Heidelberg
7-15 September
2005

Regional Association VI (Europe)

Fourteenth session

Abridged final report with resolutions

World Meteorological Organization

Weather • Climate • Water

WMO-No. 991

Weather • Climate • Water

REPORTS OF RECENT WMO CONSTITUENT BODY SESSIONS

Congress and Executive Council

915 — **Executive Council**, fifty-second session, Geneva, 16–26 May 2000
929 — **Executive Council**, fifty-third session, Geneva, 5–15 June 2001
932 — **Thirteenth World Meteorological Congress**, Proceedings, Geneva, 4–26 May 1999
945 — **Executive Council**, fifty-fourth session, Geneva, 11–21 June 2002
960 — **Fourteenth World Meteorological Congress**, Geneva, 5–24 May 2003
961 — **Executive Council**, fifty-fifth session, Geneva, 26–28 May 2003
972 — **Fourteenth World Meteorological Congress**, Proceedings, Geneva, 5–24 May 2003
977 — **Executive Council**, fifty-sixth session, Geneva, 8–18 June 2004
988 — **Executive Council**, fifty-seventh session, Geneva, 21 June–1 July 2005

Regional associations

934 — **Regional Association III** (South America), thirteenth session, Quito, 19–26 September 2001
942 — **Regional Association VI** (Europe), thirteenth session, Geneva, 2–10 May 2002
944 — **Regional Association V** (South–West Pacific), thirteenth session, Manila, 21–28 May 2002
954 — **Regional Association I** (Africa), thirteenth session, Mbabane, 20–28 November 2002
981 — **Regional Association II** (Asia), thirteenth session, Hong Kong, China, 7–15 December 2004
987 — **Regional Association IV** (North America, Central America and the Caribbean), fourteenth session, San José, 5–15 April 2005

Technical commissions

931 — **Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology**, first session, Akureyri, 19–29 June 2001
938 — **Commission for Climatology**, thirteenth session, Geneva, 21–30 November 2001
941 — **Commission for Atmospheric Sciences**, thirteenth session, Oslo, 12–20 February 2002
947 — **Commission for Instruments and Methods of Observation**, thirteenth session, Bratislava, 25 September–3 October 2002
951 — **Commission for Agricultural Meteorology**, thirteenth session, Ljubljana, 10–18 October 2002
953 — **Commission for Aeronautical Meteorology**, twelfth session, Montreal, 16–20 September 2002
955 — **Commission for Basic Systems**, extraordinary session, Cairns, 4–12 December 2002
979 — **Commission for Hydrology**, twelfth session, Geneva, 20–29 October 2004
985 — **Commission for Basic Systems**, thirteenth session, St. Petersburg, 23 February–3 March 2005

In accordance with the decision of Thirteenth Congress, the reports are published in the following languages:

Congress	—	Arabic, Chinese, English, French, Russian, Spanish
Executive Council	—	Arabic, Chinese, English, French, Russian, Spanish
Regional Association I	—	Arabic, English, French
Regional Association II	—	Arabic, Chinese, English, French, Russian
Regional Association III	—	English, Spanish
Regional Association IV	—	English, Spanish
Regional Association V	—	English, French
Regional Association VI	—	Arabic, English, French, Russian
Technical Commissions	—	Arabic, Chinese, English, French, Russian, Spanish

REGIONAL ASSOCIATION VI (EUROPE)

Fourteenth session

Heidelberg
7—15 September 2005

Abridged final report with resolutions

WMO-No. 991

World Meteorological Organization
Weather • Climate • Water

ISBN 92-63-10991-5

NOTE

The designations employed and the presentation of material in this publication do not imply the expression of any opinions whatsoever on the part of the Secretariat of the World Meteorological Organization concerning the legal status of any country, territory, city or area, or its authorities, or concerning the delimitation of its frontiers or boundaries.

CONTENTS

Page

RESOLUTIONS ADOPTED BY THE SESSION

Final No.	*Session No.*		

GENERAL SUMMARY OF THE WORK OF THE SESSION

1. OPENING OF THE SESSION (agenda item 1)

1.1 The fourteenth session of Regional Association VI (RA VI) (Europe) was held in Heidelberg, Germany, from 7 to 15 September 2005. The opening ceremony took place at the Heidelberg Convention Centre (Kongresshaus Stadthalle, Heidelberg) on Wednesday, 7 September 2005 at 10.00 a.m..

1.2 Mr D. Keuerleber-Burk, acting president of the Association, welcomed the participants and opened the session. Mr Keuerleber-Burk recalled the news of the natural disasters that had occurred all over the world, including catastrophes within the territory of RA VI Members. In remembrance of the victims of recent months, the participants held one minute's silence.

1.3 Mr Keuerleber-Burk expressed his appreciation and thanks to the hosts of the session, the representatives of Germany, the Bundesland Baden-Wurttemberg, and the city of Heidelberg for its warm welcome and the opportunity to hold the session in Heidelberg. The fourteenth World Meteorological Congress (Geneva, 15-24 May 2003), in its ambition to be proactive, had established in 2003 the World Meteorological Organization (WMO) Natural Disaster Prevention and Mitigation Programme (DPM). It would develop an organization-wide coordinating framework to enhance further WMO's contributions to the natural disaster risk-reduction activities at international, regional and national levels; and it was now up to all those present to find an adequate response within the framework of RA VI. It was the purpose and duty of the regional associations to apply WMO strategies and programmes at regional level. The Association was faced with high expectations, in particular in the field of natural disaster prevention and mitigation. The session had to discuss and decide how RA VI would meet the many difficult challenges, discuss the priorities of the Region and formulate action and the strategic plan. Mr Keuerleber-Burk expressed his assurance that the session would be successful.

1.4 Mr M. Jarraud, Secretary-General of the WMO, in his opening statement, extended a warm welcome to all participants. He expressed his appreciation to the Government of Germany, through H.E. Mr R. Nagel, for hosting the session in Heidelberg and emphasized that Germany had a long tradition of actively supporting WMO Programmes and activities, which was particularly evident from the global and regional responsibilities that the country had assumed. Mr Jarraud conveyed his thanks to the acting president of RA VI, Mr D. Keuerleber-Burk, for his leadership of the Association during the last two years, as well as to the vice-president, Mr A. Leitass, the chairpersons, rapporteurs and members of the working groups, for the work that they had accomplished since the thirteenth session of RA VI, which had been held in Geneva (2-10 May 2002). He expressed his gratitude to Mr W. Kusch, Permanent Representative of Germany with WMO, and to Mr U. Gärtner, President of the *Deutscher Wetterdienst (DWD)*, as well as his staff, for the excellent arrangements made to ensure the success of the session.

1.5 The Secretary-General emphasized that he attached very high priority to promoting transparency and internal controls in the Secretariat, thereby enhancing its support to Members' National Meteorological and Hydrological Services (NMHSs), as well as to WMO scientific and technical programmes. Additionally, he endeavoured to ensure synergy and efficiency in the implementation of the new cross-cutting programmes that had been approved by Fourteenth Congress: the DPM Programme, the WMO Space Programme (WMOSP) and the WMO Programme for the Least Developed Countries (LDCs). Recent years had been marked by natural disasters in Europe, with considerable loss of life and socio-economic impacts. The 2002 and recent summer floods in central Europe, the tragic 2003 heatwave and the 2005 floods in south-eastern Europe, as well as the devastating droughts in south-western Europe, were there to remind us of the increasing frequency of such events. Yet, had it not been for WMO's global system of warnings of extreme weather events, the global loss in terms of life and property would have been much higher. Recalling the tragic events related to the tsunami that had hit Indian Ocean littoral countries on 26 December 2004, in which about 300 000 people had lost their lives, Mr Jarraud emphasized that WMO had been prepared to respond to the emergency and had been actively joining forces with other key agencies of the United Nations system, in ensuring that adequate warning systems would soon become a reality in the Indian Ocean and other regions at risk. The WMO DPM Programme promoted collaboration among relevant programmes, and the notion of a shift in the disaster management approach, from relief and rehabilitation to multi-hazard preventive and proactive strategies, had the potential of significantly reducing the vulnerability of communities. The establishment by Fourteenth Congress of the WMO Space Programme had been very opportune in preparing the Organization to fulfil its need for a new composite observing system, which would be fundamental to meteorology and hydrometeorology in meeting the demands of sustainable development in the twenty-first century. Moreover, the third Earth Observation Summit (EOS-III), held in Brussels, Belgium, on 16 February 2005, had approved a 10-year implementation plan to develop the Global Earth Observation System of Systems (GEOSS). The meeting had also approved the hosting of the Group on Earth Observations (GEO) Secretariat at WMO Headquarters. As regards the WMO Programme for the LDCs, the fifty-seventh session of the WMO Executive Council (Geneva, 23 June-July 2005) had underscored the importance of reflecting the needs of the LDCs in the future programme structure of WMO. It had further supported the organization of a high-level international conference on the economic and social benefits of meteorological and hydrological services, in order to demonstrate the NMHSs' contribution to the realization of national development goals and the fact

that resources attributed to NMHSs should be seen as investments rather than expenditures. It had been agreed to hold such an international conference early in 2007.

1.6 The Secretary-General shared with the Association his views on issues relevant to the session's deliberations, as follows:

(*a*) Some notable gaps still remained in observational data coverage, sometimes due to deficiencies in the network's instruments and systems, but often also due to the high cost of the equipment, as well as the lack of consumables and spare parts, especially in the eastern part of the Region. Additionally, there were still some shortcomings in the area of telecommunications.

(*b*) Climate change and climate variability were important challenges to the NMHSs of the Region. A long-term operational system was required, with the capability of providing the comprehensive observations needed for monitoring and attributing climate change, for assessing the impacts of climate variability and for supporting research towards improved understanding, modelling and prediction.

(*c*) There was an increasing need for some RA VI Members to become more involved in environmental concerns, including air and water quality, marine pollution and public health-related issues. WMO, its international partners and NMHSs, needed to intensify cooperation in the field of environmental quality.

(*d*) The enlargement of the European Union was an important process for WMO and especially for many RA VI Members. A memorandum of understanding (MoU) had been signed in December 2003 between WMO and the European Commission, setting up cooperation arrangements. Recently concrete steps had been taken to develop further partnerships with the European Commission in the fields of weather, climate and water.

(*e*) In the field of hydrology and water resources, WMO had developed close links with its partner United Nations agencies, the European Commission and other regional and international organizations. In that respect, he mentioned, for example, WMO's collaboration with the Global Water Partnership (GWP) in the framework of the Associated Programme on Flood Management (APFM), which aimed at providing national government agencies with a sound system of methods, tools and policy options for integrated flood management.

(*f*) As a result of rapid technological developments, NMHSs required continuous staff training, in order to keep up with those changes and to utilize more fully all emerging opportunities. Education and training would therefore continue to be a top priority, with the objective of reducing the gap between developed and developing countries. He encouraged Members to give very high priority to human resources development and capacity-building, in order for their NMHSs to become increasingly self-reliant in the basic training of their meteorological and hydrological personnel. He also seized the opportunity to express WMO's appreciation to countries hosting Regional Meteorological Training Centres (RMTCs) in the Region, for their unflinching support to the WMO Education and Training Programme (ETRP).

(*g*) He recalled that WMO had continued to cooperate with the World Bank in the implementation of several projects. The World Bank had designed a project to improve the capacities of the Russian Federal Service for Hydrometeorology and Environmental Monitoring (ROSHYDROMET) and was also focusing on the cost-benefit of improved meteorological and hydrological services for the national economies of central and eastern Europe. That was a new challenge for NMHSs, and WMO would continue to maintain active dialogue with the World Bank, in order to promote support for the services.

(*h*) Since the thirteenth session of RA VI, the close cooperation between WMO and key regional institutions, such as the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT) and the European Centre for Medium-range Weather Forecasts (ECMWF), among others, had continued to be strengthened. There was also much synergy with the European Meteorological Services Network (EUMETNET) and he looked forward to closer cooperation in the future, including liaison with European institutions in Brussels. Furthermore, an MoU between WMO and the European Meteorological Society (EMS) had been signed in 2003, expressing the common desire to cooperate in the effective achievement of shared objectives.

(*i*) He was pleased to note that NMHSs of the developing countries in RA VI had continued to benefit from the generous support of several partners, mainly from within the Region. That had been accomplished through the WMO Technical Cooperation Programme (TCOP), particularly the Voluntary Cooperation Programme (VCP), and through other bilateral and multilateral arrangements. He stressed WMO's appreciation, and his own, for those significant contributions.

1.7 Mr Jarraud said that a number of Members in the Region were currently facing many socio-economic and development challenges that would have a major influence on their ability to achieve sustainable development. Those challenges included globalization, intellectual property, global security, the changing role and perception of the United Nations system, the impact of climate change and its variability, the rapid developments in telecommunications and information technology, and the increasing toll of natural disasters, among others. Some of those factors represented major obstacles for the most vulnerable countries, particularly in the eastern and southern parts of the Region.

Responses to those countries' needs should keep in mind the relevant global strategies, such as the United Nations Millennium Declaration (Resolution 55/2 of the United Nations General Assembly, September 2000) and the Hyogo Framework for Action 2005–2015, which had been adopted by the World Conference on Disaster Reduction (WCDR) (Kobe, Japan, 18-22 January 2005). In all cases, the visibility of NMHSs and the important roles that they played in their respective countries needed to be strengthened. Core functions of NMHSs, such as observing, forecasting and issuing warnings in relation to weather, climate and water, should be linked to their social responsibility in the provision of vital new services to traditional and non-traditional sectors. By working together within the context of the Region, members of WMO technical commissions, rapporteurs and other experts could contribute significantly to the NMHSs' cost-effectiveness. They were also very important focal points for fostering international cooperation and were instrumental in promoting collaboration in the activities of RA VI.

1.8 As part of the WMO Secretariat reform, and in order to facilitate further the implementation of programmes that the Association would be developing, a number of structural and organizational measures had been undertaken to enhance the cost-effective implementation of the Regional Programme (RP) and the Technical Co-operation Programme (TCOP) by creating the Regional and Technical Cooperation Activities for Development Department (RCD) , which regrouped the TCOP Department and the Regional and Subregional Offices. Its main objectives were to improve the services provided to Members, by better responding to their needs, and to assist them in resource mobilization activities through closer collaboration with the relevant national and regional funding and socio-economic institutions. Those changes and additional reform would be increasingly perceived through the Subregional Office for Europe, which had been officially established during the intersessional period. The Office would serve as a focal point to support regional activities, facilitate technical cooperation, and assist Members in their implementation of WMO Programmes and the development of their NMHSs.

1.9 Mr Jarraud emphasized the significant contribution of the Association to an increased participation of NMHSs in the socio-economic development of the respective Member countries. In that respect, the preparation of the Regional Strategic Plan was a topic of major importance to the session.

1.10 On behalf of Germany, Mr R. Nagel, State Secretary of the Federal Ministry of Transport, Building and Housing, addressed the participants. He conveyed the greetings of the Federal Minister, Mr M. Stolpe, and expressed a cordial welcome to participants at the session in Heidelberg. Mr Nagel emphasized that many people in central and eastern Europe had drowned in the floods and that the Iberian Peninsula and southern France had experienced an extreme drought that had led to forest and bush fires. Aware of the fact that WMO was the voice in the United Nations for weather, climate and water, and that WMO and NMHSs made an essential contribution to the improvement of the protection of lives and possessions from natural disasters and to increasing the safety of human beings, Mr Nagel stressed that the major task for politicians was to bring WMO's knowledge and capabilities into daily routine activities and structures for protection and rescue. Mr Nagel said that in Europe there were a number of worldwide exemplary initiatives, such as EUMETSAT, ECMWF and EUMETNET. RA VI could be a good example to the world by showing how cooperation in the field of meteorology, hydrology and climate could be more effective and beneficial for all partners. Another important subject was the restructuring of the traditionally successful meteorological communication system into an information system adjusted to growing needs for information and fast technological developments. Mr Nagel assured the Association that Germany would actively participate in, and contribute to, that cooperation through the various institutions whose functions entirely or partially fell within the mandate of WMO. Mr Nagel was certain that the session would make an essential contribution to cooperation in Europe and wished it every success.

1.11 On behalf of the State Government of Baden-Württemberg, Mr G. Stratthaus, Member of Parliament and Minister of Finance of the State Government of Baden-Württemberg, greeted the participants. Mr Stratthaus emphasized that the public was generally only aware of a very small portion of the vast activities of WMO. He expressed his great appreciation to WMO, especially its role in providing valuable forecasts and warnings, which had to be timely and followed by the responsible entities to ensure early measures were taken to prevent disasters. Mr Stratthaus expressed his satisfaction with the successful cooperation with the *DWD* in the area of water management through a number of WMO projects.

1.12 On behalf of the historical City of Heidelberg, Mr E. Würzner, Mayor for Environment and Energy of the City of Heidelberg, addressed the participants. He said that WMO was playing a leading role in international efforts to monitor and protect the environment through its programmes. There was a clear need for international organizations like WMO to support the implementation of relevant conventions such as the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Convention to Combat Desertification (UNCCD), and the Vienna Convention for the Protection of the Ozone Layer and its Protocols and Amendments. Mr Würzner presented an overview of what a city could do to protect the climate and, in that context, to protect itself. The City of Heidelberg was trying its best to operate a future-oriented climate protection campaign, especially for municipal facilities, even though their share of the total carbon dioxide emissions in Heidelberg amounted to only four per cent. Heidelberg had established a municipal energy management and energy controlling scheme, the use of performance-contracting because of

limited personnel and finances, and an Energy Concept for the City of Heidelberg in December 1992 and in 2004. Apart from the above, numerous individual projects in the field of renewable energy had been implemented. The largest share of CO2 emissions (32.2 per cent) came from energy use in private households. Therefore, Heidelberg had promoted special offers to its citizens, a climate protection advisory bureau had been opened, a promotion programme on rational energy use amounting to EUR 500 000 had been set up, and a new energy agency had been established. There was a clear need for closer cooperation in creating new technical solutions to achieve a more sustainable way of living for the whole world. WMO programmes provided vital information for advanced warnings that saved many lives and reduced damage to property and the environment. Thanks to the hydrometeorological warning system, an 18-hour warning period had been achieved in Heidelberg. Mr Würzner wished the session every success.

1.13 Mr W. Kusch, Permanent Representative of Germany with WMO and Vice-President of *DWD*, welcomed participants to Heidelberg. *DWD* considered the organization of, and support to, that important session as a contribution to international cooperation within WMO. Mr Kusch said that the whole system of meteorological communities could only function if every Member maintained and supported an operational meteorological service and contributed to the worldwide exchange of observational data. In addition, voluntary commitments for operational services by Members were necessary to support the system. The contribution of *DWD* comprised, for example, the operation of a Regional Specialized Meteorological Centre (RSMC), a Regional Telecommunication Hub (RTH) and various data and product centres. Furthermore, *DWD* was engaged in the Global Atmosphere Watch (GAW) system of global stations and operated the German GAW Training Centre at Hohenpeissenberg. That commitment to contribute services for the benefit of RA VI and the whole of WMO had existed for many years and he gave assurances that *DWD* would continue that commitment. Mr Kusch expressed his great expectations that the session would formulate realistic aims to be achieved by the next session. He gave his assurances that *DWD* would do its best to support the work of the Association.

2. Organization of the session (agenda item 2)

2.1 Consideration of the report on credentials (agenda item 2.1)

2.1.1 The representative of the Secretary-General presented reports on credentials, taking into account the documents received prior to and during the session. The Association accepted the reports. In accordance with General Regulation 22, it would not be necessary to establish a Credentials Committee. It was so agreed.

2.1.2 The meeting was attended by 129 participants from 45 countries of RA VI. In addition, two representatives of other WMO Members and 11 representatives of other national, regional and international organizations participated at the session. The list of participants is given in Appendix A to the present report.

2.2 Adoption of the agenda (agenda item 2.2)

The provisional agenda for the session was unanimously adopted.

2.3 Establishment of committees (agenda item 2.3)

2.3.1 In accordance with General Regulation 24, the Association established the following committees:

Nomination Committee

2.3.2 A Nomination Committee was established consisting of the principal delegates of Iceland, Romania and Spain. The principal delegate of Spain, Mr F. Cadarso, was requested to serve as convenor.

2.3.3 The Association decided to conduct its business in plenary throughout. Mr D. Keuerleber-Burk, acting president, would chair the general plenary to consider agenda items 1-3, 13, 15.1-15.3, 15.6, 16.3, 17-22. Mr A. Leitass, the vice-president, would chair plenary sessions A to consider agenda items 4.1-4.6, 7.1, 7.3, 7.4, 6.1-6.5, 11, 12, 15.4, 15.5. Mr R. Chitanava (Georgia) would chair plenary sessions B to consider agenda items 5.1-5.5, 7.2, 8-10, 14, 16.1, 16.2.

Coordination Committee

2.3.4 As stipulated by General Regulation 28, a Coordination Committee was set up, comprising of the acting president of RA VI, the representative of the Secretary-General, the co-chairpersons of plenary sessions A and B and secretaries of the plenary sessions.

Subcommittee on the Action Plan

2.3.5 The Association established an open Subcommittee on the Action Plan initially comprising the delegates of the United Kingdom, as convenor, the Czech Republic, Germany, Jordan, and the Russian Federation.

2.4 Other organizational matters (agenda item 2.4)

2.4.1 The Association established its working hours for the session.

2.4.2 The Association agreed that no minutes of the plenary meetings would be produced unless a Member specifically requested minutes for a particular item.

2.4.3 The Association designated Mr I. Čačić (Croatia) as rapporteur on agenda item 19 — Review of previous Resolutions and Recommendations of the Association and of relevant Executive Council Resolutions.

2.4.4 The Association agreed to waive the General Regulation 109 for the duration of the session.

3. Report by the president of the Association (agenda item 3)

3.1 The Association noted with appreciation the report of the president of RA VI which provided a review and assessment of the major activities of the Association

since its thirteenth session and expressed satisfaction at the effective manner in which the activities of the Association were being undertaken.

3.2 The Association commended its former president, Mr F. Quintas Ribeiro (Portugal), and former acting president, Mr P. Korkutis (Lithuania), for their contributions to the work of Association. The Association also commended its acting president, Mr D. Keuerleber-Burk (Switzerland), for having effectively conducted the affairs of the Association, thus contributing to the development of meteorology and hydrology in the Region. The Association commended the vice-president, Mr A. Leitass (Latvia), for his contribution to the work of the Association. It also expressed its appreciation to the chairpersons and members of the working groups and rapporteurs, who had actively collaborated in carrying out the activities of the Association in the Region.

3.3 The Association extended its appreciation to Members which had hosted various regional events during the intersessional period and encouraged all Members to continue to provide the necessary support to the activities of the Association.

3.4 The Association gave its full support to priority issues, in particular those related to WMO scientific and technical programmes that focus on the specific needs and requirements of the Region and new priority areas such as climate change and related environmental issues, natural disaster prevention and mitigation and water resources management. It requested the Secretary-General to take into consideration the regional needs of the Association in the implementation of WMO Programmes and activities.

3.5 The Association agreed that RA VI Members should work closely together to achieve a better equilibrium in the level of NMHSs throughout the Region. Optimal use of the resources and services of WMO as well as effective collaboration with regional organizations such as ECMWF, EUMETSAT, EUMETNET, the European Space Agency (ESA) and the European Cooperation in the Field of Scientific and Technical Research (COST), should be given greater attention during the next intersessional period. Greater consideration should be given to the application of new technology in NMHSs' systems and operations and to the use of research in the design, development and dissemination of new products. Attention should be given to capacity-building, especially education and training to enable Members to strengthen their manpower development.

3.6 The systems for observing, recording and reporting on the weather, water resources, ocean, climate and related natural environment should be improved and optimized in the most effective and efficient manner, including the standardization of techniques for observing data and planning networks on a regional basis. Regular calibration of meteorological and hydrological instruments should be introduced where it was not already in place. Broader international cooperation in that respect was needed, especially with institutions able to issue internationally valid certificates. It was recommended that NMHSs that did not have a quality management system (QMS) in place should gradually start implementing a relevant QMS to improve their overall visibility and performance.

3.7 The Association recognized a need to promote closer cooperation among hydrological and meteorological services, mainly in countries where they were separate, and in RA VI among international river basins in dealing with hydrological and water-related problems.

3.8 The accuracy and reliability of the analysis, forecasts, warnings and risk assessments of natural hazards of meteorological origin should be improved. That should include improving seasonal and longer-term predictions of changes in the timing, severity and frequency of such severe events. Members of the Association should try to raise the level of public awareness, understanding and response to severe weather forecasts and warnings as part of natural disaster prevention and mitigation. Focus should be on the promotion and enhancement of cross-border exchange of warnings and on close collaboration with the media and emergency management organizations.

3.9 Climate change and related environmental issues would continue to be of great concern to the countries in the Region. In order to enable Members to provide guidance to their government policy makers, climate change scenarios and their impact in a regional and subregional context should be developed. With a view to achieving more effective collaboration, Members of the Association should continue to seek new opportunities for a more cost-effective sharing of activities in the Region, such as an emerging Regional Climate Centre (RCC) and to avoid unnecessary duplication of activities.

3.10 Making the changes related to the European Union enlargement beneficial to all RA VI Members would be one of the most challenging future tasks. Consideration should be given to joint approaches to the European Union, with one authoritative voice when there was an identified regional or subregional requirement to be met. That had already been the case of the Single European Sky Regulations, the Infrastructure for Spatial Information in Europe (INSPIRE) initiative and the Global Monitoring for Environment and Security (GMES).

3.11 Moreover, the Association stressed the importance of promoting the development of regional high-level policies and directives in the field of meteorology, hydrology, climate and environmental protection to help in increasing governmental support to the activities of NHMSs.

3.12 The role of the Subregional Office for Europe should be considered in the context of how it could best engage with, and facilitate, the process of cooperation between Members. A network of international advisers to Permanent Representatives in RA VI could be very helpful in that regard.

3.13 A strategic plan for RA VI should be developed during the intersessional period, with a corresponding

action plan. Such a regional strategic plan should include broad guidance for Members in order to assist them in formulating their own development plans pertaining to the contribution of, and support to, meteorology, hydrology and related disciplines as well as their applications.

4. WORLD WEATHER WATCH PROGRAMME — REGIONAL ASPECTS (agenda item 4)

4.1 REPORT OF THE CHAIRPERSON OF THE WORKING GROUP ON PLANNING AND IMPLEMENTATION OF THE WORLD WEATHER WATCH IN REGION VI (agenda item 4.1)

4.1.1 The Association noted with appreciation the report of the chairperson, Mr G. Steinhorst (Germany). It was noted that the Working Group had made good progress and the major results were considered in detail under the relevant agenda items of the session.

4.1.2 The Association noted the results of the monitoring of the operation of the World Weather Watch (WWW). During the October 2004 annual global monitoring, the availability of SYNOP reports (94 per cent) and TEMP reports (80 per cent) from Regional Basic Synoptic Network (RBSN) stations, and that of CLIMAT reports (90 per cent) and CLIMAT TEMP reports (73 per cent) from Regional Basic Climatological Network (RBCN) stations had been relatively satisfactory.

4.1.3 The Association gave particular attention to Resolution 2 (Cg-XIV) — World Weather Watch Programme for 2004–2007 and Resolution 25 (Cg-XIV) — Sixth WMO Long-term Plan, which had confirmed that the WWW continued to have the highest priority as the basic WMO Programme and provided the basis for the operations of NMHSs and the international exchange of data and products. The Association also noted Resolution 5 (Cg-XIV) — WMO Space Programme, which had established a major new programme to increase the effectiveness and contributions from satellite systems to WMO Programmes as indicated in the Sixth WMO Long-term Plan (6LTP). As regards Resolution 29 (Cg-XIV) — Natural Disaster Prevention and Mitigation Programme, the Association emphasized the important role of the WWW system at the regional level, and, in particular, its information systems and services component for the exchange of early warnings and related information.

4.1.4 The Association stressed that it would continue to play an active role in the implementation and further development of the WWW in Region VI to keep the WWW Programme under continuous review and to recommend adjustments in light of Members' changing requirements as well as developments in science and technology, bearing in mind the principles and directives laid down in the 6LTP. It would also identify deficiencies, propose remedial measures and develop system support projects on a regional scale.

4.1.5 The Association agreed that, taking into account the many tasks related to the basic WWW components, it was necessary to re-establish the Working Group on Planning and Implementation of the WWW (WG-PIW) in Region VI. Accordingly, Resolution 1 (XIV-RA VI) was adopted. The Association identified the specific tasks, as listed in the annex to that resolution, that the WG-PIW should carry out during the forthcoming intersessional period with a view to further developing WWW implementation in the Region and to effectively meeting evolving requirements.

4.2 INTEGRATED OBSERVING SYSTEMS, INCLUDING THE INSTRUMENTS AND METHODS OF OBSERVATION PROGRAMME (agenda item 4.2)

4.2.1 The Association recalled that the Global Observing System (GOS), as described in the 6LTP, was a composite system comprising the surface-based and space-based subsystems. The former was composed of the RBSN of surface and upper-air stations and other networks of observing stations on land, at sea and in the air, while near-polar-orbiting and geostationary environmental observation satellites with associated ground stations formed the latter.

SURFACE-BASED SUBSYSTEM

REGIONAL BASIC SYNOPTIC NETWORK

4.2.2 The Association noted that during the intersessional period the approved RBSN, in accordance with Resolution 2 (XIII-RA VI) — Regional Basic Synoptic Network, had basically remained unchanged with the addition and closure of a single surface and upper-air station, respectively. The RBSN comprised 770 surface stations, 135 upper-air stations, 11 moored buoys and two fixed ships. It noted that the implementation and maintenance of the RBSN combined with the real-time meteorological data exchange over the GTS continued to be one of the most important commitments of Members.

4.2.3 The Association noted that the observing system was functioning well in the Region; nontheless, there were deficiencies in some areas, mostly in the eastern part. It appreciated the work carried out by the WG-PIW in Region IV through the Subgroup on Regional Aspects of the Integrated Observing Systems (IOS) in identifying and addressing deficiencies in the observing programmes. It also appreciated the work done by the Lead Data Quality Monitoring Centres for improving the procedures for monitoring and for the presentation and distribution of monitoring results on the availability and quality of surface-based observational data.

4.2.4 As regards the revision of the RBSN, the Association confirmed the principles endorsed by its previous session to be applied for the inclusion of stations in the RBSN. It noted with appreciation the efforts undertaken by Mr A. Douglas (United Kingdom), the coordinator of the Subgroup on Regional Aspects of the IOS in compiling, in coordination with the Secretariat, the revised list of RBSN stations. The Association also noted that the proposed list of RBSN stations had been reviewed by the WG-PIW and circulated among RA IV Members prior to the session. By

adopting Resolution 2 (XIV-RA VI), the Association approved the new list of RBSN stations as given in the annex to the resolution.

Regional Basic Climatological Network

4.2.5 The Association noted with satisfaction that the establishment of an RBCN in all WMO Regions and in the Antarctic allowed a more effective and consistent monitoring of the availability of climatological data. It noted that the RBCN stations served as the target list for WWW monitoring and that the contribution of RA VI to the global RBCN constituted 20 per cent and 17 per cent in providing CLIMAT and CLIMAT TEMP reports, respectively.

4.2.6 The Association took note that since its thirteenth session the total number of stations in the RBCN of RA VI had increased from 611 to 614 with the addition of six CLIMAT reporting stations and the closure of three CLIMAT TEMP reporting stations. Similar to the RBSN, it noted with appreciation the efforts undertaken by the coordinator of the Subgroup on Regional Aspects of the IOS in compiling, in coordination with the Secretariat, the revised list of RBCN stations. The Association reviewed the list of RBCN stations which had been proposed by the WG-PIW and circulated among RA VI Members prior to the session. By adopting Resolution 3 (XIV-RA VI), the Association approved the list of RBCN stations in Region VI.

4.2.7 The Association welcomed the preparation of special guidance material by the Secretariat related to the operational procedures and practices to be used by observers and technicians in transmitting CLIMAT and CLIMAT TEMP messages at the national level. It also noted the organization of the RA II/RA VI Subregional Training Seminar on CLIMAT and CLIMAT TEMP Reporting (Moscow, Russian Federation, 2-4 November 2004), which had been the first in a series of such seminars for countries in WMO Regions which were having problems in generating and exchanging climate data.

Other networks, including sea stations

4.2.8 The total number of Voluntary Observing Ships (VOS) recruited by Members of the Association had increased slightly during the intersessional period to 2 385 by December 2004, compared with 2 155 in 2002. The number of SHIP reports received at Main Telecommunication Network (MTN) centres in the Region had not undergone significant changes during the intersessional period. At the same time, there had been a continuing increase in the deployment of other types of sea stations.

4.2.9 In March 2005, the total number of active drifting buoys deployed by six Members was 85 out of global total 1 022 (59 by five Members in August 2003). In addition a substantial number of drifting buoys deployed by operators from countries in other Regions had also been reporting from waters within the Region. At the same time, in March 2005, agencies in three countries in Region VI had been operating on average 15 moored buoys within regional waters out of a global set of 185 (26 by three countries in August 2003) in addition to several other moorings in the Region deployed by mixed operators.

4.2.10 Implementation of the Argo project of subsurface profiling floats was well under way. In March 2005, 349 out of a global set of 1 712 floats had been deployed operationally by eight Members of the Association, through a project funded by the European Union, compared with 200 floats by five Members in August 2003. Reports from the great majority of all those different automated sea stations were exchanged in real-time on the Global Telecommunication Network (GTS). The Ship-of-Opportunity Programme (SOOP) was continuously contributing to global ocean monitoring. During 2004, two Members of the Association provided 1 320 XBT profiles (out of a global total of 23 412) compared with 1 003 (out of a global total of 18 337) provided by two Members in 2003. As previously, most of the data were exchanged in real-time on the GTS.

4.2.11 The Global Sea-Level Observing System (GLOSS) was another essential component of the Marine Meteorology and Oceanography Programme (MMOP). Thirty-seven GLOSS committed sites were operated by Members by March 2005, including 15 sites exchanging data in real-time.

4.2.12 Fully automated systems within the Automated Shipboard Aerological Programme (ASAP) were considered as a fully operational component of the WWW, with no significant changes during the last three years (in March 2005, 22 ships were being operated by six Members).

4.2.13 Using that listing of the various elements of the observing system, and averaging the present status versus targets, the global marine meteorology and ocean observing system could be estimated to be 51 per cent complete by March 2005. To that effect, the Members of the Association contributed a total of 7 099 platforms and deployments out of a global total of 27 264 (26 per cent).

4.2.14 The number of Aircraft Meteorological Data Relay (AMDAR) observations disseminated on the GTS per day had increased to over 200 000, representing more than a fourfold increase since 1998 when the AMDAR Panel had been established. A big step had been taken with the start of an operational trial of the humidity/water vapour sensor in the United States. Despite a few technical problems, the quality of data generated by that sensor had been good and, in any case, much better than data from previous sensors. A data intercomparision was being conducted against data from other aircraft, against radiosonde data and the United States Rapid Update Cycle (RUC) model output. Furthermore, an operational trial over the United States Great Lakes Region (Great Lakes Fleet Experiment (GLFE)) of the United States Tropospheric Airborne Meteorological Data Reporting (TAMDAR) system was under way with SAAB 340 aircraft equipped with the special sensor package, including pressure altitude, temperature, wind speed/direction, humidity, turbulence and an icing index. The trial would run for six months to August

2005. Independent studies of data quality were being undertaken by the Forecast Systems Laboratory (FSL) in the United States and the EUMETNET Composite Observing System (EUCOS) in Europe.

SPACE-BASED SUBSYSTEM AVAILABLE FOR REGION VI

4.2.15 The global space-based component of the GOS comprised three types of satellites: operational meteorological polar-orbiting and geostationary satellites and environmental research and development (R&D) satellites. With regard to meteorological satellites, both polar-orbiting and geostationary, the present operational meteorological satellites included the following geostationary and polar-orbiting satellites: GOES 10, GOES-12, NOAA-16 and NOAA-17 operated by the United States; MTSAT 1R operated by Japan; METEOR-3M N1 operated by the Russian Federation; Meteosat 5, Meteosat-7 and Meteosat-8 operated by EUMETSAT; and FY-2C and FY-1D operated by China. Additional satellites in orbit or in commissioning included GOES-9, GOES-11, NOAA-11, NOAA 12, NOAA 14, NOAA-15 and NOAA-18 operated by the United States; GOMS N 1 operated by the Russian Federation; Meteosat-6 operated by EUMETSAT; and FY-2A, FY-2B and FY-1C operated by China.

4.2.16 The R&D satellites included the National Aeronautics and Space Administration (NASA) Aqua, Terra, NPP, TRMM, QuikSCAT and GPM missions, the ESA ENVISAT, ERS-1 and ERS-2 missions, the Japan Aerospace Exploration Agency (JAXA) ADEOS and GCOM series, the Rosaviakosmos research instruments on board the ROSHYDROMET operational METEOR-3M N1 satellite, as well as on its future Ocean series, and the National Centre for Space Studies (CNES) JASON-1 and SPOT-5.

GROUND SEGMENT

4.2.17 Thirty-six out of 49 RA VI Members were equipped with low resolution polar-orbiting receivers (automatic picture transmission (APT)), and 21 out of 49 Members were equipped with high-resolution polar-orbiting receivers (high-resolution picture transmission (HRPT)). Out of 49 Members, 40 had low resolution weather facsimile (WEFAX) receivers and 27 had high resolution receivers. Forty-four out of 47 Members had at least one geostationary receiver. Forty-three out of 49 Members had at least one polar-orbiting receiver as well as one geostationary receiver, leaving six Members to be equipped.

GOS-RELATED REGULATORY MATERIAL (REGIONAL ASPECTS)

4.2.18 The Association was pleased with the activities undertaken to update the regional entry for the *Manual on the Global Observing System* (WMO-No. 544) (Volume II) - Regional Aspects - Region VI (Europe) in response to evolving requirements. It noted with appreciation the efforts undertaken by the Subgroup on Regional Aspects of the IOS in compiling the draft revision of the regional entry, which had been reviewed and proposed for adoption by its WG-PIW. The Association adopted Resolution 4 (XIV-RA VI).

COOPERATION WITH EUMETNET EUCOS

4.2.19 The Association noted the key role played by EUMETNET EUCOS in developing improved and integrated observing networks in the Region. The Association welcomed the initiative taken by EUCOS to develop monitoring capabilities for the Region. The Association requested its WG-PIW to continue working closely with EUCOS and agreed that a representative of EUCOS should be included in the membership of the Subgroup on Regional Aspects of the Integrated Observing Systems.

DESIGNATION OF FOCAL POINTS

4.2.20 The Association supported the concept of each Member appointing focal points for the three key aspects of IOS (RBSN and Vol. A entries, RBCN/Global Climate Observing System (GCOS)). It noted that to complete the current list, the president of the Association had already invited Members to nominate focal points in 2005. The Association urged the RA VI Member countries to designate the focal points as required.

INSTRUMENTS AND METHODS OF OBSERVATION PROGRAMME

4.2.21 The Association noted the results of the thirteenth session of the Commission for Instruments and Methods of Observations (CIMO-XIII) (Bratislava, Slovakia, 25 September - 3 October 2002). It stressed that the Instruments and Methods of Observation Programme (IMOP) was of fundamental importance in ensuring the quality and reliability of meteorological data that were essential to Members' operational and research activities.

4.2.22 The Association noted with appreciation that the technical conferences, TECO 2002 and TECO-2005, and the exhibitions of meteorological equipment and systems, METEOREX-2002 and METEOREX-2005, (Bratislava, September/October 2002, and Bucharest, Romania, May 2005, respectively), had been very successful. One hundred and seventeen experts from 32 RA VI Member countries had attended TECO-2002, and 169 experts from 25 RA VI Member countries had attended TECO-2005. The Association underlined the importance of such technical conferences as a means of exchanging technical information and experience and of facilitating technology transfer and capacity-building.

4.2.23 The Association noted with satisfaction that steps had been taken by CIMO to proceed with the urgently needed WMO intercomparisons according to the programme for WMO intercomparisons set up by CIMO-XIII. It noted that this work was essential for the WMO programmes that demanded accurate homogenous measurements. The WMO Intercomparison of Rainfall Intensity Gauges had started on 15 September 2004 in three laboratories of the Royal Netherlands Meteorological Institute, at *Météo France* and at the Italian Met Service (University of Genova). Nineteen pairs of instruments (including two from Region IV) from 18 manufacturers were taking part in the inter-

comparison, the first two phases of which had been successfully concluded by 15 February and 15 May 2005, respectively. The intercomparison would last until mid-2006.

4.2.24 The WMO Intercomparison of High Quality Radiosonde Systems (Vacoas, Mauritius, 1-27 February 2005) was vital for the worldwide and regional homogeneity of upper-air measurements. Six operational radiosonde systems (Vaisala, Lockheed Martin - Sippican, Modem, MEISEI Electric Co., Graw Radiosondes and Meteolabor) had participated in the intercomparison, which consisted of 62 successful comparison flights. In addition to the Sippican MKII radiosondes, three thermistor radiosondes had been flown to provide a daytime "working reference" for temperature, and the Snow-white chilled mirror hygrometer was used as a "working reference" for dewpoint/relative humidity. The objectives had been met and the project team was analyzing the results and preparing a report.

4.2.25 The Association agreed that a successful determination of the radiation budget, which was fundamental to understanding the Earth's climatic system, climate variability and climate change, would only be possible with very homogeneous solar radiation data from all over the world. In that regard, the Association welcomed the Tenth International Pyrheliometer Comparison (IPC-X) to be held in the World Radiation Centre in Davos, Switzerland, from 26 September to 14 October 2005.

4.2.26 The Association underscored the importance of capacity-building and training in the field of instruments and methods of observation as a prerequisite for the uninterrupted operation of instruments and the generation of high quality data. It encouraged Members to arrange for required training through national and regional training programmes and urged Members as well as private industry to sponsor regional instrument training events. In that regard, the WMO Web portal on Development, Maintenance and Operation of Instruments, Observing Methods and Automatic Weather Stations (AWSs) had contributed significantly to capacity-building and training.

4.2.27 Noting the relatively large and still growing number of AWS in the observing networks of RA VI, the Association recalled the valuable outcomes of the Third International Conference on Experiences with Automatic Weather Stations (ICEAWS) (Torremolinos, Spain, 19-21 February 2003) and welcomed the organization by Portugal of the Fourth ICEAWS to be held in Lisbon, Portugal, from 24 to 26 May 2006. The Association encouraged Members to participate in that conference.

4.2.28 The Association underlined the role that the Regional Instrument Centres (RICs) played in capacity-building, such as by actively supporting the organization of training workshops and preparation of training materials. RICs should also play an important role in organizing instrument evaluations and comparisons, and in providing assistance and advice on the calibration of national standards/reference instruments within the Region. In that connection, the Association welcomed efforts to further strengthen RIC services, especially those in developing countries, to better assist Members of the Region in providing services as defined in their terms of reference. In that regard, the RICs would be evaluated against the agreed criteria and proposals for their further strengthening would be developed by the recognized expert from the RIC in Trappes, France. The Association noted with interest that the Training Workshop on Metrology for the RICs would be held in Trappes, from 17 to 21 October 2005. The workshop would train the operational staff of the RICs in basic metrology principles, measurements and calibration of basic meteorological variables and how to conduct tests and intercomparisons.

4.2.29 The Association also noted the usefulness of the *Instrument Catalogue*, a second edition of which had been produced by the China Meteorological Administration under the auspices of CIMO, in assisting Members to select the most suitable instruments for application within their operational networks. The 2002 edition of the *Instrument Catalogue* had been distributed to Members in June 2003. The third edition was under development and would be distributed to Members later in the year.

The impact of the forced need to replace certain radiosonde systems

4.2.30 The Association was informed of the discontinuation of radiosondes of the type Vaisala RS80 and RS90 (400 MHz) in the course of 2005. In that regard, the Secretariat had conducted a survey to collect information necessary to investigate the impact of the replacement/upgrade of the above radiosonde systems on the global network. Thirty-three RA VI Members had responded to the survey covering 105 upper-air stations in the Region. Out of those stations, 32 were using RS80 (400 MHz) and 14 RS90 (400 MHz) radiosondes and needed to upgrade or replace their current ground stations. All 46 stations had reported that they intended to replace/upgrade their ground stations (44 stations planned to do this before the end of 2005). Financial assistance had been requested for four currently operational upper-air stations (Zadar, Croatia; Athalassa, Cyprus; San Pietro Capofiume, Italy; and Petrovec, the FYR of Macedonia). The Association was also informed of the termination of the NELS Agreement (Loran C in north-western Europe and the North Atlantic) by Denmark, Germany, Ireland, the Netherlands and Norway, which would be effective as from 1 January 2006. France had decided to continue to operate Loran, thus the Loran C signal would remain available in part of the present coverage area. About 18 stations would be affected and a change to another NAVAID system would be necessary. As all of those Members used RS80/90 (400 MHz) radiosondes, upgrades to other systems were being considered as a part of the overall replacement/upgrade of RS80/90 (400 MHz) radiosondes.

Report of the Rapporteur on Regional Aspects of Instrument Development, Related Training and Capacity-building

4.2.31 The Association noted with appreciation the report of Mr I. Zahumensky (Slovakia), the Rapporteur on Regional Aspects of Instrument Development, Related Training, and Capacity-building, and his efficient cooperation with instrument experts of the Region aimed at enhancing capacity-building in the field of instruments and methods of observation.

4.2.32 The Association noted the difficulties in the maintenance of the observing network that had negatively affected the availability of data in some parts of the Region. The main reasons for the unsatisfactory performance of the instruments were inadequate funds to rehabilitate and replace the obsolete instruments and a lack of properly trained instrument specialists. The Association also noted with concern that the high cost of consumables continued to adversely affect performance, especially of upper-air observing stations.

4.2.33 The Association underlined that the RIC in Trappes was instrumental in satisfying the needs of the Region for regular calibration, standardization, instrument comparisons and evaluation and for training of instrument experts. It felt that additional RICs would be beneficial, specifically in the southeastern part of the Region and the Association noted with appreciation the willingness of some Members to support some RIC functions or to host RICs. In that connection, it was critical that the necessary resources be made available to the RICs so that they could carry out and support required calibration campaigns for other Members. With a view to attaining an optimal constellation of RICs in the Region, which would meet all Members' requirements and take into account the existing and emerging capabilities and initiatives, such as relevant EUMETNET programmes, and the recommendations arising from an ongoing evaluation of RICs being carried out under the WMO Instrument Programme, the Association agreed to review the Region's comprehensive requirement for RICs and to develop a corresponding plan as part of the RA VI Action Plan (2005-2011). It tasked its WG-PIW, in collaboration with the Rapporteur on Regional Aspects of Instrument Development, Related Training and Capacity-building, to develop the plan.

4.2.34 The Association welcomed the fact that the RA VI RIC had carried out calibrations of several types of national standard instruments for Members of RA VI, such as Ireland, Italy, Poland and Slovenia. Support for calibration had also been given to Members outside of the Region, namely to Algeria, Cuba and Egypt. The Association also noted with pleasure that the RIC had offered its facilities and staff for training and workshops on pressure, temperature and humidity measurements, radar equipments, meteorological sensors for aviation and upper-air measurements. In addition, RIC experts had conducted technical missions to various countries. The RIC was also involved in the instrument evaluations and comparisons and in the development of standard evaluation methods for some instruments.

4.2.35 The Association expressed appreciation for the work of the rapporteur that had resulted in the launch of a Web Portal on the Development, Maintenance and Operation of Instruments, Observing Methods and Automatic Weather Stations, which provided access to worldwide information on instruments and methods of observation. Accessible through the CIMO/IMOP Web site, the Web Portal was proving to be a useful tool for instruments specialists.

4.2.36 The rapporteur had disseminated information on instrument development and related training to instrument specialists and other contact points regularly through nine issues of "Letter of Rapporteur", thus creating a forum for the exchange of information. In addition to the terms of reference approved by the thirteenth session of RA VI, information on AWS included the siting and exposure of automatic sensors for different purposes; specifications for surface-based meteorological observations; procedures for quality management of observations; quality assurance systems for AWS data; development, field-testing and comparison of newly-developed instruments and sensors; and algorithms used for AWS data.

4.2.37 The Association noted with appreciation that the rapporteur had provided technical assistance to a number of RA VI Members thus contributing to their capacity-building.

4.2.38 The Association agreed that the work to study all the problems raised should be continued by a Rapporteur on Regional Aspects of Instrument Development, Related Training and Capacity-building, preferably coming from the RIC, and adopted Resolution 5 (XIV-RA VI).

Calibration and maintenance of meteorological instruments

4.2.39 The Association recalled that, at its tenth session, it had designated the *Service des équipements et des techniques instrumentales de la météorologie, Météo-France*, Trappes, to perform the functions of a Regional Instrument Centre (RIC) (Resolution 4 (X-RA VI) — Regional Instrument Centre).

4.2.40 With reference to its conclusion regarding the requirement for several additional RICs in the Region, as reflected in paragraph 4.2.33 of the present report, the Association welcomed offers from the Slovak Republic and the Republic of Slovenia to provide their calibration laboratories, facilities to perform the functions of the RICs and to provide services predominantly in central, eastern and southeastern parts of Europe and adopted Resolution 6 (XIV-RA VI).

4.3 Information Systems and Services, including telecommunications and data management (agenda item 4.3)

Status of the GTS in Region VI

4.3.1 The majority of the links of the Regional Meteorological Telecommunication Network (RMTN) within the western part of Region VI were running over

Regional Meteorological Data Communication Networks (RMDCNs) and used TCP/IP as the data transport protocol, with almost all the GTS links using RMDCN operating at 32 kbps or greater.

4.3.2 The status of the RMTN in the south-east and eastern part of Region VI still remained unsatisfactory. The delay in moving the circuits to the RMDCN was attributable to the fact that the cost of leased lines was still much lower than the cost of connection to the RMDCN. However, the difference between those costs was gradually decreasing. Fifteen of the circuits, specified in the plan for the RMTN in the south-eastern and eastern part of the Region, still did not exist. Some of them were not considered essential for the operation of the RMTN. The status of the telecommunication systems at National Meteorological Centres (NMCs) in the area of responsibility of the RTH Moscow and Sofia was, for the most part satisfactory, except for the NMC Damascus and Tirana. The Association gave the highest priority to the connection of NMCs Damascus and Tirana to RTH Sofia. Furthermore, the Association noted with appreciation the automation of NMC Baku (Azerbaijan) and the commencement of operations both of the Internet link Baku-Moscow and the satellite link Baku-Ankara. It requested the Coordinator for Central and Eastern Europe of the Subgroup on Regional Aspects of the Information Systems and Services of the WG-PIW to address, as a matter of urgency, the incorporation of the Baku-Moscow link as a main connection and the Baku-Ankara link as a backup connection in the RMTN of RA VI, as appropriate.

4.3.3 In the majority of eastern European countries, the national observation data collection systems were either being upgraded, or were scheduled to be upgraded in the near future. Those upgraded networks would employ modern technologies, which would enable the cost of data collection to be reduced and would also increase reliability and timeliness. All the countries concerned required WMO support to enable them to realize their plans within acceptable timescales.

4.3.4 The following satellite systems were included in the RMTN plan: RETIM2000 operated by France; DWDSAT operated by Germany; TV-Inform-Meteo operated by the Russian Federation; and NUBIS operated by Italy. All these satellite distribution systems used DVB technology. Following a recommendation by the Visual Global Information System Centre (VGISC) Steering Committee that both RETIM2000 and EUMETCast should be part of the satellite-based data transmission system for basic meteorological data in the Region, as foreseen in the WMO Information System concept, the Association noted with appreciation the trial implementation of the EUMETCast/WWW-RA VI transmission service, as from 1 September 2005. That had been made possible by EUMETSAT's decision in December 2004 to approve, for a trial period of two years, the extension of the DVB Data Distribution System. Based on the initial experience, a review of the contents of the EUMETCast/WWW-RA VI transmission would still need to be carried out by the WG-PIW taking into account the requirements of WWW centres in RA VI. Modifications to the transmission schedule may then be necessary. If the trial proved successful, the service could be integrated into the RMTN plan after consideration by the EUMETSAT Council.

4.3.5 All the RTHs and the majority of NMCs in Region VI had access to the Internet, with several centres enabling access to their servers for the provision of data and products. Tests using a Virtual Private Network (VPN) over the Internet had taken place between some centres.

Regional Meteorological Data Communication Network

4.3.6 The Association noted the report of the chairperson of the Steering Group on the RMDCN, Mr D. André (France). The Association agreed that the implementation of the RMDCN had been a successful achievement of the WWW Programme in the Region. The RMDCN had proved to be a reliable and effective data transport service of the RMTN within RA VI. It felt that the coordination of the implementation and operation of the RMDCN by a team of RMDCN Operations Committee (ROC) working in a unique structure was essential in achieving a successful deployment of the RMDCN. The Association noted that 35 RA VI Member countries were connected to the RMDCN, as well as ECMWF and EUMETSAT, and that Members of other Regions (China, India, Japan and Saudi Arabia) were connected within the framework of the Improved Main Telecommunication Network (MTN). The Association expressed its appreciation and thanks to the ECMWF for its crucial contribution to the implementation and operation of the RMDCN.

4.3.7 The Association noted with satisfaction that the RMDCN contract between ECMWF and the service provider EQUANT had been amended in July 2002 to permit the extension of the RMDCN beyond Region VI as agreed in Resolution 6 (XIII-RA VI), and that another amendment to the RMDCN contract in January 2003 had resulted in an overall 27 per cent price reduction in total RMDCN charges.

4.3.8 The Association noted that a session of the Steering Group on the RMDCN held jointly with the ninth session of ROC (Moscow, 30 June-2 July 2004) and the fourth session of its WG-PIW (Exeter, United Kingdom, 4-8 October 2004) had discussed the study made by ECMWF to compare the different possible RMDCN future scenarios. These included the current Frame Relay solution, Multi Protocol Label Switching (MPLS) solution and Internet VPN solutions. The MPLS solution represented the closest match to the current solution and brought almost 22 per cent cost savings over the current RMDCN.

4.3.9 The Association noted that the Secretary-General had distributed the migration plan to all RA VI Members and other Member countries connected to the RMDCN, that many Members had given their agreement and that no negative replies had been received. Therefore, the Association endorsed the Steering Group

proposal for a migration to an IP/MPLS VPN for the RMDCN in 2005 on the condition that there would be no increase in costs for Members. Noting the potential capabilities of the migration, it agreed that the optimum adaptation of the data exchange, including data flows, be further developed.

4.3.10 The evolution of the RMDCN, including the migration to MPLS, offered new cheaper opportunities such as different types of Service Level Agreements and access connections, including Internet VPN and new backup options, which would facilitate the connection of those RA VI Member countries not already connected to the RMDCN. The Association agreed that support for the implementation and operation of the RMDCN should continue to be considered a priority in assistance activities for the implementation of the WWW in RA VI. The Association noted the statement of accounts of the RMDCN Trust Fund as given in annex II to the present report and invited Members to continue their contributions to the implementation and operation of the RMDCN, in particular to the WMO RMDCN Trust Fund.

4.3.11 The Association noted that specific coordination of the RMDCN continued to be needed and agreed to maintain the Steering Group on the RMDCN. The Association adopted Resolution 7 (XIV-RA VI).

WMO Information System (WIS)

4.3.12 The WMO Information System includes the concepts of Global Information System Centres (GISCs) to replace the roles of the RTHs. France, Germany and the United Kingdom, in cooperation with EUMETSAT and ECMWF, were developing the concept of a virtual GISC (VGISC) in Region VI as a WIS pilot project. An ad hoc group comprising representatives from the three countries and the two organizations was working to develop such a system, in particular through the European SIMDAT project. A 'Proof of Concept' VGISC had been demonstrated at the thirteenth session of the Commission for Basic Systems (CBS) (St Petersburg, Russian Federation, 23 February-3 March 2005) and a similar demonstration had been given at the session of the Regional Association.

4.3.13 The Association agreed that the following requirements should be taken into account in the development of the WIS:

(*a*) A reduction in costs when exchanging data and products;
(*b*) A coordinated transition plan for all of the NMCs/NMHSs to the WIS;
(*c*) Preparation and timely provision to NMCs/NMHSs of regulating documents, instructive materials, etc., on matters of the transition and operation in the WIS;
(*d*) Reliability and consistency in receiving data and products in the WIS;
(*e*) Provision of technical and technological assistance to the NMCs/NMHSs when moving to the WIS.

4.3.14 The Association recalled that the fifty-seventh session of the Executive Council (Geneva, 21 June-1 July 2005) had decided to accelerate the development of WIS with the aim of beginning the operation of some WIS components in 2006 instead of 2008. It noted with appreciation the progress made in the development of the VGISC. It asked its WG-PIW to keep under review the development of the WIS, in particular the VGISC, with respect to the requirements of the Region.

4.3.15 The Association noted that the European Union had launched the INSPIRE initiative to organize the availability, interoperability and access rights to spatial data and metadata, which encompassed meteorological and related data. The eventual implementing rules of the INSPIRE Directive would include harmonized data specifications and data exchange arrangements. It noted the action taken by NMHSs in the regions through EUMETNET and EUMETSAT. It also noted that the WMO Secretary-General had recalled to the European Commission that the management of meteorological information had been, and continued to be, carried out by the NMHSs through policies, guidance, mechanisms, and infrastructures agreed to, and implemented by, WMO Members. The Association agreed that the involvement of the meteorological community in the process of the elaboration of the directive under consideration was of critical importance. The president of the Regional Association had agreed that the UK Met Office should represent RA VI in the INSPIRE work programmes. The Association requested its WG-PIW to keep the development of the INSPIRE initiative under review.

Migration to Table Driven Code Forms

4.3.16 In 2004, the WMO Secretariat surveyed the status of the development of plans by NMCs and RTHs to migrate from Traditional Alphanumeric Codes (TAC) to Table Driven Code Forms (TDCF). The Association noted with concern that the preparation and planning for the transition to the TDCF was not adequate. Less than 50 per cent of NMCs in RA VI had started to develop migration plans. Many Members still underestimated the challenge involved in a migration and also the benefits to be gained from TDCF.

4.3.17 With a view to assisting NMCs in the migration, WMO encouraged the development and distribution of universal BUFR, CREX and GRIB decoding/encoding software on various platforms to the whole meteorological community. ECMWF was providing BUFR software via a free Internet download. The *DWD* had developed a BUFR edition 3 library. BUFR encoding/decoding software was also offered by NWS/National Centres for Environmental Predictions (NCEP (United States)) and the UK Met Office as listed in the CBS Software Registry. BUFR/CREX tables and templates for category 1 of TAC data types (SYNOP, TEMP, PILOT, CLIMAT and CLIMAT TEMP) were available on the WMO server. A training seminar on the table-driven codes for the eastern part of Region VI was planned in 2005.

4.3.18 In February 2004, the Czech Hydrometeorological Institute (CHMI) started to produce BUFR messages containing TEMP data including the time and position identification of the

radiosonde at individual levels. The Association noted that the migration to TDCF would also contribute to the generation of better products by data processing centres in RA VI.

4.3.19 The Association noted with appreciation that its WG-PIW had prepared a technical note on the benefits and implications of TDCF, which had been disseminated to the Members of RA VI. The Association urged all Members, who had not yet started on the TDCF migration, to develop their migration plans, and requested the Secretary-General to organize a workshop on the transition to the TDCF.

4.3.20 The Association concluded that more efforts were needed to achieve progress in the implementation and use of the TDCF. Therefore, it urged that the development of the coordinated Regional Migration Plan be expedited and established, for this purpose, a rapporteur on the Regional TDCF Migration Plan as member of the WG-PIW.

4.4 Data-processing and Forecasting System (agenda item 4.4)

Status of Implementation

4.4.1 The Association noted that Data-processing and Forecasting System (DPFS) Centres in RA VI had continued to maintain and enhance their operational numerical weather prediction (NWP) systems, to generate specialized products and services provided by the designated RSMCs, and to contribute to the overall operations of the Global Data-processing and Forecasting Systems (GDPFS) in the Regions. In October 2004, with WMO support, ECMWF had provided a one-week training course for 12 participants from Member countries on the use and interpretation of ECMWF products.

4.4.2 The UK Met Office's global 41-member seasonal ensemble model (2.5 lat., 3.75 long.) was operational on ECMWF's computer facility as part of the development of a European multi-model system. ECMWF was running a 50-member ensemble system, and a coupled T95L40 model forecasting up to six months. A subset of its products (forecasts of four parameters up to day seven) was disseminated on the GTS in GRIB codes, and on the Internet, with an increased set for WMO Members (password access). Twenty-nine NMCs in the Region were running Limited Area Models, 26 had a horizontal resolution finer than 36 km. Many centres were benefitting from international cooperation through the *Aire Limitée Adaptation dynamique Développement InterNational* (ALADIN) consortium, the High Resolution Limited Area Model (HIRLAM) grouping or the Consortium for Small-scale Modeling (COSMO) grouping.

4.4.3 The RSMCs in Exeter and Toulouse were maintaining their operations for the provision of specialized atmospheric transport model products for nuclear emergency response under the Regional and Global Arrangements in RAs I and VI. Together, with a number of other NMCs of RA VI, they had participated in the ConvEx-3 (2005) international nuclear emergency exercise in May 2005. These RSMCs were also designated Volcanic Ash Advisory Centres providing specialized ash clouds trajectories and dispersion forecasts for aviation purposes. Satellite-based dissemination systems enabled NMCs to receive more products directly and reliably from World Meteorological Centres (WMCs) and RSMCs. All GDPFS centres now had Internet access to specialized GDPFS products.

Limited area models and data assimilation

4.4.4 The Association realized that some NMHSs still needed to develop local expertise in NWP. It therefore requested its WG/PIW:

(*a*) To examine the specific situation of the NMHSs on a case-by-case basis;

(*b*) To coordinate, for those NMHSs that needed assistance, direct support to develop the most appropriate action plans, such as bilateral sponsorships.

4.4.5 With respect to the latter issue, the Association suggested the following facilitating measures:

(*a*) Visiting scientists programmes; participation in small research projects;

(*b*) Exchange of staff engaged in forecasting activities;

(*c*) Attendance at training courses or workshops on NWP (such as the ECMWF workshop opened to WMO Members), workshops targeted to the use of basic NWP products, severe weather forecasting and directly targeted to the improvement of NMHSs forecasting activities (such as the one organized by the UK Met Office and some other centres like *Météo-France* in English, French or other languages).

Ensemble Prediction Systems

4.4.6 The Association noted the use of Ensemble Prediction Systems (EPSs) in operational or research modes for various forecast time ranges, with increasing emphasis on specific applications such as forest fire risk indices, and windstorms forecasts, etc., and encouraged the centres concerned to participate in WMO standardized verification system for EPS.

Long-range forecasting

4.4.7 The Association recalled that the fifty-seventh session of the Executive Council had agreed on the formal designation of the Global Producing Centres (GPCs) for long-range forecasts (LRFs). For this purpose, a minimum list of LRF products to be made available by GPCs would be included in the *Manual on the Global Data Processing and Forecasting System* (WMO-No. 485) and form part of the criteria for the designation of GPCs for LRF, as follows:

(*a*) Fixed production cycles and time of issuance;

(*b*) Definition of a minimum set of products;

(*c*) Provide verifications as per the WMO verification scheme;

(*d*) Provide up-to-date information on methodology used by the GPC;

(*e*) Make products accessible through the GPC Web site and/or dissemination on the GTS and/or Internet.

NOWCASTING ACTIVITIES, RISK MANAGEMENT AND EARLY WARNING

4.4.8 The Association noted that under the EURORISK initiative, involving civil protection authorities, NMHSs and industrial partners, risk management projects had been proposed in the European Commission (EC) and ESA GMES framework. Those projects were to develop risk management services for European NMHSs, give them visibility in that domain at European level, and ensure that they would become key operators in the domain of risk management. Nowcasting techniques based on extrapolation of radar information, to be compared with a reference atlas of critical information had been developed in the framework of the METEORISK INTERREG project led by the Austrian Meteorological Services (ZAMG) on the Alps. Other activities in the Region that focussed on nowcasting included the EUMETSAT Satellite Application Facility (SAF) on Nowcasting and the Cooperation Meeting of European Forecasters.

4.4.9 The Association confirmed the increasing importance of nowcasting techniques for severe weather warning and risk management. Existing nowcasting techniques at regional level should be assessed and a unified approach to the various user-driven initiatives should be reached. This included the proper use of remote sensing data, the assimilation of radar data in high resolution forecasting models and the presentation and visualisation of data. It was agreed that the WG-PIW should keep abreast of developments in nowcasting systems and make recommendations for an integrated system approach.

OTHER REGIONAL SEVERE WEATHER FORECASTING AND RISK MANAGEMENT ISSUES

4.4.10 The EUMETNET EMMA project aiming at providing information on potential meteorological risks for the general public was a major project that had contributed to the new WMO Programme on Natural Disaster Prevention and Mitigation (DPM).

4.4.11 The Association was informed of the routine exercise programme, focussing on notification procedures between the International Atomic Agency (IAEA) and the WMO (RTH Offenbach, RSMCs with specialization in environmental emergency response, and NMHSs). It was also informed of efforts being made by RSMCS of RA VI to enhance Web-based dissemination facilities (already available) in view of the ConvEx-3 (May, 2005) international exercise. Tests would be carried out, in parallel with the current procedure for dissemination and the Commission for Basic Systems (CBS) would review the results of the exercise in relation to the standards (presentation, dissemination procedure, etc.).

4.4.12 RMSC Toulouse had conducted a transmission test (fax, e-mail) in July 2004 to check operational contacts information and to distribute RSMC documentation on the RSMC Web site and via FTP to NMHSs servers with valid contact information. RMSC Toulouse expressed its intention to conduct this kind of transmission test on a regular basis and to develop procedural arrangements for doing so.

4.4.13 The Association noted the priority goal of the Emergency Response Activities (ERA) Programme to advance the work on the specialized applications of atmospheric transport modelling for non-nuclear applications, based on the results of the Workshop on Development of Scope and Capabilities of the Emergency Response Activities (Geneva, 7-9 December 2004). The thirteenth session of the Commission for Basic Systems had recommended that, with respect to the provision of meteorological support for chemical incidents, the NMHSs that had expressed their willingness to support capacity-building through the survey (August 2004) should be invited to provide an interim contact point to the WMO Secretariat that could be forwarded to those NMHSs that had expressed an immediate need for such support. The Association noted in that connection that some centres in the Region had already developed capabilities for forecasting the dispersion of chemical agents in the atmosphere and in water bodies. The Association supported the CBS initiative to expand the development and application of atmospheric transport models to specific non-nuclear environmental emergencies, and encouraged relevant GDPFS centres in the Regions to actively participate and contribute to that work, which was seen as an important input by WMO to a global multi-hazard early warning strategy.

4.4.14 Finally, the Association recognized that important new initiatives and programmes in the field of NWP applications and research had emerged in Europe, such as in GMES and EUMETNET. At the same time, it was gratified to note that the operational NWP skill and capabilities of many GDPFS centres in the Region had significantly increased. The Association concluded that it was now necessary to review and assess the structure and roles of the RSMCs in RA VI, and to develop recommendations for harmonizing and optimizing functions, responsibilities, and capabilities, taking into account relevant newly-emerging capabilities, in particular the use of EPS and the provision of advisories on high-impact weather events. It tasked its WG-PIW to address those issues and to develop recommendations on the future structure of the GDPFS in Region VI.

4.5 OPERATIONAL INFORMATION SERVICE (agenda item 4.5)

4.5.1 The Association agreed that the Operational Information Service (OIS), by enabling access to operational information via the Internet in addition to the distribution of information in other electronic formats (CD-ROMs), had ensured better data reliability, timeliness of distribution, and greater flexibility for Menbers using operational information. The session noted with much appreciation the pilot project on interactive online access to Volume C1 - *Catalogue of Meteorological Bulletins* (WMO-No. 9) that had been developed by the Secretariat.

4.5.2 The Association emphasized that the overall

efficiency of the OIS was dependent on the prompt notification of changes and updated information from NMHSs. It urged NMHSs to ensure that all changes to Volume C1 reached the MTN centres and the Secretariat without delay, thus enabling them to benefit from improved OIS access to the up-to-date information required for their operations. In particular, the Association invited RA VI Members operating data distribution systems of the GTS to provide updated information on the identification and the technical specifications of each data distribution system and a summary of the transmission programmes for inclusion in Volume C2 of the *Catalogue*, in accordance with CBS decisions.

4.5.3 Fourteenth Congress had noted with satisfaction that the Secretariat had established a data quality monitoring Index Page on the WMO server (http://www.wmo.int/web/www/DPS/Monitoring-home/mon-index.htm) with links to Web sites containing the quality monitoring information. Fourteenth Congress had invited all the quality monitoring centres to provide the Secretariat with the relevant URL addresses of their Web sites and their subsequent updates. The Association urged those Member countries in Region VI with responsibilities in quality monitoring to do so.

4.6 WWW System Support Activities (agenda item 4.6)

4.6.1 The Association noted the need for cooperation activities to support the implementation and operation of the WWW Programme in Region VI. Requirements for support may be perceived to be greater in the other Regions. However, whilst there were a large number of developed NMHSs with good capabilities in Region VI, there was a requirement to support the NMHSs in less developed countries in the eastern part of the Region.

4.6.2 The Association noted five specific actions aimed at improving cooperation activities, in line with the 6LTP, which made use of collaboration between NMHSs and other resources that might exist. These actions, agreed at a meeting of its WG-PIW (Offenbach, Germany, 13-17 October 2003) were outlined as needs:

(*a*) To better identify the deficiencies in the provision of basic observations in RA VI;

(*b*) To better identify deficiencies in other areas, such as the strength of the telecommunications network in RA VI, the strength of subregional data processing and forecasting systems, as well as potential donor material and resources, for each Member of RA VI, through country profiles;

(*c*) To provide support in the form of a pool of experts who understood the deficiencies and resources, and who could enable expertise to flow from developed to less developed Members;

(*d*) To exchange ideas relating to RSMC products and services, and to improve contact between forecast staff in neighbouring NMHSs;

(*e*) To improve communication within RA VI, by identifying key points of contact in Member NMHSs.

The Association agreed that the country profiles should include information on deficiencies in the implementation and operation of the WWW Programme in Region VI.

4.6.3 The Association noted that progress had already been made on some of those actions:

(*a*) Daily monitoring statistics were now routinely generated and were available from the EUCOS Web site for downloading in CSV format for further analysis (http://www.metoffice.gov.uk/ravi/index.html);

(*b*) Several missions had been made to NMHSs in the eastern part of the Region, which had resulted in the completion of some country profiles and the identification of some deficiencies;

(*c*) A second RSMC workshop had been held at RSMC Exeter, United Kingdom, from 7 to 9 March 2005, which had resulted in a number of recommendations to improve RSMC products and services and the capability of 16 participating forecasters;

(*d*) A workshop for international advisers had been held in Bucharest (Romania) in May 2005 to start the process of identifying key points of contact in Members' NMHSs, which had been strengthened by the establishment of an informal network of international focal points of NMHSs in RA VI at the present session of the Association.

4.6.4 The Association noted with satisfaction the support provided to the implementation and operation of the WWW since its thirteenth session (see agenda item 17). It noted progress in the implementation of the project for the automation of NMCs Baku, Chisinau and Yerevan.

4.6.5 The Association recommended giving the highest priority to supporting the modernization of data collection systems and also to the automation of the telecommunication centres. It considered that the best way to achieve this would be to support integrated projects that included the modernization and automation of the telecommunication centres, data collection systems and observation systems.

4.6.6 The Association noted that problems still existed in some countries where there was little opportunity for forecasters to exchange knowledge or for young scientists to fully learn and develop expertise in numerical modelling, both in research and operational mode. The Association agreed that RSMCs should hold workshops for participants from RA VI to exchange ideas relating to RSMC products and services, which would increase understanding of a variety of products, and improve contact between forecast staff in neighbouring NMHS, where such contact had not yet been made.

4.6.7 NMHSs in central Europe might be seen as being in transition between being Members of the more developed European meteorological infrastructure (including resources such as EUMETNET, EUMETSAT and ECMWF) and those who had very few resources, or had major deficiencies, for example in the eastern part of the Region. The Association noted with satisfaction, therefore, that a number of cooperation meetings and activities had been held, many of which had focussed on cooperation with central European NMHSs

5. WORLD CLIMATE PROGRAMME — REGIONAL ASPECTS (agenda item 5)

5.1 WORLD CLIMATE PROGRAMME COORDINATION AND SUPPORT ACTIVITIES AS WELL AS THE REPORT OF THE CHAIRPERSON OF THE WORKING GROUP ON CLIMATE-RELATED MATTERS (agenda item 5.1)

5.1.1 The Association was informed of the overall coordination of the World Climate Programme (WCP). In that regard, the Association noted with satisfaction the decisions made by Fourteenth Congress relating to building partnerships within the climatology community to improve effectiveness. The Association also noted discussions held during the fifty-sixth session of the Executive Council (Geneva, 8-18 June 2004) with special emphasis on steps that should be taken to maintain WMO's leadership in climate, and urged Members to develop relations with international and regional agencies involved in areas of high priority to WMO and to strengthen linkages between climate and their high priority national issues. The Association noted with satisfaction that a special side event had been held during the Executive Council to discuss the leadership role in climate. The Association requested Members to continue their support to regional coordination of the WCP and to take a more active position in dealing with climate related events organized by other United Nations agencies.

5.1.2 The Association noted the sixth session of the EC Advisory Group on Climate and Environment (EC-AGCE-VI) had been held in Geneva from 31 March to 1 April 2005. The group had so far reviewed overall coordination mechanisms of climate activities within the Secretariat and the Organization, and within other agencies. It was further noted that EC-AGCE-VI had considered the report of an ad hoc Exploratory Committee on World Climate Conference-3 (WCC-3). It was informed that, on the recommendation of fifty-seventh session of the Executive Council, the Secretary-General had established a provisional Organizing Committee to develop a meeting plan and other requirements for WCC-3 for further review and decision.

5.1.3 The Association noted that support and coordination had been provided for all aspects of the WMO Commission for Climatology (CCl) including supporting the CCl Management Group meetings. In September 2003, a mid-intersessional Core Management Group meeting had been held in Toulouse, France, at the invitation of *Météo-France*. The Association took further note that CCl had held the second meeting of its Core Management Group in Geneva (31 January-2 February 2005) before its fourteenth session in Beijing, China (3-11 November 2005). It requested the Secretary-General to arrange for the finalization of the editing process of the *Guide to Climatological Practices* before the fourteenth session of the CCl and to expedite its publication.

5.1.4 The Association was informed that the organization of the Technical Conference "Climate as a Resource" preceding the fourteenth session of the CCl, was in progress and that *Deutscher Wetterdienst* had seconded an expert to the WMO Secretariat for three months to facilitate the organization of the conference and enhance the participation of delegates from least developed and developing countries. The Association encouraged RA VI Members to contribute to the conference and assist the WMO Secretariat in mobilizing extra-budgetary resources for its organization.

WMO RA VI WORKING GROUP ON CLIMATE-RELATED MATTERS

5.1.5 The Association noted with appreciation the report of the Chairperson of the Working Group on Climate-related Matters (WGCM). The Association was informed that the working group had held a meeting in Sofia, Bulgaria (29 March-1 April 2004), and had made an overview of relevant RA VI activities and of the work of the individual Members according to the terms of reference of the working group. It had also reviewed activities to be carried out during the intersessional period. The working group had made recommendations towards enhanced collaboration on climate observations; data-collection; quality control; data management and provision of climate data; resource mobilization for Climate Information and Prediction Services (CLIPS) activities (training, showcases); the endorsement of the 10 GCOS Climate Monitoring Principles in RA VI; enhancing capabilities to perform climate monitoring and analyses; and on the organization and implementation of Regional Climate Centre functions.

5.1.6 The Association was informed of the RA VI CLIPS Workshop (Erfurt, Germany, 12-18 June 2003) which had provided training on Long-range Forecasting (LRF) and climate extremes and had underlined RA VI Members requirements and capabilities as regards climate services.

5.1.7 The Association agreed that in the light of the issues identified above, it was necessary to re-establish the Working Group on Climate-related Matters. Accordingly, Resolution 8 (XIV-RA VI) was adopted.

FOLLOW UP TO ESTABLISHMENT OF REGIONAL CLIMATE CENTRES

5.1.8 The Association recalled that the thirteenth session of RA VI had agreed to proceed with the establishment of Regional Climate Centres (RCCs). It further noted the *Proceedings of the Meeting on Organization and Implementation of Regional Climate Centres (Geneva, Switzerland, 27-28 November 2003)*, (WMO/TD–No. 1198). The Association noted with appreciation the provision, since January 2004, of long-range forecast products to RA VI Members by ECMWF, *Météo-France*, ROSHYDROMET and the UK Met Office.

5.1.9 The Association recalled that, based on the requirements for the establishment of an RCC, the Working Group on Climate-related Matters had proposed a network of multiple multifunctional centres and/or specialized centres to be implemented on a pilot basis. Furthermore, the Association noted the need to give priority to the preparation and establishment of RCCs in accordance with the procedures applied for the

designation of RSMCs and taking into account national and regional specifics. Accordingly, Resolution 9 (XIV-RA VI) was adopted.

International Strategy for Disaster Reduction

5.1.10 The Association noted the importance of active participation of WCP in the Inter-Agency Task Force on the International Strategy for Disaster Reduction (ISDR) and its Working Group on Climate Change and Disaster Risk Reduction. The Association further recognized the involvement of the WCP in thematic clusters of the World Conference on Disaster Reduction II (WCDR-II), (Kobe, Japan, 18-22 January 2005). It was informed that WMO along with the European Commission Joint Research Centre (EC/JRC) and the United Nations University (UNU) had co-chaired cluster 2 "Risk identification, assessment, monitoring and early warning" of the Thematic Segment of the Conference. The Association requested the Secretary-General to arrange for continued support and participation of WMO in the implementation and follow-up to the outcome and Framework for Action of the WCDR-II and to promote the application of climate modelling and forecasting, communication tools and early warning as far as climate disaster management was concerned. The Association welcomed the announcement by the Russian Federation of the organization of an International Conference on Hydrometeorological Safety: "Prediction and adaptation of the society to the extreme climate changes" (Moscow, 26-29 September 2006).

United Nations Framework Convention on Climate Change

5.1.11 The Association noted the tenth session of the Conference of Parties (COP-10) of the United Nations Framework Convention on Climate Change (UNFCCC) had been held at La Rural Conference Complex in Buenos Aires, Argentina, from 6 to 17 December 2004. The twenty-first session of the Subsidiary Body for Scientific and Technical Advice (SBSTA) had been held from 6 to 14 December, followed by the High-Level Segment from 15 to 17 December 2004. The Association was informed that the Secretary-General had addressed the High-Level Segment and had, thereafter, held a press conference at which he had issued the press release on the Status of the Global Climate in 2004. Recognizing the emphasis of COP-10 on adaptation to climate change and the commitment of countries to take measures on climate change, the Association endorsed initiatives on adaptation to climate variability and change and urged the Secretary-General to:

(*a*) Support the development of NMHS capacities both in human resources and infrastructure, especially in developing countries and LDCs, to enable them to carry out activities that support adaptation to climate change;

(*b*) Support national and regional efforts, through relevant institutions, that address issues related to adaptation to climate change;

(*c*) Collaborate with other international organizations and United Nations agencies that address the adaptation to climate change issue.

5.1.12 The Association also noted that the issue of "systematic observations" was addressed regularly in the sessions of the SBSTA to the COP. The Association encouraged NMHSs to become actively involved in discussions on those issues and to contribute their expertise to facilitate sound SBSTA conclusions and COP decisions.

5.1.13 The Association was informed of plans for WMO to organise a side event during UNFCCC COP-11 (Montreal, Canada, 28 November-9 December 2005). It was envisaged that the event would address the role of meteorology in supporting countries to adapt to climate change and variability.

United Nations Convention to Combat Desertification

5.1.14 The Association noted that the United Nations Convention to Combat Desetification (UNCCD) Secretariat, in cooperation with WMO, had organized a Technical Workshop on Drought Preparedness for the Balkans within the context of the UNCCD in Romania (25-26 October 2004). The Association expressed its satisfaction with the workshop recommendation that a Balkan sub-regional Drought Management Center be established for early warning of drought events, severity assessment and damage mitigation. The Association was informed of plans for WMO to organise a side event during UNCCD COP-7 (Nairobi, Kenya, 17-28 October 2005), which would address climate and land degradation issues.

5.1.15 The Association noted the General Assembly Resolution declaring 2006 as the "International Year of Deserts and Desertification". In that regard, it suggested that droughts and desertification should be featured prominently in the publications and press releases related to World Meteorological Day 2006 on "Preventing and mitigating natural disasters".

Convention on Biological Diversity

5.1.16 The Association noted that 13 recommendations on a range of substantive, strategic, and scientific and technical issues had been adopted at the tenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-10) to the Convention on Biological Diversity (CBD) which had been held in Bangkok, Thailand, from 7 to 11 February 2005.

5.1.17 In particular, it noted that SBSTTA-10 had adopted terms of reference for an Ad Hoc Technical Expert Group (AHTEG) on synergies among activities related to biodiversity, desertification and climate change. Having considered that the mandate of the AHTEG was to undertake a supplementary assessment of the integration of biodiversity considerations into the implementation of activities on adaptation to climate change and prepare advice for planning and/or implementing activities to address that issue, the Executive

Council had requested the Secretary-General to ensure the active participation of WMO in the AHTEG.

World Climate Impact Assessment and Response Strategies Programme

5.1.18 The United Nations Environment Programme (UNEP), which is responsible for implementing the World Climate Impact Assessment and Response Strategies Programme (WCIRP), had made progress in its joint programmes with WMO since Fourteenth Congress. The Association noted that WMO had been represented at the 23rd Session of UNEP Governing Council (Nairobi, 21-25 February 2005) and recognized the importance of close cooperation between WMO and UNEP within WCIRP. It further noted that the link to the WCIRP Web page on the World Climate Programme (WCP) home page had been activated in a joint activity between due Atmosphere and Desertification Conventions Unit of UNEP and the WCP of WMO. As a follow-up to WCIRP activities, the Association requested the Secretary-General to promote interaction and cooperation with UNEP on regional and national actions on adaptation to climate change and reduction of vulnerability, and to encourage further the Commission for Climatology to emphasize applications of climate as a resource for renewable energies and arrange for closer cooperation with UNEP and other agencies.

Guide to Climatological Practices

5.1.19 The Association was pleased to note that RA VI Members (France, Russian Federation and Slovakia) were supervising the development of Part II of the *Guide to Climatological Practices* (WMO-No. 100). The edited text of Part I of the Guide was currently available on the CCl home page. In addition, elements of Part II were currently being gathered and reviewed by contributors, mostly from RA VI Member countries. However, the completed *Guide*, which would be reviewed and discussed in September 2005, would be forwarded to the next session of the Commission for Climatology for final approval. The Association urged its Members to make available their experts to contribute in the review process of the *Guide*.

5.1.20 Furthermore, the Association decided that after work on issuing the *Guide* in English was completed, it would also be desirable to issue it in Russian. The Russian Federation kindly offered to provide assistance in translating it.

5.2 World Climate Data and Monitoring Programme (agenda item 5.2)

5.2.1 The Association noted the activities involved in preserving and managing climate data, and in monitoring the global climate. Through the Commission for Climatology (CCl), experts in the Region had made good progress on the three highest priority projects within the World Climate Data and Monitoring Programme (WCOMP): Climate System Monitoring, Data Rescue and Digitization, and Climate Database Management.

5.2.2 The Association noted the urgency associated with each of those projects:

(*a*) Coordinated climate system monitoring was needed to elevate the awareness of risks, for all time-period planning; it should be noted that RA VI experts had completed the WMO Statement on the Status of the Global Climate in 2001, 2002, 2003 and 2004;

(*b*) Data rescue activities must prevent the irreversible loss to science and society of historical climate datasets, by helping NMHSs to make computerized records of their own climate data holdings, and to find and record the data that were being held in other datasets;

(*c*) Support activities in climate database management were urgently needed to ensure that national climate databases could provide the high quality historical data - including the rescued data - that were needed for the authoritative climate assessments produced through climate system monitoring.

Observing requirements and standards for climate

5.2.3 The Association expressed its appreciation to WCDMP for efforts with CCl to develop *Guidelines on Climate Observation Networks and Systems* (WCDMP-No. 52). The Guidelines series had provided information on how to organize and implement climate services.

5.2.4 The Association noted with appreciation the collaboration between WCP and GCOS, funded by the United States, to produce a Climate Reporting (CLIREP) software to encode and decode CLIMAT and CLIMAT TEMP messages. It was informed that an expert of the Russian Federation ROSHYDROMET had developed the software, and that this CCl-led project had been completed. A joint WWW/WCP RA II/RA VI Sub-Regional Training Seminar on CLIMAT & CLIMAT TEMP Reporting had been held in Moscow, from 2 to 4 November 2004, during which the software had been distributed. The Association noted the offer by the Russian Federation to organise, in collaboration with WMO, training workshops on the CLIREP software and recommended that the software be provided to all Members in the region through WMO.

5.2.5 The Association took note of the successful conduct of the Third International Conference on Automatic Weather Stations, held in Torremolinos, Spain, from 19 to 21 February 2003, and shared the view of its Working Group on Climate-related Matters, that that conference series had provided an excellent forum to foster and strengthen cooperation with manufacturers, network managers and users, especially climatologists, in order to improve climate observations.

5.2.6 The Association invited CCl, CIMO, and CBS to further strengthen collaboration to ensure the effectiveness, appropriateness, and accuracy of observing systems and networks for climate purposes. In that respect, the Association requested CCl to complete a statement of requirements for observations, as well as for the networks, as a matter of urgency.

Climate watches

5.2.7 The Association noted with appreciation the work of the CCl Expert Team (ET) to develop *Guidelines on Climate Watches*. An expert team meeting was held in Brazil to finalize the guidelines and recommend its publication in all WMO official languages.

5.2.8 The Association concurred with the ET's conclusions that NMHSs retained exclusive responsibility for the issuance of climate warnings and advisories for their countries and territories, as well as for meteorological warnings.

Climate analysis and monitoring techniques (including climate change detection)

5.2.9 The Association expressed its support for the activities of the CCl/Climate Variability and Predictability (CLIVAR) Expert Team on Climate Change Detection, Monitoring and Indices. It noted with appreciation that the ET's objectives supported the monitoring and understanding of the global climate system; the collection, rescue and management of climate data; the detection and assessment of climate variability and changes; and capacity-building, transfer of knowledge, techniques and guidance. It noted with appreciation the ET's plans to develop indices of climate change and variability with emphasis on daily to seasonal extremes, and standardized software packages, and to study additional indices and their application as input data to models and homogeneity issues. It urged WMO Members to provide daily data records from all CLIMAT and CLIMAT TEMP stations to build the datasets needed for the calculations of indices.

5.2.10 The Association endorsed the ET's intention to provide guidance for NMHSs, software to calculate indices in support of the Intergovernemental Panel on Climate Change (IPCC) process, the organization of training workshops, and the use of results in WMO's World Climate System Monitoring Programme (WCSMP). It noted with appreciation the workshops planned for all WMO Regions to fill gaps in the climate datasets.

5.2.11 The Association invited its Members to include capacity-building projects and publications concepts, techniques, and equipment needed in climate analysis and monitoring.

Climate System Monitoring

5.2.12 The Association noted with satisfaction the significant results that had been achieved in Climate System Monitoring (CSM). The seventh *Global Climate System Review (June 1996-December 2001)* (WMO-No. 950) published in 2002, had assessed climate variations across the globe for the entire cycle of the El Niño/Southern oscillation, from neutral conditions through the most intense El Niño event of the twentieth century, to the establishment of La Niña conditions. The WMO Annual Statement on the Status of the Global Climate had documented each year's anomalies and its global impacts.

5.2.13 The Association noted with interest the collaboration of a number of the Region's experts with the National Climatic Data Center (NCDC) of the United States National Oceanic and Atmospheric Administration (NOAA), to produce a "State of the Climate in 2003" review, which was published in the *Bulletin of the American Meteorological Society*, June 2004, Vol. 85, No. 6, which will be enhanced and published by WMO. WMO had arranged for the participation of several international authors.

5.2.14 The Association was pleased to note that, since 2003, the WMO *Annual Statements on the Status of the Global Climate* (WMO-No. 966 and WMO-No. 983), had been produced in English, French, Spanish and Russian, and printed and distributed during the World Meteorological Day celebrations.

5.2.15 The Association appreciated the results of three important activities initiated by EUMETNET European Climate Support Network (ECSN), the input to which was provided by the majority of the RA VI NMHSs and comprised the establishment of the RA VI covering project European Climate Assessment and Dataset (led by The Netherlands); the establishment and realization of the European Climate Atlas (led by France); and the implementation of the 'Generate Climate Monitoring Products' Web Portal (led by Germany). The Association stressed the need to carry out such activities in an operational mode with support by, and for the benefit of, all RA VI Members and considered that such services were good examples of future RCC services.

5.2.16 The Association recognized the contribution of the *DWD* in publishing the *Annual Bulletin on the Climate in WMO Region VI - Europe and Middle East* and encouraged Members to provide their input in electronic format and in English.

Datasets and metadata

5.2.17 The Association noted the imminent conclusion of the project, World Weather Records (WWR) for 1991-2000. It expressed appreciation to the RA VI Members for providing data for inclusion in the 1991-2000 WWR datasets to be published.

5.2.18 The Association expressed appreciation for the completion of the *Guidelines on Climate Metadata and Homogenization* (WCDMP-No. 53).

5.2.19 The Association urged its Members to provide any data exchanged, together with metadata, and especially with information about the level of the applied quality processing. In this context, the Association invited CCl to explore the concept of a graduated quality control process as developed by the Israel Meteorological Service, involving a set of different levels, and to develop additional guidelines on the use and description of the levels, which should be included in the metadata and be provided with any exchange of data.

5.2.20 The Association noted the importance of combining *in situ* data, model output data, and remotely sensed data in a comprehensive climate database, understanding that 'database' refers to a disciplined set of datasets; and consider inclusion of oceanic and terrestrial data or links to those databases.

Data rescue, digitization and data exchange

5.2.21 The Association expressed its support for the Data Rescue (DARE) project, which had initiated national projects in Region VI. The new projects had introduced digital cameras and optical scanners to develop digital archives of the records and refresh the media holding climatological data and to develop digital archives of their paper records on CD-ROM. It encouraged WMO Members of the Region to periodically update their data archives using current digital media and software. The Association furthermore invited the Working Group on Climate-related Matters to support efforts to make inventories, validate and digitalize climate related data sources.

Climate database management systems

5.2.22 The Association noted with appreciation that new Climate Database Management Systems (CDMS) had been implemented in a number of countries, through the voluntary cooperation of six WMO Members who had offered to share their systems. Three of those six Member countries were from RA VI (Czech Republic, France and the Russian Federation). All new CDMSs use multi-tier, client/server relational databases. The implementations, which had resulted from bi-lateral and multi-lateral cooperation, had frequently been coordinated through WMO Regional Activities and Technical Cooperation for Development (RCD).

5.2.23 The Association urged its Members to consider adding funding for the implementation of CDMS into the Trust fund for the Subregional Office for Europe (SRO/E) for climate-related matters.

5.2.24 The Association recalled a request of Fourteenth Congress for CDMS training materials and manuals, and endorsed CCl's plans for the relevant Implementation and Coordination Team (ICT) to develop WCDMP Guidelines on Climate Database Management. It further noted the importance of the RA VI representative on this team.

5.2.25 The Association welcomed the accelerated transition from CLICOM to the new CDMSs in nearly all Regions. More than 30 countries had already moved to the new systems through different projects (the SIDS-Caribbean Project in RA IV and the AGRHYMET Project in RA I) and through bilateral cooperation (Czech Republic and several WMO Members) and the WMO Voluntary Cooperation (VCP) Programme (VCP-France with Madagascar, VCP-UK with Rwanda and Uganda, VCP-F with Kazakhstan).

5.2.26 The Association noted that a seminar on Climate Data Rescue and Data Management had been held in Bishkek, Kyrgyz Republic, from 14 to 19 April 2003, for the CIS countries. The Association endorsed the following recommendations of the seminar's participants:

(*a*) WMO should explore the possibility of financial support, through the VCP, to provide NMHSs with the Cliware software and related applications and equipment;

(*b*) WMO should look into the possibility of arranging training workshops for the staff to be engaged in the creation, management and maintenance of the database;

(*c*) WMO should conduct expert missions to WMO Member countries that urgently needed assistance in climate data management and data rescue.

5.3 World Climate Applications and Services Programme, including CLIPS (agenda item 5.3)

5.3.1 The Association noted the progress that had been made in RA VI in the intersessional period (2002-2005) in activities related to climate applications, and to Climate Information and Prediction Services (CLIPS). Those included holding regional workshops and planning new showcase projects for CLIPS; completion of a survey on national and regional climate requirements; inauguration of the CLIPS network of focal points; development of RCC activities for the Region (see general summary item 5.1); research on long-range forecasting (LRF); and extensive applications activities.

5.3.2 The Association noted that the key priorities for the development of improved climate information, prediction and services for RA VI as a whole included:

(*a*) Promotion of networking, collaboration, information sharing and training through RCC functions, the CLIPS focal point initiative, workshops and showcase projects;

(*b*) Research on, and implementation of, improved models for LRF and/or seasonal to interannual climate prediction (SIP), as well as promotion of the development and application of downscaling techniques;

(*c*) Mobilization of the resources required to promote CLIPS activities (through, for example, the establishment of an RA VI Trust Fund for CLIPS, and through interaction in various activities with the European Union); to improve technological and communications capacity throughout the Region; to support consistent, reliable provision of high-quality prediction output to all Members in the Region; and to provide training in the use of LRF where needed;

(*d*) Promotion of the analysis of historical and current climate data (i.e. national and regional climate statistics, maps and atlases), including the development and implementation of Geographical Information System (GIS) activities, to better understand variability (including extremes and cooperation with the well-established and recognized extreme value analysis community) and change;

(*e*) Development of improved dialogue with user groups (i.e. health, water resources, energy, transportation, tourism, managers in NHS, emergency services, national policy groups, etc.) to better understand their requirements for climate information and to improve users' understanding of the climate products they received; and

(*f*) Promotion of studies into the socio-economic value of climatological services.

RA VI Climate Information and Prediction Services activities

5.3.3 A first CLIPS Workshop had been held in Erfurt (June 2003) to initiate CLIPS-related activities in the Region. Keynote lectures had been provided on the topics of the WMO CLIPS Project; the potential of climate information and LRF for current and future climate services; and an overview of climate variability in Europe. The agenda had covered issues of training on LRF and climate extremes; requirements and capabilities in RA VI for climate services and the planned survey on this topic; interaction with the European Climate Support Network (ECSN) on climate projects; Regional Climate Centre development for the Region; and a European GCOS regional workshop (2005). The workshop had resulted, amongst other things, in a first draft overview of the requirements and capabilities of the climate services in RA VI NMHSs, and had led to the development of preliminary planning for two CLIPS showcase projects that would demonstrate the potential of LRF within the RA VI area.

5.3.4 The above-noted survey had been carried out under the auspices of the RA VI Working Group on Climate-related Matters (see general summary item 5.1) in 2004, and the key findings had revealed that, on the whole, RA VI Members had the potential to deal with the opportunities and challenges with which climate services would be faced in the years to come. However, at the same time, it needed to be stressed that efforts were necessary to provide system solutions RA VI-wide in order to optimize the existing capabilities for the benefit of all Members. WMO initiatives, such as the CLIPS project and the RCC approach, were considered very helpful in that respect and Members were encouraged to conduct showcase and pilot projects to demonstrate the related potential. Members were urged to examine the CLIPS questionnaire analysis for appropriate input on Members' requirements with respect to climate applications for the user communities in different sectors, and for activities to be developed for implementation. Members were further urged to liaise with the CCl Open Programme Area Group (OPAG) 3 Expert Teams on End-user Liaison and on CLIPS Operations to coordinate information on user requirements and develop appropriate products and services.

5.3.5 The Association was pleased to be informed that CLIPS Focal Points had been nominated by most RA VI Members, but agreed that the Focal Point Network was not yet fully operational, even in some countries where nominations had been made. The Members urged that the role and activities of the CLIPS Focal Points should be reviewed and strengthened within the Region and that Members that had not yet done so should nominate one or more focal points for national and regional climate activities. Therefore, the Association adopted Resolution 10 (XIV-RA VI).

Future workshops and showcase projects

5.3.6 Members recognized the importance of the planned showcase projects, one for the Mediterranean/Middle East subregion, and another for the Caucasus region. Those projects were designed to demonstrate the benefit of LRF in those regions and in RA VI as a whole. Members also recognized the value of the first RA VI CLIPS Workshop, and endorsed plans to hold similar workshops in the next intersessional period. It was noted that those workshops should build on the recommendations of the first workshop and on the results of the survey undertaken in 2004. Furthermore, the Association recommended that a link be developed between workshops and showcase projects and their outcomes, and that key outcomes be communicated to all RA VI Members, as well as to other WMO Regions, as demonstration examples. The Members recommended that the World Climate Applications and Services Programme (WCASP) and the WMO CLIPS Project support the continuation of CLIPS-related workshops, and that steps be taken to investigate coordination with the European Union Framework Programme (FP6), particularly with respect to the Mediterranean showcase project. Members noted the offer made by the Russian Federation to host a workshop for RA VI and neighbouring countries, on the presentation and dissemination of climate information and prediction products.

Climate Applications activities in RA VI and coordination with OPAG 3 of the Commission for Climatology

5.3.7 The Association noted that a key work area for RA VI was related to climate and human health. Various aspects had been explored, including health and wellness, heat-health warning systems and thermal stress, development of a Universal Thermal Climate Index (UTCI), bioclimatic indices and the role of extreme weather and climate. RA VI experts had participated in the European Union 'COST action 730' on the Universal Thermal Climatic Index (UTCI), and in various activities (e.g. climate Change and Adaptation Strategies for Human health (cCASHh)) organized by the World Health Organization (WHO), and a Workshop on Extreme Weather and Public Health Events held in Bratislava, from 9 to 10 February 2004. Experts from RA VI had participated in two CCl OPAG 3 Expert Teams related to health, namely ET 3.7 on Operational Heat-health Warnings and ET 3.8 on Health-related Climate Indices and their Use in Early Warning Systems. These two teams had met in Freiburg, Germany, in April 2004, and had agreed to develop WMO/WHO guidelines on heat-health warning systems. The Association noted the need to collaborate closely on those issues with health and social service agencies and with public weather service specialists, and urged Members to develop effective mechanisms (e.g. multidisciplinary workshops, brochures and Web-based information related to the effects of weather and climate variability and change on human health).

5.3.8 There had been considerable activity in European Commission projects on the thermal performance of buildings, including issues of cooling loads and

risks of overheating, and the calculation of driving rain indices for vertical surfaces (from hourly wind and rain data). The Association noted that the World Urban Forum had been held in Barcelona, Spain, from 13 to 17 September 2004. RA VI urban climate experts had participated in the activities of the CCl Expert Team on Urban Climatology Including Training (ET 3.9), which had met in Geneva from 23 to 25 May 2005. The Association urged its Members to support the current projects of that ET, including the development of updated versions of Technical Notes 149 and 150 on 'Urban climatology and its relevance to urban design' and 'Applications of building climatology to the problem of housing and building for human settlements', respectively. Those two documents would form the basis of new training materials for users in NMHSs and other training institutes with meteorology programmes. The Association further urged the promotion of the optimal use of climate information in the area of building climatology in applications projects, and noted that the basis of that work could be emphasized through the European Union (EU) CEN/TC 89: Thermal Performance of Buildings and Building Components.

5.3.9 WMO had recently launched a new programme on Natural Disaster Prevention and Mitigation (DPM). The World Climate Programme (WCP) and CCl were supporting this important initiative by ensuring that the perspectives related to the climate timeframe were included in DPM activities, for operational and planning activities of user groups. The Association noted the importance of the application of climate information to emergency planning activities in order to reduce the risk that natural hazards turned into socio-economic disasters, and urged Members to work with this sector in the development of appropriate analyses and products. The Association further noted that a second International Conference on Climate Change and Disaster Risk Reduction had been held in The Hague, Netherlands, from 21 to 24 June 2005.

5.3.10 Members noted that considerable activity had taken place in the Region in the application of climate information to other key sectors, including energy, tourism and water resources, but that little of this had happened under the auspices of CCl expert teams, or through CLIPS activities. The European Union COST programmes were one of the mechanisms used for coordinating those application efforts. The Association highly recommended that CCl, at its fourteenth session (Bejing, China, 3-10 November 2005) should take steps to reinvigorate applications in those sectors, and encouraged RA VI Members to nominate experts to participate in those CCl activities.

5.3.11 The Association noted the importance of sharing knowledge, building capabilities, identifying methodologies, developing standard definitions, and of developing and using of software or 'toolkits' with which to calculate various indices. It recommended that WMO should take steps to develop a common, cost-effective approach not only to implement new standards and disseminate and implement new tools, but also to support the capacity-building, training and collaboration required to develop common approaches throughout the Region.

WMO Conference on Living with Climate Variability and Change: Understanding the uncertainties and managing the risks

5.3.12 In keeping with the recommendation of Members at Fourteenth Congress, and the fifty-sixth session of the Executive Council, WMO had decided to hold an International Conference on 'Living with Climate Variability and Change: Understanding the uncertainties and managing the risks'. Multidisciplinary and multiorganizational, the conference would be the first of its kind in WMO history. It would focus on decision processes in climate applications, and on effective integration of climate information, including predictions and scenarios. It would also discuss how these could be included in strategic planning, decision-making and risk management for economic, social and environmental sectors, recognizing that climate was often only one of several important contributing information streams.

5.3.13 The conference would be held in Espoo, Finland, from 17-21 July 2006. WMO had established a Scientific Organization Committee, and WCP was managing administrative matters for the conference. The Association was pleased to be informed that the logistical arrangements for that major event would be supported by the Finnish Meteorological Institute (FMI). Besides the FMI, the International Research Institute for Climate Prediction (IRI) (part of the Columbia Earth Institute, Palisades, NY, United States) would co-sponsor the conference. Expected participants for the event would include individuals from many organizations such as FAO, WHO, UNDP, UNEP, OECD and the Red Cross. Individuals from both public and private sectors, involved in climate science and services (e.g. agricultural scientists and producers, mathematicians, psychologists, health professionals, hydrological engineers, sociologists, economists, generators of energy, tourism experts and environmentalists) were also expected to participate. The Association noted that the conference's success would depend on extensive resource mobilization, and urged Members in the Region to respond positively to the need for support for the event, which could include cash donations (for logistical arrangements and to support participation from developing countries) or in-kind contributions.

El Niño updates

5.3.14 The Association noted with appreciation the support provided to the WMO by various Members in the development of regular El Niño updates.

Expert Team on El Niño Definitions and Indices

5.3.15 The Association commended CCl for establishing an Expert Team that would catalogue the various definitions of El Niño used in different parts of the globe.

5.4 GLOBAL CLIMATE OBSERVING SYSTEM (agenda item 5.4)

5.4.1 The Association welcomed the completion, under the Global Climate Observing System (GCOS) leadership, of the *Second Report on the Adequacy of the Global Observing Systems for Climate in Support of the UNFCCC* (WMO/TD-No. 1143) and the subsequent *Implementation Plan for the Global Observing System for Climate in Support of the UNFCCC* (WMO/TD-No. 1219). It noted that those had been developed in collaboration with the broader climate scientific community and with other observing system initiatives such as the recently established Group on Earth Observations (GEO). The Association encouraged Members to implement the actions recommended in the plan to the maximum extent possible.

5.4.2 The Association welcomed the decisions adopted by the ninth (COP-9, December 2003) and tenth (COP-10, December 2004) sessions of the UNFCCC Conference of the Parties (COP) in support of global observing systems for climate and, in particular, those related to the Second Adequacy Report and the Implementation Plan. It noted that COP had invited GCOS to provide information to future sessions on how the actions identified in the plan were being implemented, and recognized that ensuring such implementation would be a major priority for GCOS in the coming years. It was pleased to note that the Implementation Plan had been recognized as the "climate module" of the GEOSS 10 year Implementation Plan.

5.4.3 The Association welcomed the progress made by the GCOS Regional Workshop Programme, launched in 2000, following a request contained in COP decision 5/CP.5. It noted that the ninth of 10 planned regional workshops had been hosted by the *DWD* for the countries in eastern and central Europe in Leipzig, Germany, from 26 to 28 April 2005. The Association also noted that a workshop for the countries of central Asia had been held in Almaty, Kazakhstan, from 24 to 26 May 2004, with the participation of some RA VI Members (Georgia, Armenia, and Azerbaijan), and that an Action Plan for this region had been developed at a follow up meeting hosted by the Armenian Met Service held in Yerevan, Armenia, from 1 to 3 September 2004. The Association stressed the importance of maintaining the momentum created by the regional workshops and action plans and urged Members to participate fully in implementing the regional action plans for both eastern and central Europe and central Asia.

5.4.4 The Association noted with appreciation the efforts of the GCOS Secretariat in responding to the decisions of the COP and commended the continuing interactions between GCOS, on behalf of WMO Members and the global observing systems for climate, and the UNFCCC. It encouraged GCOS to continue the strategy of engaging the UNFCCC and its subsidiary bodies to develop support for the global climate observing systems, as had been endorsed by Fourteenth Congress.

5.4.5 The Association welcomed the establishment of the GCOS Cooperation Mechanism (GCM), aimed at addressing priority improvements in observing systems for climate, especially in developing countries. Eight countries and/or organizations, including Switzerland, the United Kingdom, the European Commission within RA VI, and the WMO Regional and Technical Cooperation Activities for Development Departement (RCD) had participated in the inaugural meeting of the GCM hosted by the United Kingdom (London, 7-8 June 2004). The Association noted the importance of Member support for furthering the implementation of GCOS networks.

5.4.6 The Association welcomed the improving performance of the GSN and GUAN networks in the Region and expressed its appreciation to the Members involved. It noted that further improvement was still required, especially in the submission of daily and monthly historical data to the GSN Archive, and encouraged Members to submit outstanding data as soon as possible. The Association expressed its appreciation to the *DWD*, the UK Met Office and ECMWF for their continuing support in acting as Monitoring and/or Analysis Centres for GCOS data, as well as to those Members that had contributed to revitalization efforts at a number of under-performing stations on a global basis.

5.4.7 The Association noted the need to prepare homogeneous datasets that were required for the evaluation of ongoing climate variability and changes. In that regard, the Association proposed the organization of a special meeting for experts from the Region on creation of datasets for GCOS stations in RA VI.

5.4.8 The Association noted that the next session of the GCOS Steering Committee was planned to be held in St. Petersburg in October 2005 and expressed its appreciation to the Russian Federation for offering to host the session.

5.5 WORLD CLIMATE RESEARCH PROGRAMME (agenda item 5.5)

5.5.1 The Association welcomed the progress of the World Climate Research Programme (WCRP) in investigating all important physical aspects of climate and climate change. The Association was pleased to note that Members in the Region continued to actively support the implementation of the WCRP offering substantial contributions to advancing WCRP science through basic research, observational and data management activities as well as to the development of climate modelling. In particular, the Region was hosting several important WCRP data evaluation and archiving centres: the World Radiation Monitoring Centre and the primary archive for the Baseline Surface Radiation Network data (Switzerland); the Global Precipitation Climatology Centre (Germany); and the Global Run-off Data Centre (Germany). The past years had also seen increased cooperation with the European Space Agency (ESA). The Region had hosted several conferences, workshops and meetings, notably, the 24th and 25th sessions of the WCRP Joint Scientific Committee (JSC) (Reading, United

Kingdom, 17-21 March 2003 and Moscow, 1-6 March 2004, respectively). The Association fully endorsed the introduction of the new WCRP strategic framework for 2005-2015: Coordinated Observation and Prediction of the Earth System (COPES), which aimed to facilitate analysis and prediction of Earth system variability and change for use in an increasing range of practical applications of direct relevance, benefit and value to society.

5.5.2 The Association emphasized that WCRP activities were fundamental to the Intergovernemental Panel on Climate Change (IPCC) making progress on the IPCC Fourth Assessment report. WCRP-coordinated model evaluation and intercomparison projects were being used directly in the assessment. In particular, for the first time, WCRP had arranged for the global modelling predictions using IPCC emissions scenarios to be made available to researchers around the world, enabling the largest ever analysis of regional climate change and changes in extreme events. Also, issues raised in previous IPCC assessments had been addressed in the WCRP activities, leading to improvements in climate models and the understanding of climate change.

5.5.3 The Association noted with particular interest the progress of the Climate Variability and Predictability (CLIVAR) study which included several activities designed to extend understanding of climate variability on seasonal to decadal timescales and further strengthen the scientific basis for practical climate prediction. The Region continued to make major contributions to advancing the CLIVAR study through the scientific agenda of European projects as well as through many national efforts. Those included the completed 'Development of European Multi-model Ensemble system for seasonal to inTERannual prediction" (DEMETER) project; the 'Prediction of Climate Variations on Seasonal and Interannual Timescales' (PROVOST) project; the 'PRedictability and variability Of Monsoons, and the agricultural and hydrological ImpactS of climatE change' (PROMISE) project; the Prediction of Regional scenarios and Uncertainties for Defining EuropeaN Climate change risks and Effects (PRUDENCE); the Programme for Integrated Earth System Modelling (PRISM); and the new ENSEMBLES probabilistic forecasting project. In addition, the ECMWF had supported the publication of the special edition of the CLIVAR newsletter *Exchanges* for the CLIVAR Conference (Baltimore, United States, 21-25 June 2004); the United Kingdom was hosting the CLIVAR International Project Office; and the Region had hosted a workshop on Regional Climate Indices (Alanya, Turkey, 4-9 October 2004).

5.5.4 The Association was pleased to note that the WCRP Global Energy and Water Cycle Experiment (GEWEX) project office had been reinforced with a European staff member funded by the ESA; the Fourth Study Conference on the Baltic Sea Experiment (BALTEX) that had taken place in Gudhjem, Denmark, from 24 to 28 May 2004, had focused on the achievements of the first phase of the project (1993-2002) and issues of high importance for the second phase of the project; and that the project had published its science plan for the second phase and was finalizing its implementation plan.

5.5.5 The Association noted that from 1992 to 2004, the International Project Office of the WCRP Stratospheric Processes and their Role in Climate (SPARC) project had been operating in Paris under the sponsorship of the National Scientific Research Center (CNRS) and the National Centre for Space Studies (CNES) and supported by *Météo-France*. In 2004, the office had moved to the University of Toronto in Canada. The Association expressed satisfaction that the Paris office operations had been very successful, and that major advances in stratospheric studies during that period had led to improvements in numerical weather prediction and had strengthened the basis for climate projections. It expressed its appreciation for the generous support by French agencies to the operations of the International SPARC Project Office.

5.5.6 The Association noted that the Region had hosted the Final Conference on the WCRP Arctic Climate System Study (ACSYS) Project (St. Petersburg, 11-14 November 2003) and that Norway was hosting the International Project Office for the Climate and Cryosphere (CliC) project. Members of the Region had also actively contributed to planning of the International Polar Year 2007/2008.

5.5.7 The Association was pleased to be informed of the contributions of the Members to the WCRP climate modelling activities. The Region had hosted the second International Atmospheric Model Intercomparison Project (AMIP) Conference (Toulouse, France, 12-15 November 2002); the WGCM/GAIM International Conference on Earth System Modelling, and the Coupled Model Intercomparison Project (CMIP) Workshop (Hamburg, Germany 15-19 and 24-26 September 2003, respectively). A Joint WGNE/WGCM International Workshop, in close collaboration with the Global Change System for Analysis, Research and Training (START), entitled, 'High-resolution climate modelling: Assessment, added value and applications' had been held in Lund, Sweden, from 29 March to 2 April 2004. The Region had hosted, the twentieth session of the Working Group on Numerical Experimentation (WGNE) and a very successful joint WCRP/THORPEX Workshop on Ensemble Methods (Exeter, 18-20 October 2004). The ninth session of the ISC/CLIVAR Working Group on Coupled Modelling (WGCM) and the first session of the WCRP Modelling Panel would be held in Exeter from 6-7 October 2005. The twenty-first session of WGNE would be held in St Petersberg from 7 to 11 November 2005. WCRP had been a strong supporter of reanalysis activity under its WGNE and had contributed to the publication of an atlas using the ERA-40 products.

5.5.8 Following the Global Change Open Science Conference, held in Amsterdam, the Netherlands, from 10 to 13 in July 2001, the Earth System Science Partnership (ESSP) had been initiated by WCRP, the International Geosphere-Biosphere Programme (IGBP), the International Human Dimensions Programme on Global Environmental Change (IHDP) and an international programme of biodiversity science (DIVERSITAS)

for the integrated study of the Earth system, the changes that were occurring to the system, and the implications of those changes for global sustainability. At this early stage of its development, the ESSP was undertaking three types of activity: joint projects; regional activities; and global change open science conferences. The first four ESSP joint projects had focused on the global carbon cycle; food systems; the global water system; and global environmental change and human health. The Association was pleased to note that the Region had hosted the first scoping meeting on 'Global Change and Health' in February-March 2003.

5.5.9 WCRP had initiated a new strategic framework for 2005-2015: Coordinated Observation and Prediction of the Earth System (COPES), which aimed to facilitate analysis and prediction of Earth system variability and change for use in an increasing range of practical applications of direct relevance, benefit and value to society. The ultimate objective was to provide the soundest possible scientific basis for a predictive capability for the total climate system to meet society's needs, including an assessment of what is, and what is not, predictable on various time- and space-scales. COPES would provide the unifying context and agenda for the wide range of climate science coordinated by, and performed through, WCRP projects and activities, and for demonstrating their relevance to society. Specific, time-limited objectives would be identified and set annually by the Joint Scientific Committees (JSC). The necessary activities to achieve them would in general be performed through the continuing WCRP projects. Strong collaborations would be sought in research, in particular with the International Geosphere-Biosphere Programme (IGBP) and, increasingly, with the International Human Dimensions Programme on Global Enviromental (IHDP) on the broader Earth Change System aspects, with THORPEX on weather aspects, satellite agencies and numerical weather/climate prediction centres, and with the System for Analysis Research and Training (START) on developing country involvement. Collaboration would also be actively pursued in applications, in particular, with those involved in seasonal prediction, the new WMO Natural Disaster Prevention and Mitigation Programme (DPM), the Intergovernmental IPCC, and the other components of the WMO WCP. The Association was pleased to note that France had hosted a COPES support unit.

5.5.10 The Association noted WCRP's contribution to activities and research projects implemented in developing countries such as the intra-seasonal variability and prediction for the monsoon systems. Endorsement of the African Monsoon Multidisplinary Analysis (AMMA) project by WCRP CLIVAR and GEWEX, as well as by the WWRP's THORPEX was noted as one of the examples of such collaboration.

6. Atmospheric Research and Environment Programme - regional aspects
(agenda item 6)

6.0 The Association noted the activities that had taken place within the Atmospheric Research and Environment Programme (AREP) over the past four years and the fact that its Members had played an active part in many of them. The Association noted with satisfaction that Members in the Region had submitted candidates for the WMO Research Award for Young Scientists, and that a Swedish scientist had won the prize in 2005.

6.1 Global Atmosphere Watch, including support to ozone and other environment-oriented conventions
(agenda item 6.1)

6.1.1 The Association noted the considerable progress achieved by the Global Atmosphere Watch (GAW) programme providing scientists and governments with credible information on atmospheric chemistry aspects of climate, weather, hydrology and air quality. RA VI Members were making significant contributions to the three major missions of GAW: coordination of global monitoring, support of scientific analysis/assessment; and assistance in developing the means to predict future atmospheric states. It thanked Germany for having organized a successful regional GAW workshop (Tutzing, 2-5 November 2004) and all Members for their strong contribution to the GAW 2005 Workshop (Geneva, 14-16 March 2005). It recommended that GAW should maintain its focus on developing the global networks of six variable groups, namely, ozone, ultra-violet (UV), greenhouse gases, aerosols, selected reactive gases and precipitation chemistry. It recommended that Members should emphasize the value of GAW quality assurance activities and facilities in the Region and continue their development and support in the long term.

6.1.2 The Association expressed its appreciation to its Rapporteur on the GAW, Ms U. Pechinger (Austria), for a thorough and comprehensive report on GAW activities in the Region. The Association decided to re-appoint a Rapporteur on the Global Atmosphere Watch and adopted Resolution 11 (XIV-RA VI).

6.1.3 The Association noted with appreciation the report of the Rapporteur on Atmospheric Ozone, Mr K. Vanicek (Czech Republic). It noted the continuing need for Members to monitor and study both tropospheric and stratospheric ozone levels and the role of ozone in climate forcing and human health matters. In that connection, the Association urged Members to maintain and expand, if possible, their ozone observing activities. Members were strongly urged to ensure the regular submission of data and quality assurance information to the GAW World Data Centres in Toronto (total column and balloon sonde) and in Tokyo (surface ozone), and to continue activities to assure data quality. The continued operation of the Quality Assurance/Scientific Activity Centre based in Japan would be of great assistance in this matter.

6.1.4 Recalling the importance of promoting and stimulating regional ozone activities, the Association decided to re-appoint a Rapporteur on Atmospheric Ozone and adopted Resolution 12 (XIV-RA VI).

6.1.5 It was noted that GAW had provided fundamental information underpinning scientific assessments of the measures agreed by governments to address stratospheric ozone destruction (the Vienna Convention and the Montreal Protocol and subsequent amendments), long-range transport of pollution in Europe (the Convention on Long-range Transboundary Air Pollution) and the build up of greenhouse gases (notably CO2 and CH4) in the atmosphere (UNFCCC and the Kyoto Protocol). Members were requested to assign high priority to the integrity of the global ground-based ozone measurement networks through a combination of regular intercomparisons and calibrations of Dobson and Brewer spectrophotometers, comparisons of various types of ozonesondes, and quadrennial ozone assessments. The Association thanked Spain for establishing the Regional Brewer Calibration Centre for Europe, the first of its kind in the world. Members were urged to assist WMO to widen the scope of the Antarctic Bulletin to include the Arctic and issues related to ozone recovery. The Association encouraged Members to find a solution to the gap in UV calibrations in Europe left by the cessation of activities at the European Joint Research Centre (JRC), Ispra, Italy. The Region was requested to consider supporting the fourteenth WMO/IAEA Meeting of Experts on Carbon Dioxide Concentration and Related Tracer Measurement Techniques in 2007.

6.1.6 The Association welcomed efforts by the Russian Federation in organizing of a Global GAW station in Terskol, Caucasus, which was a suitable location within the Region, as well as a regional observatory in compliance with the GAW requirements and the applied procedures. Members were urged to continue to develop the GAW network in the Region and, in particular, to assist in the building of measurement and analysis capacity in eastern Europe and the Russian Federation through twinning partnerships. Recognizing the paucity of information on the vertical distribution of ozone in many areas of the world, the Association urged Members to explore options to increase the number of ozonesonde stations. The training and resource assistance given by Switzerland and Finland to the operation of ozonesonde stations in Kenya and Argentina, respectively, was gratefully acknowledged. It noted that the leadership role of Members in the establishment of standard operating procedures for the GAW global ozonesonde network needed to be maintained.

6.1.7 The Association recognized the need for enhanced GAW aerosol observations in the Region following guidelines established by the GAW Scientific Advisory Group (SAG) for aerosols. It thanked Switzerland for hosting an International Workshop on a Global Surface-based Network for Long-term Observations of Column Aerosol Optical Properties (Davos, 8-10 March 2004). It further noted the efforts of Spain to improve the quality assurance/quality control of the aerosol optical depth network in the Region through the RHOTONS/AERONET sun-calibration centre established in June 2004 at Izana Observatory (Canary Islands). It urged Members to work with WMO, its regional partners such as the Cooperative Programme for the Monitoring and Evaluation of Long-range Transmission of Air Polluants in Europe (EMEP), the European Aerosol Research Lidar Network to Establish an Aerosol Climatology (EARLINET) and other networks to develop a strong regional contribution to the global network that GAW was implementing.

6.1.8 The Association expressed satisfaction with the (CEOS)/Integrated Global Observing Strategy (IGOS) theme report entitled *Integrated Global Atmospheric Chemistry Observations Theme* (WMO-GAW Report No. 159). It recognized that Integrated Global Atmospheric Chemistry Observations (IGACO) constituted a framework for formulating the next generation GAW programme and the leading role that the WMO Secretariat and Region Members had had in its implementation. It thanked Finland for hosting the international secretariat for IGACO-ozone that would be jointly sponsored by WMO, the International Ozone Commission and GEOSS. It urged Members to assist WMO in finding secretariats and developing an implementation plan for the other three IGACO components, namely for greenhouse gases, air quality and Long-range Transboundary Air Pollution (LRTAP), and aerosols.

6.1.9 The Association expressed strong support for the links between GAW and activities under the United Nations Economic Commission for Europe (UNECE) Convention on Long-range Transboundary Air Pollution (LRTAP). It noted with satisfaction that GAW had co-chaired the Task Force on Measurements and Modelling of the EMEP programme and had recommended that the link should continue as GAW and EMEP monitoring was harmonized. It also recommended that GAW play a major role in the new UNECE LRTAP Task Force on Hemispheric Transport of Air Pollution and the development of IGACO Air Quality and LRTAP.

6.1.10 The Association noted that the issue of urban pollution was becoming an urgent issue for many NMHSs and welcomed the continuing implementation of workshops and projects within the GAW Urban Research Meteorology and Environment Project (GURME). European experts had contributed to the capacity-building of Air Quality Forecasting in Member countries. The Association appreciated the transfer of knowledge that had been achieved to the Nizhniy Novgorod area by the Moscow project.

6.1.11 The Region had provided a variety of training and outreach activities to the GAW programme. In particular, the Training and Education Centre (GAWTEC) programme, funded and hosted by Germany, was an effective mechanism for capacity-building. Calibration centres in the Czech Republic, Germany, Spain and Switzerland had also provided excellent training opportunities during site visits or regional instrument intercomparisons. Appreciation was extended to the many scientists in the Region who had provided their assistance in developing capacity in WMO Regions outside of Europe.

6.1.12 The Association appreciated development and support by Switzerland and the Secretariat of the Web-

based GAW Station Information System (GAWSIS), which allowed on-line access to the GAW network information including status of data submission to the GAW World Data Centres. Members were requested to routinely update information on their stations and contacts in GAWSIS directly through http://www.wmo.int/web/arep/gaw/gaw_home.html.

6.2 World Weather Research Programme, including THORPEX (agenda item 6.2)

6.2.1 The Association noted with satisfaction that Members from the Region had maintained an active interest in, and contributed to, the implementation of the WMO World Weather Research Programme (WWRP). It was recalled that this programme had offered the prospect of improvements in weather predictions on all timescales, with the focus on high impact events, and the development of an extensive range of new socio-economic applications.

6.2.2 The Association was particularly pleased that Members were playing a leading role in the WWRP Mesoscale Alpine Programme (MAP), the Mediterranean Experiment on Cyclones that Produce High Impact Weather in the Mediterranean (MEDEX), in a new MAP forecast demonstration project (FDP) on flood forecasting in the Alps, the Sand and Dust Storm Research Project and the Beijing Olympics 2008 Project (the latter comprising a FDP on nowcasting and a research and development project on mesoscale data assimilation and ensemble prediction), and in a number of developing WWRP projects, such as quantitative precipitation estimation (QPF), Wildfire Weather and Warm Season Precipitation Research. Recognizing that accurate weather forecasting and improved early warning continued to be one of the highest priorities for NMHSs, the Association urged Members to become more involved in their support of WWRP projects in order to accelerate the development of improved and cost-effective techniques.

6.2.3 The Association noted that Members of the Region (primarily France, Germany, Norway, the United Kingdom), regional organizations such as ECMWF, EUMETNET/EUCOS and EUMETSAT and a number of universities were playing leading and crucial roles in THORPEX, demonstrating outstanding cooperative efforts in supporting the major goal of the programme - improving high impact weather forecasting skill from 1 to 14 days and beyond. THORPEX was being developed and implemented under the leadership of the Commission for Atmospheric Sciences (CAS) International Core Steering Committee (ICSC) in cooperation with the CAS Science Steering Committee for WWRP, the WMO/ICSU/IOC Joint Scientific Committee for WCRP, the CAS/JSC Working Group on Numerical Experimentations and the WMO Commission for Basic Systems. Regional activities were being coordinated by the European Regional THORPEX Committee, co-chaired by Mr G. Craig (Germany) and Mr D. Richardson (United Kingdom).

6.2.4 The Association was pleased to note that a number of its Members had participated in the THORPEX North Atlantic Regional Campaign conducted jointly by the North American and European THORPEX Regional Committees, including the prediction and provision of additional observations over the sensitive areas. The field phase had been successfully completed in October-December 2003. A number of storms had been targeted from the east coast of North America through to the Mediterranean, and data had been developed and made freely available for research purposes through the THORPEX Web site. The assessment and research phases of the campaign were well under way.

6.2.5 The Region had actively participated in the First THORPEX International Science Symposium (Montreal, Canada, 6-10 December 2004), which had gathered more than 200 scientists from about 30 countries. During the World Conference on Disaster Reduction (see also general summary paragraph 11), THORPEX and WCRP had jointly led the session: 'Scientific and technological advancements towards the development of seamless prediction systems from next hour to climate change time scales'. That concept had been further developed into a joint THORPEX/WCRP project on the development of a Unified Global Weather and Climate Prediction System. The Association was pleased to note that the THORPEX Interactive Grand Global Ensemble (TIGGE) was under development. From early 2006, it was planned that a TIGGE central archive of near real-time ensemble forecasts from a number of Numerical Weather Prediction (NWP) centres and other data, hosted by the ECMWF, would be available for research purposes. Members were urged to use this unique archive and to provide feedback to THORPEX thus supporting the development of a future Global Interactive Forecasting System (GIFS).

6.2.6 The Association noted with appreciation that the THORPEX International Science Plan and the International Research Implementation Plan had been developed and circulated to Members (detailed information was available on the Web site at www.wmo.int/thorpex). These plans had been developed with contributions from the Region and in collaboration with the WWW, the WCRP, the WMO Space Programme, other relevant WMO Programmes and international organizations, and in connection with GEO and International Polar Year (IPY) initiatives. The Association urged Members to support the involvement of NMHSs (operational forecasting and research entities, their users and national academic institutions) in THORPEX research, experimentation, and demonstration projects and especially welcomed the involvement of developing countries.

6.2.7 The Association further noted the establishment of THORPEX International Programme Office (IPO) in the WMO Secretariat and THORPEX Trust Fund dedicated to supporting the IPO management and priority programme activities with an initial annual budget of US$ 1.2 million. The Association appreciated the gracious annual financial contributions of France, Norway and the United Kingdom, among other WMO

Members, and urged all its Members to contribute financially, by secondments and through in kind support in order to sustain the implementation of THORPEX over the next decade.

6.2.8 Recognizing the importance and benefits of THORPEX research to all Members of the Region, the Association agreed to establish and appoint a Rapporteur on WWRP-THORPEX and adopted Resolution 13 (XIV-RA VI).

6.2.9 The Association noted with appreciation that the Czech Republic had successfully hosted the Fourth WMO International Symposium on Assimilation of Observations in Meteorology and Oceanography (Prague, 18-22 April 2005), which had provided an international forum for experts from both the meteorological and oceanographic communities to exchange their research results and operational experience in these fields, to review the state-of-the-art of existing data assimilation techniques, and to make appropriate recommendations for future research efforts.

6.3 Tropical Meteorology Research Programme (agenda item 6.3)

6.3.1 While primarily of interest to tropical countries, the Association nevertheless had made important contributions to the Tropical Meteorology Research Programme (TMRP) through both individual scientists and advanced meteorological centres. In recent years, the programme had organized a number of international workshops on monsoons and tropical cyclones. The Association fully supported these events in that they were focussed on technology transfer to developing countries in tropical regions.

6.3.2 The Association noted that the Sixth International Workshop on Tropical Cyclones (IWTC-VI) would be held in 2006 in Costa Rica and urged Members to continue supporting the organization of the workshop and other activities concerning monsoon studies and limited area modelling under the TMRP.

6.4 Programme on Physics and Chemistry of Clouds and Weather Modification Research (agenda item 6.4)

6.4.1 The Association noted the outcomes of the different meetings, workshops and conferences organized by the Programme on Physics and Chemistry of Clouds and Weather Modification Research (PPCWMR) and expressed its overall satisfaction for the systematic effort made by the programme in support of the continued interest of many Members of the Region in the areas of hail suppression and precipitation enhancement, as well as in improved parameterization of cloud processes in weather forecasting models and for a better understanding of the behaviour of clouds in climate.

6.4.2 The Association noted the establishment of the WMO/IUGG Science Assessment of Aerosol Effects on Precipitation on local, regional and global scales and the CAS International Aerosol Precipitation Science Assessment Group (IAPSAG), which would prepare a peer-reviewed report to be published by 2007.

6.4.3 Recalling the recommendation of Fourteenth Congress concerning the Mediterranean, SE Europe and Middle East Precipitation Enhancement Project (MEDSEEME-PEP), the Association invited Members to explore the rationale and consider the feasibility of joint efforts to establish a regional precipitation enhancement scientifically-based project for assessing the precipitation enhancement potential in the Region.

6.4.4 The Association noted the outcomes of the meeting of the CAS Working Group on Physics and Chemistry of Clouds and Weather Modification Research (Geneva, 23-27 May 2005). The working group had considered the most recent recommendations of the WMO Congress, and both CAS and the Executive Council had consequently reviewed the WMO Statement on Status of Weather Modification. As stated in that document, our understanding of storms was not yet sufficient to allow confident prediction of seeding effects on hail. Thus, glycogenic and hygroscopic nuclei seeding technologies were still being used and assessed, with low confidence. However, new approaches using advanced models, sophisticated measurement techniques, new experiments on storm organization and evolution of precipitation (including hail) could bring advances in the weather modification research.

6.4.5 The Region was pleased to note that the Ninth WMO Scientific Conference on Weather Modification would be held in 2007 in Turkey and invited Members to participate in that conference.

7. Applications of Meteorology Programme — regional aspects (agenda item 7)

7.1 Public Weather Services Programme (agenda item 7.1)

7.1.1 The Association noted with satisfaction the continuing progress and development of the Public Weather Services (PWS) Programme and the assistance given to Members of the Region to enable them to enhance their capability to deliver high quality PWS to their national communities. In particular, the Association noted that the programme's activities focussing on capacity-building, coordination with media and emergency management, cross-border exchange of warnings, keeping abreast of new technology and improving products and services were in line with XIII-RA VI recommendations.

7.1.2 The Association recognized that the effective application of PWS in the mitigation of natural disasters presented many opportunities and challenges as regards taking advantage of technology and meeting rising community expectations. A particular challenge for WMO Members was to ensure that all the relevant meteorological, hydrological, climatological and related information was provided in a way that enabled informed decisions and actions. NMHSs needed to create better public awareness of natural hazards and to contribute to vulnerability assessments for all potential natural threats with a view to strengthening an all-hazards community. The Association also encouraged

NMHSs to cooperate more closely with high-level decision makers in government, civil defence and the media to emphasize the value of warnings, to enhance the effectiveness of, and support for, their efforts in PWS, and to help emphasize principles such as the need for a single authoritative voice for public warnings. In that regard, the Association requested that the PWS Programme should continue its strategy of conducting training activities, transferring knowledge, applying technology and publishing guidelines on topics related to NMHSs' role in disaster prevention and mitigation. It strongly urged close collaboration between the PWS Programme and the cross-cutting programmes and projects of WMO and, in particular, the DPM Programme and THORPEX, as a mechanism for developing tools to assist Members in the all-round effort to minimize the adverse effects of severe and high impact weather events. The Association requested the Secretary-General to hold regional training workshops on PWS in support of disaster prevention and mitigation.

7.1.3 The Association noted with appreciation the work of the Subgroup on Regional Aspects of Public Weather Services that had been established by XII-RA VI and tasked with advising Members in the Region on PWS matters of interest. The subgroup had been charged specifically with addressing and developing proposals for cross-border exchange of warnings, education and training, disaster management, verification, and visibility of NMHSs in RA VI. At its meeting (Pilsen, Czech Republic, 3-6 April 2005), the subgroup had made a number of recommendations for the further development of PWS in the Region for consideration by the RA VI Working Group on the Planning and Implementation of the World Weather Watch. As a result of the work of the subgroup, a network of focal points consisting of 37 representatives of NMHSs within the Region had been established. The Association recognized that the subgroup was a valuable conduit for keeping the PWS community aware of the requirements and priorities of Members in the Region and encouraged it to continue its valuable work, while acknowledging the necessity of financial support to allow the members of the subgroup to carry out their tasks efficiently.

7.1.4 The Association noted that the GMES initiative could have an impact on PWS delivery in Europe and agreed that NMSs in the Region should be proactive and turn this initiative into an opportunity. In that regard, the Association invited the subgroup on PWS to:

(*a*) Review potential opportunities for using GMES to support services key NMSs for Members within or outside of the EU;
(*b*) Work with the EU to maximize the development of services using existing infrastructure;
(*c*) Inform the EU of existing infrastructure as part of multi-hazard warning services;
(*d*) Encourage delivery of warnings to be channelled through the NMSs to national authorities; and
(*e*) Keep all Members informed of developments in this area.

7.1.5 A PWS training workshop was held for Members from RA VI at the Training and Conference Centre of the *DWD* in Langen, Germany, from 18 to 22 October 2004. The workshop had been organized as part of the terms of reference of the RA VI Subgroup on Regional Aspects of PWS and had been targeted mainly to assist the NMHSs of the developing countries in the Region with improving their public weather services. Fourteen participants from the eastern Europe and Balkan regions had attended the workshop. The programme of the workshop had been developed with special attention to the result of the PWS survey of Members in RA VI conducted in 2001 at the initiative of the subgroup. The Association expressed appreciation to Austria, France, the United Kingdom and EUMETSAT for kindly providing financial support in addition to the resources made available by the Secretariat. The Association noted with appreciation the offer of the *DWD* to host a second training workshop for Members in the Region in 2006. The Association requested the Secretary-General to consider organizing additional training events in the Region in the future.

7.1.6 The Association noted with satisfaction the success and popularity of the World Weather Information Service (WWIS) and Severe Weather Information Centre (SWIC) Web sites among the public and WMO Members. By 15 April 2005, WWIS had carried forecasts for 1 032 cities from 103 Members including 37 from RA VI and climatological information for 1 089 cities from 154 Members. In addition to English, the WWIS Web site was in Arabic, Chinese and Portuguese. Tests were underway for a French version in the very near future. In addition, the Russian Federation was examining the possibility of future work on a Russian version of WWIS. The Association further noted that the thirteenth session of CBS had agreed that the WWIS and SWIC Web sites should move from pilot to operational phase and become an operational component of the PWS Programme, to be maintained by the current WWIS and SWIC host Members (China, Hong Kong and Macao and Oman, respectively). The SWIC Web site had provided a centralized source for media access to official tropical cyclone warnings and information issued by NMSs. The project had global coverage with 20 participating NMSs and had expanded to include observed information on rainfall, thunderstorms and heavy snowfall from all Regions. In the context of supporting and implementing the single official voice policy of WMO, the SWIC Web site aimed to provide the public and the media with easy and timely access to all warnings of severe weather worldwide, and it would incorporate and build on the work already carried out in RA VI in the European Multy-service Meteorological Awareness (EMMA) project and in the development of the vigilance systems.

7.1.7 The Association welcomed the preparation and distribution, since its last session, of the following technical documents under the PWS Programme, which had not only aimed to assist with the development and improvement of national PWS efforts but had also focussed the needs of the developing countries: *Guidelines on the Improvement of NMSs-Media Relations*

and Ensuring the Use of Official and Consistent Information (PWS-3, WMO/TD No. 1088); *Guidelines on the Application of New Technology and Research to Public Weather Services* (PWS-6, WMO/TD No. 1102); *Supplementary Guidelines on Performance Assessment of Public Weather Services* (PWS-7, WMO/TD No. 1103); *Guide on Improving Public Understanding of and Response to Warnings* (PWS-8, WMO/TD No. 1139); *Guidelines on Cross-Border Exchange of Warnings* (PWS-9, WMO/TD No. 1179); *Guidelines on Biometeorology and Air Quality Forecasts* (PWS-10 WMO/TD No. 1184); *Guidelines on Quality Management Procedures and Practices for Public Weather Services* (PWS-11, WMO/TD No. 1256); *Guidelines on Presentation Skills and Dissemination Technology* (PWS-12, WMO/TD No. 1278); and *Guidelines on Integrating Severe Weather Warnings into Disaster Risk Management* (PWS-13, WMO/TD No. 1292). Recognizing the tremendous amount of information that had been collected in these guidelines, the Association noted that the PWS strategy had recently been directed at promoting the use of this information within NMSs, and recognized that the work of the RA VI subgroup on PWS had provided an excellent template of how these strategic developments could best be implemented.

7.1.8 The Association noted that liaison had been established through CBS between THORPEX and the PWS Programme and that the PWS Programme would collaborate closely with the social and economic applications tasks of THORPEX. In line with encouraging NMHSs to focus on the fundamental principles of PWS in contributing to safety of life and alleviation of poverty through reducing the effects of severe and high impact weather on society as given in the 6LTP, the Association requested the Secretary-General to assist Members in the evaluation and demonstration of the social, environmental and economic benefits of their public weather services through the elaboration of methodologies and case studies.

7.1.9 The Association agreed on the importance of verification of warnings and forecasts as well as service evaluation and noted that user-based service assessment was required input for product/service upgrade and the development of new products and services. In that regard, the Association welcomed the development by the NMS of Germany (*DWD*) of a simple verification of city forecasts from the WWIS Web site. The project, which would be continued by *DWD* for another year, would be evaluated at the end of that period and the results would be provided to RA VI Members. The aim of the project was to encourage more Members from the Region to use verification statistics to help improve the quality of forecasts.

7.1.10 The Association stressed that provision of high quality PWS was a fundamental function of NMSs and in order to satisfy the growing public demand for more timely, efficient and accurate products and services, requested that the future work of the PWS Programme focussed on the following issues:

(*a*) Capacity-building and transfer of knowledge and technology;
(*b*) Application of new technology and research in NMHS systems and operations;
(*c*) Increasing the adoption of verification and user-based service assessment;
(*d*) Raising the level of public awareness, evaluating socio-economic benefits, understanding and responding to weather and hydrological warnings as part of natural disaster mitigation and reduction efforts;
(*e*) Improving relationships and coordination with emergency management and the media, and stressing the need for a single official voice, in the form of the NMSs;
(*f*) Promoting closer cooperation between meteorologists and hydrologists when issuing warnings of severe weather and water-related hazards;
(*g*) Promoting and enhancing cross-border exchange of warnings, encouraging cooperation with neighbouring NMSs to enhance preparedness and to establish action plans for likely threatening scenarios, and to exchange data and products for the assessment of early developments of severe weather systems;
(*h*) Promoting awareness of the importance of the impact of high quality, well-delivered public weather services on the image and visibility of the NMS;
(*i*) Improving the use of official, consistent information, facilitating the international exchange of public weather products and making weather information available on the Internet.

7.2 Agricultural Meteorology Programme (agenda item 7.2)

7.2.1 The Association complimented the Secretary-General and the Commission for Agricultural Meteorology (CAgM) on progress made in the implementation of the Agricultural Meteorology Programme (AgMP), including the publication of a large number of technical notes and CAgM reports.

7.2.2 The Association noted with appreciation the theme adopted by the Commission 'to promote operational applications of agrometeorology using innovative technologies for services to agriculture, silviculture and aquaculture'. The Association noted with interest the intersessional activities of the CAgM and agreed that they would contribute greatly to the economic development of the countries in the Region.

7.2.3 As regards to Institutional Support to AgMP, the Association requested the Secretary-General to provide support to the meeting of the RA VI Working Group on Agricultural Meteorology so that the priority issues to promote sustainable agriculture in the Region could be properly addressed.

7.2.4 The Association supported the initiatives taken to address the locust menace in north and west Africa through the organization of the Expert Meeting in Geneva and welcomed the collaboration between WMO and FAO to ensure more meteorological support for locust monitoring and control. The Association noted

with appreciation that experts from IBIMET (Italy) and the UK Met Office had participated actively in the WMO/FAO Regional Training Workshop on Meteorological Information for Locust Control for the Francophone countries (Niamey, Niger, 19-22 April 2005).

7.2.5 The Association noted that the locust menace was spreading in a number of countries in the Region and that satellite observations and seasonal prediction products might be needed to monitor their movement in the Region and other neighbouring countries.

7.2.6 The Association noted with appreciation the collaboration with COST ACTION 718 'Meteorological Applications for Agriculture' of the European Science Foundation in organizing the Expert Team Meeting on Weather, Climate, and Farmers of CAgM and it encouraged continued collaboration with COST ACTION 718.

7.2.7 The Association supported the recommendations of the ET on Weather, Climate and Farmers that:

(*a*) The research and farming community should be encouraged to develop more appropriate weather and farming system modelling to minimize environmental losses for sustainable agriculture;

(*b*) Agroclimatic analysis, agrometeorological monitoring, models and GIS should be more widely used to produce agrometeorological information using text, graphical and map formats;

(*c*) Monitoring coverage and the quality and accuracy of available data and products should be improved and investment in infrastructure (new measuring instruments and systems like automatic stations, radar, satellite) should be increased;

(*d*) Modification due to climate change and variability should be taken into account in order to tune agrometeorological applications to the new situations.

7.2.8 The Association supported the recommendations of the WMO/COST Action/FAO Workshop on Climatic Analysis and Mapping for Agriculture (Bologna, Italy, 14-16 June 2005) that agroclimatic analysis, agrometeorological monitoring, models and GIS should be more widely used to produce agrometeorological information using text, graphical and map formats.

7.2.9 The Association noted that the World AgroMeteorological Information Service (WAMIS) had products from over 23 countries and provided tools and resources to help countries improve their bulletins and services (http://www.wamis.org). In RA VI, seven countries and organizations were actively contributing their products to WAMIS. As of May 2005, the WAMIS Web site had registered 17 000 visits and 50 000 pages had been viewed. Considering the benefits of WAMIS to Members, the Association urged Members to participate and disseminate their products to the global community as these products could also assist in natural disaster assessments by providing bulletins in both real-time and from a historical perspective.

7.2.10 The Association supported the recommendations of the CAgM Implementation Coordination Team on Climate Change/Variability and Natural Disasters in Agriculture that:

(*a*) A case study from RA VI on drought for improved water management in maize should be included in the proposed project entitled 'Assessment of Natural Disaster Impacts on Agriculture (ANADIA)', which was being prepared by WMO;

(*b*) Appropriate aspects from RA VI should be included in the proposed project entitled 'Contributions of Agriculture to the State of Climate (CONASTAC)' which was being developed by WMO to promote a better understanding of how agricultural practices were contributing to the current state of climate;

(*c*) A case study from RA VI on the application of seasonal forecasts for crop yield predictions should be included in the proposed project entitled 'Climate Forecasts for User Communities (CLIFORUC)' which was being prepared by WMO.

7.2.11 The Association congratulated the Secretariat on the collaboration with Global Change System for Analysis, Research and Training (START) of IGBP, WCRP and the International Human Dimensions Programme (IHDP), and the International Research Institute for Climate Prediction (IRI) in organizing the International Workshop on Climate Prediction and Agriculture: Advances and Challenges (Geneva, 11-13 May 2005) and the Synthesis Workshop on Climate Variability and Food Security (Geneva, 9-10 May 2005). It encouraged WMO to convene the Task Force on Climate Prediction and Agriculture (CLIMAG) in order to seek broader support for the promotion of seasonal climate applications in agriculture.

7.2.12 The Association was pleased to note that a number of experts from the Region had participated in international workshops organized by WMO in other Regions. The Association considered that such opportunities for exchange of experiences between the Regions would help strengthen the agrometeorological activities in the Region and urged the Secretary-General to continue to enhance inter-regional cooperation in agrometeorology.

7.2.13 The Association expressed its appreciation to WMO for co-sponsoring the International Conference on Sustainable Agriculture and Environment in the Arab Region held in Amman, Jordan from 14 to 16 October 2003.

7.2.14 The Association noted WMO's activities on desertification and urged Members to participate actively in the implementation of the United Nations Convention to Combat Desertification (UNCCD). It urged Members to benefit from the support of the Global Mechanism of the Convention for projects in that area. The Association was pleased to note that WMO had sponsored the Technical Workshop on Drought Preparedness for the Balkans within the context of the UNCCD (Poiana-Brasov, Romania, 25-26 October 2004).

Report of the Chairperson of the RA VI Working Group on Agricultural Meteorology

7.2.15 The Association complimented the chairper-

son and members of the RA VI Working Group on Agricultural Meteorology for the activities carried out and for the final technical report. The Association recommended that the report be published by WMO and distributed widely.

7.2.16 The Association agreed that the subject of the impacts of climate change and climate variability on agriculture and forestry in Europe was of significant importance and that Members in RA VI should be fully sensitized in order to be able to take action to monitor and mitigate them.

7.2.17 The Association concluded that financial and human resources available for activities in the area of agricultural meteorology in Europe were not consistent with the perceived impacts of climate change and weather extremes on agriculture and forestry in Europe and recommended that:

(*a*) Efforts should be made to strengthen training, research and operational applications in agricultural meteorology in Europe;

(*b*) The linkages between meteorological services and the agricultural sector should be strengthened and that the collaborative activities in the field of agricultural meteorology should be improved, especially in the areas of numerical weather forecasting, remote sensing, and data management that make limited area model (LAM) products available to agriculture extension services.

7.2.18 The Association agreed that the application of meteorology to agriculture continued to be of high importance to the Region. Hence, the activities of the Working Group on Agricultural Meteorology should be continued, taking into account the developments in the Region, such as enhancing water use efficiency and availability in European agriculture; assessing the economic impacts of agrometeorological information in Europe; promoting applications of seasonal to interannual climate forecasts to agriculture in Europe, especially as regards the quality and storage of agricultural products and the use of numerical weather products in operational applications of agrometeorology; using remote sensing techniques for monitoring crop growth phases; and promoting more active collaboration with the farming community in Europe to improve applications of agrometeorology at farm level including Internet technologies. The Association therefore re-established a Working Group on Agricultural Meteorology with renewed terms of reference and adopted Resolution 14 (XIV RA VI).

7.3 Aeronautical Meteorology Programme (agenda item 7.3)

7.3.1 The Association noted with satisfaction that Fourteenth Congress had re-emphasized the importance it attached to an expanded and vigorous Aeronautical Meteorology Programme (AeMP) to meet the needs of the worldwide aviation community and requested the Secretary-General to assist in its implementation. It also noted with satisfaction that Fourteenth Congress had requested that high priority be given to training requirements. The Association welcomed the request by the fifty-sixth session of the Executive Council to the Commission for Aeronautical Meteorology (CAeM) and the Secretary-General to monitor closely the evolution of national and regional institutional frameworks for the provision of meteorological services for international air navigation and to report to that session. In that regard, for a better coordination of aeronautical meteorological activities in the eastern part of the Region, the Working Group on Aeronautical Meteorology of the Interstate Council for Hydrometeorology (ICH) representing NMSs in CIS countries had held a meeting from from 11 to 12 May 2005 also attended by aviation authorities.

7.3.2 The Association welcomed the establishment by the twelfth session of CAeM of a new CAeM structure composed of a Management Group, 2 Open Programme Area Groups (OPAGs), 8 expert teams, a Rapporteur on AMDAR activities and another on Aviation and the Environment. The Association was pleased to note that the first meeting of the CAeM Expert Team on Education and Training (Exeter, 28 February-4 March 2005) had discussed important topics that included the preparation of the CAeM technical conference to be held in conjunction with the CAeM session in 2006, the provision of training material and an implementation plan for training strategy in aeronautical meteorology.

7.3.3 The Association noted with appreciation the major contributions of Members from the Region, in particular, France, Hungary, the Russian Federation and the United Kingdom, to training aeronautical meteorological personnel since its previous session. The Association was pleased to note that training events organized outside the Region and attended by participants from Europe had included a Workshop on Radar and Satellite Imagery Interpretation (Toronto, Ontario, Canada, 27-31 October 2003), and two AMDAR Workshops (Johannesburg, South Africa, 15-17 October 2003 and Beijing, China, 11-15 October 2004). The Association welcomed Recommendation 4/1 by the CAeM Session/ICAO Meteorology Divisional Meeting (hereafter referred to as Conjoint Meeting) held in Montreal, from 9 to 12 September 2002, that had called for WMO, in coordination with the International Civil Aviation Organization (ICAO), to continue to arrange seminars on cost recovery as a matter of priority. The Association was informed that cost recovery was of critical importance to those CIS countries currently establishing market-based meteorological services. In that regard, the Association was pleased to note that a cost recovery workshop had been held in Moscow from 4 to 7 November 2003 attended by participants from 17 countries in RA VI and that another cost recovery workshop to be held in the first quarter of 2006 in Moscow would be a good opportunity for the exchange of relevant experience and expertise among CIS countries. The Association supported the initiative of the Russian Federation to organize two workshops during 2006 on the development of the MET component of the CNS/ATM Systems, and on the definition of visibility in the terminal area. The Association welcomed the request by the fifty-sixth session of the Executive Council to

hold regional cost recovery seminars and asked the Secretary-General to facilitate the convening of such events in the Region in the near future.

7.3.4 The Association welcomed Recommendation 4/2 by the Conjoint Meeting that called for ICAO, in coordination with WMO, to extend the current guidance material on cost recovery. In that regard, the Association was pleased to note that the update of the ICAO *Manual on Air Navigation Services Economics* (Doc. 9161) that contained guidance on cost recovery for air navigation services including aeronautical meteorology had been completed during 2004 and was currently available on the ICAO/ANSEP Web site (http://icaosec.icao.int/users). Furthermore, the Association was pleased to note that the updating to the WMO *Guide on Aeronautical Meteorological Services Cost Recovery* (WMO-No. 904) to reflect changes already made to the ICAO *Manual* was underway.

7.3.5 The Association noted with great interest that the EU Single European Sky (SES) Regulations providing for air navigation services including aeronautical meteorological services (METs) in the EU had come into force on 1 January 2005. Those Regulations had required, in particular, the certification of MET service providers by national authorities, transparency in the provision and costs of MET services, competition among MET service providers, if so desired, and strongly promoted uniform European practices. An additional Regulation on Common Requirements adopted on 17 March 2005 by the SES Committee and applicable to any air navigation service provider (ANSP), including MET, was expected to be published in mid-2005. That Regulation would, in particular, contain additional specifications on proof of compliance; monitoring and continuity; quality of the service and reporting; human resources; financial strength; liability of the provider; and rules for peer review procedures. The Association expressed the view that the influence of those regulations on CIS countries was increasing. More information of the SES could be found at http://europa.eu.int/eur-lex

7.3.6 The Association noted that a major objective of SES was to improve safety and efficiency of air navigation in Europe. In that regard, the Association agreed that more support was necessary from the meteorological community to contribute to the efficiency and meteorological safety of air navigation in the Region. The Association further agreed that due to certain issues specific to RA VI, including very high density of air traffic, which may aggravate dangerous situations and threaten safety in the event of adverse meteorological conditions, those issues needed to be addressed urgently in the Region.

7.3.7 The Association was of the opinion that in that regard the provisions of existing WMO technical regulations on international aeronautical meteorological services should be improved to include the application of modern technology such as radar and satellite imagery tailored to users' needs, nowcasting techniques, and precise, relevant and reliable real-time distribution of information in the terminal area and outside. The Association requested that WMO should contact ICAO to revise existing technical regulations (Annex 3 of the ICAO manual) in order to incorporate the above suggestions. Noting the complexity of the task, the Association agreed that it would not be realistic to expect the rapporteurs to be given the responsibility of producing proposals. It, therefore, suggested that the strategic plan for RA VI should include actions to take this proposal into account and, given the scale of the work required, considered that it might be desirable to establish a regional working group to address that issue. The Association welcomed the idea that other organizations reflecting the interest of aviation users should be approached to support such an initiative.

7.3.8 The Association was informed that the role of the European Organization for the Safety of Air Navigation (EUROCONTROL) in the MET domain as currently being defined would increase. In the meantime, EUROCONTROL had decided to put the MET domain under the Aeronautical Information Management. EUROCONTROL had presented a comprehensive report on the performance and costs of MET service providers in Europe. The main impact of that report would probably be to increase financial pressure on MET service providers and to reduced MET charges. In that regard, the European Commission had been developing, in consultation with EUROCONTROL, a Common Charging Scheme likely be adopted at the end of 2005. The Association invited the rapporteurs to monitor SES and keep Members informed of progress (particularly those outside the EU). The Association welcomed the possibility of holding a seminar on SES in order to facilitate discussions on the potential implications of SES for Members with the aim of developing a common understanding of possible impacts and a common strategy for follow-up actions.

7.3.9 The Association noted with appreciation the availability of training material on the AeMP Web site and the efforts being made by CAeM to provide guidance material to reinforce the training process. In that regard, the Association was pleased to note that, in 2003, the *Compendium on Tropical Meteorology for Aviation Purposes* (WMO-No. 930) and the *AMDAR Reference Manual* (WMO-No. 958) had been published in English and in English and French, respectively, and an updated version of the *Guide to Practices for Meteorological Offices Serving Aviation* (WMO-No. 732) had been published in four languages. In 2004, the booklet on *Aviation and the Global Atmospheric Environment* (March 2004) that summarized the current scientific and operational knowledge on the impact of aviation on the environment had been jointly published in English by WMO and UNEP. Furthermore, the updated *Guide on Meteorological Observation and Information Distribution Systems at Aerodromes* (WMO-No. 731) was awaiting publication.

7.3.10 The Association welcomed advances made in reaching the final phase of the World Area Forecast System (WAFS) which had come into force on 1 July 2005 after nearly twenty years of development. As of that date, each of the two World Area Forecast Centres

(WAFCs) was required to transmit by satellite broadcasts global wind and temperature forecasts in the GRIB coded format only and the current wind and temperature forecast in T4 chart format would have to be produced locally using the GRIB coded information broadcast by the 2 WAFCs. The Association was informed that, due to unforeseen difficulties in completing work on BUFR coded SIGWX forecasts and making available to users relevant workstation visualization software by 1 July 2005, the two WAFCs would continue to broadcast by satellites SIGWX T4 charts until 30 November 2006. The Association was further informed that ROSHYDROMET had developed a programme for decoding WAFS information, preparing and transmitting WAFS charts in T4 format to aeronautical meteorological units that did not have those capabilities. The Association was pleased to note that CIS countries would be able to benefit from such planned transmission of WAFS T4 charts. In the meantime, the Association urged Members to upgrade their current workstations and their workstation visualization softwares and to ensure that their operational staff had been trained to access, decode and use both the GRIB coded information and BUFR coded WAFS products for the preparation locally of all T4 charts needed for flight documentation.

7.3.11 The Association noted with satisfaction that various amendment proposals to ICAO Annex 3/WMO *Technical Regulations*, Volume II (WMO-No. 49), had been approved by ICAO and WMO as part of Amendment 73 and had become applicable on 25 November 2004. Those provisions related, among others, to the WAFS final phase, prevailing visibility, aerodrome forecasts, observing and reporting of certain meteorological elements, cloud of operational significance as well as SIGMET, AIRMET, aerodrome warnings and the overall restructuring of Volume II. The Association was pleased to note that the updated *Manual on Codes* (WMO-No. 306), Volume I.1, Part A, reflecting changes to aeronautical meteorological codes stemming from Amendment 73, would be made available to Members following the Executive Council session in June 2005.

7.3.12 The Association noted with satisfaction that, in line with Recommendation 2/2 of the Conjoint Meeting, ICAO had completed, in close coordination with WMO, the development of a Manual on the Use of Automatic Meteorological Observing Systems at Aerodromes. The Association was pleased to note that there were plans to publish the Manual during 2005.

7.3.13 The Association recalled that the Aircraft Meteorological Data Relay (AMDAR) Panel had been established in 1998 to enhance the upper-air component of the WWW GOS. It noted with satisfaction that, since then, the number of automated, accurate, timely and cost effective aircraft observations disseminated on the GTS per day had increased to over 200 000 representing over a fourfold increase. The Association was pleased to note the excellent collaboration between the management of the EUCOS AMDAR programme and the AMDAR Panel and expressed its appreciation for the contributions of Members from the Region to the implementation of the AMDAR Panel. In that regard, the Association thanked European Members of the Panel, namely, Austria, France, Germany, The Netherlands, Sweden, Switzerland and the United Kingdom, for their continued contributions to the AMDAR Trust Fund. It encouraged other Members in the Region to join the Panel, and the Panel to continue its work aimed, among others, at the development of an operational humidity sensor. The Association was informed that, with the exception of the Russian Federation, AMDAR programmes had not yet been implemented in CIS countries. However, the planned meeting of the ICH Working Group on Aeronautical Meteorology would discuss AMDAR issues and progress so far achieved by the Russian Federation in using AMDAR data. The Association requested the AMDAR Panel to continue to provide assistance to Members, in particular those in central and eastern Europe who had expressed interest in implementing AMDAR programmes and in convening AMDAR training events.

7.3.14 In view of the importance of the AeMP for the Region, the Association decided to continue to appoint Rapporteurs on Regional Aspects of the Aeronautical Meteorology Programme and adopted Resolution 15 (XIV-RA IV).

7.4 Marine Meteorology and Oceanography Programme (agenda item 7.4)

7.4.1 The Association noted with interest that Fourteenth Congress had emphasized the importance of the Marine Meteorology and Oceanography Programme (MMOP) including its traditional activities in areas such as maritime safety services, the new priorities in operational oceanography, and the implementation of an integrated ocean observing system for climate. Fourteenth Congress had approved the programme as part of the 6LTP. This programme provided overall objectives as well as detailed guidelines for Members, regional associations and WMO in this field.

7.4.2 The Association noted that the organizational transition from the Integrated Global Ocean Services System (IGOSS) and Commission for Marine Meteorology (CMM) to the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) seemed to have been well received by both the parent organizations and their Members, and that most steps in the transition had been fairly smooth. Significant progress had been achieved within the four JCOMM Programme Areas with cross-cutting working relations with the International Oceanographic Data and Information Exchange (IODE), the Global Ocean Observing System (GOOS), the Tropical Cyclone Programme (TCP), CAgM, the Commission for Hydrology (CHy), the Future WMO Information System (FWIS) and the International Hydrographic Organisation (IHO). Some overlaps still needed to be assessed, and the potentials of synergy should be further exploited.

7.4.3 The Association noted that the second session

of JCOMM was scheduled to take place in Halifax, Canada, from 19 to 27 September 2005. Detailed planning for all necessary arrangements for the session was well underway and was for the most part on schedule. The Association noted with interest that the JCOMM-II Organizing Committee had arranged for the Scientific Conference on Operational Oceanography and Marine Meteorology for the 21st Century, which would precede JCOMM-II and for celebrations and ceremonial deployment during JCOMM-II for the 1 250th global drifting buoy in sustained service. The Members of Region VI were encouraged to participate in the session.

7.4.4 With regard to the implementation of marine meteorological services in Region VI, the Association noted with appreciation the comprehensive report of the Rapporteur on Regional Marine Meteorological and Oceanographic Services, Mr H. Savina (France). The Association agreed that the further development of marine meteorological and oceanographic services, together with marine observing systems in the Region, particularly in the light of the opinions of Fourteenth Congress on the matter, should be an ongoing activity. It therefore decided to re-appoint a rapporteur and adopted Resolution 16 (XIV-RA VI).

Marine meteorological and oceanographic services

7.4.5 The Association noted with satisfaction that meteorological services, through SafetyNET under the WMO Marine Broadcast System, for the Global Maritime Distress and Safety System (GMDSS) (a part of SOLAS) covering the Region were fully operational and that mariners had confirmed (through surveys of user requirements) the satisfactory accuracy and usefulness of those services. The Association recalled that while the great majority of respondents had emphasized the usefulness of radio facsimile products, there had also been significant dissatisfaction with the quality of those services and unannounced terminations. In that regard, it noted with interest that JCOMM was conducting a project regarding possible transmission of SafetyNET graphical products via Inmarsat C. The Association recognized the need to continually review services, including in particular the views of users and urged Members in the Region operating Voluntary Observing ships (VOSs) to participate actively in the various marine meteorological services monitoring exercises that were being undertaken. The Association noted with interest that a new Web site (http://weather.gmdss.org) had been established to broadcast real-time global marine forecasts and warnings via satellite under the GMDSS marine broadcast system.

7.4.6 The Association noted with interest that a major JCOMM marine products workshop, Ocean Ops 04, had taken place in Toulouse, from 10 to 15 May 2004. The workshop had attracted a large number of providers and users of operational ocean products, which had resulted in important input for the further development of the JCOMM Electronic Products Bulletin, as well as the implementation of the Marine Pollution Emergency Response Support System (MPERSS). The Association noted with interest that a new Web site dedicated to MPERSS had been established to provide information on MPERSS, its resources, and contact points in Area Meteorological Oceanographic Centres.

7.4.7 The Association noted with appreciation that the Marine Climatological Summaries Scheme (MCSS), the Global Digital Sea Ice Data Bank (GDSIDB) and the Global Temperature Salinity Profile Programme (GTSPP) were all being continually developed to meet the requirements of a wide range of operational and research users for various types of marine data. It therefore urged Members concerned in the Region to participate actively in those projects, which now all formed part of the JCOMM Data Management Programme Area. It expressed its particular appreciation to the United States for the maintenance of one of the global data banks for the GDSIDB, along with the Russian Federation, and to Canada and the United States for their substantive support to the GTSPP.

Systems for marine observations and data collection

7.4.8 The Association shared the view of Fourteenth Congress that JCOMM was now recognized as a primary implementation mechanism for GOOS, and for operational oceanography in general, for which it was expected to play a role equivalent to that of CBS with regard to the WWW. For this task, JCOMM would require the enhanced, active support of all maritime Members, especially collaboration between NMSs and appropriate national oceanographic agencies/institutions at the national level. In that regard, the Association drew attention to the necessity of an integrated approach to ocean/atmosphere observations and agreed that the work done in collecting oceanographic data would be of great value in support of GEO. It decided to keep in force Resolution 16 (XIII-RA VI) on the subject.

7.4.9 The Association agreed that VOS, SOOP, the Global Sea-Level Observating System (GLOSS), the ASAP programme, ocean data buoys, the Argo Programme and oceanographic satellites formed key components of both existing and future ocean observing systems. It agreed on the importance of Members' continued support for those activities, and, in particular, urged its Members to:

(*a*) Recruit more ships to the VOS programme, improve data quality and timeliness, strengthen their Port Meteorological Officers' (PMOs) networks;

(*b*) Participate where possible in the VOS Climate Project, SOOP, the ASAP and Argo programmes;

(*c*) Develop and operate drifting buoy programmes in data-sparse ocean areas, and participate in the work of the Data Buoy Cooperation Panel (DBCP) and its action groups, such as the International South Atlantic Buoy Programme (ISABP), and the North Pacific Data Buoy Advisory Panel (NPDBAP), and the International Arctic Buoy Programme (IABP).

7.4.10 The Association noted with appreciation that Members of the Association were playing a prominent role in the Argo Programme and that the Argo array was

expected to reach its target of 3 000 operating floats in 2006/2007. The Association noted that the Argo Information Centre (AIC, http://argo.jcommops.org/) was participating in the activities of the JCOMM In Situ Observing Platform Support Centre (JCOMMOPS) which, inter alia, was providing integrated information on programme status and logistical opportunities available for marine deployment. The Association expressed its appreciation for Members' contribution to the AIC, including Denmark, France, Germany, the Russian Federation, Spain and the United Kingdom.

7.4.11 The Association noted with satisfaction that the JCOMMOPS facility continued to expand, with new support tools and services being offered to users. It expressed its considerable appreciation to those Members that had contributed financially to the operation of JCOMMOPS.

7.4.12 The Association noted that the satellite system of the International Mobile Satellite Organization (IMSO), as well as being a key element in the GMDSS and thus in the new WMO marine broadcast system, was now also the primary means of transmitting meteorological and oceanographic reports from VOS, SOOP and ASAP ships from ship-to-shore. The Association agreed that continuing efforts were required to ensure that the most efficient and cost-effective use was made of Inmarsat, for the benefit of all Members. The Association further recognized that the Argo system continued to be widely used for the collection and location of data from unmanned, automated marine platforms, such as drifting and moored buoys and sub-surface floats. Non-commercial users of the system had participated collectively in the Argos Joint Tariff Agreement, which had served to secure a favourable price and conditions for such system users. The Association therefore urged Members operating those ocean platforms to participate in that agreement wherever possible, if not already doing so.

7.4.13 The Association noted that the project to improve the GMDSS through the expansion of services to provide products in graphical format via the Inmarsat SafetyNet service had been underway for several years, but had yet to achieve any of the objectives or expectations placed upon it. JCOMM would certainly agree that this nevertheless remained a priority activity for JCOMM, in particular in view of the ongoing reduction in radiofacsimile services for shipping, and would urge the Expert Team on Maritime Safety Services (ETMSS) to continue to give the project its full attention in the coming intersessional period. Regarding that particular topic, any action undertaken by regional Member countries or projects should be reported to ETMSS. In particular, actions regarding the Electronic Chart Display and Information System (ECDIS), and Additional Military Layers (AML), would be considered with interest.

7.4.14 The Association noted with appreciation the support expressed by the Russian Federation for the work of JCOMM and the desire to expand the activities of the Commission to include the sea areas bordering the Region. The Association was informed that after an interval of 10 years, the Russian Federation was renewing its hydrometeorological research in the northern ocean by using drifting research North Pole stations (NPSs). NPS-33 had recently stopped its operation and had been reached by a Russian expedition vessel without the support of an icebreaker. Meanwhile, plans were underway for the NPS-34. Furthermore, the Russian Federation was developing statistics on the current status of the world's oceans, using a distributed data base which allowed the user to select data for producing cartographic maps. This system would be used as part of Euro-GOOS. The Association agreed that the implementation of plans to extend observations and the dissemination of final operational products to polar regions as part of the support for the International Polar Year (IPY), as well as adaptation of sea ice data, should become an important part of JCOMM's activities. Finally, the Association stated that, in the framework of global assessment of marine pollution, JCOMM should organize a pilot project to collect data on chemical and biological parameters of the oceans.

Common sets of sub-areas for Met Area II and Met Area III

7.4.15 The Association was invited to consider the fact that common sets of marine forecast areas and subareas, had been approved by JCOMM-I and the concerned regional associations, and were being included in the *Manual* by the WMO Secretariat, similar to those defined in the Baltic Sea and the North Sea. In that sense it was requested that all regional Member countries should be strongly encouraged to adopt those common sets of sub-areas for their high seas and offshore marine forecasts prepared either for the GMDSS or for their national safety service. That was the compulsory first step to envisaging international coordination of Maritime Safety Information (MSI) for those domains, as requested by the International Maritime Organisation (IMO) regarding the provision of MSI within the GMDSS, especially for the NAVTEX broadcast. Such coordination had been in place in the Baltic Sea on a trial basis since 1998. The preparation of some appropriate coordinating mechanisms could also be considered for the other European maritime areas. It was noted that, in that field, the successful implementation of a NAVTEX system in Italy allowing, with the existing transmitters operated in particular by France and Spain, a nearly full NAVTEX coverage of the western part of the Mediterranean Sea.

Programme support activities

7.4.16 The Association agreed that specialized seminars, workshops and similar events were of considerable value to Members involved in the operation of marine observing systems and in the provision of marine services, and should be continued. It requested its Members to consider the possibility of hosting such activities in the future.

7.4.17 The Association noted with satisfaction that the special seminar to celebrate the 150th anniversary of

the Brussels Maritime Conference of 1853, together with the second JCOMM Workshop on Advances in Marine Climatology (CLIMAR-II) (Brussels, Belgium, 17-22 November 2003), had been outstanding successes. It expressed its appreciation to the Canada and United States for its support to those events.

7.4.18 The Association noted the importance of the national/regional/international network of the Port Meteorological Officers. The Association also noted that experts from the Region had attended the Second International PMO Workshop (London, 21 July-1 August 2003). More than 30 PMOs had taken part in the workshop. The proceedings were available in: *Second International Workshop of Port Meteorological Officers* (WMO/TD-No. 1216). In addition, in the light of the ongoing gradual degradation of the network, and bearing in mind the continued high importance of the PMOs to the JCOMM Observations Programme Area, Member countries were urged to maintain or reinforce the network. It further noted that the third PMO workshop had been postponed until 2006.

7.4.19 The Association noted that the first session of the JCOMM Expert Team on Marine Climatology had taken place in Gdynia, Poland, from 7 to 10 July 2004. By then, the two VOS Global Collecting Centres (Germany and United Kingdom) had celebrated their 10-year anniversary. The Global Collecting Centre (GCC), Germany, was maintaining a Web site (http://www.dwd.de/en/FundE/Klima/KLIS/int/GCC/GCC.htm), which was providing a route map for users looking for VOS data and assistance. A Web site, to be developed by the Global Collecting Centre (GCC), United Kingdom, would provide further assistance. The second session of the JCOMM Expert Team on Sea Ice and the tenth session of the Global Digital Sea Ice Data Bank had been held in Hamburg, Germany, from 15 to 17 April 2004, and had provided an opportunity to review sea ice operational and climatic practices and to further enhance marine meteorological and oceanographic services in ice invested waters, including sea ice information on electronic charts (ECDIS), and support for IPY 2007-2008. The third session of the Ship Observation Team (SOT-III) had taken place in Brest, France, from 7-12 March 2005 and had included VOS Panel and Ship-of-Opportunity Programme Implementation Panel (SOOPIP) and Automated Shipboard Aerological Programme Panel (ASAPP) sessions. SOT-III had reviewed and further enhanced working aspects of such programmes as VOS, VOS Climate Project (VOSClim), the Global Temperature Salinity Profile Programme (GTSPP), SOOPIP and JCOMMOPS.

7.4.20 The Association noted with interest the plans by WMO and IOC to contribute to an operational and robust tsunami warning system with in the framework of JCOMM. The Observation Programme Area role included the possible addition of tsunami-related sensors to existing platforms. The Services Programme Area role included strengthening existing services to disseminate safety related warnings and assisting Members to develop expertise in storm surge and wave modelling.

8. Hydrology and Water Resources Programme – regional aspects
(agenda item 8)

8.1 The Association noted with pleasure that, in general, the needs of Members in the Region had been adequately reflected in the priority activities of WMO in the Hydrology and Water Resources Programme (HWRP) given in WMO's Sixth Long-term Plan (6LTP) as approved by Fourteenth Congress. It examined those topics in the Plan which required more emphasis and having considered those of higher interest to countries in Region VI, recommended that they be taken into account as appropriate in the future work of the Working Group on Hydrology (WGH).

8.2 The Association noted with appreciation the report of the chairperson of the WGH, Mr J. Kubát (Czech Republic). It also noted the progress made in carrying out activities of particular interest to Members through five rapporteurs and two subgroups that had been given specific assignments and were supported by other members of the WGH. In particular, it noted with interest the work carried out by the rapporteurs in the preparation of the reports on: Public relations and visibility of National Hydrological Services, Mr P. Givone (France) (vice-chairperson of the WGH); Potential extreme floods, Mr B. Ozga-Zielinski (Poland); Climate and water, Mr O. Varis (Finland); Water quality assessment, Mr P. Ronĉák (Slovak Republic); and Drought assessment and forecasting, Ms G. Monacelli (Italy).
It also noted the outcomes of the activities carried out by the chairpersons of the two subgroups on: Institutional aspects of monitoring and assessment, Mr A. Snorrason (Iceland) and Flood forecasting and warning, Mr I. Karro (Sweden).

8.3 On the basis of the recommendations of the WGH, and taking into account the decisions of Fourteenth Congress and the recommendations of CHy, the Association decided to re-establish the Working Group on Hydrology (WGH), which was open to all Members of the Region, and adopted Resolution 17 (XIV-RA VI). With respect to the group's membership, the Association requested its Members to ensure adequate representation of the NHSs and other institutions working in the field of water. The Association also took note of the future programme of work proposed by the WGH, which conformed closely to the 6LTP and included it in Resolution 17 (XIV-RA VI). It further recommended that at least one session of the working group should be arranged during the intersessional period and that financial assistance should be provided by WMO so that the Members could attend the session. The Association invited the WGH to cooperate with the newly-established Working Group on Natural Disaster Prevention and Mitigation.

Commission for Hydrology

8.4 The Association was informed on the outcome of the twelfth session of the Commission for Hydrology (CHy). It took note that the Commission had established an Advisory Working Group composed of nine

members, and five Open Panels of CHy Experts (OPACHE) on five thematic areas: basic systems (hydrometry and hydraulics), water resources assessment and water use, hydrological forecasting and prediction, disaster mitigation – flood and droughts (hydrological aspects), and analysis of hydrometeorological data for variability and trends. The Association recommended that the WGH should liaise and cooperate with the CHy Advisory Working Group on themes of common interest.

8.5 The Association noted that the Commission had expressed concern with regard to the decline of the financial support provided to the organization of the sessions of regional WGHs, and at the low visibility of their activities in the annual reports of the presidents of regional associations to the Executive Council. In that respect the Association invited the Secretariat to explore ways of providing more financial support towards the activities of the WGHs. It also recommended that the WGH should coordinate its work with the Task Team on Strategic Plan and Action Plan.

8.6 The Association welcomed the adoption by the Commission of a WMO Strategy on Education and Training in Hydrology and Water Resources. It noted the priority areas identified by the regional Working Group on Hydrology (data processing and quality control, hydrological modelling and forecasting). It requested the WGH to cooperate with the Secretariat in identifying ways to implement that strategy in the Region. The Association also stressed the importance of standard levels of qualification for hydrological forecasters and of the need to provide them with appropriate training.

Implementation of the HWRP and its regional aspects

8.7 The Association noted that progress had been made in the implementation of the Plan for the Hydrological Operational Multipurpose System (HOMS) in the twenty-first century during the past intersessional period. In particular, it was pleased to note that the online version of the HOMS Reference Manual (HRM) was being updated regularly and since 2003, most component descriptions had become available in English, French, Spanish and Russian.

8.8 However, the Association noted that the replenishment of the HRM with new components was advancing rather slowly, as very few had been submitted by the National HOMS Reference Centres in the recent years. Aware that in the past Members from the Region had been very active in supplying components to HOMS, the Association invited Members to renew their commitment with a view to improving on components of particular interest in RA VI.

8.9 The Association noted with appreciation that the 5th edition of the *Guide to Hydrological Practices* (WMO-No. 168) was available on a CD-ROM in four languages. It also noted that the draft of the 6th edition of the Guide was under development.

8.10 The session noted that the fifty-sixth session of the Executive Council had requested the Secretariat to promote the project Arctic-HYCOS as an important component of WMO's contribution to the International Polar Year (2007-2008). The project was science-driven and aimed at monitoring freshwater fluxes and pollutants into the Arctic Ocean with the objective of improving climate predictions in the Northern Hemisphere and assessing the pollution of the Arctic coastal areas and the open Arctic Ocean.

8.11 The Association noted also with appreciation the support provided by the governments of France, The Netherlands, and the European Commission to the implementation of different HYCOS projects.

8.12 The Association was informed that WMO had launched a flood forecasting initiative to improve flood forecasting and to enhance cooperation between NMSs and NHSs in delivering timely and more accurate products and services. The initiative was being implemented through the organization of a number of regional workshops and would conclude with a final global conference to be held in 2006. The results of the conference would serve both as inputs to the review of cooperation mechanisms between NMHSs, and to promote the application of NWP products for flood forecasting. The Association recommended that the planned workshop for RA VI should be organized in cooperation with the WGH Subgroup on Flood Forecasting and Warning and with the European Union Expert Circle on Flood Forecasting (EXCIFF).

8.13 The Association was pleased to note the contribution provided by WMO to the World Water Week (Stockholm, Sweden, 20-26 August 2005) and the continuous support to the Conference of the Danubian Countries on Hydrological Forecasts and Hydrological Bases of Water Management.

8.14 The Association noted also that the WMO Secretariat was cooperating with the Sava River Basin riparian countries in developing a project for the development and upgrading of a hydrometeorological information and forecasting system for the Sava River Basin.

8.15 The Association noted progress made in the development of the Global Terrestrial Network – Hydrology (GTN-H) as a "network of networks" of global data centres and information providers for hydrological and relevant meteorological data and information.

8.16 The Association noted that a meeting on Hydrological Sensitivity to Climate Conditions had been held at the Centre for Ecology and Hydrology, Wallingford, United Kingdom, from 2 to 4 December 2003, to prepare a global statistical analysis on the sensitivity of runoff to precipitation. The fourth session of the WCP-Water had been held in the same location in June 2005, and had discussed the project's progress and had undertaken a review of the programme.

8.17 The Association was pleased to note the continuous cooperation with the Global Runoff Data Centre (GRDC) in Koblenz (Germany). It encouraged Members to send regular updates of daily discharged data of their river gauging stations to GRDC, in accordance with WMO Resolutions 21 (Cg-XII) and 25 (Cg-XIII). The

Association was also informed of the launching of the Global Terrestrial Network for river discharge (GTN-R), a GRDC project aiming at improving near real-time data on fresh water fluxes into the oceans. The Association was further informed that the International Groundwater Resources Assessment Centre (IGRAC) based in Utrecht, the Netherlands, had been in operational mode since May 2003. It expressed its appreciation to the Government of The Netherlands for the support provided to it. It was also pleased to learn that the WMO Secretariat had organized ajoint UNESCO-WCRP International Workshop on Applicability of Climate Research and Information for Water Resource Management in Semi-arid and Arid Regions (Cairo, Egypt, 18-20 April 2005). Over 70 international experts from 45 countries had attended the workshop, including 18 experts representing nine countries from the RA VI. Recognizing the importance of groundwater for integrated water resources management, the Association invited Members to cooperate with IGRAC.

8.18 The Association was pleased to learn that the *Guidelines for the Education and Training of Personnel in Meteorology and Operational Hydrology*, Volume II: Hydrology (WMO-No. 258) had been prepared by the Editorial Task Force - Hydrology, and covered the field of integrated water resources management. The volume has been prepared with contributions from hydrological services of various regions, CHy, UNESCO and external experts. The review had been carried out in two steps: (1) by CHy and UNESCO; and (2) two external reviewers. The English version of that Volume had been sent to all Members during the first half of 2004.

8.19 The Association also recognized the importance of intercomparison of discharge measurement instruments and appreciated the offer of the Russian Federation to provide assistance in that area.

8.20 The Association noted that close collaboration had been maintained between WMO and other United Nations organizations dealing with water in the framework of UN-Water and that one of the main activities of UN-Water was now directed towards the preparation of the second World Water Development Report (WWDR) with emphasis on the development of performance indicators. It noted the contribution of WMO to several chapters of the report. The Association also noted the continued collaboration with the United Nations Economic Commission for Europe (UNECE) within the framework of the Convention on the Protection and Use of Transboundary Rivers and International Lakes.

8.21 The Association noted with satisfaction the cooperation established between the WGH, the European Commission Strategic Cooperation Group on Common Implementation of the Water Framework Directive, and the European Environment Agency (EEA). The Association encouraged Members to continue and strengthen cooperation with the European Commission in other fields of common interest such as in the preparation of the groundwater and flood directives, the European Union Action Plan on Risk Management and the European Flood Alert System (EFAS).

8.22 The Association was informed that WMO and the International Strategy for Disaster Reduction (ISDR) had been the lead Secretariats within the United Nations for the global celebration of World Water Day 2004 with 'Water and disasters' as the theme. The emphasis in the awareness campaign was 'be informed and be prepared'. WMO prepared an Information Kit that included a booklet, a poster and fact sheets on the activities of various United Nations agencies in the field of water-related disasters.

8.23 The Association noted with interest the development of the 'International Flood Initiative' (IFI) originally promoted jointly by WMO and UNESCO and later extended to include other United Nations agencies. The initiative would promote an integrated approach to flood management to maximize the long-term benefits of floods and to minimize the hardship, loss of life and damage to goods and assets that resulted from floods.

8.24 The Association was informed that within the framework of UNESCO's International Hydrological Programme (IHP) a virtual European Drought Centre had been established to deal with various aspects of drought. Furthermore, links would be established with the European Union's Water Directors' Initiative to produce a water scarcity report reflecting best practices on drought management.

8.25 The Association was informed that the UN General Assembly by its Resolution A/RES/58/217 adopted on 23 December 2003, had proclaimed the period from 2005 to 2015 as the International Decade for Action, 'Water for Life', commencing on World Water Day, 22 March 2005. The resolution called upon the relevant United Nations bodies, specialized agencies, regional commissions and other organizations of the United Nations system to deliver a coordinated response to the 'Water for Life' Decade for Action. The Association invited Members to provide regional perspectives and inputs for the development of the International Decade for Action.

8.26 The Association was pleased to learn of WMO's participation at the 3rd World Water Forum (WWF3) and the Ministerial Conference on the occasion of WWF3 that had been held in Kyoto, Japan, from 16 to 23 March 2003 and its active role in WWF4 scheduled to be held in Mexico City, Mexico, from 16 to 22 March 2006.

8.27 The Association noted with appreciation the implementation of the Associated Programme on Flood Management (APFM), funded by Japan and the Netherlands. This joint initiative undertaken by WMO and the Global Water Partnership (GWP) aimed to promote the concept of Integrated Flood Management (IFM) and highlight practical steps for putting it into practice. It was informed of the implementation of a pilot project within the framework of APFM involving Bulgaria, the Czech Republic, Lithuania, Poland, Slovakia and Slovenia aimed at identifying gaps and weaknesses in flash flood management practices.

8.28 The Association was informed on progress on the issue of international data exchange and the imple-

mentation of Resolution 25 (Cg-XIII). It noted the results of the questionnaire on the exchange of hydrological data and products that had been circulated to all Members.

8.29 The Association recognized the importance of standardization of data and metadata in hydrology to facilitate the international exchange of hydrological data and information, and agreed that it needed to be taken into account in the development of the WMO Information System (WIS).

8.30 The Association was informed of the launching of the SAF-H (Satellite Application Facility-Hydrology) by EUMETSAT, which would provide satellite-based data on precipitation, snow cover, soil moisture and other hydrological parameters.

9. Education and Training Programme — regional aspects (agenda item 9)

Surveying Members' training needs and providing guidance

9.1 The Association was informed that the results of the quadrennial WMO questionnaire on Members' training requirements were being used as a guide for the overall monitoring of training priorities during the current financial period. It was recognized that additional financial resources would be necessary in order to satisfy all the identified training needs of the developing countries and countries with economies in transition in the Region.

9.2 The Association, noting that only 69 per cent of its Members had responded to the Survey-2002, encouraged Members to be more responsive to the forthcoming Survey-2006, thus efficiently assisting in the regional planning and implementation of ETRP during the fifteenth financial period.

9.3 The Association was informed that the twenty-first session of the EC Panel of Experts on Education and Training, (Antalya, Turkey, 3-7 May 2003) had established an Expert Team on Accreditation and Certification in Meteorological Education and Training (ETAC-MET), with the mandate, amongst others, to clarify certain practical questions raised by some Members in relation to the implementation of the new WMO *Classification of personnel in meteorology and operational hydrology* (WMO-No. 258).

Training events organized/co-sponsored by WMO

9.4 The Association was informed that nearly 20 per cent of the training events organized in the Region with WMO acting as the main organizer or providing partial financial support, were aimed at improving the efficiency and effectiveness of the instructional process itself, particular attention being given to the following objectives: training the trainers; training the training managers; promoting distance learning; updating trainers' science base; stimulating the application of modern pedagogical methods and IT tools in training design and delivery.

9.5 The large majority of participants in these training events had declared their satisfaction with respect to the training delivery and its suitability for their subsequent work.

9.6 The Association expressed its gratitude to all those Members who made available their training facilities and/or experts in order to implement those events, and 30 other WMO-organized/co-sponsored training events addressing specific technical subjects in weather, climate and water, including: weather forecasting; aeronautical meteorology; public weather services; marine meteorology; automated weather observing systems; radar meteorology; climate variability and change; climate information and prediction; drought preparedness; and the use of ECMWF products.

9.7 The Association recognized the importance of enhancing public awareness on weather, water and climate phenomena, and encouraged NMHSs to promote meteorological and hydrological education in schools and to publish popularization articles in local languages.

Sharing training resources and promoting distance learning

9.8 The Association was informed that the sixth meeting of the Standing Conference of Heads of Meteorological Training Institutions (SCHOTI) (Madrid, Spain, 25 April 2003) had elected its new Coordinating Committee (CO-COM), which strongly encouraged the sharing of training resources among relevant institutions.

9.9 Noting that five out of ten members of CO-COM belonged to RA VI, the Association expressed its appreciation to the respective NMSs (Finland, France, Germany, Spain, and United Kingdom) for their voluntary support to SCHOTI activities. The Association also appreciated the kind offer of the Cooperative Organization for Meteorological Education and Training (COMET), in the United States, EUMETSAT and EUMETNET to freely make available some of their training modules.

9.10 The Association noted the recent review of the ETRP Web site and the current initiative towards developing an interface to facilitate online access to worldwide training resources, as well as exchange of meteorological case studies and related documentation between advanced and less advanced training institutions. It encouraged Members possessing relevant expertise and experience in that domain to assist the Secretariat in developing and maintaining that interface.

Regional Meteorological Training Centres

9.11 The Association was informed that the quadrennial Meeting of Directors/Principals of the WMO Regional Meteorological Training Centres (RMTCs) (Madrid, 26 April 2003) had examined, amongst others, the need to strengthen the interaction of RMTCs with advanced training and educational centres. In particular, it was suggested that advanced training institutions from RA VI might assist RMTCs from RA I to enhance their training design and delivery.

9.12 In that respect, the Association appreciated the support provided by EUMETSAT, UK Met Office and

Météo-France to training in the RMTCs of Algeria, Kenya and Niger. It also appreciated the training support offered by other RA VI Members (Finland, Germany, Israel, Italy, Portugal, Russian Federation, Spain and Turkey) to trainees from RA I, and from other regions.

9.13 The Association noted that three RMTCs (Italy, Russian Federation and Turkey) had been externally assessed during 2003-2004, and that all three had been recommended for re-confirmation by the Executive Council as WMO-recognized RMTCs. The external assessment of the fourth WMO RMTC in the region (Israel) was planned for 2006, as recommended by the Executive Council's Panel of Experts.

Awarding and implementing fellowships

9.14 The Association noted with appreciation the measures taken in the Secretariat to enhance the fellowships sub-programme and to improve its effectiveness and transparency. It welcomed the Secretary-General's circular letter to all WMO Members regarding the process of awarding and implementing fellowships. The Association encouraged its Members, particularly those from the eastern and south eastern part of the Region to utilize more effectively the fellowships sub-programme.

9.15 The Association noted with appreciation the generous contributions of VCP donor Members in the Region who had continued to provide VCP fellowships. It appealed to the traditional VCP donor Members to possibly increase their VCP contributions, and solicited other Members in the Region who had not contributed to the VCP fellowships fund to do so. It requested the Secretary-General to continue his efforts to increase the conventional fellowships fund by tapping extrabudgetary resources and by exploring new potential sources of funding for the fellowships sub-programme.

Rapporteur on Education and Training Matters

9.16 Given continued pressing needs by Members for capacity-building and human resources development in meteorology and hydrology, and in view of the need to strengthen the contribution of education and training in meeting those needs, the Association agreed to nominate a Rapporteur on Education and Training Matters and adopted Resolution 18 (XIV-RA VI) to that effect.

10. Technical Cooperation Programme – regional aspects (agenda item 10)

10.1 Technical cooperation activities (agenda item 10.1)

10.1.1 The Association noted that WMO had continued to promote technical cooperation activities in RA VI taking into account the changing context, including policies and procedures of funding agencies, the increased requirements of NMHSs, as well as the areas in which WMO had unique experience and advantages. Several approaches for the mobilization of resources for the Technical Cooperation Programme (TCOP) had been developed, including:

(*a*) Agreements between WMO and the European Commission, the World Bank and development banks;
(*b*) Promotion of trust fund projects;
(*c*) Establishment of systematic contacts with development agencies; and
(*d*) Enhancement of partnerships with the UNDP and other United Nations agencies.

10.1.2 The Association recognized the importance of establishing strategic partnerships and alliances with NMHSs of donor Members, funding institutions, the United Nations system and regional and international organizations, as well as with the private sector, as a strategy in accessing extrabudgetary resources for technical cooperation activities. The Association further recognized the need to strengthen the communication between WMO and NMHSs to develop joint initiatives for sharing resources and avoiding duplication of efforts. It recommended further coordination of international assistance to recipient NMHSs from multilateral and bilateral funding agencies in the preparation and negotiation of project proposals.

10.1.3 The Association recognized the effort being made by WMO to reactivate partnerships with United Nations agencies and other relevant organizations, contribute actively to the formulation and implementation of relevant meteorological, hydrological and environmental aspects of projects and programmes, and to ensure international standards and guidelines. In that respect, the Association recommended paying special attention to the contribution and participation of WMO in the implementation of the Johannesburg Plan of Action of the World Summit on Sustainable Development (WSSD), the United Nations Millennium Declaration, the Mauritius International Meeting to Review Implementation of the Progress of Action for the Sustainable Development of Small Island States (SDSIDS), the World Conference on Disaster Reduction (WCDR) and the Group on Earth Observations (GEO).

10.1.4 The Association noted with satisfaction the efforts made by the Secretary-General towards mobilizing further resources in support of the TCOP. In particular, WMO had concluded a Memorandum of Understanding with the European Commission in December 2003 to foster collaboration in the areas of natural disaster prevention and mitigation, climate change, water resources management, protection of the environment and others. The Association encouraged the enhancement of this type of agreement.

10.1.5 The Association was informed on the outcomes of the fourth and fifth sessions of the Executive Council Advisory Group of Experts on Technical Cooperation (Geneva, 7-8 March 2002 and 9-11 March 2004, respectively), and the recommendations and actions that had led, among others, to the establishment of a mechanism in WMO for more effective coordination and promotion of Secretariat efforts in resource mobilization, the organization of an international symposium on technical cooperation to promote WMO's areas of competence and contributions to socio-economic sectors, and to the support of the WMO

Programme for the LDCs for the period 2004–2005 and the related project briefs.

WMO Programme for the Least Developed Countries

10.1.6 The Association noted that, at its fifty-seventh session, the Executive Council had reviewed the major outcomes of the meeting on the WMO Programme for the LDCs including a strategic action plan and had endorsed the recommendations, in particular:

(*a*) Adopting an integrated but country-specific strategic approach when implementing the Programme;
(*b*) Providing NMHSs in LDCs with the means to enable them to provide a minimum set of products and services to their respective governments and users;
(*c*) Establishing an appropriate structure and funding mechanism for the effective implementation of the Programme considering its cross-cutting nature;
(*d*) Facilitating information flow to the LDCs on how they could take advantage of the various opportunities to enhance resource mobilization; and
(*e*) Mobilizing resources to support the participation of LDCs in training seminars/workshops.

10.1.7 The Association further noted that an implementation plan was being developed based on the strategic action plan and urged its Members to support and actively participate in the WMO Programme for LDCs, both scientifically and by mobilizing resources through their national cooperation agencies or any other funding mechanism.

Resource mobilization activities

10.1.8 The Association took note that WMO had continued with the implementation of the Memoranda of Understanding with the World Bank and with the European Commission to develop joint initiatives and projects in the areas of natural disaster prevention and mitigation, climate change, water resources management and others. In that regard, the Secretary-General had recently led a mission to discuss with the EC Commissioners for Development and Humanitarian Aid and Sciences and Research in Brussels on wider cooperation with the EC. Contact had been established at a working level with the Offices of the Commissioners and an action plan was being developed.

10.1.9 The Association welcomed WMO's continued efforts to assist the NMHSs and governments through coordinated efforts from the Secretariat, in the mobilization of resources for the development of meteorological and hydrological services in support of the economic and social sectors. The Association also noted that several Members had received assistance in the development of new projects in support of national and regional meteorological and hydrological projects.

10.1.10 The Association expressed satisfaction that a number of measures had been taken by the Secretary-General to effect structural and organizational changes in the Secretariat, especially with respect to Regional and Subregional Offices and technical cooperation activities with a view to improving delivery of services to Members and enhancing partnerships with national and regional institutions and international organizations. In that regard, the new Regional and Technical Cooperation Activities for Development (RCD) Department would ensure the smooth and efficient implementation of activities within the framework of the Regional Programme and Technical Cooperation Programme. The new structure was being implemented in a phased manner. The Association noted that the Subregional Office for Europe had initiated technical cooperation activities and had requested the Secretary-General to continue his efforts to strengthen the department with a view to meeting the requirements of Members in the Region in an efficient and cost-effective manner.

Regional projects during the period 2002-2004

10.1.11 The Association noted with satisfaction that a number of regional initiatives had been developed and were either being finalized or were under consideration by respective countries and/or the European donor community. The Association requested the Secretary-General to continue to assist Members in securing the required resources in order to enable the implementation of the project proposals as early as possible.

10.1.12 The Association urged Members, especially their NMHSs, to make special efforts to foster partnerships within countries, e.g., with development agencies, other agencies and institutions.

10.1.13 The Association noted that projects being implemented or under proposal included:

(*a*) Transport corridor between Europe and Asia:
Following the initiative of several European and Asian countries to create a new transport corridor between Europe and Asia (TRACECA), concerned Members of WMO had prepared, with the assistance of the WMO Secretariat, a draft project proposal for the provision of specialized hydrometeorological services to the proposed transport corridor named HYMES-TRACECA. WMO had been requested to assist Members in organizing and carrying out preparatory activities and in mobilizing resources for that project. A booklet entitled *Operational Provision for Hydrometeorological Safety of the Transport Corridor Europe-Caucasus-Asia* (WMO-No. 917) had been published to that effect. In the meantime, a reorganization of the programme was taking place in the European Commission and as a consequence WMO, in the light of the MoU signed between WMO and the European Commission, would have to resubmit the project to the next intergovernmental conference;
(*b*) MSG Central and Eastern Europe:
In 2002, a joint initiative had been taken by WMO and EUMETSAT to provide central and eastern European countries with common ground-receiving equipment for the new products and technology made available by the METEOSAT second generation (MSG) satellites. An international bidding process for the equipment was conducted and a Trust Fund was set

up by WMO for the countries from central and eastern Europe. Following the receipt of funds from Norway for the Trust Fund, three countries (Bosnia and Herzegovina, Latvia and Serbia and Montenegro) were taking delivery of ground-receiving equipment which was being supplied by a company selected jointly by EUMETSAT and WMO. It should be noted that several countries had received or had purchased their own MSG ground-receiving equipment through bilateral arrangements.

(*c*) Integrated Programme on Hydrometeorology and Monitoring Environment in the Caspian Sea Region (CASPAS):
With the participation of Azerbaijan, the Islamic Republic of Iran, Kazakhstan, Russian Federation and Turkmenistan, the CASPAS Programme would provide a cooperation mechanism for the development of a strategy in hydrometeorology and the monitoring of the environment in the Caspian Sea region. The sixth session of the Coordinating Committee on Hydrometeorology and Pollution Monitoring of the Caspian Sea (CASPCOM) (Obninsk, Russian Federation, 3-4 October 2001) decided to conclude a MoU between CASPCOM and WMO, and CASPCOM and the Caspian Environment Programme (CEP). WMO had submitted to the EU, and other interested donors, the Integrated Project on Monitoring and Information System in the Caspian Sea Region (IPM&IS) prepared by CASPCOM and WMO. It was noted that, due to factors beyond the control of WMO and the situation prevailing in the region of the Caspian Sea, no significant improvement had been achieved.

(*d*) Some other projects were in the pipeline for funding purpose, mainly developed by the Subregional Office for Europe (see general summary paragraph 17).

Voluntary Cooperation Programme

10.1.14 The Association reaffirmed the important role of the WMO Voluntary Cooperation Programme (VCP) in the Region. Most Members with economies in transition in RA VI had received assistance from the VCP, which aimed to facilitate their effective participation in the WWW and other scientific and technical programmes of WMO. During the period from 2002 to June 2005, 50 VCP project requests had been submitted by 21 Members of the Association. Forty VCP projects were related to the implementation of the WWW Programme. Seven projects concerned the improvement of the upper-air observing stations; six the improvement of the surface observing stations; 21 the enhancement of telecommunication systems; four the data processing system; and two the satellite receiving systems. Three projects were related to climatological activities; three to agricultural meteorological services; two to public weather services activities; and two to hydrological activities. Thirteen Members had received support for a total of 49 VCP projects that had supplied equipment. Of these projects, 37 were completed and 12 were in the process of being implemented. Five supported projects were aiming at strengthening upper-air observing stations; eight at strengthening surface observing stations; 32 at improving the GTS; two at improving data processing systems; one at strengthening hydrological activities; and one at agricultural meteorology activities. In spite of the support obtained during 2002-2005, 29 valid projects had not received support as of 30 June 2005.

10.1.15 With regard to fellowships, the Secretariat had taken measures to enhance and improve fairness and effectiveness in granting and implementing fellowships. All requests for fellowships had been submitted to the Fellowships Committee for review according to the adopted criteria. For the period 2003-2004, a total of 91.1 person x month of fellowships had been awarded to four Members of RA VI.

10.1.16 The Association was also informed that the fifth session of the EC Advisory Group of Experts on Technical Cooperation held in Geneva from 9 to 11 March 2004, had made recommendations to the fifty-sixth session of the Executive Council on the VCP coordinated programmes, allocations of the VCP(F), and measures to improve the formulation, monitoring and evaluation processes of the VCP projects. The Members of the Association were encouraged to utilize the new forms for submitting VCP requests and for evaluation.

10.2 Subregional Office activities (agenda item 10.2)

10.2.1 The Association reviewed the activities of the Subregional Office for Europe since its thirteenth session. It noted that the Office was continuing to fulfil its functions and responsibilities as an integral part of the Secretariat. It also noted that the Subregional Office was providing effective support to the president and the vice-president and to the four working groups and rapporteurs of the Association. The Association expressed its appreciation to the Secretary-General and the staff of the Subregional Offices for their continued support to RA VI activities during the intersessional period. A comprehensive and detailed report was available under general summary paragraph 17.

10.3 Proposed future activities (agenda item 10.3)

10.3.1 The Association requested the Secretary-General to continue his efforts to strengthen regional and technical cooperation activities to meet the requirements of Members in the Region.

10.3.2 Efforts would be made to mobilize resources to ensure the continuation of projects or for projects being formulated such as TRACECA, MSG Europe, the HYCOS projects and the natural disaster prevention projects.

10.3.3 WMO would continue supporting the implementation of CASPAS, as well as the development of new projects and joint initiatives with the World Bank and other partners.

10.3.4 As recommended by the Executive Council, WMO would develop stronger partnerships with NMHSs

for the development and implementation of joint projects and programmes, for resource mobilization from bilateral and multilateral agencies, and for further collaboration with foundations and NGOs.

11. Natural Disaster Prevention and Mitigation Programme — regional aspects (agenda item 11)

11.1 The Association recalled Resolution 29 (Cg-XIV) by which Fourteenth Congress had decided to initiate a major programme on Natural Disaster Prevention and Mitigation (DPM). It noted that the Secretary-General had taken measures for the implementation of the new programme and established a Steering Committee on Disaster Reduction in March 2004.

11.2 The Association further recalled that the fifty-sixth session of the Executive Council had established the Executive Council Advisory Group on Disaster Prevention and Mitigation as an effective framework for the coordination of natural disaster risk reduction matters and a continuous mechanism to review and advise on those matters on a regular basis.

11.3 The Association noted that the Executive Council had also endorsed the recommendations of the First Meeting of the Executive Council Advisory Group DPM (Geneva, 18-19 March 2005) and had adopted the Revised Implementation Plan of the DPM Programme and the priorities proposed including several high-priority actions at regional level.

11.4 The Association noted the focal points on natural disaster prevention and mitigation that had been nominated by the permanent representatives from Region VI and invited those that had not yet nominated their national focal points to do so as soon as possible. The Association urged the national focal points to coordinate their activities with the WMO DPM Programme and to network at subregional level according to their different requirements and interests. It stressed the need for effective collaboration between the network of focal points and the RA VI Working Group on Natural Disaster Prevention and Mitigation (RA VI WG-DPM).

11.5 The Association noted WMO's significant contributions to the successful preparation and outcome of the World Conference on Disaster Reduction (WCDR). The Association recognized that the benefits of this proactive participation were a result of effective coordination through cross-cutting activities of DPM. The Association acknowledged that the WCDR outcomes reflected in the Hyogo Declaration and Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters, had provided a vehicle to expand international recognition of the importance of hydrometeorological information and services to disaster risk reduction. The Association noted that HFA had called for an integrated, multi-hazard approach to disaster risk reduction, providing five high priority action areas, to:

(*a*) Ensure that disaster risk reduction was a national and local priority with a strong institutional basis for implementation;
(*b*) Identify, assess and monitor disaster risks and enhance early warnings;
(*c*) Use knowledge, innovation and education to build a culture of safety and resilience at all levels;
(*d*) Reduce the underlying risk factors;
(*e*) Strengthen disaster preparedness for effective response at all levels.

11.6 The Association noted that natural disasters were a major consideration for RA VI and acknowledged that WMO, RA VI and NMHSs were in an excellent position to take a leadership role at international, regional and national levels, particularly in the second high priority action area, while also contributing to the other four areas. The Association urged Members to participate actively in the preparation of their national implementation plans in response to HFA. The Association further urged the NMHSs to strengthen their links with national disaster platforms, emergency structures and authorities, and with regional activities related to disaster risk reduction.

11.7 The Association stressed the fact that multi-hazard warning systems should be built in the most effective and efficient way by using existing systems and capabilities. It referred, in that connection, to the maturity and proven effectiveness of WMO global operational warning systems implemented between NMHSs, and highlighted in particular the network of RSMCs specialized in tropical cyclone tracking and forecasting and in emergency response to nuclear accidents. It also stressed the fact that for most other natural hazards there was no single internationally recognized authority or official warning process. The Association recommended the use of the existing 24/7 operational global network of 187 NMHSs as the authoritative coordinated system for the exchange of warnings and advisories for other types of hazards and as points of delivery in each country, in collaboration with other relevant agencies. It agreed to present and promote that goal at the Third Conference on Early Warning (EWC-III, Bonn, Germany, 27-29 March 2006). Noting that a number of issues would have to be addressed within RA VI, the Association requested its WG-DPM to promote that concept within the Region, assess the current requirements and capabilities, propose how to improve and develop the system, and foster links with other relevant organizations, with a view to including non-hydrometeorological hazards and emergencies.

11.8 The Association acknowledged the DPM Programme office actions to execute the Revised DPM Implementation Plan and noted that the DPM Programme was pursing with the highest priority: (i) integration of cross-cutting activities of WMO Programmes to address systematically and sustainably priorities and gaps in DPM in WMO Regions; (ii) facilitation of strategic partnerships; and (iii) hazard mapping and risk assessment capabilities for hydro-meteorological hazards.

11.9 In particular, the Association noted that the DPM Programme, technical commissions, regional associations, and the NMHSs, in close collaboration with

other WMO Programmes, had initiated three major projects. These projects included:

(*a*) Regional-level DPM Assessments – The goal was to systematically identify key hazards and to document capabilities (i.e., strengths and weaknesses), gaps and needs in WMO's core areas of activities related to DPM in all six WMO Regions. In addition to being technical surveys, the surveys would also address:
  (i) How effectively the products and services developed through the WMO regional structures were being integrated into the disaster risk management process for different hazards in the Region;
  (ii) The linkages between WMO regional capacities and risk management structures;
  (iii) Capacity-building and training; and (iv) educational and public outreach programmes at the regional level. The execution and coordination of the regional survey would be carried out through the RA VI WG-DPM. The DPM Programme Office would develop a survey and reporting template for all of the regional associations' working groups on DPM;

(*b*) Country-level DPM Assessments - The goal was to develop country profiles with respect to DPM-related capabilities (i.e., strengths and weaknesses), gaps and needs on WMO's core areas of activities, and how effectively the products and services developed by NMHSs were being integrated into the disaster risk management and emergency response process for hazards in their respective countries. The DPM Programme Office would develop a survey and reporting template. The execution of the survey would be coordinated through DPM Focal Points designated by the PRs;

(*c*) Mapping of DPM activities of WMO Major Programmes - Develop a comprehensive matrix of DPM-related activities for all relevant WMO major programmes to determine scope, synergies, gaps, redundancies and related budgets.

The Association noted that the outcome of (*a*), (*b*) and (c) would be compiled, reviewed, and utilized in order to identify clear goals and priorities for each Region and to develop concrete projects, which could be built on the activities of WMO Programmes using a cross-cutting approach to address those goals in a systematic and sustainable manner. The Association noted that a set of DPM performance measurements would be developed to ensure the effectiveness of the WMO Programmes' cross-cutting activities. The Association stressed the role of the RA VI WG-DPM in those activities, that particularly related to providing feedback on the development of regional survey templates, coordination and completion of the survey, and working with the Secretariat to establish specific priorities and performance measurements for the Region.

11.10 The Association noted that natural disasters presented significant risks to life and socio-economic impacts in Europe. The Association noted the 2002 summer floods in central Europe and the north Caucasian region, the tragic 2003 heat wave in Europe, the 2005 floods in most of Europe including south-eastern Europe, and the devastating droughts in south-western Europe. It also recognized the critical role of NMHSs in disaster prevention and mitigation and noted the scientific lectures and discussions related to these issues (see general summary paragraph 18).

11.11 The Association noted the DPM Programme initiative 'Cataloguing of Hydrometeorological Hazards and their Impacts' to develop a standard methodology for the collection of information on hazardous and damaging hydrometeorological events. The Association noted its critical role in contributing to this activity by providing information for RA VI.

11.12 The Association noted that the DPM Programme, together with relevant partners would be initiating a project entitled Methodologies for Hydrometeorological Hazard Mapping and Risk Assessment, which would identify a portfolio of hazard mapping and risk assessment methodologies for hydrometeorological hazards. The Association urged Members to provide input and share their methodologies and experiences (including best practices), particularly related to hazards that posed most risk in Region VI.

11.13 The Association noted WMO's leading role in:

(*a*) the Global Survey of the Early Warning Systems requested by the Secretary-General of the United Nations in his report to the General Assembly 'In larger freedom: towards development, security and human rights for all', A/59/2005, 21 March 2005;

(*b*) the Third International Early Warning Conference (EWC III) sponsored by Germany, to be held in March 2006. With regard to the latter, the Association acknowledged the support of Germany.

11.14 The Association noted the activity of the European Commission in Disaster Prevention and Mitigation. It also noted that in 2004 the governments of the CIS countries had defined the concept of hydrometeorological security for CIS Member countries. The Association also acknowledged Members' various critical initiatives in the area of disaster risk reduction and emergency management, such as the establishment of, and cooperation on, National Disaster Reduction Platforms and the European Multi-service Meteorological Risk Awareness (EMMA) system, based on *Météo-France*'s Vigilance system. The Association stressed the need to strengthen links between WMO's strategic goals and activities related to disaster prevention and emergency response and the various projects in the Region.

11.15 The Association noted the critical need for WMO's strategic partnerships with other organizations at regional level. It urged the strengthening of the strategic partnership between the hydrometeorological community and the disaster risk management community. The Association stressed the need for new partnerships with other organizations in the Region based on their complementary roles and activities, and their value added towards advancing DPM goals for the

Region. The Association also urged the NMHSs to seek targeted partnerships through participation in the National Disaster Reduction Platforms.

11.16 The Association noted the launch of the DPM Web page (http:www.wmo.int/disasters). It urged Members to provide relevant information on their activities to the Secretariat so that it could be included in a reference Web page being developed for the natural disaster risk management community.

11.17 The Association adopted Resolution 19 (XIV-RA VI), which established a Working Group on Natural Disaster Prevention and Mitigation. The Association requested the Secretary-General to take the necessary measures, within the available budgetary resources, to support the activities of that group.

11.18 The Association noted the activities being developed by the DPM Programme and urged the Region VI Working Group on DPM, in consultation with the president of RA VI and the WMO Secretariat, to take adequate action to prepare a regional plan to support the implementation of DPM Programme in the Region.

12. WMO Space Programme – regional aspects (agenda item 12)

12.1 The Association was informed that Fourteenth Congress had established a new major cross-cutting Programme, the WMO Space Programme (WMOSP), in response to the momentous expansion in the availability of satellite data, products and services, and in recognition of the increase in responsibilities for WMO. Fourteenth Congress had agreed to establish a WMO Space Programme as a matter of priority and had felt that the scope, goals and objectives of the new Programme should respond to the tremendous growth in the utilization of environmental satellite data, products and services within the expanded space-based component of the GOS that now included appropriate R&D environmental satellite missions. Fourteenth Congress had also supported the WMO Space Programme Long-term Strategy reviewed at the third session of the Consultative Meetings on High-level Policy on Satellite Matters. It had agreed that the WMO Space Programme Long-term Strategy provided an excellent balance to the 6LTP and the programme and budget for 2004-2007. Thus, Fourteenth Congress had believed it important to establish the new as a major cross-cutting Programme and had adopted Resolution 5 (Cg-XIV) — WMO Space Programme.

12.2 The Association noted that Fourteenth Congress had agreed that the main thrust of the WMO Space Programme Long-term Strategy should be:

'To make an increasing contribution to the development of the WWW GOS, as well as to the other WMO-supported Programmes and associated observing systems (such as AREP's GAW, GCOS, WCRP, HWR's WHYCOS and JCOMM's implementation of GOOS) through the provision of continuously improved data, products and services, from both operational and R&D satellites, and to facilitate and promote their wider availability and meaningful utilization around the globe.'

12.3 The Association noted further that the main elements of the WMO Space Programme Long-term Strategy had been agreed as follows:

(*a*) Increased involvement of space agencies contributing to, or with the potential to contribute to, the space-based component of the GOS;

(*b*) Promotion of a wider awareness of the availability and utilization of data, products - and their importance at levels 1, 2, 3 or 4 - and services, including those from R&D satellites;

(*c*) Considerably more attention to be paid to the crucial problems connected with the assimilation of R&D and new operational data streams in nowcasting, numerical weather prediction systems, reanalysis projects, monitoring climate change, chemical composition of the atmosphere, as well as the dominance of satellite data in some cases;

(*d*) Closer and more effective cooperation with relevant international bodies;

(*e*) Additional and continuing emphasis on education and training;

(*f*) Facilitation of the transition from research to operational systems;

(*g*) Improved integration of the space component of the various observing systems throughout WMO Programmes and WMO-supported Programmes;

(*h*) Increased cooperation amongst WMO Members to develop common basic tools for utilization of research, development and operational remote sensing systems.

12.4 The Association also noted that Fourteenth Congress had considered the progress and results from the sessions of the Consultative Meetings on High-level Policy on Satellite Matters and had recalled that it had agreed to build a new and closer partnership, under the auspices of WMO, between the meteorological and hydrological services and environmental satellite communities. It had agreed that a mechanism for such discussions should be provided through the convening of Consultative Meetings on High-level Policy on Satellite Matters. Fourteenth Congress had been convinced that the newly-established dialogue between WMO and the environmental satellite communities in the sessions of the Consultative Meetings had matured rapidly to the great benefit of all and that they should be continued and institutionalized. Thus, Fourteenth Congress had considered it appropriate to institutionalize the sessions as WMO Consultative Meetings on High-level Policy on Satellite Matters in order to establish more formally the dialogue and participation of environmental satellite agencies in WMO matters. It had urged close cooperation with the IOC and other related international organizations to ensure a coordinated and integrated approach to space-based Earth observations.

12.5 Fourteenth Congress had been unanimous that the WMO user community should be represented at the highest level at the sessions and that the space agencies should also be represented by their Directors. Future sessions of the Consultative Meetings on High-level Policy on Satellite Matters should be chaired by the

President of WMO as had been the case for the first three sessions. The Consultative Meetings would continue to provide advice and guidance on policy-related matters and would maintain a high-level overview of the WMO Space Programme. Fourteenth Congress had agreed that CBS should continue the lead role in full consultation with the other technical commissions for the new WMO Space Programme. Thus, Fourteenth Congress had adopted Resolution 6 (Cg-XIV) to establish the WMO Consultative Meetings on High-level Policy on Satellite Matters.

WMO Space Programme Implementation Plan

12.6 The Association noted that the WMO Space Programme Implementation Plan for 2004-2007 as contained in Section 4 and Annex III to the report of the fourth session of the WMO Consultative Meetings on High-level Policy on Satellite Matters (CM-4) had been approved by the fifty-sixth session of the WMO Executive Council and that the Implementation Plan provided further details to the WMO Space Programme Long-term Strategy as approved in the 6LTP by Fourteenth Congress.

12.7 The Association agreed that it would assign a rapporteur to work with the WMO Space Programme for the implementation of regional aspects of the WMO Space Programme Implementation Plan and, in particular, regional Advanced Dissemination Methods (ADM) within the context of the planned Integrated Global Data Dissemination Service (IGDDS). In that regard, it appointed a Rapporteur for the WMO Space Programme with terms of reference as contained in Resolution 20 (XIV-RA VI).

12.8 The Association agreed that the WMO, through its Space Programme, had acted as a catalyst in greatly improving the utilization of satellite data and products. The Virtual Laboratory (VL) for Education and Training in Satellite Meteorology had already made a considerable impact through its 'Centre of Excellence'. The Association was pleased to see the integration of the new R&D constellation into education and training activities. It also noted that the WMO Space Programme Long-term Strategy and associated Implementation Plan provided for increased utilization of the VL to the benefit of WMO Members, especially as regards the exploitation of R&D data, products and services, as well as those from new and existing operational meteorological satellite systems.

13. Information and Public Affairs Programme — regional aspects (agenda item 13)

13.1 The Association recalled that by adopting Resolution 23 (Cg-XIV) — Information and Public Affairs Programme, Fourteenth Congress had not only underlined the need for a WMO Global Communication Strategy to guide and enhance the process of making NMHSs and WMO more visible and better appreciated but also the importance of communications in mitigating the devastating impact of extreme weather and climate events.

13.2 The Association welcomed the WMO Global Communication Strategy comprising five basic elements:

(*a*) Projecting a unified and consolidated image of WMO and NMHSs;
(*b*) Constituency-building both at national and regional levels;
(*c*) Spreading key messages giving a local voice to a global undertaking and vision;
(*d*) Fostering strategic alliances with the media; and
(*e*) Promoting a communication culture through which to demonstrate the high relevance of WMO and NMHSs to the daily lives of all citizens of the world.

In that context, the Association noted with appreciation the increased interaction between the WMO Communications and Public Affairs Office (CPA) and national Information and Public Affairs (IPA) Focal Points and Members' electronic access to the quarterly WMO press review. The Association encouraged its Members to provide their IPA Focal Points with the necessary support to discharge their responsibilities effectively. In light of the invitation by Fourteenth Congress to strengthen regional public outreach activities, the Association called upon its Members to consider designating a regional IPA Focal Point who could work for a short period with the Communications and Public Affairs Office at the WMO Headquarters to launch regionally targeted outreach activities. The Focal Point would be the team leader of a core group of IPA Focal Points of NMHSs, which would assist the Secretariat in promoting the image of WMO and NMHSs at regional level. It also welcomed the invitation addressed to United Nations Offices in the field for enhanced interaction with NMHSs.

13.3 The Association welcomed the initiative to consult Members on WMO publications and expressed great satisfaction with the revamped *Bulletin* and *MeteoWorld*. These new products were available in printed versions and online. The Association also welcomed the online 'News' entry and invited its Members to contribute up-to-date information about their activities of interest to the general public.

13.4 The Association took note of the numerous press releases and, 'Info Notes', issued on specific WMO topics and activities related to weather, climate and water. It requested the Secretary-General to pursue efforts to keep the media fully briefed on major issues involving WMO and the NMHSs.

13.5 The Association took note of the increase in visits by the public to WMO Headquarters, notably by students on study tours of universities and academic institutions from the Region.

13.6 The Association encouraged its Members to translate the cartoon entitled 'We care for our climate', into local languages and to widely disseminate it.

13.7 In response to Resolution 23 (Cg-XIV), the Association invited its Members to ensure mutual assistance and support in matters related to public

information and communication, including partnerships and constituency-building and resource mobilization and closer cooperation with the media, non-governmental organizations and advocacy groups, academic circles, parliamentarians, schools, universities, national meteorological and hydrological societies, the private sector and corporate foundations, and other civil society institutions and public figures.

13.8 The Association recalled the request by Congress that the best possible use of available extra-budgetary resources be made to strengthen the IPA Programme. It further noted with appreciation private sector sponsorship of WMO greeting cards and NMHSs' electronic access to the cards which had enabled them to add their logos and use them.

13.9 The Association requested the Secretary-General to ensure that the IPA Programme continued to take advantage of available technologies for timely transmission and easy access to media and public information materials issued by WMO and NMHSs. It welcomed the continued development of the News Centre at the WMO Web site and the actions taken to establish a linkage between WMO's Web site and those of the NMHSs. The Association requested Members to take steps to set up on the home pages of their Web sites an entry on WMO identifying the service as part of a world system and showing the public how the NMHSs work with the WMO. The Association encouraged its Members to make use of the 'News from WMO Members', segment of the Online News Centre. Furthermore, it welcomed NMHSs' electronic access to artwork for major events, including World Meteorological Day.

13.10 The Association welcomed WMO's outreach activities for radio and television networks and communication professionals. WMO had also co-sponsored the first *Forum International de la Météo* sponsored by *Société Météorologique de France*. It requested the Secretary-General to undertake further training activities for NMHSs aimed at improving their presentation and communication skills.

13.11 The Association noted with appreciation the comprehensive public information kit for World Water Day (WWD) 2004 on the theme of 'Water and Disasters', which had been developed and disseminated worldwide by WMO and which, jointly with ISDR, was the lead agency within the United Nations system for the global public information campaign about WWD. A Web site and e-mail address for WWD 2004 had been set up by WMO. The Association welcomed the public information products disseminated to all Members in support of national plans for the celebration of World Meteorological Day 2004 (WMD 2004) on the theme of 'Weather, Climate and Water in the Information Age' and of WMD 2005 on the theme of 'Weather, Climate and Water and Sustainable Development'. The Association requested the Secretary-General to arrange for the timely transmission of WMO information materials to NMHSs, in order to allow for timely outreach to the public.

13.12 The Association requested the Secretary-General to arrange for the participation of the Secretariat in relevant international exhibitions in order to promote the visibility of WMO and NMHSs. It welcomed the information campaigns that had been set up by the IPA Programme on the occasion of major events, such as the 150th Anniversary of International Cooperation in Meteorology (Brussels, 17-18 November 2003); the Space Technology for Human Development Exhibition (New York, United States, 11-22 October 2004); the UNFCCC COP-10; the International Meeting to Review the Implementation of the Programme of Action for the Sustainable Development of Small Island Developing States (SIDS) (Port Louis, Mauritius, 10-14 January 2005); the WCDR (Kobe, 18-22 January 2005) and the European Earth and Space Week (Brussels, 12-20 February 2005). Those campaigns had included press conferences, information kits, specific media products and exhibitions. It noted with appreciation that the activities of WMO and its Members had been given visibility also in the United Nations Pavilion at EXPO 2005 in Japan.

13.13 The Association saw great benefit in the Public Service Announcements that had been aired by CNNI, at the initiative of WMO, to enhance visibility of the relevance of the activities of NMHSs. In addition, a film entitled 'The other side of Paradise', (12 minutes, English) had been produced for television from WMO's contribution to the sustainable development of SIDS. It had also been shown to participants in the SIDS and WCDR meetings. The film had been chosen as an exhibit in 'Stories from the Field', the First United Nations Documentary Film Festival.

13.14 The Association welcomed progress made in the branding of the Organization and the fact that the subtitle 'Weather, Climate and Water' featured prominently on all official documentation, correspondence and publications as had been requested by Fourteenth Congress.

13.15 The Association called upon Members to take appropriate measures to support the IPA Programme, to develop an active public information programme at the national and regional levels and to implement the WMO Global Communication Strategy, giving a local voice to a global vision and make available to the Secretariat relevant material produced at national level.

13.16 The Association noted with satisfaction the efforts of the Subregional Office for Europe as an information focal point in the WMO Secretariat for the Region. In order to enhance WMO's IPA Programme in the Region, it requested the Subregional Office to further support RA VI Members' efforts to promote public information activities.

14. LONG-TERM PLANNING — REGIONAL ASPECTS (agenda item 14)

GENERAL

14.1 The Association recalled the importance given to WMO long-term planning by Fourteenth Congress.

14.2 The Association agreed on the importance of identifying what WMO should be aspiring to as a basis for WMO long-term planning, particularly in connec-

tion with its leadership role. It also agreed on the use of the Sixth WMO Long-term Plan (6LTP) framework (vision, desired outcomes, strategies and goals) as the basis for future LTPs. The Association further agreed that information about the issues that concerned Members would help in formulating an effective strategy on how to address those concerns. For the Region, those included management of scientific developments, mitigation of natural disasters, improvement of forecasts, warnings and risks assessments and sustainable use of natural resources.

14.3 The Association agreed that it was important to take into consideration the effects of long-term planning on developments in the Region. Those included the adoption of the EU Regulation on the Single European Sky, INSPIRE, GMES, Water Framework Directive and Action Programme on Flood Risk Management as well as the intergovernmental agreements concluded on hydrometeorological networks in hydrometeorological security by the CIS countries.

14.4 Support to policy formulation and implementation by WMO (and NMHSs) in relation to natural disasters, climate, water and other sectors, such as aviation, agriculture, health and planning, were recognized by the Association as also needing further improvement. In addressing the essential, though difficult, challenge of how RA VI, and NMHSs could be more relevant to policy formulation and implementation in areas which fell within their competence, the Association underscored the importance of developing programme activities that would demonstrate and propagate the involvement of NMHSs in those issues.

14.5 The Association agreed on the importance of ensuring better appreciation of the socio-economic value of the NMHSs' products, and of the need to measure the value of the impact of what WMO does as an Organization. It was also underscored that it would be necessary for WMO and NMHSs to undertake studies on the economic value of meteorological and related products to help secure better recognition of, and more adequate resources for, WMO and NMHSs.

14.6 Given the need to ensure the promotion and coordination of national and regional studies on socio-economic benefits, the Association urged that appropriate support be given to concerned countries or groups of countries through bilateral and multilateral cooperation.

The long-term planning process

14.7 The Association reaffirmed that the WMO long-term planning process, with its refinements over the years, had served the Organization in good stead. The purposes and characteristics identified for the process remain essentially valid. The Association considered that the WMO Long-term Plans were of use to its Members and were utilized in the development of regional and national strategic plans.

14.8 The Association recognized the various changes relating to national, regional and global issues. It agreed that consideration should be given to the significant opportunities that were ahead of WMO and the major challenges to be met in dealing with those opportunities, including the challenges posed by globalization, the increasing wave of privatization, rapid development in information technology and environmental degradation, and issues relating to the 2000 Millennium Development Goals (MDGs) and the Johannesburg Plan of Implementation of the 2002 WSSD.

Sixth WMO Long-term Plan

14.9 The Association noted the adoption of the 6LTP, covering the period 2004-2011, by Fourteenth Congress. It further noted that regional associations, among others, had been requested to adhere to the policies and strategies set forth in the Plan and to organize their activities so as to realize the WMO vision, desired outcomes, strategies and associated goals as described in the Plan, as well as to achieve the overall and main long-term objectives associated with the WMO Programmes contained therein.

14.10 The Association expressed its appreciation for the publication of the 6LTP and a separate summary for decision makers which had identified the results expected and how those would be realized. It noted that governments would better understand the way in which WMO and Members' NMHSs worked and their contributions, thus helping them to obtain enhanced financial and other support.

14.11 The Association agreed on the importance of ensuring the appropriate implementation of the 6LTP, as well as the related monitoring and evaluation of implementation. The Association underscored the importance of identifying clear objectives and indicators to facilitate the monitoring of the implementation of the plans and enable corrective actions to be taken, as needed. The Association requested its president to ensure the provision of the relevant contributions expected from RA VI in the evaluation process.

14.12 The Association considered that, in the implementation of the 6LTP, it was important to bear in mind that there were diverse interests and needs to be addressed by WMO and NMHSs and that the operating environment continued to change as well. In that regard, the implementation of the 6LTP should be adapted to these changes. The Association urged the active participation of its Members, specially their NMHSs, in the implementation of the 6LTP and the related monitoring and evaluation of its implementation.

14.13 The Association noted that reports to future sessions of Executive Council (particularly by presidents of regional associations and technical commissions, as well as the Secretary-General) should address the way different programmes were contributing to the implementation of the LTP and should confirm whether the implementation of the 6LTP in that particular area was on track or not. The report should also dwell on the programmes' contribution to the realization of the six WMO desired outcomes and the nine strategies (with

their associated goals) contained in the 6LTP. The Association agreed that a similar approach should be taken into account in the preparation of future sessions of RA VI.

14.14 The Association also noted that the 6LTP and its relevance had been taken into account in documentation and communications pertinent to more recent developments, such as like the GEOSS, the WMOSP and the DPM Programme as well as initiatives relating to the December 2004 earthquake and tsunami disaster.

14.15 The Association noted that the fifty-seventh session of the Executive Council had agreed that the evaluation of the 6LTP should be carried out primarily in terms of the realization of the WMO strategies. In that connection, the Council had requested the consideration of the feasibility of some form of external evaluation focusing on the realization of WMO's strategies on services provision (strategies 1 and 2).

Future programme structure

14.16 The Association recalled that the Executive Council had recognized the need to link the WMO Programme structure to the WMO strategies in the LTP and had underscored the importance of highlighting the relevant needs of, and actions for, LDCs in the future programme structure.

14.17 The Association also agreed that cross-cutting activities such as the WMOSP and the DPM Programme merited more in-depth consideration in the LTP process. In view of the increasing importance of cross-cutting issues, the WMO Programme structure might need to be modified in the future. That also related to developments on the further consolidation of WMO activities such as those on the integrated observing system (including the GEO) and the FWIS. The Association noted that the GEO Secretariat was currently being hosted by WMO. In that regard, the Association considered that WMO should continue to play a leadership role in the GEO and work towards greater involvement of NMHSs in its implementation. the Association emphasized the importance of aligning the future WMO Programme structure to the LTP strategies. It urged that serious consideration be given to a new approach to programme structure, with greater emphasis on cross-cutting topics and possibly moving away from the traditional or historical structure.

Preparation of the Seventh WMO Long-term Plan

14.18 The Association recalled that Fourteenth Congress had decided that the Seventh WMO Long-term Plan (7LTP) should be prepared, and in so doing, had requested the regional associations:

(*a*) To provide a forum for consideration of the Plan and, in particular, to provide an integrated view of their respective activities and priorities within the context of the 7LTP, including through regional analyses and assessments; and

(*b*) To coordinate, as necessary, national contributions to Plan's regional projects.

14.19 The Association noted that Fourteenth Congress had agreed that the 7LTP should build on the WMO vision, the desired outcomes as well as on strategies and associated goals, to be realized through the major WMO Programmes, bearing in mind the purposes of WMO, which were reflected in the WMO Convention and the evolving role of the Organization. At the same time, the planning process should be simple and flexible to ensure an effective response to any new challenges and needs that might arise in the rapidly changing world.

14.20 The Association noted that the Executive Council had agreed that in the preparation of the 7LTP, the following issues should be taken into account, among others:

(*a*) Protection of life and property against natural disasters;

(*b*) Poverty alleviation;

(*c*) Safeguarding the environment;

(*d*) Enhancing the economic and social well-being of various sectors of society in areas such as food security, water resources, energy, health, transport, and tourism;

(*e*) Policy-making and meeting international commitments in pertinent areas through the provision of required information, assessments and advice;

(*f*) Assuring the sustainability of the scientific leadership of the Organization by ensuring increasing attention to the further development of the WMO core scientific programmes, as well as by strengthening relationships with the appropriate research communities;

(*g*) Development of strategic alliances within the United Nation system in the areas of weather, climate and water;

(*h*) Consideration of ways of strengthening partnerships with the private sector, academia, media and non-governmental organizations (NGOs) in the work of the Organization;

(*i*) Proactively addressing emerging issues with the aim of increasing the general responsiveness of the Organization;

(*j*) Development of innovative ways of building the capacity of operators and potential users of the meteorological, hydrological and related infrastructure and facilities, particularly enhancing those in least developed countries, as well as the products and services deriving from these initiatives;

(*k*) Improvement of WMO visibility, communication and transparency; and

(*l*) Increased effectiveness and efficiency of WMO's mode of operation.

14.21 The Association agreed that the following trends, needs and developments should be taken into account in the preparation of the 7LTP:

(*a*) Increasing diversification of economies;

(*b*) Developments in science and technology;

(*c*) Responses to climate change;

(*d*) Need for relevant investments in developing countries and in those countries whose economies were in transition; and

(*e*) Need for capacity-building and bridging the gap.

14.22 It also agreed that the 7LTP should also take into consideration the countries' concerns and recommendations as reflected in the 2000 Millennium Development Goals, the Johannesburg Plan of Implementation of the 2002 of the WSSD and related events such as the WCDR and World Water Forums.

14.23 The Association emphasized the importance of the social and economic benefits of meteorological and hydrological services, and the need to incorporate relevant results of selected pertinent studies in the preparation of the 7LTP.

14.24 The Association acknowledged the importance of close linkages between the Plan and the resources needed, or that may be available, for the realization of its various elements, and of the need to incorporate improved performance indicators to assist in the eventual monitoring and evaluation of the Plan. It recognized that the LTP should drive the activities of the Organization and therefore WMO Programmes should be properly resourced and aligned with the Plan to ensure its effective implementation and achievement of the desired outcomes.

14.25 The Association agreed that from the global perspective, priorities should be given to poverty alleviation, rapid changes in information technology, increasing competitiveness among stakeholders in a growing market economy, changes in science and technology, and research needs to accommodate various challenges.

14.26 In terms of its regional priorities, the Association considered the following areas of importance:

(*a*) Building a robust and integrated observing system for weather, climate and water;
(*b*) Development of the Region's capacity to improve weather prediction over all timescales as well as relevant risks assessments for the general public and for special user groups;
(*c*) Reinforcement of the Region's basic climatological advisory services;
(*d*) Reducing the technology gap, including training and transfer of technology from developed to developing countries in the southern part of the Region;
(*e*) Mesoscale forecasting;
(*f*) Cooperation on socio-economic valuation of NMHSs;
(*g*) Enhanced international and regional cooperation;
(*h*) Quality management relating to data, products, services and technology.

RA VI Strategic Plan

14.27 Consistent with the WMO long-term planning system, the Association also discussed the development of the RA VI Strategic Plan and Action Plan (see general summary item 16.1). The Association underscored the importance of a strong linkage between those regional plans and the overall WMO Plan.

14.28 In that connection, the Association noted that the Technical Conference on International Cooperation in Weather, Climate and Water Issues in Regional Association VI (Europe), Challenges and Opportunities, which had preceded its session had intended to contribute to the formulation of the RA VI Strategic Plan and that the conference had been structured to take into account the strategies identified in the 6LTP.

14.29 The regional plans reflected the Association's consideration of trends and developments as well as areas of particular concern and relevance to be addressed by the Region. The regional plans indicated the Association's views relating to the long-term planning process pertinent to the Region that would guide its Members. They would also serve as the Association's contribution to the WMO long-term planning process and could be part of a set of best practices that could be adapted by other regions and the Organization as a whole.

15. Emerging issues and specific challenges (agenda item 15)

15.1 Evolving role of WMO (agenda item 15.1)

15.1.1 The Association noted that the fifty-sixth session of the Executive Council, following consideration by Fourteenth Congress, had discussed that item and touched on the following areas of concern:

(*a*) WMO and its environment;
(*b*) WMO responsibilities;
(*c*) WMO Convention;
(*d*) Mode of operation;
(*e*) WMO structure.

15.1.2 The Association recalled that the Executive Council had recognized the importance and urgency of developing a strategy on how to address the various issues of concern that had been raised, particularly relating to WMO's leadership role and rendering it more responsive, proactive and relevant. There was also a need to ensure greater political awareness of its role and contribution in issues of concern to the nations it served, such as natural disasters, climate change and management of water resources. Parallel consideration at the national level with respect to NMHSs should also be undertaken. In that regard, the Association agreed that WMO should continue to be more responsive, proactive and relevant, especially through a management process that enabled proposed activities to be turned into real progress, for example, through the use of a regional action plan. The Association also agreed that WMO should continue to promote its role and work with relevant organizations, such as other Unite Nations agencies and the European Commission, to ensure the best use of the WMO infrastructure in meeting the needs and requirements of global initiatives, such as the development of a global multi-hazard warning system, among others. The Association urged its Members to contribute to achieving those initiatives, particularly through their NMHSs, which should also seek to be responsive, proactive and relevant.

15.1.3 The Association noted that there was a need for a clear and proactive WMO response to global concerns as expressed in the MDGs adopted by the

United Nations General Assembly in 2000 and the Johannesburg Plan of Implementation adopted by the WSSD in 2002. Those concerns included poverty alleviation, natural disasters mitigation, climate change, and management of water resources needs. Account should also be taken of recent developments and initiatives, such as on the GEO initiative and the EU's GMES. In the case of the Region, the Association agreed that consideration should be given to the greater involvement of NMHSs in the framework of GEO. It was noted that it would be necessary to foster cooperation among NMHSs in the Region as well as with those in other Regions, particularly within the framework of rendering support to developing countries and those whose economies were in transition.

15.1.4 The Association noted that the Executive Council had agreed that, in the light of the report of the EC Ad hoc Group on the Evolving Role of WMO, including the table of issues for consideration prepared by that group and its deliberation on that subject, there was sufficient material to enable action to be taken. It was recognized that WMO needed to evolve with urgency, but carefully and sensitively, to respond to Members' changing needs and expectations, including their expectations for an agreed WMO strategy and strong leadership across a wide range of Earth system science and service issues in the present rapidly changing world.

15.1.5 The Association recalled that the Executive Council had also agreed that WMO should be a more agile Organization conducive to action, and that key elements of such an Organization included mechanisms which:

(*a*) Better organized and tracked performance of WMO around cross-cutting issues;
(*b*) Addressed how WMO' could mobilize its programmes, technical commissions, regional associations, and relationships with other organizations to have a coherent approach on key issues and societal needs;
(*c*) Defined and clarified the unique role of WMO now and how that role should evolve in the future;
(*d*) Regularly reviewed progress towards long-term objectives;
(*e*) Adjusted management approaches to meet those objectives;
(*f*) Ensured early implementation of changes agreed.

15.1.6 Furthermore, the Association stressed the importance of further integration within WMO, and the need to build/strengthen strategic alliances with United Nations bodies, in particular on cross-cutting issues, and to enhance communication strategies.

15.1.7 The Association called for WMO's role in providing advice to decision makers and the public to be enhanced. It requested that the provision of weather, climate and water advice to decision makers and the public, and the education of decision makers and the public in weather, water and climate information, should form an integral part of the scientific and technical programmes of WMO.

15.1.8 With regard to the mode of operation, it was felt that this was an area where there was greatest feasibility for significant progress, particularly through improved ways of addressing cross-cutting issues, including the use of matrix management, and various measurements that had been proposed for achieving more effective and efficient operation of the constituent bodies. The Association considered that its own mode of operation relating to its sessions and the intersessional activities should be reviewed and improved and called upon its Members to contribute to that process. In that connection, the Association considered that the preparation of the Regional Strategic Plan and Action Plan was an important step. Moreover, in light of those plans, the Association expected to make effective progress during the intersessional period. It underscored the importance of translating those plans into achievements.

15.1.9 Consideration should also be given to how best Members, constituent bodies and the Secretariat could coordinate better in the provision of relevant information, including to the general public and the media, issues of interest such as prevention and mitigation of natural disasters, climate change and management of water resources.

15.1.10 The Association noted that the Executive Council had decided to re-establish an EC Task Team to Explore and Assess the Possible Changes to the WMO Convention (Resolution 19 (EC-LVII)) and to establish an EC Working Group on the Evolution of NMHSs and WMO (Resolution 21 (EC-LVII)). In connection with the work of those two bodies, it was suggested that the relevant views of the Association as reflected in the present session be taken into account.

15.1.11 The Association expressed its appreciation to the chairperson of the EC Task Team for having explored and assessed the possible changes to the WMO Convention. The Association supported the task team's recommendation to introduce a new preamble to the Convention to clarify the scope of the Organization and to reflect developments over the past 50 years, such as climate issues, natural disaster prevention and mitigation, contribution to sustainable development, and others. In that regard, it noted that the Geneva Declaration might be a good starting point for drafting a new preamble because the Declaration had been adopted unanimously by Thirteenth Congress in 1999. The Association noted that, if agreed, a new preamble could be a means of focusing the Organization while introducing the relevant developments, terms and key ideas into the Convention.

15.1.12 The Association considered that the adoption of protocols was an option and Members would have to decide on the scope and implications of each protocol. It underscored the importance of ensuring that the protocols eventually benefited all Members. The Association suggested that consideration be given to the development of a protocol on global observing systems for possible adoption at Fifteenth Congress. Such a protocol would facilitate the provision of support - political, financial and others - to the work of WMO and NMHSs. This would be of particular significance in the

light of recent disasters and the GEO initiative.

15.1.13 The Association affirmed that in the related discussions, due account should be taken of the different levels of development of various Members and their NMHSs.

15.1.14 In view of the above, the Association urged its Members to contribute to the relevant discussions as they participated in the various WMO programme activities. It requested its president to ensure that appropriate views from Region were taken into account in the pertinent processes.

15.2 Role and operation of NMHSs (agenda item 15.2)

General

15.2.1 The Association recalled that Fourteenth Congress had had extensive discussions on the role and operation of NMHSs, including on:

(*a*) Findings from the questionnaire on the role and operation of National Meteorological Services (NMSs);
(*b*) Economic framework and funding issues;
(*c*) Legal instruments;
(*d*) Aeronautical meteorological services;
(*e*) Regional cooperation;
(*f*) WMO standards for weather forecasts;
(*g*) Quality management;
(*h*) WMO statement on weather and climate forecasting;
(*i*) Mechanisms for strengthening NMSs;
(*j*) Involvement of the media, the private sector and academia;
(*k*) Cooperation with other international organizations;
(*l*) Definition of commonly used terms; and
(*m*) Role and operation of National Hydrological Services (NHSs).

15.2.2 The Association noted that the Executive Council had provided guidelines on the role and operation of NMHSs and that on the basis of that guidance, Fourteenth Congress had adopted Resolution 28 (Cg-XIV) — Role and Operation of National Meteorological and Hydrological Services, which had invited Members to take relevant action to enhance the role and operation of NMHSs. The Association considered that an update of the EC Statement on the Role and Operation of NMHSs should be considered.

15.2.3 The Association noted that Fourteenth Congress had requested that the Executive Council keep that matter under review, and, in turn, the Executive Council had established its Advisory Group on the Role and Operation of National Meteorological and Hydrological Services to assist it in that area. Subsequently, the group had been merged with the EC Action Group for an Enhanced WMO to become the EC Working Group on the Evolution of NMHSs and WMO. The Association suggested that the group should address topics relevant to the Region such as the effectiveness and visibility of NMHSs, particularly in connection with issues of interest to the Region such as SES, regional cooperation, management of water resources and natural disaster prevention and mitigation.

15.2.4 The Association noted that the first session of the Advisory Group had been held in Geneva, from 14 to 18 March 2005, at which a number of issues had been discussed and recommendations made that had implications on the role and operation of NMHSs.

15.2.5 The Association recognized that the role and operation of NMHSs were intimately linked to many other issues of major interest to WMO and NMHSs. It was also recognized that such links should be carefully considered and should help WMO, its Members and their NMHSs to strengthen complementarity and strategic alliances as well as to meet the major challenges and commitments facing the Organization. Thus, the Association considered that the particular issues of interest to the Region were:

(*a*) Strengthening the activities of WMO and NMHSs to work with partners (such as the civil defense/disaster preparedness community) in dealing with natural disasters and poverty;
(*b*) Closer partnership with the EU and other regional organizations on early warning systems;
(*c*) Integration of NMHSs' contribution to sustainable development;
(*d*) Bridging the gap in the level of services among NMHSs through capacity-building of human resources and institutional development;
(*e*) Promotion of cooperation with NMHSs in other Regions;

15.2.6 The Association noted that the fifty-seventh session the Executive Council had addressed the following five major issues:

(*a*) Leadership role, contributions and visibility of NMHSs and WMO;
(*b*) Partnership and cooperation;
(*c*) Economic and social value of NMHSs;
(*d*) Capacity-building and modernization;
(*e*) Resource mobilization.

Leadership and partnership

15.2.7 The Association underscored the linkage between the leadership role, contribution and visibility of NMHSs at the national level, on the one hand, and of WMO at the international level, on the other. The NMHSs should be the official voice in issuing weather warnings for public safety at the national level while WMO served as the authoritative voice in the United Nations system on matters relating to weather, climate and water. Their leadership roles stemmed from their respective core competences which should continue to be enhanced.

15.2.8 While maintaining leadership in the relevant areas, partnerships should also be a key characteristic of the work of NMHSs and WMO, which could provide opportunities that might otherwise not be available to them. The Association encouraged Members to facilitate partnerships between NMHSs and relevant institutions across countries in the Region as well as within their countries, such as with other government agencies.

15.2.9 The Association agreed that both NMHS and WMO visibility could be further enhanced by working more closely with the media and ensuring that appropriate communications with them were established and/or maintained.

15.2.10 The Association considered that the involvement of the media, the private sector and academia continued to be of particular interest. It recalled that Fourteenth Congress had noted that there was a growing recognition of the importance of cooperation with the media, the private sector, and academia and of the need to consider the opportunities that such cooperation could provide while recognizing the associated challenges.

15.2.11 The Association agreed with the Executive Council which had encouraged NMHSs to adopt a more positive approach in dealing with other institutions, including government departments in the country, and regional NMHSs, for instance, through pertinent regional groupings. Furthermore, NMHSs should pay particular attention to the implementation of the core business of NMHSs, such as daily weather forecasts and warnings, which served as an important base in furthering NMHSs' recognition. lt also emphasized the importance of partnerships with respect to resource mobilization, visibility and delivery of services as a whole. In that connection, it encouraged NMHSs to relate better to NGOs and the private sector, including equipment manufacturers, suppliers, the media, meteorological services providers and end users. The Association also encouraged enhanced regional cooperation by making use of existing frameworks such as the EU.

Economic and social value

15.2.12 The Association encouraged its Members to pursue economic valuation studies to strengthen the case for the recognition of the role and contribution of NMHSs in relation to the provision of meteorological and hydrological services. It agreed that there was a strong case for resources committed to NMHSs to be considered as investments, rather than expenditures, in view of the high benefit to cost ratio. The Association encouraged its Members to extend cooperation with NMHSs in developing countries and those with economies in transition, on the issue of economic valuation.

15.2.13 It agreed that economic benefit studies and assessments could serve a benchmarking purpose in the future enhancement of services, in the context of the overall management and legal status of NMHSs and demonstrating their contributions to society and its economy. They could also be taken into account to show actual and potential results when seeking support for the NMHSs. Members were encouraged to exchange experience on this aspect.

15.2.14 Furthermore, the Association recognized the importance of further highlighting such socio-economic benefits, particularly through Technical Conferences on the Economic and Social Benefits of Meteorological and Hydrological Services and through interaction with other institutions like the European Commission and OECD.

International Conference on the Economic and Social Benefits of Meteorological and Hydrological Services

15.2.15 The Association supported the holding of the International Conference on the Economic and Social Benefits of Meteorological and Hydrological Services in 2007. The socio-economic benefit studies presented at the conference should help to demonstrate NMHSs, contribution to the realization of national development goals. Hence, resources attributed to NMHSs could and should be seen as investments rather than expenditures.

15.2.16 It agreed that the conference would promote a better appreciation of the social and economic benefits among a wide range of stakeholders. The participation of such stakeholders, including decision makers, user groups, relevant organizations, development planners, economists and social scientists, should be strongly encouraged. Moreover, special efforts should be made to facilitate the participation of some eminent personalities who would help to give further credence to the conference and draw special attention to it.

15.2.17 In that connection, the Association urged its Members, particularly their NMHSs to participate actively in the preparation for and realization of the conference, especially through partnerships at national level in undertaking socio-economic studies.

Statement on the role and operation of NMHSs

15.2.18 The Association recalled that the Executive Council had agreed that two outward-looking EC statements on the role and operation of NMHSs should be prepared:

(*a*) A succinct, forceful and well-targeted statement addressed to decision makers;

(*b*) A more extended statement for Directors and other senior officials of NMSs for their guidance.

15.2.19 The Council had agreed on its statement relating to decision makers contained in Annex III to this report, which described the international settings of interest to decision makers. It had urged decision makers, to support NMHSs, by identifying what they did and how they contributed to meeting societal needs and to national strategic planning. The Association welcomed that statement.

15.2.20 Concerning the second document for Directors and other senior officials, the Association agreed with the need to prepare that statement.

15.2.21 In that connection, the Association agreed with the Council on the importance of a communications strategy to help facilitate the favourable consideration of those statements and other relevant WMO position papers by decision makers.

Role and operation of National Hydrological Services

15.2.22 The Association also recognized the need to address the more general question of enhancing the role of National Hydrological Services (NHSs) within the framework of WMO. The Association noted that the Council, noting the diverse but close relationship

between NMSs and NHSs, had requested that consideration be given to how that diverse range of relationships could best be represented within the framework of WMO. The Association stressed the importance of closer integration of WMO hydrological activities with those of meteorology and relevant disciplines.

Other considerations

15.2.23 The Association recognized the importance of and need to reinforce capacity-building of NMHSs, particularly through training in such relatively new areas as management, partnership, networking, communication, user interaction, cost recovery, commercialization, and the valuation of the socio-economic benefits of meteorological and related services.

15.2.24 The Association also emphasized the importance of continually assessing the role and operation of NMHSs in the light of the rapid changes occurring and of identifying appropriate actions that might be taken by NMHSs and WMO. The Association underscored the importance of closely following developments relating to the draft EC Directive INSPIRE, which could have serious implications for NMHSs, not only for EU Members, but also for others in the Region and elsewhere. In that regard, the Association had relevant discussions under general summary paragraphs 15.6 and 16.1.

15.2.25 The Association agreed that it was important to address the relevant priority areas of concern which provided challenges and opportunities to its Members. It therefore called upon its Members to take appropriate action. Moreover, it felt that Directors of NMHSs should be proactive in that regard.

15.3 International exchange of data and products (agenda item 15.3)

15.3.1 The Association recalled the discussions that had taken place during Fourteenth Congress in connection with the topic of international exchange of data and products, especially as they related to the:

(*a*) Implementation of Resolution 40 (Cg-XII) — WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationship in commercial activities;
(*b*) Implementation of Resolution 25 (Cg-XIII) — Exchange of hydrological data and products;
(*c*) Exchange of climate data and products;
(*d*) Oceanographic data exchange policy;
(*e*) Exchange of aeronautical meteorological data and products;
(*f*) Exchange of agrometeorological data;
(*g*) Database protection mechanism and the World Intellectual Property Organization (WIPO).

15.3.2 The Association noted the experience in the implementation of Resolution 40 (Cg-XII). In the case of the Region, the Association supported the continued implementation of the resolution, reiterated a strong commitment to making it work and urged Members to work towards its effective implementation.

Implementation of Resolution 25 (Cg-XIII)

15.3.3 The Association also noted progress in the implementation of Resolution 25 (Cg-XIII). It recalled that Thirteenth Congress had seen the monitoring of the exchange of hydrological data and products as an important ongoing activity to be overseen and reported on by the Commission for Hydrology (CHy).

15.3.4 The Association was informed that, following the request by Fourteenth Congress, the questionnaire on the exchange of hydrological data and products had been circulated to River Basin Organizations (RBOs) and International Data Centres (IDCs), including those in the Region, to obtain their comments and views on the status of the international exchange of data. The outcome of the survey had been considered by the twelfth session of CHy (Geneva, 20-29 October 2004), which had also considered future actions in the spirit of Resolution 25 (Cg-XIII). The Association was also pleased to note that the technical report on the exchange of hydrological data and products prepared by CHy, after having been reviewed by the Regional Hydrological Advisers and Executive Council, had been published and distributed in early 2004.

Exchange of climate data and products

15.3.5 With respect to the international exchange of climate data and products, the Association noted that CCl had been requested to continue to work with CBS on the issues of the collection of CLIMAT and CLIMAT TEMP messages and their dissemination via the GTS or the Internet. The Association welcomed the development of software to encode and decode CLIMAT and CLIMAT TEMP messages. The Association was informed that Members of the Region that would like to use this software should make their interest known to the Secretary-General. The Association noted that the distribution of the software would also be organized through regional training workshops.

15.3.6 The Association urged its Members who had not yet done so to send their daily historical data for GCOS Surface Network observations to the WCD-A Asheville, as had been requested by the Secretary-General. The Association noted that there was a need for the essential climate variables (maximum temperature, daily precipitation, pressure, radiation, wind and humidity).

15.3.7 The Association also noted that the GCOS Secretariat, at the request of the COP to the UNFCCC, had prepared a report entitled 'Analysis of data exchange problems in global atmospheric and hydrological networks'. The Association was informed that that report would be considered at the eleventh session of the COP (COP 11) to be held in Montreal from 28 November to 9 December 2005.

Oceanographic data exchange policy

15.3.8. The Association noted with interest that the 22nd session of the Intergovernmental Oceanographic Commission (IOC) Assembly (Paris, 24 June-4 July 2003) had, inter alia, approved an IOC Oceanographic Data

Exchange Policy, which had both recognized and had been compatible with the WMO policy and practice on the international exchange of meteorological and related data and products as expressed through Resolution 40 (Cg-XII). It recalled that the Executive Council had expressed its appreciation to IOC for its efforts in that regard, which would further serve to strengthen cooperation and coordination between the two Organizations in the exchange of relevant geophysical data. It was pleased to note that JCOMM was developing its data exchange and management mechanisms and procedures within the context of the data exchange policies of both its parent Organizations, with a particular focus on ensuring the full and open exchange of oceanographic data from all sources.

15.3.9 The Association noted detailed information provided on the problem of data transmission costs from VOS, and recognized that possible mechanisms for its solution were still under development. In that connection the Association noted that European countries participating in the EUCOS Surface Marine Programme (E-SURFMAR) were developing a partial solution to the problem by fairly distributing such costs. However, a global solution to the problem would be very difficult to achieve. It was also noted that there were potentially serious security risks associated with allowing VOS call signs and position data to be made freely available on external Web sites not maintained by the NMSs. Because ship observations were regarded as 'essential data' in Resolution 40 (Cg-XII) the problem was likely to persist. It was therefore agreed at the last JCOMM Ship Observations Team meeting (SOT-III, Brest, 7-12 March 2005), that a report on the issue should be made to the fifty-eighth session of the Executive Council.

Exchange of aeronautical meteorological data and products

15.3.10 The Association recalled that, in accordance with Note 3 of Annex 4 to Resolution 40 (Cg-XII), aeronautical meteorological information had not been included in the application of that resolution. The Association noted that the Conjoint CAeM Session/ICAO Meteorology Divisional Meeting (Montreal, 16-20 September 2002) had endorsed Recommendation 4/7, which had called for ICAO, in consultation with WMO, to develop guidelines for access to aeronautical meteorological information for air navigation support purposes only. The Association further noted that the ICAO Council and the Executive Council had approved that Recommendation in 2003. As part of the implementation of the Conjoint Meeting Recommendation 4/6, ICAO had established the Aviation Use of the Public Internet Study Group (AUPISG) in September 2003 and WMO had agreed to participate in the work of that group. The Association was informed that the work of the AUPISG had been completed.

15.3.11 The Association was informed that, similar to previous guidelines for authorized access to the World Area Forecasts Systems (WAFS) satellite broadcasts prepared by ICAO and already distributed to Members, ICAO had developed guidelines for access to aeronautical meteorological information that had also been distributed to WMO Members.

15.3.12 The Association was informed that the document 'Guidelines for the Use of the Public Internet for Aeronautical Applications' had been prepared. It noted that this document had made a distinction between time-critical meteorological information crucial to airline operations that should be distributed via the ICAO Aeronautical Fixed Service (AFS) and not via the Internet (e.g. SIGMET information), and information that was not time-critical and could be exchanged through the Internet (e.g. TAFS). It agreed on the importance of giving attention to that matter and also noted that relevant guidelines on the provision of aviation services continued to be provided by ICAO.

15.3.13 The Association noted developments relating to the adoption of the EU Regulation on Single European Sky (SES), which could have some consequences on the exchange of data and products in the Region. In that connection, the Association was informed that, for the moment, there appeared to be no direct impact of SES on data exchange. Nonetheless, the Association felt that the issue needed to be carefully followed.

Recent developments

15.3.14 The Association noted that recent developments and initiatives, such as on the expanded satellite activities which now covered R&D satellites and the GEOSS initiative, had implications on the free and unrestricted international exchange of meteorological and related data and products that were under consideration.

15.3.15 The Association noted developments concerning the proposed European Commission Directive INSPIRE, which had possible implications on the international exchange of meteorological, hydrological and related data and products for NMHSs in Europe and possibly worldwide. It expressed appreciation for the efforts of EUMET, EUMETNET, the representative of RA VI to the European Commission expert team (offered by the United Kingdom), the acting president of RA VI and the Secretary-General to draw the European Commission's attention to those possible implications and to WMO's and the European NMSs' concerns.

15.3.16 In that connection, the Association noted that the Executive Council had called for the possible European and worldwide implications of this initiative to be carefully studied and properly addressed and had requested its Advisory Group on the International Exchange of Data and Products to follow the relevant developments and to liaise with CBS, as appropriate.

15.3.17 Concerning the INSPIRE initiative, the Association agreed on the need to continue to make representations to the European Commission and requested its president to keep the matter under review in close cooperation with EUMETREP programme which was a joint WMO/EUMETNET initiative.

15.3.18 In view of the above, the Association requested WMO to ensure that recent initiatives took into account the WMO policy and practice on the international

exchange of meteorological and related data and products.

General

15.3.19 Members of the Association expressed their views and shared their relevant experiences. Among others, the Association recognized that the increasing use of the Internet in accessing meteorological, hydrological and related data and products provided both challenges and opportunities that should be addressed, particularly in connection with related commercial activities.

15.4 WMO Quality Management Framework (agenda item 15.4)

15.4.1 The Association recalled that Fourteenth Congress had decided (Resolution 27 (Cg-XIV) — Quality Management) that WMO should work towards a Quality Management Framework (QMF) for NMSs that would eventually include and develop the following distinct, though related elements, which could be addressed possibly on a phased basis:

(*a*) WMO technical standards;
(*b*) Quality management system(s) including quality control; and
(*c*) Certification procedure(s).

15.4.2 The Association noted the deliberations and decisions on that subject by the fifty-sixth and fifty-seventh sessions of the Executive Council. Surveys among NMSs carried out in 2004 and 2005 to assess the quality management activities, plans and requirements for assistance through WMO, had revealed that a large number of Members required technical guidance and assistance from WMO as a matter of urgency. Quality management appeared to be of growing relevance for Members, partly because of the development of SES. Some NMSs had reported that they were implementing their own Quality Management System (QMS) and audit mechanisms. Furthermore, it had been reported that several Members had gained positive experience with the QMS based on the ISO 9001 standard, which had resulted in a continuous process of improvements in the management and operation of NMSs and in the delivery of services through an enhanced focus on the customer and user community. The survey had also shown that the implementation of QMS could be pursued for separate sectors, such as aeronautical meteorological, marine meteorological and climatological services, or for the service as a whole. The second survey had also shown that the overall costs for achieving ISO 9001 certification had decreased, mainly resulting from a wider availability of know-how and experience in that area. Of utmost interest was the fact that the pure certification (audit) costs had been reported as being much lower than had been expected whilst consultants' costs had been much higher. Since most certified NMHSs belonged to RA VI, great savings and progress could be achieved in the Region through capacity-building activities and by Members exchanging experience.

15.4.3 The Association noted with interest the outcome of the WMO Workshop on Quality Management held in Kuala Lumpur, Malaysia, from 26 to 28 October 2004. The workshop further developed QM aspects related to observing systems and instrumentation and aviation meteorological services, reviewed available QM documentation relevant to NMSs for its suitability as a WMO publication, developed additional guidance material, and recommended future work activities towards meeting the objectives given in Resolution 27 (Cg-XIV).

15.4.4 The Association was satisfied that guidance material in the form of the First WMO Technical Report on QMF (on CD-ROM, revised edition, July 2005) had already been published, which contained, inter alia, basic QM documentation offered by several Members, several technical reports and the final report of the above-mentioned workshop. Noting that some of this material had been written in national languages, the Association welcomed the fact that English translations had been procured, where necessary. The publication also contained reports on 'QM Implications on the Instrument Sector' and on 'A QM Approach to *in-situ* Observing Systems', the draft Guide on QM Procedures and Practices for PWS and the QM section of the new edition of the *Guide to Practices of Meteorological Offices Serving Aviation* (WMO-No. 732). The Association was informed that ICAO was producing guidance material on QM related to aeronautical meteorological services, in collaboration with WMO, which would be published during 2005.

15.4.5 The Association underlined that the development and implementation of a QMS was a particular challenge for, and a burden on, the scarce resources of NMSs in developing countries. It appealed to Members whose NMSs had successfully implemented a QMS, or completed QMS certification according to ISO 9001, to share their experiences with others by making available relevant documents for information and guidance as well as by direct exchange through expert visits within the Region. It was seen as particularly important that the WMO QMF should provide clear and unambiguous guidance on QMS and show that the WMO QMF was complementary and not exclusive to QMS according to ISO 9001. It was also recognized that any QMS must be specifically designed for, or adjusted to, the individual situation of a given NMS in order to achieve its objectives.

15.4.6 The Association felt that the use of the WMO QMF, including standards such as ISO 9001 and other equivalent standards as well as the associated certification, were critical for many NMSs to achieve the desired international visibility and credibility related to commercial competitiveness. While there was general concern over the potentially high costs involved, some Members preferred a WMO-owned certification procedure, but others felt that it would lack the full international recognition that would be important for strengthening their commercial activities and competitiveness. As far as a WMO-owned certification scheme was concerned, the Association noted with interest

experts' conclusions that it would most likely be more expensive than ISO 9001 certification because of costs for WMO permanent staff, interpretation and travel and the requirements for neutrality and geographic balance within a WMO-owned certification team. In addition, it was not clear whether NMSs could meet the ICAO recommendation on QMS with a certification scheme established by WMO. Furthermore, the Association noted that for some Members the application by NMSs of the recommendation of ICAO regarding QMS was still problematic.

15.4.7 The Executive Council had agreed to pursue the phased approach recommended by the presidents of the technical commissions, in other words, that the WMO QMF should focus on the technical aspects of the NMSs' operations and that the first step should address the QM aspects of observing systems and aeronautical meteorological services. Furthermore, it had agreed to focus on a review of WMO Technical Regulations relevant to observation generation, including procedures for instrument intercomparisons, with a view to identifying and rectifying deficiencies, duplications, inconsistencies and errors, which should ensure that the relevant WMO Technical Regulations would become viable reference documents for use within national QMS. In that regard, the Association requested its WG-PIW to review and update the Annexes corresponding to Region VI in the WWW-related Technical Regulations in order to achieve consistency with the global sections reviewed by CBS.

15.4.8 The Association requested the Secretary-General to support capacity-building of NMSs in the implementation of QMS, in particular for countries with economies in transition, individually or as part of regional groups, through seminars, workshops, conferences, etc. To that end, the Association agreed that training events, such as regional technical conferences and other suitable training events planned in the Region under various scientific and technical programmes of WMO, should, inter alia, address the WMO QMF by including this topic in their programmes or curricula, and by inviting resource persons from Members that had already implemented QMS.

15.5 Group Earth Observations process (agenda item 15.5)

The ad hoc Intergovernmental Group on Earth Observations (GEO) Status and Plans

The first Earth Observation Summit (EOS-I)

15.5.1 The Association was informed that at the invitation of the United States, 33 nations, and the European Commission, had joined forces at the first Earth Observation Summit (EOS-I) (Washington DC, 31 July 2003) to adopt a Declaration that had called for action in strengthening global cooperation on Earth observations. The purpose of the Summit was to:

"Promote the development of a comprehensive, coordinated, and sustained Earth observation system or systems among governments and the international community to understand and address global environmental and economic challenges; and begin a process to develop a conceptual framework and implementation plan for building this comprehensive, coordinated, and sustained Earth observation system or systems."

15.5.2 To that end, the Summit participants had launched an ad hoc Group on Earth Observations (GEO), with the goal of furthering the creation of a comprehensive, coordinated, and sustained Earth observing system or systems. The group, co-chaired by the European Commission, Japan, South Africa, and the United States and joined by more than 21 international and intergovernmental organizations, had begun its work by organizing five subgroups, as well as a secretariat to support its activities. In order to promote the development of the now named Global Earth Observing System of Systems (GEOSS), GEO had decided that a document describing the GEOSS framework and an associated 10-Year Implementation Plan would be developed.

EOS-II

15.5.3 The Association noted that four sessions of GEO had been held followed by the second Earth Observation Summit (EOS-II) (Tokyo, Japan, 25 April 2004). A Communiqué stating approval of the Framework Document, pointing the way forward in the GEO effort, and encouraging broad participation in and support for the GEO effort, had been approved at EOS-II. Also agreed at EOS-II was a Framework Document consisting of a high-level synopsis of the GEO effort for senior policymakers; a description of the GEOSS purpose and expected benefits; and a broad framework for developing the 10-Year Implementation Plan.

Development of GEOSS

15.5.4 The Association noted that the fifty-sixth session of the Executive Council had adopted Resolution 9 (EC-LVI) - Global Earth Observation System of Systems (GEOSS), affirming its full support for the GEO process and resulting GEOSS.

15.5.5 That Resolution had encouraged WMO Members to work closely with other earth observation agencies at the national level to ensure the development of well-coordinated national plans for GEOSS implementation. In that regard, the Association appointed a Rapporteur for GEOSS to work on regional implementation aspects of the GEOSS Implementation Plan with terms of reference as contained in Resolution 21 (XIV-RA VI).

15.5.6 It also noted that Resolution 9 (EC-LVI) had requested the Secretary General to keep GEO Members fully informed of WMO's long-term experience in operational observing and telecommunication systems and service provision and of its capacity to provide effective leadership in the implementation and operation of several key components of GEOSS. The Resolution had also authorized the Secretary-General to indicate WMO's readiness to host the GEOSS Secretariat.

15.5.7 In responding to a request contained in a letter

in September 2004 from the Director-General for Research Directorate-General of the European Commission, the Secretary-General had provided details on the potential hosting of the GEOSS Secretariat in the WMO Building. At the GEO Special Session on Governance held in Brussels, from 27 to 28 September 2004, and hosted by the European Commission, the Secretary-General had been invited by the Director-General for Research Directorate-General of the European Commission to express WMO's willingness to host the GEOSS Secretariat as evidenced in the exchange of letters. The reaction of GEO Members and participating organizations at the Special Session had been most supportive. The fifth session of GEO (GEO-5) (Ottawa, Canada 29-30 November 2004), had reviewed a proposal by WMO to host the GEOSS Secretariat and had reached consensus in principle to consider an Agreement describing the WMO offer at GEO-6 which was held in Brussels from 14 to 15 February 2005.

15.5.8 Three significant events for WMO emerged from GEO-6 and from the third Observation Summit (EOS-III). First, the GEO-6 Resolution agreeing to a Standing Arrangement between WMO and GEO to host the GEO Secretariat in Geneva; second, a Communiqué relating to support for tsunami and multi-hazard alert systems, which was endorsed at EOS-III; and third, an EOS-III Resolution endorsing the 10-Year GEO Implementation Plan, which was signed at the ministerial level.

15.6 BRAINSTORMING (agenda item 15.6)

15.6.1 The Association held a special brainstorming session with 'The Future of NMHSs' as the theme, which was part of the preparation for the discussion on the Regional Strategic Plan for the enhancement of National Meteorological and Hydrological services (NMHSs) under general summary paragraph 16.1.

15.6.2 The Association carried out the brainstorming under the chairpersonship of the acting president, assisted by the Sub-committee on the Strategic Plan and Action Plan established during the session and composed of delegates from the United Kingdom (convener), Czech Republic, Germany, Jordan and the Russian Federation (core-members). Mr G. Pankiewicz (United Kingdom) served as rapporteur.

15.6.3 The Association identified guiding principles, key elements and other relevant matters that it agreed would be the basis for the preparation of the Strategic Plan.

15.6.4 The pertinent ideas raised were taken into account in subsequent discussions about the Strategic Plan and were also reflected in the Association's deliberations under general summary paragraphs 16.1 and 16.3.

15.6.5 A summary of the brainstorming session was prepared and circulated to participants. This would be available to the task team that would carry out further work relating to the development of the RA VI Strategic Plan and the implementation of the RA VI Action Plan.

16. OTHER REGIONAL ACTIVITIES (agenda item 16)

16.1 STRATEGIC PLAN FOR THE ENHANCEMENT OF NATIONAL METEOROLOGICAL AND HYDROLOGICAL SERVICES IN REGIONAL ASSOCIATION VI (EUROPE) (agenda item 16.1)

16.1.1 The Association agreed with the proposal of the acting president to develop a Regional Strategic Plan for the Enhancement of NMHS in Regional Association VI (Europe).

16.1.2 The Association took into account the input from the Technical Conference on International Cooperation in Weather, Climate and Water Issues in Europe, Challenges and Opportunities, that had preceded the session of RA VI, as well as the brainstorming that had taken place under general summary paragraph 15.6.

16.1.3 The Association recognized the need to develop the Regional Strategic Plan for the Enhancement of NMHS in RA VI. It aimed at strengthening the capabilities of the NMHSs in RA VI to provide appropriate meteorological, hydrological and related services, highlighting the important role of WMO and its Members in the prevention and mitigation of natural disasters, the protection of life and property, safeguarding the environment and contributing to sustainable development.

16.1.4 The Association accordingly adopted Resolution 22 (XIV-RA VI) and its Annexes I and II.

16.1.5 The Association also adopted the RA VI Action Plan attached as Annex I to Resolution 22 (XIV-RA VI) for implementation until such time as the RA VI Strategic Plan was adopted.

16.1.6 The Association established its Task Team on the RA VI Strategic Plan and Action Plan with the terms of reference given in Annex II, in order to oversee and monitor the implementation of the action plan and to develop the Strategic Plan.

16.2 COOPERATION WITH REGIONAL AND INTERNATIONAL ORGANIZATIONS (agenda item 16.2)

AGREEMENTS WITH REGIONAL AND INTERNATIONAL ORGANIZATIONS RELATED TO RA VI

16.2.1 The Association noted the increasing collaboration of WMO with international organizations including those of the United Nations system. In addition, WMO had been collaborating actively with a number of regional organizations such as EUMETSAT, ECMWF as well as COST. During the intersessional period two new agreements important for the Region had been established. WMO and the European Commission had agreed on areas for cooperation in operational and research fields related to weather, climate, hydrology, water resources and the environment. A Memorandum of Understanding (MoU) setting up the framework and arrangements for such cooperation had been signed on 18 December 2003. A Memorandum of Understanding (MoU) between WMO and the European Meteorological Society had been signed on 22 April 2003, expressing the desire of the parties to cooperate in the effective achieve-

ment of shared objectives.

16.2.2 The Association noted with satisfaction that the signed agreements, working arrangements and memoranda of understanding had provided a suitable framework for further interaction among the NMHSs of the Region and, in particular, with relevant regional socio-economic and scientific groupings. Such interaction contributed to the enhancement of their image and visibility among decision makers, the public, the media, educational institutions, the private sector, NGOs and other relevant national institutions. Therefore, the Association encouraged its Members to further strengthen their cooperation with relevant regional bodies.

16.2.3 The Association stressed the usefulness of NMHSs' bilateral agreements in the Region, as well as bilateral and multilateral agreements with the neighbouring WMO Region, for instance, in the Caspian Basin.

16.2.4 It recognized the benefit of the agreement signed between WMO and the *Agence Française de Développement* (AFD), which was facilitating the implementation of the WHYCOS programme, in particular HYCOS projects in RA I. That type of collaboration was worth extending to other funding bodies.

16.2.5 The Association encouraged Members to cooperate with existing meteorological and hydrological societies, and consider the opportunity of establishing new cooperation arrangements with relevant national and regional institutions.

16.2.6 The Association requested the Secretary-General to take appropriate measures to promote cooperation with relevant regional and international organizations, including NGOs. It suggested that additional agreements important for the Region should be set up, with, for instance, COST-Meteorology, the European Broadcasting Union (EBU), and with international water basin commissions in the Region (Elbe, Oder, Rhine, etc.). When updating the MoU between WMO and the European Commission, it would be useful to ensure closer cooperation with EU bodies such as the European Environmental Agency and JRC-Ispra. The cooperation with the World Bank should be further developed because of its future enhanced activity in the Region.

16.3 Internal matters of the Association (agenda item 16.3)

Report of the Advisory Working Group of RA VI

16.3.1 The Association noted with appreciation the reports of the sessions of the RA VI Advisory Working Group (AWG) and complimented Mr D. Keuerleber-Burk, acting president and chairperson of the RA VI AWG and members of the group for the activities carried out according to its terms of reference. The AWG had made a number of recommendations concerning the setting up of the Strategic Plan for RA VI, the structure of the RA VI subsidiary bodies, the Subregional Office for Europe and its assistance to NMSs, the establishment of a network of international advisers to Permanent Representatives (PRs) and the use of country profiles. The AWG had also decided on the distribution of tasks among its members.

16.3.2 Recognizing the importance of coordinating its activities, the Association agreed to re-establish the Advisory Working Group of RA VI and re-named it the Management Group of RA VI. It adopted Resolution 23 (XIV-RA VI).

16.3.3 The RA VI Management Group was expected to consider the optimal use of resources that may be allocated or could be made available in connection with the activities of the subsidiary bodies of RA VI. It may provide the basis for a rationalization of the number, nature and activities of the subsidiary bodies, including rapporteurs.

Review of the subsidiary bodies of the Association

16.3.4 The Association noted with appreciation the information provided by the acting president on the activities of the RA VI subsidiary bodies during the intersessional period. It expressed its satisfaction for the subsidiary bodies' activities. The Association encouraged Members to assist in ensuring that the designated members of working groups and rapporteurs discharged their responsibilities efficiently.

16.3.5 The Association decided to make the necessary arrangements to keep its subsidiary bodies active throughout the intersessional period and to keep the Association abreast of developments. In that regard, after examining the establishment of relevant working groups and rapporteurs, the Association recorded its decisions under the relevant general summary paragraphs.

16.3.6 The Association encouraged the chairpersons and members of working groups, as well as rapporteurs, to take all available opportunity to work very closely with each other and to facilitate coordination of activities across the working groups and rapporteurs.

17. WMO Subregional Office for Europe (agenda item 17)

17.1 The Association noted that the Subregional Office for Europe had operated as a project up to the end of the thirteenth financial period. The Secretary-General had established the Office in March 2003. From 1 January 2004, the Office had been financed by the regular WMO budget.

17.2 The Association reviewed the activities of the Office since its thirteenth session. It noted that the Office had carried out its functions and responsibilities as an integral part of the WMO Secretariat. It also noted the effective assistance provided by the Office to the president, vice-president, and subsidiary bodies of the Association in discharging their responsibilities. It expressed its appreciation to the Secretary-General and to the staff of the Office for their continued support to the activities of the Association during the intersessional period. The Association requested the Secretary-General to consider an appropriate name for the Office, which

would reflect its responsibility for the Region as a whole. It also requested the Secretary-General to maintain the practice of expert focal points in the Secretariat to cover the work of the regional working groups and rapporteurs.

17.3 The Association noted with satisfaction the increasing role of the Office as a focal point and an information centre for regional activities and in assisting Members to develop their NMHSs and implement WMO Programmes and other activities with a regional focus. It recognized the efforts of the Office to contribute to the new high priority needs in the areas of science and technology, capacity-building, climate variability and change, water resources management and disaster mitigation as well as other environmental issues that had been identified by the Members. The Office's contribution to enhancing the visibility of NMHSs was recognized. The Association requested the assistance of the Office in connection with efforts of some NMHSs for strengthened technical capacity and enhanced visibility and further plans to improve their headquarters.

17.4 The Association expressed satisfaction at the commendable efforts of the Subregional Office in maintaining close contact with Members through visits, study tours for the new PRs with WMO, and in supporting regional events in order to ensure the strengthening of WMO activities in the development of meteorology and operational hydrology at national and regional levels. It thanked Members who had contributed financially to enable the Office to carry out its activities in addition to the regular WMO Programmes and encouraged Members to maintain such practices. The Association agreed that Subregional Office staff should continue to make every effort to further strengthen contact with Members and facilitate the implementation of regional activities.

17.5 The Association recognized the Office's efforts to maintain close liaison and collaboration with regional bodies such as EUMETSAT, ECMWF, EUMETNET, COST-Meteorology, the European Commission and regional groups of Directors of NMHSs. It invited the Office to continue this type of activity and to use these institutions to promote meteorology and operational hydrology and related environmental issues and to increase policy makers' awareness of the role of both NMHSs and WMO in contributing to sustainable development.

17.6 The Association expressed its appreciation of measures implemented by the Secretary-General to effect structural and organizational changes in the Secretariat, especially with respect to the optimization of the operations of the Regional and Subregional Offices and the Technical Cooperation Department. It requested the Secretary-General to continue his efforts to strengthen the Subregional Office and meet the needs of Members in the Region and to take into account the work of the Management Group in its consideration of the provision of support to the Region and its monitoring of related progress.

Proposed future activities

17.7 The Association requested the Secretary-General to continue his efforts to strengthen regional and technical cooperation activities and meet the requirements of Members in the Region.

17.8 The Associated noted that WMO would continue supporting close cooperation with the European Commission, as well as the development of new projects and joint initiatives with the World Bank, and other partners.

17.9 WMO would develop stronger partnerships with NMHSs for the development and implementation of joint projects and programmes and for resource mobilization taking into account the potential for increased international cooperation within the NMHSs.

17.10 It also noted that WMO would give the highest priority to bridging the gap in the provision of relevant services by NMHSs in the Region.

18. Scientific lectures and discussions (agenda item 18)

18.1 The following scientific lectures were presented during the session:

(*a*) The 2002 summer flood in Central Europe, lessons learnt, by Prof. Dr Gerd Tetzlaff (Leipzig University);

(*b*) The 2003 heat wave in Europe, by Mr Pierre Bessemoulin (*Météo-France*);

(*c*) The role of NMHSs in natural disaster prevention and mitigation, by Mr Keith Groves (UK Met Office).

18.2 The Association thanked the lecturers for their presentations, which had been of great interest and high quality.

19. Review of previous resolutions and recommendations of the Association and of revelant Executive Council resolutions (agenda item 19)

19.1 The Association examined those of its resolutions which were still in force at the time of the fourteenth session.

19.2 The Association noted that most of its past resolutions had been replaced by new resolutions adopted during the session. It was further noted that while a few resolutions had been incorporated into the appropriate WMO publications, some of them were still required to be kept in force.

19.3 The Association accordingly adopted Resolution 24 (XIV-RA VI).

19.4 The Association considered that Resolution 10 (EC-LIV) on the report of the thirteenth session of the Association need not be kept in force.

20. Election of officers (agenda item 20)

The Association unanimously elected Mr D. Keuerleber-Burk (Switzerland) as president and Mr A. Leitass (Latvia) as vice-president of WMO Regional Association VI (Europe).

21. DATE AND PLACE OF THE FIFTEENTH SESSION (agenda item 21)

The delegation of Turkey extended its invitation to host the next session of the Association in Antalya, Turkey. The Association expressed its appreciation for this offer. In accordance with Regulation 170 of the WMO General Regulations, the president of the Association should determine the date and place of the fifteenth session in agreement with the President of the WMO and after consultation with the Secretary-General, during the intersessional period.

22. CLOSURE OF THE SESSION (agenda item 22)

22.1 Prof. H. Yan, the representative of the Secretary-General thanked the Government of Germany, as well as Mr W. Kusch, Permanent Representative of Germany with WMO, and Mr U. Gärtner, the President of *Deutscher Wetterdienst* and his staff for the excellent arrangements and kind hospitality. He congratulated the participants for a job well done under the leadership of the acting president and vice-president. He expressed his thanks for the session's willingness to try new ways to make the session more effective and efficient. He stated that the Secretariat would provide the necessary support to the implementation of the session's decisions.

22.2 Mr W. Kusch, on behalf of the host country, expressed the hope that the participants had had a comfortable and memorable stay in Heidelberg. He expressed his thanks to all those who had done their part in ensuring the success of the session.

22.3 In his closing remarks, Mr D. Keuerleber-Burk, acting president of RA VI, expressed his appreciation to the participants, the host country, the WMO Secretariat and the supporting staff for their cooperation, which had enabled an excellent session. He considered that a good job had been done during the session. A mechanism had been established to define the future strategy of the Association. That mechanism included the generation of input from the preceding Technical Conference, the brainstorming and the session itself. He indicated his commitment to continue working in the interests of the Region. He wished the participants a safe journey.

22.4 The fourteenth session of Regional Association VI (Europe) closed at 10:30 a.m. on 15 September, 2005.

RESOLUTIONS ADOPTED BY THE SESSION

RESOLUTION 1 (XIV-RA VI)

WORKING GROUP ON PLANNING AND IMPLEMENTATION OF THE WORLD WEATHER WATCH IN REGION VI

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 2 (Cg-XIV) — World Weather Watch Programme for 2004-2007,

(2) Resolution 5 (Cg-XIV) — WMO Space Programme,

(3) Resolution 25 (Cg-XIV) — Sixth WMO Long-term Plan,

(4) The report of the chairperson of the Working Group on Planning and Implementation of the WWW in Region VI,

CONSIDERING:

(1) That World Weather Watch (WWW) data and products are of vital importance to RA VI Members to meet existing and new requirements for meteorological services,

(2) That the implementation of the WWW in the Region needs to be kept under constant review,

(3) That the introduction of new concepts and technology into the WWW will be of great benefit to all Members in the Region,

(4) That full integration of the WWW functional components requires careful coordination among Members of RA VI and constant evaluation of the related projects,

DECIDES:

(1) To establish a Working Group on Planning and Implementation of the WWW in Region VI with the following terms of reference:

(*a*) To monitor the progress made in the implementation and operation of the WWW in the Region and advise on possible improvements and priorities for appropriate action to be carried out under the WWW and on the need for external support, where required;

(*b*) To keep under review the action taken under the Sixth WMO Long-term Plan with a view to updating and further developing the WWW relating to RA VI;

(*c*) To develop proposals for the further development and full integration of the WWW components and functions with a view to achieving a cost-effective operation and a better supply of WWW data and products throughout the Region;

(*d*) To keep abreast of new developments in the field of meteorological data processing, observing techniques, telecommunications and codes and to make recommendations for their application as appropriate in the Region;

(*e*) To identify and keep under review regional requirements for the exchange of observational data and processed products and to propose measures and procedures as appropriate to meet those needs for information from within and outside the Region;

(*f*) To promote implementation of the Public Weather Services Programme in the Region;

(*g*) To monitor the regional development of the THORPEX and IPY international programmes and coordinate the corresponding contributions of the WWW component system to these programmes;

(*h*) To monitor developments and needs of the emerging Natural Disaster Prevention and Mitigation Programme (DPM), and, in collaboration with the Regional Working Group on Natural Disaster Prevention and Mitigation and the Regional Working Group on Hydrology, make recommendations and coordinate the most effective contributions of the WWW component system to the regional DPM and the regional hydrological forecasting and warning systems, respectively;

(*i*) To keep abreast of the development of the Global Earth Observation System of Systems (GEOSS) and, in collaboration with the coordinator on regional aspects of GEOSS, develop recommendations as to the integrated contribution of the regional components of WWW to GEOSS;

(j) To advise the president of the Association on all matters concerning the WWW;

(2) That the Working Group should be composed of:

(*a*) A co-coordinator for western and central Europe and a co-coordinator for central and eastern Europe of a Subgroup on Regional Aspects of the Information Systems and Services;

(*b*) A coordinator of a Subgroup on Regional Aspects of the Integrated Observing Systems;

(*c*) A coordinator of a Subgroup on Regional Aspects of the Global Data-processing and Forecasting System;

(*d*) A coordinator of a Subgroup on Regional

Aspects of Public Weather Services;
(*e*) A coordinator of an Ad Hoc Group on WWW-related Cooperation Activities;
(*f*) A Rapporteur on the Regional Table-driven Code Forms Migration Plan;
(*g*) Other experts as nominated by Members;
with the terms of reference of the subgroups as indicated in the annex to this resolution,

(3) To designate, in accordance with Regulation 32 of the WMO General Regulations, Mr J. Dibbern as chairperson of the Working Group,

(4) To designate:
(*a*) Mr C. Little (United Kingdom) as co-coordinator for western and central Europe and Mr L. Bezruk (Russian Federation) as co-coordinator for central and eastern Europe of the Subgroup on Regional Aspects of the Information Systems and Services;
(*b*) Mr K. Bjorheim (Norway) as coordinator of the Subgroup on Regional Aspects of the Integrated Observing Systems;
(*c*) Mr L. Perron (France) as coordinator of the Subgroup on Regional Aspects of the Data-processing and Forecasting System;
(*d*) Mr D. Robinson (United Kingdom) as coordinator of the Subgroup on Regional Aspects of Public Weather Services;
(*e*) Mr G. Pankiewicz (United Kingdom) as coordinator of the Ad Hoc Group on WWW-related Cooperation Activities;
(*f*) Ms E. Cervena (Czech Republic) as Rapporteur on the Regional Table-driven Code Forms Migration Plan;

(5) To invite Members to nominate experts who are committed to serve actively on the Working Group and subgroups;

(6) To request the coordinators of the subgroups and the rapporteur to submit progress reports at yearly intervals to the chairperson of the Working Group and a final report no later than six months before the fifteenth session of the Association;

(7) To request the chairperson to submit a biennial progress report to the president of the Association and a final report no later than six months before the fifteenth session of the Association.

NOTE: This resolution replaces Resolution 1 (XIII-RA VI), which is no longer in force.

ANNEX TO RESOLUTION 1 (XIV-RA VI)

WORKING GROUP ON PLANNING AND IMPLEMENTATION OF THE WORLD WEATHER WATCH IN REGION VI

The terms of reference of the subgroups established under Resolution 1 (XIV-RA VI) are as follows:

(*a*) Subgroup on Regional Aspects of the Integrated Observing Systems:
(i) To monitor, report and make recommendations on the capability and utilization of an integrated system of different observing networks (including satellites) to meet regional requirements for weather analysis, forecasts and warnings;
(ii) To review and make proposals on the observational data requirements of Members of RA VI in the context of the WWW Programme and WMO Space Programme in the Sixth WMO Long-term Plan, particularly in relation to the full implementation of the GOS;
(iii) To monitor, and work with Members to improve shortfalls in the performance of Members in delivering the RBSN; identify gaps in the RBSN; work with Members to ensure the list of existing RBSN stations, including relevant metadata, remains valid and propose revisions to the RBSN list; and to identify automatic stations on land and fixed positions at sea to be included in the RBSN;
(iv) To further develop, in close cooperation with the Working Group on Climate-related Matters and the GCOS Programme and the Members involved, the operation of the RBCN to deliver required CLIMAT and CLIMAT TEMP reports; this network to include those identified as GCOS (GSN/GUAN) network stations, especially with respect to spatial coverage, performance, station details including required metadata, and revision of stations;
(v) To work with EUCOS to ensure consistency of approach and integration in respect of observing networks, procedures and monitoring;
(vi) To keep abreast of and advise the Regional IOS Subgroup on developments in observing systems; automatic weather stations, wind and temperature profilers, radars, thunderstorm detection techniques, AMDAR, ASAP, data buoys and new satellite opportunities, and advise on coordinated assessment and implementation developments within the Region;
(vii) To report on the regional use of data from, and operational experience with, new observing systems, and formulate recommendations based on these assessments;
(viii) To work with the Rapporteur on Regional Aspects of Instrument Development, Related Training and capacity-building, to

develop a strategic plan for Regional Instrument Centres in RA VI; to report on new developments in observing techniques, including instruments and sensors, in the operational systems; to organize special consultations and arrangements between Members concerned on coordination of implementation of automated observing systems and to support the development and implementation of standardization of observing practices, methods and procedures, and standard procedures for assuring the quality of observational data with monitoring of the quality;

(ix) To advise and report to the chairperson of the Regional Working Group, as required, on observing system problems in the Region and advise and report routinely as agreed to the chairperson of the Working Group and to the Regional Association on all matters concerning the regional aspects of the GOS activities in the Region (both surface-based subsystems and space-based subsystems related to the GOS);

Additionally, the coordinator of the Subgroup will:

(x) Advise the president of the Association and the chairperson of the Working Group on proposed changes to the RBSN and RBCN;

(xi) Lead the Association, working with Members, to maintain regulatory material related to observations (including *Weather Reporting* (WMO-No. 9), Volume A — Observing Stations and the *Manual* on the *GOS* (WMO-No. 544) related to the Region;

(xii) Liaise with other appointed regional rapporteurs to ensure that GOS aspects are addressed in a coordinated way;

(xiii) Represent the Region at sessions of the CBS Implementation Coordination Teams on IOS;

(*b*) Subgroup on Regional Aspects of Information Systems and Services (Global Telecommunication System and Data Management):

(i) To keep under review the status of implementation and operation of the RMTN, including the RMDCN, and maintain an up-to-date statement of requirements for the exchange of observational data, processed information and related data in the Region;

(ii) To work with the Steering Group on the RMDCN (including its Contract Advisory Committee and RMDCN Operations Committee) to assist RA VI Members who have not joined the RMDCN to do so and to ensure the optimum adaptation of the data exchange, including data flows, in the RMDCN migration to an IP/MPLS VPN;

(iii) To keep under review the organizational and planning aspects of the GTS in the Region and formulate recommendations for its further development, in particular for the coordinated implementation of information and communication facilities, techniques and services at WWW centres;

(iv) To keep under review data and information representation including character and bit-oriented codes, and syntax conversion between formats and codes (binary, character and graphics), and emerging standards, such as INSPIRE;

(v) To keep under review the implementation of real-time exchange of observations, including high-resolution data in the boundary layer, in table-driven codes format, working towards phasing out traditional alphanumeric codes; coordinate the necessary relevant actions, monitor implementation of encoding and decoding software and impacts on meteorological operations;

(vi) To keep under review data and product dissemination, selection and presentation to recipients (NMCs), including storage and retrieval of data and products and recovery procedures in case of major outages of key facilities;

(vii) To keep abreast of developments in information and communication techniques, procedures, services and equipment, including in particular data-communication networks, satellite-based systems, the Internet and other international telecommunication facilities, data management applications and to evaluate their relevance and applicability to the Region;

(viii) To participate in the development of the concept of the WMO Information System (WIS) and further develop the virtual GISC, particularly with respect to the requirements of the Region;

(ix) To keep under review and coordinate real-time and non-real-time monitoring of the WWW Programme in the Region, including quantity and quality aspects;

(x) To identify the training requirements of Members in the Region relating to relevant information and communication techniques;

(xi) To keep under review and advise on telecommunication support provided by the RMTN to other WMO and international programmes;

(xii) To advise and report to the chairperson of the Working Group and the Association all matters concerning regional aspects of the Global Telecommunication System and Data Management, and the WIS;

(xiii) Represent the Region at sessions of the CBS Implementation Coordination Team on Information Systems and Services, through the participation of its co-coordinators;

(*c*) Subgroup on Regional Aspects of the Global Data-processing and Forecasting System:

(i) To review the structure and functions of the RSMCs in the Region, as well as monitor developments in data-processing and forecasting system equipment and techniques, including relevant newly-emerging initiatives and programmes, which could be beneficially integrated at national and regional centres to improve their operational capability both within the WWW system and in related areas;

(ii) To make recommendations to strengthen the collaboration between Members' NWP centres in the generation and exchange of basic and specialized NWP products, including high-impact weather and precipitation forecasts, as well as in developing and applying methodologies for nowcasting and NWP verifications techniques and procedures;

(iii) To review needs for maintaining/establishing RSMCs and their capabilities and responsibilities including those related to new fields of activity specialization, and develop recommendations as appropriate;

(iv) To examine the requirements for processed products of general interest for the Region;

(v) To periodically review the requirements for providing data, including boundary conditions needed for running limited area models (LAM) at NMCs, and possibilities for coordinating the related data flow;

(vi) To advise the Association, where appropriate, on the use of observational data in meteorological data-processing and forecasting;

(vii) To formulate recommendations for coordinated implementation of data-processing and forecasting facilities and techniques;

(viii) To propose, where appropriate, the training requirements for the implementation, operation and maintenance of the data-processing and forecasting system in the Region;

(ix) To advise and report to the chairperson of the Working Group and the Association on all matters concerning the data-processing and forecasting system activities in the Region;

(x) To represent the Region at sessions of the CBS Implementation Coordination Team on DPFS through the participation of its coordinator;

(*d*) Subgroup on Regional Aspects of Public Weather Services:

(i) To develop documentation and advise on the regional aspects of the PWS Programme and its implementation, containing information:

a. On liaison between NMHSs and the media and others involved in the dissemination of public weather forecasts and warnings;

b. On collaboration between NMHSs and disaster authorities;

(ii) To keep abreast of and evaluate technical and scientific developments related to formulation, presentation and dissemination techniques and make recommendations on a regional scale;

(iii) To review the status of the implementation of the pilot project of cross-border exchange and consider future development in this area;

(iv) To continue activities in education and training related to the PWS Programme;

(v) To develop guidance material on, and prepare common procedures for, verification of public forecasts and warnings;

(vi) To elaborate proposals for demonstrating the benefits of PWS and heightening the visibility of NMHSs;

(vii) To advise and report to the chairperson of the Working Group and the Association on all matters concerning PWS in the Region;

(viii) To represent the Region at sessions of the CBS Implementation Coordination Team on PWS through the participation of its coordinator;

(*e*) Ad Hoc Group on WWW-related Cooperation Activities:

The Ad Hoc Group will consist of senior experts selected from Members, assisted by the Working Group on Planning and Implementation of the WWW in RA VI subgroup coordinators with the following terms of reference:

(i) On the basis of deficiencies, potential problems and future plans concerning WWW components in RA VI countries identified by relevant WG-PIW subgroup coordinators, to formulate and consolidate priorities in terms of emergency (short-term), consolidation (medium-term) and development (long-term) requirements;

(ii) To review, assess and consolidate available information on requirements of RA VI Members for WWW-related technical coop-

eration activities;

(iii) To recommend to the chairperson appropriate actions to meet the identified requirements, particularly those urgent/emergency requirements at national and regional levels, while ensuring that the identified requirements are consistent with and linked to national/regional WWW plans;

(iv) To assist and advise in identifying possible resources to meet these requirements from within each country, through bilateral/multilateral arrangements among RA VI Members, as well as from international funding institutions in Europe and elsewhere, and to promote actions to access such resources;

(v) To formulate and recommend a specific and integrated action plan;

(vi) To submit regular reports through the established mechanisms;

(*f*) Rapporteur on the Regional Table-driven Code Forms Migration Plan:
To develop the Regional Plan for the migration to TDCF and advise the Members of the Region on all aspects related to the migration strategy.

RESOLUTION 2 (XIV-RA VI)

REGIONAL BASIC SYNOPTIC NETWORK

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 2 (XIII-RA VI) — Regional Basic Synoptic Network,

(2) The *Manual on the Global Observing System* (WMO-No. 544), Volume I, Part III, Regulations 2.1.3.1 — 2.1.3.5 and the definition of the Regional Basic Synoptic Network,

(3) Resolution 40 (Cg-XII) — WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities,

CONSIDERING that the establishment and maintenance of a regional basic synoptic network of surface and upper-air synoptic stations, adequate to meet the requirements of Members and of the WWW, constitute one of the most important obligations of Members under Article 2 of the WMO Convention,

DECIDES that the stations and the observational programmes listed in the annex to this resolution constitute the Regional Basic Synoptic Network (RBSN) in Region VI;

URGES Members:

(1) To spare no effort in their endeavours to secure, at the earliest date possible, full implementation of the network of the stations and observational programmes set forth in the annex to this resolution;

(2) To comply fully with the standard times of observation, the global and regional coding procedures and data collection standards, as laid down in the WMO *Technical Regulations* (WMO-No. 49) and the *Manuals on the GOS* (WMO-No. 544), *on Codes* (WMO-No. 306) and *on the GTS* (WMO-No. 386);

AUTHORIZES the president of the Association to approve, at the request of the Members concerned and in consultation with the Secretary-General, minor amendments to the list of RBSN stations in accordance with the procedures laid down in the *Manual on the Global Observing System* (WMO-No. 544), Volume II — Regional Aspects, Region VI (Europe).

NOTE: This resolution replaces Resolution 2 (XIII-RA VI), which is no longer in force.

ANNEX TO RESOLUTION 2 (XIV-RA VI)

LIST OF STATIONS COMPRISING THE RBSN IN REGION VI

Index No.	*Station name*	*Observations*
ARMENIA		
37682	AMASIA	S
37717	SEVAN OZERO	S
37788	YEREVAN ZVARTNOTS	S
37789	YEREVAN	W R
AUSTRIA		
11010	LINZ HOERSCHING AP	S
11035	WIEN HOHE WARTE	S
11035	WIEN HOHE WARTE	W R
11120	INNSBRUCK AP	S
11150	SALZBURG AP	S
11157	AIGEN IM ENNSTAL	S
11231	KLAGENFURT	S
11240	GRAZ THALERHOF AP	S
AZERBAIJAN		
37575	ZAKATALA	S
37675	GUBA	S
37735	GANDJA	S
37749	GOYCHAY	S
37756	MARAZA	S
37864	BINA	S
37985	LANKARAN	S
BELARUS		
26554	VERHNEDVINSK	S
26666	VITEBSK	S
26850	MINSK	S
26863	MOGILEV	S
26941	BARANOVICHI	S
26951	SLUTSK	S
33008	BREST	S
33019	PINSK	S
33036	MOZYR'	S
33041	GOMEL'	S
BELGIUM		
06407	OOSTENDE AP	S
06447	UCCLE	S
06476	ST HUBERT	W R
BOSNIA AND HERZEGOVINA		
14542	BANJA LUKA	S
14648	MOSTAR	S
14652	BJELASNICA	S
14654	SARAJEVO BEJELAVE	S
BULGARIA		
15502	VIDIN	S
15525	LOVETCH	S
15549	RAZGRAD	S
15552	VARNA	S
15614	SOFIA OBS	S
15614	SOFIA OBS	W R
15640	SLIVEN	S
15655	BURGAS	S
15712	SANDANSKI	S
15730	KURDJALI	S
CROATIA		
14240	ZAGREB MAKSIMIR	S
14240	ZAGREB MAKSIMIR	W R
14258	DARUVAR	S
14307	PULA/AERODROM	S
14330	GOSPIC	S
14370	SLAVONSKI BROD	S
14445	SPLIT MARJAN	S
14474	DUBROVNIK CILIPI	S
CYPRUS		
17600	PAPHOS AP	S
17607	ATHALASSA	W R
17609	LARNACA AP	S
CZECH REPUBLIC		
11423	PRIMDA	S
11487	KOCELOVICE	S
11518	PRAHA RUZYNE	S
11520	PRAHA LIBUS	W R
11603	LIBEREC	S
11659	PRIBYSLAV	S
11723	BRNO TURANY	S
11782	OSTRAVA MOSNOV	S
DENMARK, GREENLAND AND FAROE ISLANDS		
04201	QAANAAQ	S
04202	PITUFFIK THULE	S
04202	PITUFFIK THULE	W R
04203	KITSISSUT CAREY	S
04207	HALL LAND	S
04208	KITSISSORSUIT EDDER	S
04211	MITTARFIK UPERNAVIK	S
04213	QAARSUT MITTARFIA	S
04214	NUUSSUAATAA NUSSUAQ	S
04221	ILULISSAT	S
04224	AASIAAT MITTARFIA	S
04228	KITSISSUT ATTU	S
04231	KANGERLUSSUAQ	S
04234	SISIMIUT MITTARFIK	S
04241	MANIITSOQ MITTARFIA	S
04250	NUUK	S
04253	UKIIVIK	S
04260	PAAMIUT	S
04266	NUNARSUIT	S
04270	NARSARSUAQ	S
04270	NARSARSUAQ	W R
04272	QAQORTOQ	S
04285	ANGISOQ	S

Index No.	*Station name*	*Observations*
04301	KAP MORRIS JESUP	S
04312	NORD AUT	S
04313	HENRIK KROEYER HOLME	S
04320	DANMARKSHAVN	S
04320	DANMARKSHAVN	W R
04330	DANEBORG	S
04339	ILLOQQORTOORMIUT	S
04339	ILLOQQORTOORMIUT	W R
04351	APUTITEEQ	S
04360	TASIILAQ	S
04360	TASIILAQ	W R
04373	IKERMIIT	S
04382	IKERMIUARSUK	S
04390	PR CHRISTIAN SUND	S
04416	SUMMIT	S
06011	TORSHAVN	S
06011	TORSHAVN	W R
06030	AALBORG	S
06060	KARUP	S
06070	TIRSTRUP	S
06120	ODENSE BELDRINGE	S
06180	KOEBENHAVN KASTRUP	S
06181	KOEBENHAVN JAEGERSB	W R
06193	HAMMER ODDE	S
ESTONIA		
26038	TALLINN	S
26038	TALLINN	W R
26045	KUNDA	S
26115	RISTNA	S
26135	TURI	S
26231	PARNU	S
26242	TARTU	S
26247	VALGA	S
FINLAND		
02755	YLIVIESKA AIRPORT	S
02805	UTSJOKI KEVO	S
02807	INARI / IVALO	S
02836	SODANKYLA	S
02836	SODANKYLA	W R
02845	ROVANIEMI AIRPORT	S
02849	SALLA KK	S
02866	PUDASJARVI AIRPORT	S
02897	KAJAANI PALTANIEMI	S
02913	KAUHAVA AIRPORT	S
02917	KUOPIO AIRPORT	S
02924	AHTARI MYLLYMAKI	S
02935	JYVASKYLA AIRPORT	S
02935	JYVASKYLA AIRPORT	W R
02939	ILOMANTSI MEKRIJARVI	S
02944	TAMPERE PIRKKALA AIRPORT	S
02947	MIKKELI AIRPORT	S
02952	PORI AIRPORT	S
02963	JOKIOINEN OBSERVATORY	S
02963	JOKIOINEN OBSERVATORY	W R
02971	JOMALA SODERSUNDA	S
02974	HELSINKI VANTAA AIRPORT	S
02976	KOTKA RANKKI	S
02981	KORPPOO UTO	S
02982	HANKO RUSSARO	S

Index No.	*Station name*	*Observations*
FRANCE		
07005	ABBEVILLE	S
07015	LILLE	S
07020	LA HAGUE	S
07027	CAEN CARPIQUET	S
07037	ROUEN	S
07070	REIMS	S
07110	BREST GUIPAVAS	S
07110	BREST GUIPAVAS	W R
07117	PLOUMANACH	S
07130	RENNES	S
07139	ALENCON	S
07145	TRAPPES	W R
07149	PARIS ORLY	S
07168	TROYES	S
07180	NANCY ESSEY	S
07180	NANCY ESSEY	W R
07190	STRASBOURG ENTZHEIM	S
07207	POINTE DU TALUT	S
07222	NANTES	S
07240	TOURS	S
07255	BOURGES	S
07280	DIJON LONGVIC	S
07299	BALE MULHOUSE	S
07314	CHASSIRON	S
07335	POITIERS	S
07434	LIMOGES BELLEGARDE	S
07460	CLERMONT FERRAND	S
07471	LE PUY	S
07481	LYON SATOLAS	S
07481	LYON SATOLAS	W R
07510	BORDEAUX MERIGNAC	S
07510	BORDEAUX MERIGNAC	W R
07535	GOURDON	S
07558	MILLAU	S
07577	MONTELIMAR	S
07591	EMBRUN	S
07607	MONT DE MARSAN	S
07621	TARBES OSSUN	S
07627	ST GIRONS	S
07630	TOULOUSE BLAGNAC	S
07643	MONTPELLIER	S
07645	NIMES COURBESSAC	W R
07650	MARSEILLE MARIGNANE	S
07661	CAP CEPET	S
07690	NICE	S
07747	PERPIGNAN RIVESALTE	S
07761	AJACCIO	S
07761	AJACCIO	W R
07790	BASTIA	S
61001	ODAS BUOY CÔTE D' AZUR	S
61002	ODAS BUOY GOLFE DU LYON	S
GEORGIA		
37549	TBILISI	S
GERMANY		
10004	LV TW EMS	S
10015	HELGOLAND ISL	S
10020	LIST SYLT	S
10035	SCHLESWIG	S

Index No.	*Station name*	*Observations*
10035	SCHLESWIG	W R
10055	WESTERMARKELSDORF	S
10147	HAMBURG FUHLSBUTTEL	S
10162	SCHWERIN	S
10184	GREIFSWALD	S
10184	GREIFSWALD	W R
10200	EMDEN FP	S
10200	EMDEN FP	W R
10224	BREMEN	S
10238	BERGEN	W R
10270	NEURUPPIN	S
10338	HANNOVER	S
10361	MAGDEBURG	S
10393	LINDENBERG	S
10393	LINDENBERG	W R
10400	DUESSELDORF	S
10410	ESSEN	W R
10438	KASSEL	S
10468	OPPIN	W R
10469	LEIPZIG SCHKEUDITZ	S
10488	DRESDEN KLOTZSCHE	S
10506	NUERBURG BARWEILER	S
10548	MEININGEN	S
10548	MEININGEN	W R
10618	IDAR OBERSTEIN	W R
10637	FRANKFURT MAIN AP	S
10685	HOF	S
10738	STUTTGART ECHTERDING	S
10739	STUTTGART SCHNARREN	W R
10763	NUERNBERG	S
10771	KUEMMERSBRUCK	W R
10788	STRAUBING	S
10852	AUGSBURG	S
10868	MUENCHEN OBERSCHLEI	W R
10946	KEMPTEN	S
GIBRALTAR		
08495	GIBRALTAR	S
08495	GIBRALTAR	W R
GREECE		
16614	KASTORIA AP	S
16622	THESSALONIKI AP	S
16622	THESSALONIKI AP	W R
16627	ALEXANDROUPOLI AP	S
16641	KERKYRA AP	S
16643	AKTION AP	S
16648	LARISSA AP	S
16650	LIMNOS AP	S
16667	MYTILINI AP	S
16675	LAMIA	S
16682	ANDRAVIDA AP	S
16684	SKYROS AP	S
16710	TRIPOLIS AP	S
16716	ATHINAI AP HELLINIK	S
16716	ATHINAI AP HELLINIK	W R
16732	NAXOS	S
16734	METHONI	S
16738	MILOS	S
16743	KYTHIRA	S
16746	SOUDA AP	S
16749	RHODES AP PARA	S
16754	HERAKLION AP	S
16754	HERAKLION AP	W R
HUNGARY		
12772	MISKOLC	S
12822	GYOR	S
12843	BUDAPEST LORINC	S
12843	BUDAPEST LORINC	W R
12882	DEBRECEN	S
12925	NAGYKANIZSA	S
12942	PECS POGANY	S
12982	SZEGED	S
12982	SZEGED	W R
ICELAND		
04005	BOLUNGAVIK	S
04013	STYKKISHOLMUR	S
04018	KEFLAVIK AP	S
04018	KEFLAVIK AP	W R
04048	VESTMANNAEYJAR	S
04056	HVERAVELLIR	S
04063	AKUREYRI	S
04064	KIRKJUBAEJARKLAUSTUR	S
04077	RAUFARHOFN	S
04082	AKURNES	S
04097	DALATANGI	S
IRELAND		
03953	VALENTIA OBS	S
03953	VALENTIA OBS	W R
03955	CORK AP	S
03957	ROSSLARE	S
03962	SHANNON AP	S
03969	DUBLIN AP	S
03973	CONNAUGHT AP	S
03976	BELMULLET	S
03980	MALIN HEAD	S
62090	ODAS BUOY M1	S
ISRAEL		
40153	HAR KNAAN (ZEFAT)	S
40179	BET DAGAN	W R
40180	BEN GURION AP	S
40199	EILAT	S
ITALY		
16008	SAN VALENTINO ALLA M	S
16021	PASSO ROLLE	S
16022	PAGANELLA	S
16033	DOBBIACO	S
16061	TORINO BRIC DELLA CROCE	S
16080	MILANO LINATE	S
16080	MILANO LINATE	W R
16084	PIACENZA S.DAMIANO	S
16088	BRESCIA/GHEDI	S
16098	TREVISO ISTRANA	S
16110	TRIESTE	S
16120	GENOVA SESTRI	S
16134	MONTE CIMONE	S
16138	FERRARA	S

Index No.	*Station name*	*Observations*
16148	CERVIA	S
16153	CAPO MELE	S
16158	PISA S GIUSTO	S
16172	AREZZO	S
16179	FRONTONE	S
16206	GROSSETO	S
16219	MONTE TERMINILLO	S
16224	VIGNA DI VILLE	S
16230	PESCARA	S
16232	TERMOLI	S
16245	PRATICA DI MARE	S
16245	PRATICA DI MARE	W R
16252	CAMPOBASSO	S
16253	GRAZZANISE	S
16258	MONTE SAN'T ANGELO	S
16263	TREVICO	S
16270	BARI PALESE MACCHIE	S
16280	PONZA	S
16294	CAPRI	S
16310	CAPO PALINURO	S
16320	BRINDISI AB CASALE	S
16320	BRINDISI AB CASALE	W R
16325	MARINA DI GINOSA	S
16344	MONTESCURO	S
16360	S MARIA DI LEUCA	S
16400	USTICA	S
16420	MESSINA	S
16429	TRAPANI BIRGI	S
16429	TRAPANI BIRGI	W R
16450	ENNA	S
16459	CATANIA SIGONELLA	S
16470	PANTELLERIA	S
16480	COZZO SPADARO	S
16522	CAPO CACCIA	S
16531	OLBIA	S
16539	CAPO FRASCA	S
16546	DECIMOMANNU	S
16550	CAPO BELLAVISTA	S
JORDAN		
40250	H 4 'IRWAISHED'	S
40265	MAFRAQ	S
40265	MAFRAQ	W R
40296	GHOR EL SAFI	S
40310	MA'AN	S
KAZAKHSTAN		
34398	ZHALPAKTAL	S
34691	NOVYJ USHTOGAN	S
34798	GANJUSHKINO	S
LATVIA		
26313	KOLKA	S
26346	ALUKSNE	S
26406	LIEPAJA	S
26416	SALDUS	S
26422	RIGA	S
26422	RIGA	W R
26544	DAUGAVPILS	S

Index No.	*Station name*	*Observations*
LEBANON		
40100	BEYROUTH AP	S
40100	BEYROUTH AP	W R
40103	TRIPOLI	S
LITHUANIA		
26509	KLAIPEDA	S
26518	LAUKUVA	S
26524	SIAULIAI	S
26531	BIRZAI	S
26629	KAUNAS	S
26629	KAUNAS	W R
26633	UTENA	S
26730	VILNIUS	S
LUXEMBOURG		
06590	LUXEMBOURG	S
MALTA		
16597	LUQA	S
NETHERLANDS		
06235	DE KOOY	S
06239	PLATFORM F3	S
06240	AMSTERDAM AP SCHIPH	S
06252	PLATFORM K13	S
06260	DE BILT	W R
06270	LEEUWARDEN	S
06290	TWENTHE	S
06321	PLATFORM EURO	S
06375	VOLKEL	S
06380	BEEK	S
NORWAY		
01001	JAN MAYEN	S
01001	JAN MAYEN	W R
01003	HORNSUND	S
01004	NY ALESUND II	W R
01007	NY ALESUND	S
01008	SVALBARD AP	S
01010	ANDOYA	S
01026	TROMSO	S
01028	BJORNOYA	S
01028	BJORNOYA	W R
01047	KAUTOKEINO	S
01049	ALTA AD	S
01055	FRUHOLMEN LH	S
01062	HOPEN	S
01078	SLETTNES LH	S
01098	VARDO	S
01102	SKLINNA LH	S
01115	MYKEN	S
01152	BODO VI	S
01152	BODO VI	W R
01160	SKROVA AD	S
01205	SVINOY LH	S
01212	ONA II	S
01218	TAFJORD	S
01238	FOKSTUA II	S
01241	ORLAND III	S
01241	ORLAND III	W R

Index No.	*Station name*	*Observations*
01271	TRONDHEIM VAERNES	S
01300	GULLFAKS C	S
01317	BERGEN FLORIDA	S
01338	VANGSNES	S
01367	FAGERNES	S
01384	OSLO GARDERMOEN	S
01389	RENA HAUGEDALEN	S
01400	EKOFISK	S
01400	EKOFISK	W R
01403	UTSIRA LH	S
01415	STAVANGER SOLA	S
01415	STAVANGER SOLA	W R
01448	OKSOY LH	S
01482	FERDER LH	S
01492	OSLO BLINDERN	W R
99090	SHIP M	S
99090	SHIP M	W R
POLAND		
12105	KOSZALIN	S
12120	LEBA	S
12120	LEBA	W R
12160	ELBLAG	S
12195	SUWALKI	S
12205	SZCZECIN	S
12235	CHOJNICE	S
12250	TORUN	S
12270	MLAWA	S
12280	MIKOLAJKI	S
12295	BIALYSTOK	S
12300	GORZOW WLKP	S
12330	POZNAN	S
12374	LEGIONOWO	W R
12375	WARSZAWA OKECIE	S
12400	ZIELONA GORA	S
12424	W ROCLAW II STRACHOW	S
12425	W ROCLAW I	W R
12435	KALISZ	S
12465	LODZ	S
12495	LUBLIN RADAWIEC	S
12530	OPOLE	S
12566	KRAKOW BALICE	S
12570	KIELCE	S
12580	RZESZOW JASIONKA	S
PORTUGAL		
08501	FLORES	S
08505	HORTA CASTELO BRANC	S
08508	LAJES SANTA RITA	W R
08509	LAJES	S
08512	PONTA DELGADA NORDE	S
08515	SANTA MARIA	S
08533	SAGRES	S
08541	SINES MONTES CHAOS	S
08545	PORTO PEDRAS RUBRAS	S
08548	COIMBRA CERVACHE	S
08554	FARO AP	S
08558	EVORA C COORD	S
08560	VISEU	S
08567	VILA REAL	S
08570	CASTELO BRANCO	S
08575	BRAGANCA	S
08579	LISBOA GAGO COUTINH	S
08579	LISBOA GAGO COUTINH	W R
REPUBLIC OF MOLDOVA		
33815	CHISINAU	S
ROMANIA		
15015	OCNA SUGATAG	S
15020	BOTOSANI	S
15090	IASI	S
15108	CEAHLAU TOACA	S
15120	CLUJ NAPOCA	S
15120	CLUJ NAPOCA	W R
15150	BACAU	S
15170	MIERCUREA CIUC	S
15200	ARAD	S
15230	DEVA	S
15260	SIBIU	S
15280	VF OMU	S
15292	CARANSEBES	S
15310	GALATI	S
15335	TULCEA	S
15346	RIMNICU VILCEA	S
15350	BUZAU	S
15360	SULINA	S
15410	DROBETA TR SEVERIN	S
15420	BUCURESTI IMH BANES	S
15420	BUCURESTI IMH	W R
15450	CRAIOVA	S
15460	CALARASI	S
15470	ROSIORI DE VEDE	S
15480	CONSTANTA	S
15480	CONSTANTA	W R
RUSSIAN FEDERATION		
22028	TERIBERKA	S
22106	PADUN	S
22113	MURMANSK	S
22113	MURMANSK	W R
22127	LOVOZERO	S
22165	KANIN NOS	S
22217	KANDALAKSA	S
22217	KANDALAKSA	W R
22235	KRASNOSCEL'E	S
22271	SOJNA	S
22271	SOJNA	W R
22282	MYS MIKULKIN	S
22324	UMBA	S
22349	PJALICA	S
22408	KALEVALA	S
22438	ZIZGIN	S
22522	KEM' PORT	S
22550	ARHANGEL'SK	S
22550	ARHANGEL'SK	W R
22563	PINEGA	S
22583	KOJNAS	S
22602	REBOLY	S
22621	SEGEZA	S
22641	ONEGA	S
22676	SURA	S

Index No.	Station name	Observations
22695	KOSLAN	S
22721	MEDVEZEGORSK	S
22768	SENKURSK	S
22802	SORTAVALA	S
22820	PETROZAVODSK	S
22831	PUDOZ	S
22837	VYTEGRA	S
22845	KARGOPOL'	S
22845	KARGOPOL'	W R
22867	VEL'SK	S
22887	KOTLAS	S
22892	VYBORG	S
22939	BELOZERSK	S
22954	VOZEGA	S
22996	OB'JACEVO	S
26059	KINGISEPP	S
26063	ST PETERBURG	S
26063	ST PETERBURG (VOEJKOVO)	W R
26094	TIHVIN	S
26167	NIKOLAEVSKOE	S
26258	PSKOV	S
26275	STARAJA RUSSA	S
26298	BOLOGOE	S
26298	BOLOGOE	W R
26359	PUBKINSKIE GORY	S
26389	OSTASKOV	S
26477	VELIKIE LUKI	W R
26695	VJAZ'MA	S
26702	KALININGRAD	S
26781	SMOLENSK	S
26781	SMOLENSK	W R
26882	ROSLAVL'	S
26997	TRUBCEVSK	S
27008	BABAEVO	S
27037	VOLOGDA	S
27037	VOLOGDA	W R
27051	TOT'MA	S
27066	NIKOL'SK	S
27083	OPARINO	S
27113	CEREPOVEC	S
27199	KIROV	S
27199	KIROV	W R
27208	MAKSATIKHA	S
27225	RYBINSK	S
27242	BUJ	S
27252	NIKOLO POLOMA	S
27271	SAR'JA	S
27329	ROSTOV	S
27355	JUR'EVEC	S
27369	KRASNYE BAKI	S
27373	SAKUN'JA	S
27393	NOLINSK	S
27402	TVER'	S
27459	NIZNIJ NOVGOROD	S
27459	NIZNIJ NOVGOROD	W R
27479	KOZ'MODEM'JANSK	S
27532	VLADIMIR	S
27595	KAZAN'	S
27595	KAZAN'	W R
27612	MOSKVA	S
27612	MOSKVA DOLGOPRUDNYJ	W R
27648	ELAT'MA	S
27665	LUKOJANOV	S
27679	ALATYR'	S
27707	SUHINICI	S
27719	TULA	S
27730	RJAZAN'	S
27730	RJAZAN'	W R
27786	ULYANOVSK	S
27835	RJAZSK	S
27857	ZAMETCINO	S
27906	OREL	S
27928	ELEC	S
27947	TAMBOV	S
27962	PENZA	S
27962	PENZA	W R
27983	SYZRAN'	S
34009	KURSK	S
34009	KURSK	W R
34122	VORONEZ	W R
34123	VORONEZ	S
34152	BALASOV	S
34172	SARATOV	S
34186	ERSOV	S
34247	KALAC	S
34247	KALAC	W R
34336	BOGUCAR	S
34357	SERAFIMOVIC	S
34363	KAMYSIN	S
34391	ALEKSANDROV GAJ	S
34545	MOROZOVSK	S
34560	VOLGOGRAD	S
34560	VOLGOGRAD	W R
34579	VERHNIJ BASKUNCAK	S
34730	ROSTOV NA DONU	S
34731	ROSTOV NA DONU	W R
34824	PRIMORSKO AHTARSK	S
34838	TIHORECK	S
34858	DIVNOE	S
34858	DIVNOE	W R
34866	JASKUL'	S
34880	ASTRAHAN'	S
34880	ASTRAHAN'	W R
34929	KRASNODAR	S
37018	TUAPSE	S
37031	ARMAVIR	S
37054	MINERAL'NYE VODY	S
37054	MINERAL'NYE VODY	W R
37061	BUDENNOVSK	S
37085	KOCUBEJ	S
37171	ADLER	S
37228	VLADIKAVKAZ	S
37472	MAHACKALA	S
	SERBIA AND MONTENEGRO	
13067	SUBOTICA-PALIE	S
13160	SOMBOR	S
13168	NOVI SAD	S
13173	ZRENJANIN	S
13174	KIKINDA	S
13180	BANATSKI KARLOVAC	S
13183	VRSAC	S

Index No.	*Station name*	*Observations*
13262	LOZNICA	S
13266	SREMDKA MITROVICA	S
13269	VALJEVO	S
13272	BEOGRAD SURCIN	S
13274	BEOGRAD VRACAR	S
13275	BEOGRAD KOSUTNJAK	W R
13278	KRAGUJEVAC	S
13279	SMEDEREVSKA PALANKA	S
13285	VELIKO GRADISTE	S
13289	CRNI VRH	S
13295	NEGOTIN	S
13363	PLEVLJA	S
13367	ZLATIBOR	S
13369	SJENICA	S
13376	KRALJEVO	S
13378	KOPAONIK	S
13384	CUPRIJA	S
13388	NIS	S
13389	LESKOVAC	S
13397	DIMITROVGRAD	S
13459	NIKSIC	S
13462	PODGORICA GOLUBOVCI	S
13464	ULCINJ	S
13477	PRIZREN	S
13481	PRISTINA	S
13489	VRANJE	S
	SLOVAKIA	
11826	PIESTANY	S
11903	SLIAC	S
11934	POPRAD TATRY	S
11952	POPRAD GANOVCE	W R
11968	KOSICE	S
	SLOVENIA	
14015	LJUBLJANA BEZIGRAD	S
14015	LJUBLJANA BEZIGRAD	W R
14026	MARIBOR SLIVNICA	S
	SPAIN	
08001	LA CORUNA	S
08001	LA CORUNA	W R
08015	OVIEDO	S
08023	SANTANDER	S
08023	SANTANDER	W R
08027	SAN SEBASTIAN IGUELDO	S
08045	VIGO PEINADOR	S
08055	LEON VIRGEN DEL CAMINO	S
08075	BURGOS VILLAFRIA	S
08084	LOGRONO AGONCILLO	S
08141	VALLADOLID	S
08160	ZARAGOZA AEROPUERTO	S
08160	ZARAGOZA AEROPUERTO	W R
08171	LERIDA	S
08181	BARCELONA AEROPUERTO	S
08184	GERONA COSTA BRAVA	S
08202	SALAMANCA MATACAN	S
08221	MADRID BARAJAS	S
08221	MADRID BARAJAS	W R
08231	CUENCA	S
08235	TERUEL	S
08238	TORTOSA	S
08261	CACERES	S
08280	ALBACETE LOS LLANOS	S
08284	VALENCIA AEROPUERTO	S
08302	MALLORCA/SON BONET	W R
08306	PALMA DE MALLORCA/SON SAN JUAN	S
08314	MENORCA MAHON	S
08330	BADAJOZ TALAVERA LA REAL	S
08348	CIUDAD REAL	S
08360	ALICANTE EL ALTET	S
08373	IBIZA ES CODOLA	S
08410	CORDOBA AEROPUERTO	S
08419	GRANADA AEROPUERTO	S
08430	MURCIA	S
08430	MURCIA	W R
08451	JEREZ DE LA FRONTERA/AEROPUERTO	S
08482	MALAGA AEROPUERTO	S
08487	ALMERIA AEROPUERTO	S
	SWEDEN	
02020	KATTERJAKK	S
02080	KARESUANDO	S
02096	PAJALA	S
02104	HEMAVAN	S
02120	KVIKKJOKK ARRENJ	S
02124	ARJEPLOG	S
02128	GUNNARN	S
02151	JOKKMOKK FPL	S
02185	LULEA KALLAX	W R
02186	LULEA KALLAX	S
02196	HAPARANDA	S
02206	STORLIEN	S
02222	GADDEDE	S
02226	OSTERSUND FROSON	S
02244	JUNSELE	S
02269	SKAGSUDDE	S
02288	HOLMOGADD	S
02297	BJUROKLUBB	S
02308	TANNAS	S
02324	SVEG	S
02355	KUGGOREN	S
02365	SUNDSVALL HARNOSAND	W R
02366	TIMRA MIDLANDA	S
02410	MALUNG	S
02418	KARLSTAD FLYGPLATS	S
02435	BORLANGE	S
02440	AMOT	S
02452	KILSBERGEN SUTTARBO	S
02456	FILM	S
02464	STOCKHOLM-BROMMA	S
02469	TULLINGE	S
02496	SVENSKA HOGARNA	S
02500	NORDKOSTER	S
02513	GOTEBERG	S
02518	NIDINGEN	S
02520	SATENAS	S
02527	GOTEBORG LANDVETTER	W R
02550	JONKOPING AXAMO	S
02562	LINKOPING MALMSLAET	S
02563	HARSTENA	S
02566	MALILLA	S

Index No.	Station name	Observations
02584	GOTSKA SANDON	S
02590	VISBY AD	S
02591	VISBY AS	W R
02616	FALSTERBO	S
02620	TORUP	S
02635	MALMO	S
02664	RONNEBY KALLINGE	S
02680	HOBURG	S
SWITZERLAND AND LIECHTENSTEIN		
06610	PAYERNE	S
06610	PAYERNE	W R
06670	ZURICH AP KLOTEN	S
06700	GENEVE AP COINTRIN	S
06720	SION	S
06762	LOCARNO MAGADINO	S
06794	ROBBIA	S
06990	VADUZ LIECHTENSTEIN	S
SYRIAN ARAB REPUBLIC		
40001	KAMISHLI	S
40007	ALEPPO AP	S
40022	LATTAKIA	S
40030	HAMA	S
40039	RAQQA	S
40045	DEIR EZZOR	S
40061	PALMYRA	S
40072	ABUKMAL	S
40080	DAMASCUS AP	S
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA		
13583	BITOLA	S
13586	SKOPJE PETROVEC	W R
13588	SKOPJE ZAJCEV RID	S
13591	STIP	S
TURKEY		
17022	ZONGULDAK	S
17024	INEBOLU	S
17026	SINOP	S
17030	SAMSUN	W R
17031	CARSAMBA SAMSUN	S
17034	GIRESUN	S
17038	TRABZON	S
17042	HOPA	S
17050	EDIRNE	S
17056	TEKIRDAG	S
17060	ISTANBUL ATATURK	S
17062	ISTANBUL GOZTEPE	W R
17067	GOLCUK DUMLUPINAR	S
17070	BOLU	S
17074	KASTAMONU	S
17084	CORUM	S
17086	TOKAT	S
17088	GUMUSHANE	S
17090	SIVAS	S
17092	ERZINCAN	S
17096	ERZURUM	S
17098	KARS	S
17112	CANAKKALE	S
17115	BANDIRMA	S
17116	BURSA	S
17124	ESKISEHIR	S
17128	ANKARA ESENBOGA	S
17130	ANKARA CENTRAL	W R
17140	YOZGAT	S
17150	BALIKESIR	S
17155	KUTAHYA	S
17160	KIRSEHIR	S
17170	VAN	S
17184	AKHISAR	S
17188	USAK	S
17189	AFYONKARAHISAR	S
17195	KAYSERI ERKILET	S
17199	MALATYA BOLGE	S
17202	ELAZIG	S
17203	BINGOL	S
17210	SIIRT	S
17219	IZMIR A MENDERES	S
17220	IZMIR GUZELYALI	W R
17234	AYDIN	S
17237	DENIZLI	S
17240	ISPARTA	S
17240	ISPARTA	W R
17244	KONYA	S
17248	KONYA EREGLI	S
17250	NIGDE	S
17260	GAZIANTEP	S
17272	SANLIURFA-MEYDAN	S
17280	DIYARBAKIR	S
17281	DIYARBAKIR-BOLGE	W R
17290	BODRUM	S
17292	MUGLA	S
17295	DALAMAN	S
17300	ANTALYA	S
17310	ALANYA	S
17320	ANAMUR	S
17330	SILIFKE	S
17350	ADANA INCIRLIK	S
17351	ADANA BOLGE	W R
17370	ISKENDERUN	S
17375	FINIKE	S
UKRAINE		
33088	SARNY	S
33135	CHERNIHIV	S
33177	VOLODYMYR VOLYNS'KY	S
33261	KONOTOP	S
33275	SUMY	S
33301	RIVNE	S
33317	SHEPETIVKA	S
33317	SHEPETIVKA	W R
33325	ZHYTOMYR	S
33345	KYIV	S
33345	KYIV	W R
33377	LUBNY	S
33393	L'VIV	S
33393	L'VIV	W R
33415	TERNOPIL'	S
33429	KHMEL'NYTS'KYI	S
33466	MYRONIVKA	S
33506	POLTAVA	S

Index No.	*Station name*	*Observations*
33526	IVANO FRANKIVS'K	S
33562	VINNYTSIA	S
33587	UMAN'	S
33614	SVITLOVODS'K	S
33631	UZHHOROD	S
33658	CHERNIVTSI	S
33658	CHERNIVTSI	W R
33663	MOHYLIV PODIL'S'KYI	S
33711	KIROVOHRAD	S
33761	LIUBASHIVKA	S
33791	KRYVYI RIH	S
33791	KRYVYI RIH	W R
33837	ODESA	S
33837	ODESA	W R
33902	KHERSON	S
33924	CHORNOMORS'KE	S
33946	SIMFEROPOL'	S
33946	SIMFEROPOL'	W R
33983	KERCH	S
34300	KHARKIV	S
34300	KHARKIV	W R
34415	IZIUM	S
34504	DNIPROPETROVS'K	S
34519	DONETS'K	S
34523	LUHANS'K	S
34601	ZAPORIZHZHIA	S
34712	MARIUPOL'	S
	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND	
03005	LERWICK	S
03005	LERWICK	W R
03026	STORNOWAY	S
03037	SKYE LUSA	S
03066	KINLOSS	S
03075	WICK	S
03091	ABERDEEN DYCE AP	S
03100	TIREE	S
03105	PORT ELLEN	S
03136	PRESTWICK RNAS	S
03162	ESKDALEMUIR	S
03171	LEUCHARS	S
03204	ISLE OF MAN RONALDS	S
03240	BOULMER	S
03238	ALBEMARLE	W R
03257	LEEMING	S
03292	BRIDLINGTON MRSC	S
03302	VALLEY	S
03348	WOODFORD	S
03354	NOTTINGHAM	W R
03377	WADDINGTON	S
03414	SHAWBURY	S
03462	WITTERING	S
03495	COLTISHALL	S
03502	ABERPORTH	S
03590	WATTISHAM	S
03716	ST ATHAN	S
03740	LYNEHAM	S
03772	LONDON HEATHROW AP	S
03797	MANSTON	S
03808	CAMBORNE	S
03808	CAMBORNE	W R
03853	YEOVILTON	S
03874	SOLENT MRSC	S
03882	HERSTMONCEUX	S
03882	HERSTMONCEUX	W R
03917	BELFAST ALDERGROVE	S
03918	CASTOR BAY	W R
62029	ODAS BUOY K1	S
62081	ODAS BUOY K2	S
62105	ODAS BUOY K4	S
62108	ODAS BUOY K3	S
64045	ODAS BUOY K5	S
	COOPERATION BY UNITED KINGDOM AND FRANCE	
62001	ODAS BUOY GASCOGNE	S
62163	ODAS BUOY BRITTANNY	S

Legend:
S = Surface observations
W = Radiowind observations
R = Radiosonde observations

RESOLUTION 3 (XIV-RA VI)

REGIONAL BASIC CLIMATOLOGICAL NETWORK IN REGION VI

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 3 (XIII-RA VI) — Regional Basic Climatological Network in Region VI,

(2) The report of the fifth session of the Working Group on Planning and Implementation of the WWW in Region VI,

(3) Resolution 40 (Cg-XII) — WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities,

CONSIDERING that Fourteenth Congress had welcomed the establishment of a Regional Basic Climatological Network (RBCN) in all WMO Regions and the Antarctic and urged Members to ensure that their operational observing stations compiled and transmitted the CLIMAT/CLIMAT TEMP messages according to existing regulations,

DECIDES that the stations listed in the annex to this resolution constitute the RBCN in Region VI;

URGES Members:

(1) To spare no effort in their endeavours to ensure, at the earliest date possible, full implementation of the network of RBCN stations set forth in the annex to this resolution;

(2) To comply fully with the global and regional coding procedures and data collection standards in accordance with procedures laid down in the WMO *Technical Regulations* (WMO-No. 49) and the *Manuals on the GOS* (WMO-No. 544), *on Codes* (WMO-No. 306), and *on the GTS* (WMO-No. 386) when operating the RBCN;

AUTHORIZES the president of the Association to approve, at the request of Members concerned and in consultation with Secretary-General, minor amendments to the list of RBCN stations following the procedures laid down for the RBSN in the *Manual on the Global Observing System* (WMO-No. 544), Volume II — Regional Aspects, Region VI (Europe).

NOTE: This resolution replaces Resolution 3 (XIII-RA VI), which is no longer in force.

ANNEX TO RESOLUTION 3 (XIV-RA VI)

LIST OF STATIONS COMPRISING THE RBCN IN REGION VI

Index No.	*Station name*	*CLIMAT*	*CLIMAT TEMP*	*GSN*	*GUAN*
ARMENIA					
37682	AMASIA	X			
37717	SEVAN OZERO	X			
37789	YEREVAN	X		X	
AUSTRIA					
11012	KREMSMUENSTER	X		X	
11035	WIEN HOHE WARTE	X		X	
11035	WIEN HOHE WARTE		X		X
11120	INNSBRUCK AP	X			
11146	SONNBLICK	X		X	
11150	SALZBURG AP	X			
11155	FEUERKOGEL	X			
11212	VILLACHERALPE	X			
11231	KLAGENFURT	X			
11240	GRAZ THALERHOF AP	X			
AZERBAIJAN					
37661	SHEKI	X			
37735	GANDIA	X			
37747	YEVLAKH	X		X	
37860	MASHTAGA	X			
37936	NAKHCHIVAN	X			
37989	ASTARA	X		X	
BELARUS					
26554	VERHNEDVINSK	X			
26666	VITEBSK	X			
26825	GRODNO	X			
26850	MINSK	X			
26863	MOGILEV	X			
26941	BARANOVICHI	X			
26951	SLUTSK	X			
33008	BREST	X			
33019	PINSK	X			
33036	MOZYR	X			
33038	VASILEVICHI	X		X	
33041	GOMEL'	X			

Index No.	*Station name*	*CLIMAT*	*CLIMAT TEMP*	*GSN*	*GUAN*
BELGIUM					
06447	UCCLE	X			
BOSNIA AND HERZEGOVINA					
14542	BANJA LUKA	X			
14557	TUZLA	X			
14648	MOSTAR	X			
14652	BJELASNICA	X		X	
14654	SARAJEVO BEJELAVE	X			
BULGARIA					
15502	VIDIN	X			
15552	VARNA	X			
15614	SOFIA OBS	X			
15614	SOFIA OBS		X		
15730	KURDJALI	X			
CROATIA					
14236	ZAGREB GRIC	X			
14240	ZAGREB MAKSIMIR		X		
14445	SPLIT MARJAN	X			
CYPRUS					
17607	ATHALASSA		X		
17609	LÁRNACA AP	X			
CZECH REPUBLIC					
11423	PRIMDA	X			
11464	MILESOVKA	X		X	
11487	KOCELOVICE	X			
11520	PRAHA LIBUS	X			
11520	PRAHA LIBUS		X		
11603	LIBEREC	X			
11659	PRIBYSLAV	X			
11723	BRNO TURANY	X			
11782	OSTRAVA MOSNOV	X			
11787	LYSA HORA	X			
DENMARK, GREENLAND AND FAROE ISLANDS					
04210	UPERNAVIK	X		X	

Index No.	Station name	CLIMAT	CLIMAT TEMP	GSN	GUAN
04220	ASITA	X			
04220	ASITA		X		
04250	NUUK	X		X	
04270	NARSARSUAQ		X		X
04312	NORD AUT	X			
04320	DANMARKSHAVN	X		X	
04320	DANMARKSHAVN		X		
04339	ILLOQQORTOORMIUT	X			
04339	ILLOQQORTOORMIUT		X		
04360	TASIILAQ	X		X	
04360	TASIILAQ		X		
04390	PR CHRISTIAN SUND	X			
06011	TORSHAVN	X		X	
06011	TORSHAVN		X		
06030	AALBORG	X			
06181	KOEBENHAVN JAEGERSB		X		
06186	KOEBENHAVN LHS	X		X	
06190	ROENNE	X			
ESTONIA					
26038	TALLINN	X			
26214	VILSANDI	X			
26242	TARTU	X		X	
FINLAND					
02801	ENONTEKIO KILPISJARVI	X			
02805	UTSJOKI KEVO	X			
02836	SODANKYLA	X		X	
02836	SODANKYLA		X		
02875	OULU AIRPORT	X			
02897	KAJAANI PALTANIEMI	X			
02935	JYVASKYLA AIRPORT	X		X	
02935	JYVASKYLA AIRPORT		X		
02942	KANKAANPAA NIINISALO	X			
02958	LAPPEENRANTA AIRPORT	X			
02963	JOKIOINEN OBSERVATORY	X		X	
02963	JOKIOINEN OBSERVATORY		X		
02972	TURKU AIRPORT	X			
02974	HELSINKI VANTAA AIRPORT	X			
FRANCE					
07005	ABBEVILLE	X			
07015	LILLE	X			
07020	LA HAGUE	X			
07027	CAEN CARPIQUET	X			
07037	ROUEN	X			
07070	REIMS	X			
07110	BREST GUIPAVAS	X			
07110	BREST GUIPAVAS		X		
07117	PLOUMANACH	X			
07130	RENNES	X		X	
07139	ALENCON	X			
07145	TRAPPES		X		
07149	PARIS ORLY	X			
07168	TROYES	X			
07180	NANCY ESSEY		X		
07181	NANCY OCHEY	X			
07190	STRASBOURG ENTZHEIM	X		X	
07207	POINTE DU TALUT	X			
07222	NANTES	X			
07240	TOURS	X			
07255	BOURGES	X		X	
07280	DIJON LONGVIC	X			
07299	BALE MULHOUSE	X			
07314	CHASSIRON	X			
07335	POITIERS	X			
07434	LIMOGES BELLEGARDE	X			
07460	CLERMONT FERRAND	X			
07471	LE PUY	X			
07481	LYON SATOLAS	X			
07481	LYON SATOLAS		X		
07510	BORDEAUX MERIGNAC	X			
07510	BORDEAUX MERIGNAC		X		
07535	GOURDON	X			
07560	MONT AIGOUAL	X		X	
07577	MONTELIMAR	X			
07591	EMBRUN	X			
07607	MONT DE MARSAN	X			
07621	TARBES OSSUN	X			
07627	ST GIRONS	X			
07630	TOULOUSE BLAGNAC	X		X	
07643	MONTPELLIER	X			
07645	NIMES COURBESSAC		X		
07650	MARSEILLE MARIGNANE	X		X	
07661	CAP CEPET	X			
07690	NICE	X			
07747	PERPIGNAN RIVESALTE	X			
07761	AJACCIO	X			
07761	AJACCIO		X		
07790	BASTIA	X			
GEORGIA					
37549	TBLISI	X		X	
GERMANY					
10015	HELGOLAND ISL	X			
10020	LIST SYLT	X			
10035	SCHLESWIG	X			
10035	SCHLESWIG		X		
10046	KIEL-HOLTENAU	X			
10055	WESTERMARKELSDORF	X			
10091	ARKONA	X			
10113	NORDERNEY	X			
10131	CUXHAVEN	X			
10147	HAMBURG FUHLSBUTTEL	X		X	
10162	SCHWERIN	X			
10170	ROSTOCK WARNEMUNDE	X			
10184	GREIFSWALD	X			
10184	GREIFSWALD		X		
10200	EMDEN FP	X			
10200	EMDEN FP		X		
10224	BREMEN	X			
10238	BERGEN		X		
10270	NEURUPPIN	X			
10315	MUENSTER OSNABRUCK	X			
10338	HANNOVER	X			
10361	MAGDEBURG	X			

Index No.	Station name	CLIMAT	CLIMAT TEMP	GSN	GUAN
10379	POTSDAM	X			
10384	BERLIN-TEMPELHOF	X			
10393	LINDENBERG	X		X	
10393	LINDENBERG		X		X
10400	DUESSELDORF	X			
10410	ESSEN		X		
10427	KAHLER ASTEN	X			
10453	BROCKEN	X			
10469	LEIPZIG SCHKEUDITZ	X			
10488	DRESDEN KLOTZSCHE	X			
10499	GORLITZ	X			
10501	AACHEN	X			
10506	NUERBURG BARWEILER	X			
10513	KOLN BONN	X			
10544	WASSERKUPPE	X			
10548	MEININGEN	X			
10548	MEININGEN		X		
10554	ERFURT BINDERSLEBEN	X			
10567	GERA-LEUMNITZ	X			
10578	FICHTELBERG	X			
10609	TRIER-PETRISBERG	X			
10616	HAHN	X			
10637	FRANKFURT MAIN AP	X			
10655	WUERZBURG	X			
10675	BAMBERG	X			
10685	HOF	X			
10708	SAARBRUECKEN ENSHEIM	X			
10727	KARLSRUHE	X			
10738	STUTTGART ECHTERDING	X			
10739	STUTTGART SCHNARREN		X		X
10763	NUERNBERG	X			
10776	REGENSBURG	X			
10788	STRAUBING	X			
10791	GROSSER ARBER	X			
10805	LAHR	X			
10852	AUGSBURG	X			
10868	MUENCHEN OBERSCHLEI		X		
10870	MUENCHEN AP	X			
10908	FELDBERG SCHWARZW	X			
10929	KONSTANZ	X			
10946	KEMPTEN	X			
10948	OBERSTDORF	X			
10961	ZUGSPITZE	X			
10962	HOHENPEISSENBERG	X		X	
10980	WENDELSTEIN	X			
GIBRALTAR					
08495	GIBRALTAR	X			
08495	GIBRALTAR		X		X
GREECE					
16622	THESSALONIKI AP	X			
16641	KERKYRA AP	X		X	
16648	LARISSA AP	X			
16714	ATHENS OBSERVATORY	X			
16719	ZAKINTHOS	X			
16726	KALAMATA	X			
16746	SOUDA AP	X		X	
16754	HERAKLION AP	X			
16754	HERAKLION AP		X		
HUNGARY					
12772	MISKOLC	X			
12822	GYOR	X			
12843	BUDAPEST LORINC	X			
12843	BUDAPEST LORINC		X		
12882	DEBRECEN	X			
12925	NAGYKANIZSA	X			
12942	PECS POGANY	X		X	
12982	SZEGED	X			
12982	SZEGED		X		
ICELAND					
04013	STYKKISHOLMUR	X		X	
04018	KEFLAVIK AP	X			
04018	KEFLAVIK AP		X		X
04048	VESTMANNAEYJAR	X		X	
04063	AKUREYRI	X		X	
04097	DALATANGI	X			
IRELAND					
03953	VALENTIA OBS	X		X	
03953	VALENTIA OBS		X		X
03955	CORK AP	X			
03957	ROSSLARE	X			
03962	SHANNON AP	X			
03969	DUBLIN AP	X			
03973	CONNAUGHT AP	X			
03976	BELMULLET	X			
03980	MALIN HEAD	X		X	
ISRAEL					
40179	BET DAGAN		X		
40180	BEN GURION AP	X			
40199	EILAT	X		X	
ITALY					
16008	SAN VALENTINO ALLA M	X			
16022	PAGNELLA	X		X	
16033	DOBBIACO	X			
16044	UDINE CAMPOFORMIDO		X		
16052	PIAN ROSA	X			
16061	BRIC DELLA CROCE	X			
16088	BRESCIA/GHEDI	X			
16098	TREVISO ISTRANA	X			
16110	TRIESTE	X		X	
16134	MONTE CIMONE	X		X	
16148	CERVIA	X			
16153	CAPO MELE	X			
16158	PISA S GIUSTO	X			
16179	FRONTONE	X			
16206	GROSSETO	X			
16219	MONTE TERMINILLO	X			
16224	VIGNA DI VALLE	X		X	
16232	TERMOLI	X		X	
16245	PRATICA DI MARE	X			
16245	PRATICA DI MARE		X		X

Index No.	Station name	CLIMAT	CLIMAT TEMP	GSN	GUAN
16252	CAMPOBASSO	X			
16253	GRAZZANISE	X			
16258	MONTE SAN'T ANGELO	X		X	
16280	PONZA	X			
16310	CAPO PALINURO	X			
16320	BRINDISI AB CASALE		X		
16325	MARINA DI GINOSA	X			
16344	MONTESCURO	X			
16360	S MARIA DI LEUCA	X			
16420	MESSINA	X			
16429	TRAPANI BIRGI	X			
16429	TRAPANI BIRGI		X		
16450	ENNA	X			
16459	CATANIA SIGONELLA	X			
16480	COZZO SPADARO	X			
16522	CAPO CACCIA	X			
16546	DECIMOMANNU	X			
16550	CAPO BELLAVISTA	X		X	
16560	CAGLIARI ELMAS		X		
JORDAN					
40250	H 4 'IRWAISHED'	X			
40265	MAFRAQ	X			
40265	MAFRAQ		X		
40296	GHOR EL SAFI	X			
40310	MA'AN	X			
KAZAKHSTAN					
34398	ZHALPAKTAL	X			
34691	NOVYJ USHTOGAN	X			
LATVIA					
26346	ALUKSNE	X			
26406	LIEPAJA	X		X	
26422	RIGA		X		
26544	DAUGAVPILS	X			
LEBANON					
40100	BEYROUTH AP	X			
40100	BEYROUTH AP		X		
40103	TRIPOLI	X			
LITHUANIA					
26509	KLAIPEDA	X			
26524	SIAULIAI	X			
26531	BIRZAI	X			
26629	KAUNAS	X			
26629	KAUNAS		X		
26730	VILNIUS	X			
LUXEMBOURG					
06590	LUXEMBOURG	X			
MALTA					
16597	LUQA	X		X	
NETHERLANDS					
06235	DE KOOY	X			
06239	PLATFORM F3	X			
06252	PLATFORM K13	X			
06260	DE BILT	X		X	
06260	DE BILT		X		
06310	VLISSINGEN	X			
06380	BEEK	X			
NORWAY					
01001	JAN MAYEN	X		X	
01001	JAN MAYEN		X		X
01008	SVALBARD AP	X		X	
01026	TROMSO	X		X	
01028	BJORNOYA	X		X	
01028	BJORNOYA		X		
01098	VARDO	X		X	
01152	BODO VI	X		X	
01152	BODO VI		X		
01212	ONA II	X		X	
01238	FOKSTUA II	X		X	
01241	ORLAND III	X			
01241	ORLAND III		X		
01317	BERGEN FLORIDA	X			
01400	EKOFISK		X		
01403	UTSIRA LH	X		X	
01415	STAVANGER SOLA	X			
01415	STAVANGER SOLA		X		
01465	TORUNGEN LH	X		X	
01492	OSLO BLINDERN	X			
99090	SHIP M		X		
POLAND					
12120	LEBA	X		X	
12120	LEBA		X		
12160	ELBLAG	X			
12205	SZCZECIN	X			
12295	BIALYSTOK	X			
12330	POZNAN	X			
12374	LEGIONOWO		X		
12375	WARSZAWA OKECIE	X			
12385	SIEDLCE	X		X	
12424	WROCLAW II STRACHOW	X			
12425	WROCLAW I		X		
12497	WLODAWA	X			
12566	KRAKOW BALICE	X			
PORTUGAL					
08501	FLORES	X			
08506	HORTA	X		X	
08508	LAJES SANTA RITA		X		X
08509	LAJES	X			
08512	PONTA DELGADA/NORDELA	X		X	
08515	SANTA MARIA	X			
08535	LISBOA GEOFISICA	X		X	
08546	PORTO SERRA DO PILA	X			
08548	COIMBRA CERVACHE	X			
08554	FARO AP	X			
08558	EVORA C COORD	X			
08570	CASTELO BRANCO	X			
08575	BRAGANCA	X			

Index No.	Station name	CLIMAT	CLIMAT TEMP	GSN	GUAN
08579	LISBOA GAGO COUTINH		X		
REPUBLIC OF MOLDOVA					
33815	CHISINAU	X			
33883	KOMRAT	X			
ROMANIA					
15023	SUCEAVA	X			
15085	BISTRITA	X		X	
15090	IASI	X			
15120	CLUJ NAPOCA	X			
15120	CLUJ NAPOCA		X		
15247	TIMISOARA	X			
15260	SIBIU	X			
15280	VF OMU	X		X	
15292	CARANSEBES	X			
15310	GALATI	X			
15350	BUZAU	X			
15360	SULINA	X		X	
15420	BUCURESTI BANEASA	X			
15421	BUCURESTI AFUMATI		X		
15450	CRAIOVA	X			
15480	CONSTANTA	X			
15480	CONSTANTA		X		
RUSSIAN FEDERATION					
22113	MURMANSK	X		X	
22165	KANIN NOS	X		X	
22217	KANDALAKSHA	X	X	X	
22235	KRASNOSCEL'E	X			
22271	SHOJNA		X		
22471	MEZEN'	X		X	
22522	KEM'		X		
22522	KEM'-PORT	X		X	
22550	ARHANGEL'SK	X		X	
22550	ARHANGEL'SK		X		X
22602	REBOLY	X		X	
22619	PADANY	X			
22641	ONEGA	X			
22676	SURA	X			
22768	SHENKURSK	X			
22802	SORTAVALA	X		X	
22820	PETROZAVODSK	X			
22837	VYTEGRA	X		X	
26063	ST PETERBURG	X		X	
26157	GDOV	X			
26275	STARAYA RUSSA	X			
26359	PUSKINSKIE GORY	X		X	
26781	SMOLENSK	X		X	
26997	TRUBCHEVSK	X		X	
27037	VOLOGDA	X		X	
27051	TOT'MA	X		X	
27333	KOSTROMA	X			
27459	NIZHNIJ NOVGOROD	X	X		X
27595	KAZAN'	X		X	
27612	MOSKVA	X		X	
27612	MOSKVA		X		
27648	ELAT'MA	X		X	
27675	PORETSKOE	X			
27707	SUHINICHI	X	X		
27730	RYAZAN'		X		
27823	PAVELETS	X			
27857	ZEMETCHINO	X			
27962	PENZA		X		
27995	SAMARA (BEZENCHUK)	X		X	
34009	KURSK		X		
34110	BOGORODITSKOE-FENINO	X			
34122	VORONEZH		X		
34123	VORONEZ	X		X	
34152	BALASHOV	X			
34163	OKTYABR'SKIJ GORODOK	X		X	
34186	ERSHOV	X		X	
34579	VERHNIJ BASKUNCHAK	X			
34720	TAGANROG	X			
34740	GIGANT	X			
34866	YASHKUL'	X		X	
34880	ASTRAHAN'	X		X	
34927	KRASNODAR-KRUGLIK	X		X	
34949	STAVROPOL'	X			
37001	ANAPA	X			
37061	BUDENNOVSK	X			
37107	KRASNAYA POLYANA	X			
37126	SHADZHATMAZ	X			
37228	VLADIKAVKAZ	X			
37470	DERBENT	X		X	
37472	MAHACHKALA	X			
37663	AHTY	X			
SERBIA AND MONTENEGRO					
13168	NOVI SAD	X			
13274	BEOGRAD VRACAR	X			
13275	BEOGRAD KOSUTNJAK		X		
13363	PLEVLJA	X			
13388	NIS	X			
13462	PODGORICA GOLUBOVCI	X			
SLOVAKIA					
11826	PIESTANY	X			
11858	HURBANOVO	X			
11903	SLIAC	X			
11934	POPRAD TATRY	X		X	
11952	POPRAD GANOVCE		X		
11968	KOSICE	X			
SLOVENIA					
14015	LJUBLJANA BEZIGRAD	X			
SPAIN					
08001	LA CORUNA	X			
08001	LA CORUNA		X		
08015	OVIEDO	X			
08023	SANTANDER	X			
08023	SANTANDER		X		
08025	BILBAO SONDICA	X			
08027	SAN SEBASTIAN IGUELDO	X		X	
08045	VIGO PEINADOR	X			
08048	ORENSE	X			

Index No.	Station name	CLIMAT	CLIMAT TEMP	GSN	GUAN
08053	PONFERRADA	X			
08055	LEON VIRGEN DEL CAMINO	X			
08084	LOGRONO AGONCILLO	X			
08085	PAMPLONA NOAIN	X			
08130	ZAMORA	X			
08141	VALLADOLID	X			
08148	SORIA	X			
08160	ZARAGOZA AEROPUERTO	X			
08160	ZARAGOZA AEROPUERTO		X		
08171	LERIDA	X			
08175	REUS AP	X			
08181	BARCELONA AEROPUERTO	X		X	
08184	GERONA COSTA BRAVA	X			
08202	SALAMANCA MATACAN	X		X	
08215	NAVACERRADA	X		X	
08221	MADRID BARAJAS	X			
08221	MADRID BARAJAS		X		
08222	MADRID RETIRO	X			
08231	CUENCA	X			
08235	TERUEL	X			
08238	TORTOSA	X			
08261	CACERES	X			
08272	TOLEDO	X			
08280	ALBACETE LOS LLANOS	X		X	
08284	VALENCIA AEROPUERTO	X			
08286	CASTELLON ALMAZORA	X			
08302	MALLORCA SON BONET		X		
08306	PALMA DE MALLORCA/ SON SAN JUAN	X			
08314	MENORCA MAHON	X			
08330	BADAJOZ TALAVERA LA	X			
08348	CIUDAD REAL	X			
08360	ALICANTE EL ALTET	X			
08373	IBIZA ES CODOLA	X			
08383	HUELVA	X			
08391	SEVILLE SAN PABLO	X			
08410	CORDOBA AEROPUERTO	X		X	
08417	JAEN	X			
08419	GRANADA AEROPUERTO	X			
08430	MURCIA	X			
08430	MURCIA		X		
08451	JEREZ DE LA FRONTERA/ AEROPUERTO	X			
08482	MALAGA AEROPUERTO	X			
08487	ALMERIA AEROPUERTO	X			
SWEDEN					
02080	KARESUANDO	X			
02120	KVIKKJOKK ARRENJ	X			
02128	GUNNARN	X			
02185	LULEA KALLAX		X		
02196	HAPARANDA	X		X	
02226	OSTERSUND FROSON	X		X	
02288	HOLMOGADD	X		X	
02365	SUNDSVALL HARNOSAND		X		
02366	TIMRA MIDLANDA	X			
02410	MALUNG	X		X	
02418	KARLSTAD FLYGPLATS	X			
02485	STOCKHOLM	X			
02512	GOTEBORG SAVE	X			
02527	GOTEBORG LANDVETTER		X		
02550	JONKOPING AXAMO	X			
02584	GOTSKA SANDON	X		X	
02590	VISBY AD	X			
SWITZERLAND AND LIECHTENSTEIN					
06610	PAYERNE		X		
06660	ZURICH CITY	X			
06680	SAENTIS	X		X	
06700	GENEVE AP COINTRIN	X			
06717	GRAND ST. BERNARD	X		X	
06770	LUGANO	X			
SYRIAN ARAB REPUBLIC					
40001	KAMISHLI	X		X	
40007	ALEPPO AP	X			
40022	LATTAKIA	X		X	
40030	HAMA	X			
40045	DEIR EZZOR	X			
40061	PALMYRA	X		X	
40080	DAMASCUS AP	X			
THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA					
13577	LAZAROPOLE	X		X	
13583	BITOLA	X			
13588	SKOPJE ZAJCEV RID	X			
13591	STIP	X			
TURKEY					
17022	ZONGULDAK	X			
17026	SINOP	X			
17030	SAMSUN	X			
17030	SAMSUN		X		
17034	GIRESUN	X			
17040	RIZE	X		X	
17045	ARTVIN	X			
17050	EDIRNE	X			
17056	TEKIRDAG	X			
17062	ISTANBUL GOZTEPE	X		X	
17062	ISTANBUL GOZTEPE		X		
17069	ADAPAZARI	X			
17070	BOLU	X			
17074	KASTAMONU	X		X	
17080	CANKIRI	X			
17084	CORUM	X			
17086	TOKAT	X			
17088	GUMUSHANE	X			
17090	SIVAS	X		X	
17092	ERZINCAN	X			
17096	ERZURUM	X			
17098	KARS	X			
17099	AGRI	X			
17112	CANAKKALE	X			
17116	BURSA	X			
17123	ESKISEHIR	X			
17130	ANKARA CENTRAL	X			
17130	ANKARA CENTRAL		X		X

Index No.	*Station name*	*CLIMAT*	*CLIMAT TEMP*	*GSN*	*GUAN*
17140	YOZGAT	X			
17150	BALIKESIR	X			
17155	KUTAHYA	X			
17160	KIRSEHIR	X			
17170	VAN	X		X	
17188	USAK	X			
17190	AFYON	X			
17193	NEVSEHIR	X			
17196	KAYSERI/CITY	X			
17199	MALATYA BOLGE	X			
17202	ELAZIG	X			
17203	BINGOL	X			
17204	MUS	X			
17210	SIIRT	X			
17220	IZMIR GUZELYALI	X			
17220	IZMIR GUZELYALI		X		
17234	AYDIN	X			
17237	DENIZLI	X			
17240	ISPARTA	X		X	
17240	ISPARTA		X		
17244	KONYA	X			
17250	NIGDE	X			
17255	KAHRAMANMARAS	X			
17260	GAZIANTEP	X			
17265	ADIYAMAN	X			
17270	SANLIURFA	X			
17280	DIYARBAKIR	X			
17281	DIYARBAKIR-BOLGE		X		
17282	BATMAN	X			
17285	HAKKARI	X			
17292	MUGLA	X			
17300	ANTALYA	X			
17340	MERSIN	X			
17351	ADANA BOLGE	X			
17351	ADANA BOLGE		X		
17370	ISKENDERUN	X			
17375	FINIKE	X		X	
UKRAINE					
33213	OVRUCH	X			
33275	SUMY	X			
33301	RIVNE	X			
33317	SHEPETIVKA	X		X	
33345	KYIV	X		X	
33345	KYIV		X		X
33377	LUBNY	X		X	
33393	L'VIV	X			
33415	TERNOPIL'	X			
33429	KHMEL'NYTS'KYI	X			
33506	POLTAVA	X			
33526	IVANO FRANKIVS'K	X			
33562	VINNYTSIA	X			
33587	UMAN'	X		X	
33631	UZHHOROD	X			
33658	CHERNIVTSI	X			
33711	KIROVOHRAD	X			
33777	VOZNESENS'K	X			
33791	KRYVYI RIH	X			
33837	ODESA	X			
33889	IZMAIL	X			
33902	KHERSON	X			
33915	ASKANIIA NOVA	X		X	
33946	SIMFEROPOL'	X			
33998	AI PETRI	X		X	
34300	KHARKIV	X			
34415	IZIUM	X			
34519	DONETS'K	X			
34523	LUHANS'K	X			
34607	PRYSHYB	X			
34712	MARIUPOL'	X			
UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND					
03005	LERWICK	X		X	
03005	LERWICK		X		X
03017	KIRKWALL AP	X			
03026	STORNOWAY	X		X	
03066	KINLOSS	X			
03091	ABERDEEN DYCE AP	X			
03100	TIREE	X			
03162	ESKDALEMUIR	X		X	
03171	LEUCHARS	X			
03257	LEEMING	X			
03302	VALLEY	X		X	
03377	WADDINGTON	X		X	
03414	SHAWBURY	X			
03502	ABERPORTH	X			
03590	WATTISHAM	X			
03740	LYNEHAM	X			
03772	LONDON HEATHROW AP	X			
03797	MANSTON	X			
03808	CAMBORNE	X		X	
03808	CAMBORNE		X		X
03862	BOURNEMOUTH AP	X			
03917	BELFAST ALDERGROVE	X			

RESOLUTION 4 (XIV-RA VI)

AMENDMENTS TO THE *MANUAL ON THE GLOBAL OBSERVING SYSTEM* (WMO-NO. 544), VOLUME II, REGIONAL ASPECTS - REGION VI (EUROPE)

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 2 (Cg-XIV) — World Weather Watch Programme for 2004-2007,

(2) The report of the fifth session of the Working Group on Planning and Implementation of the WWW in Region VI,

(3) The *Manual on the Global Observing System* (WMO-No. 544), Volume II — Regional Aspects — Region VI (Europe),

DECIDES that the *Manual on the Global Observing System*, Volume II — Regional Aspects — Region VI (Europe), be amended as given in the annex to this resolution, with effect from 15 September 2005;

REQUESTS the Secretary-General to make the amendments, as given in the annex to this resolution, to the *Manual on the Global Observing System*, Volume II – Regional Aspects — Region VI (Europe);

AUTHORIZES the Secretary-General to make any consequent purely editorial amendments of the *Manual on the Global Observing System*, Volume II — Regional Aspects — Region VI (Europe).

_____

ANNEX TO RESOLUTION 4 (XIV-RA VI)

AMENDMENTS TO THE *MANUAL ON THE GLOBAL OBSERVING SYSTEM* (WMO-No. 544), VOLUME II — REGIONAL ASPECTS — REGION VI (EUROPE)

Replace Regional entry for Manual on the *Global Observing System* (WMO-No. 544), Volume II — Regional Aspects — Region VI (Europe) with the following:

6.1 Regional basic synoptic network of surface and upper-air observing stations

6.1.1 Composition of the regional basic synoptic network (RBSN)

6.1.1.1 The RBSN of surface and upper-air observing stations is reviewed and revised at each session of the Association. The list of stations constituting the current RBSN is given in the report of the most recent session of the Association. Changes are announced in the monthly "Operational Newsletter" issued by the Secretariat (see paragraph 6.1.4 below).

6.1.1.2 Manned surface land stations included in the RBSN shall conform to the specifications laid down for principal land stations in Volume I of this *Manual*.

6.1.2 Criteria for inclusion of stations in the RBSN

6.1.2.1 For the definition of criteria, two types of requirements are distinguished:

i) Target requirements (TRQs) refer to desired characteristics of network stations;

ii) Minimum requirements (MRQs) refer to threshold characteristics which are decisive for inclusion or exclusion of a station.

The inclusion of a station in the network implies a clear commitment by the Member concerned to make fair efforts to (maintain) comply with the TRQs.

In the table below, TRQs and MRQs for RBSN stations are recorded.

	TRQ Surface	MRQ Surface	TRQ Upper-air	MRQ Upper-air
Parameters	*All* Pressure; Temperature; Wind; Humidity. *Land stations* Precipitation amount Present weather; Visibility; Cloud cover; Cloud base. *Marine stations* SST; Significant wave height.	*All* Pressure *Land stations* Temperature; Wind; Humidity. *Marine stations* SST.	Pressure / geopotential; Temperature; Wind; Humidity.	Pressure / geopotential; Temperature; Wind; Humidity.
Level	-	-	Up to 10 h Pa	Up to 100 h P a
Observations at main hours	4	3	2 (at 00 and 12)	1
Observations at main and intermediate hours (i.e. 3 hourly)	8	5	-	-
Availability of data	95 - 100%	50%	95 - 100%	25%

NOTE: The availability percentage refers to the data amount required as a TQR. Thus, for example, if a land station makes five observations per day, but on average only three are available, then it yields an availability of 37.5%, not 60%.

6.1.3 Classification of station

6.1.3.1 Stations are classified according to their performance with reference to the above requirements:

i) Those stations meeting all TRQs are classified as OK;

ii) Those stations meeting all the MRQs are classified as IP (incomplete programme);

iii) Operational stations not meeting all MRQs are classified as BC (below criteria);

iv) Silent stations are classified as NO (not operating).

6.1.3.2 Silent stations should not be included in the network unless there are specific indications for a planned restoration of acceptable standards on the short-term. The same holds for BC stations.

NOTE: The TRQs are defined in accordance with the requirements set out in the *Manual on the Global Observing System* (WMO-No. 544). These should be regarded as the level of performance that should be aimed at for all stations. The MRQs have been defined as corresponding to the policy that has been applied in practice in the last few years. The definitions are such that these will not imply major changes in the current RBSN. The MRQs form the minimum threshold for inclusion or exclusion.

6.1.3.3 Spatial distribution for surface stations

OK stations are acceptable if at a distance of at least 60 km from the nearest network station. IP stations are acceptable if at a distance of at least 90 km from the nearest station. BC and NO stations are not acceptable as network stations.

6.1.3.4 Application of the criteria

The criteria are developed and revised periodically by each session of the Regional Association, which takes place every four years. If, during the intersessional period, a station performance drops below the MRQ, no automatic withdrawal is anticipated. In such cases, the continuation of the station in the network should be discussed by the president of the Association with the Coordinator of the Subgroup on Regional Aspects of the IOS and the Member concerned, and appropriate action should be taken. If no recovery, at least to MRQ standard is anticipated the station should then be withdrawn.

6.1.4 Arrangements and procedures for updating and amending the RBSN

Certain minor changes in the RBSN of surface and upper-air synoptic stations which do not affect the data requirements of the Region as a whole are inevitable from time to time. To provide a simple, rapid means of effecting changes proposed by the Members concerned, the following procedure shall be followed:

(a) Regional Association VI authorizes the president of the Association to approve, at the request of the Member concerned, on the advice of the Coordinator of the Subgroup on Regional Aspects of the IOS, and in consultation with the Secretary-General, minor amendments to the list of stations, without a formal consultation of the Members of the Association, it being understood that any changes of substance, i.e. one adversely affecting the density of the network or proposing a change in observational hours, would still require the formal agreement of Members through the adoption of a resolution by postal ballot;

(b) The Secretary-General shall notify all Members of WMO by circular letter of changes agreed with the president of the Association.

6.2 Regional arrangements and procedures for observations

6.2.1 Pressure-reduction method

6.2.1.1 According to the WMO Technical Regulations, Annex V, *Manual on the Global Observing System*, Volume I, Part III, Regulation 3.3.2.6, the atmospheric pressure at a station shall be reduced to mean sea-level, except at those stations where the Regional Association resolutions prescribe otherwise.

6.2.1.2 The Association has not taken any decision regarding the introduction of a uniform method of pressure reduction throughout the Region, although the desirability of accepting a single method is generally recognized. However, it encourages Members, especially those for whom the problem of the pressure reduction is of particular importance because of the nature of the orography of their country, to make further trials concerning the use of the formula suggested in WMO Publication No. 154 (Technical Note No. 61) - Note on the standardization of pressure reduction methods in the international network of synoptic stations, Section 8 (out of print).

6.2.2 Regional comparison of barometers

6.2.2.1 Each Member in the Region should ensure that the barometer of each synoptic station in its territory is compared with a fixed national standard barometer at least every three years.

6.2.2.2 The standard barometers in Hamburg, St Petersburg, London and Trappes are recognized as the absolute standard barometers for the Region.

6.2.3 Ground weather radar observations

Considering the usefulness of exchanging, on a bilateral or multilateral basis, meteorological information obtained by ground weather radar stations, Members are urged to continue their efforts to install ground weather radar stations for detecting precipitation, including heavy rain, hail and other severe weather phenomena, and to exchange on a bilateral or multilateral basis the meteorological information so obtained using the appropriate WMO code form (e.g. FM 94-IX Ext. BUFR).

6.2.4 Regional Instrument Centres (RICs)

6.2.4.1 Considering the need for regular calibration and maintenance of meteorological instruments to meet increasing needs for high-quality meteorological and hydrological data, the requirements of Members in the Region for standardization of meteorological measurements, the need for international instrument comparisons and evaluations, and for training of instrument experts, the Regional Instrument Centres should be established (see 6.2.4.3 paragraph below).

6.2.4.2 Regional Instrument Centres are designated to carry out the following functions:

(a) To keep a set of meteorological standard instruments linked with recognized or national standards and to log their performance and elements of comparison;

(b) To assist Members of the Region in calibrating their national standard meteorological instruments or in comparing them with the standard instruments mentioned in (a) and to keep the Members of the Region and the WMO Secretariat informed on the available standard instruments;

(c) To be prepared to certify instruments' conformity with the standards with reference to WMO recommendations;

(d) To organize instrument evaluations and comparisons, following standard methods;

(e) To advise Members of the Region, on request, regarding instrument performance and the availability of relevant guidance material;

(f) To assist WMO in organizing symposia, seminars or workshops on the maintenance, calibration and comparison of meteorological instruments by providing laboratory and field

installations, as well as assistance with regard to demonstration equipment and expert advice;

(g) To keep a library of books and periodicals on instrument theory and practices;

(h) To cooperate with other Regional Instrument Centres to provide standardization of meteorological instruments.

6.2.4.3 The Association has decided that the Service des équipements et des techniques instrumentales de la météorologie, Trappes, France, should be designated to perform the functions of a Regional Instrument Centre for RA VI.

6.2.5 Regional Radiation Centres (RRCs)

6.2.5.1 Considering the usefulness of the calibration of national and regional standard pyrheliometers against pyrheliometers of the World Standard Group (WSG) at five-year intervals for guaranteeing the high quality of radiation data and noting Resolution 11 (EC XXX) — National, Regional and World Radiation Centres and Resolution 16 (VII RA VI) — Regional Radiation Centres of Region VI, Regional Radiation Centres are designated to carry out the following functions:

(a) To possess and maintain a standard group of radiometers consisting of either: (i) three standard radiometers of the Ängström, silver disk or absolute radiometer type; or (ii) two absolute radiometers;

(b) To compare at least once every five years one of the standard radiometers against the World Standard Group;

(c) To intercompare, at least once a year, the standard radiometers with the aim of checking the stability of the individual instruments. If the ratio has changed by more than ± 0.2% and if the erroneous instruments cannot be identified, a recalibration at the World Radiation Centre (WRC) has to be performed prior to further use as a standard;

(d) To make available the necessary facilities and laboratory for checking and maintaining the accuracy of the auxiliary measuring equipment;

(e) To provide the necessary outdoor facilities for simultaneous comparison of national standard radiometers from the Region;

(f) To provide qualified staff with wide experience in radiation for continuity of the performance of the RRC;

(g) To organize and carry out comparisons of national radiation standards within the Region in close collaboration with the other RRCs and to maintain the standard instruments necessary for this purpose.

6.2.5.2 Each Regional Radiation Centre should as far as possible satisfy the above conditions before it is designated.

6.2.5.3 The following National Radiation Centres are designated to serve as Regional Radiation centres in RA VI:

Budapest (Hungary), Davos (Switzerland), Potsdam (Germany), St Petersburg (Russian Federation), Norrköping (Sweden), Trappes/Carpentras (France) and Uccle (Belgium).

6.2.6 Marine observations

6.2.6.1 Members are urged to actively contribute to/participate in regional and subregional large-scale projects involved in the study of atmosphere-ocean interaction and the routine collection and dissemination of observations that support the RBSN and RBCN requirements.

6.2.6.2 To ensure cross-programme coordination between CBS and JCOMM on maritime observing systems implementation programmes at the regional oceanic basin level, the Association recommended that the Coordinator of the Subgroup on Regional Aspects of the IOS work closely with other rapporteurs representing marine interests, to coordinate the support and contribution to the GOS.

6.2.7 AMDAR Programme

Members in the Association are strongly encouraged to become actively involved in the AMDAR Programme, either directly, or through a shared Programme such as E-AMDAR, and thus support an important element of the GOS.

6.2.8 Space-based sub-systems

6.2.8.1 The Association recognises the importance of the space-based sub-system within GOS, and the important contribution made by some of its Members through support of EUMETSAT and other space-based Programmes. The Association encourages all Members to become as involved as they can be in Programmes.

6.2.8.2 Each Member of the Association should possess satellite image reception equipment, or an alternative method of acquiring real-time images to support its activities.

6.3 Regional Basic Climatological Network of surface and upper-air observing stations

6.3.1 Composition of the Regional Basic Climatological Network (RBCN)

The RBCN includes all GCOS (GSN and GUAN) stations, regardless of whether these report CLIMAT or CLIMAT TEMP. The RBCN also includes all other stations that report CLIMAT or CLIMAT TEMP, except for stations, which are at a distance of less than 60 km of another network station.

NOTE: This distance criterion may be overruled if there is a difference in altitude of more than 1 000 metres.

Members are urged to comply fully with the global and regional coding procedures and data collection standards in accordance with procedures laid down in the WMO Technical Regulations and the *Manuals on the GOS*, *on Codes*, and *on the GTS* when operating the RBCN stations.

6.3.2 Arrangements and procedures for updating and amending RBCN

Regional Association VI authorizes the president of the Association to approve, at the request of the Members concerned, or the advice of the Coordinator of the Subgroup on Regional Aspects of the IOS and in consultation with the Secretary-General, minor amendments to the list of RBCN stations without formal consultation with the Members of the Association.

RESOLUTION 5 (XIV-RA VI)

RAPPORTEUR ON REGIONAL ASPECTS OF INSTRUMENT DEVELOPMENT, RELATED TRAINING AND CAPACITY-BUILDING

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) The *Abridged Final Report with Resolutions of the Thirteenth Session of Regional Association VI (Europe)* (WMO-No. 942),

(2) Resolution 7 (EC-LV) — Report of the thirteenth session of the Commission for Instruments and Methods of Observation,

CONSIDERING:

(1) The importance of information on instrument development as guidance for improving the equipment of surface-based observing stations with sensors and automatic weather stations,

(2) The need to update information on the status of instrumentation used at meteorological stations and on maintenance and calibration of instruments,

(3) The need to coordinate education and training activities for observers, station inspectors and technicians in the field of operation, maintenance and calibration of meteorological instruments,

DECIDES:

(1) To appoint a Rapporteur on Regional Aspects of Instrument Development, Related Training and Capacity-building with the following terms of reference:

(*a*) To update information on instrumentation operated at meteorological stations and on its maintenance and calibration;

(*b*) To prepare guidance for the best effective use of meteorological instrumentation;

(*c*) To keep abreast of all matters related to instrument development;

(*d*) To advise on the strategic requirement for Regional Instrument Centres in the Region VI and cooperate with the WG-PIW in that matter;

(*e*) To provide guidelines for coordination of education and training activities for instrument technicians in collaboration with the RIC and the WMO Secretariat;

(*f*) To facilitate liaison between CIMO and the Association on matters pertaining to capacity-building in the field of instruments and methods of observation;

(2) To invite Mr I. Zahumensky (Slovakia) to serve as Rapporteur on Regional Aspects of Instrument Development, Related Training and Capacity-building;

(3) To request the rapporteur to submit annual progress reports and a final report to the president of RA VI with a copy to the president of CIMO at least six months before the next session of the Association.

NOTE: This resolution replaces Resolution 4 (XIII-RA VI), which is no longer in force

RESOLUTION 6 (XIV-RA VI)

REGIONAL INSTRUMENT CENTRES

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) The evident benefit to Members and the experience gained from the establishment of Regional Instrument Centres,
(2) Recommendation 14 (CIMO-IX) — Intercomparison of Instruments,
(3) Recommendation 19 (CIMO-IX) — Establishment of Regional Instrument Centres,

CONSIDERING:

(1) The need for regular calibration and maintenance of meteorological instruments to meet increasing needs for high quality meteorological and hydrological data,
(2) The need for international instrument comparisons and evaluations,
(3) Limited resources of many Meteorological Services for employing experts with a scientific background or technical experience in the field of meteorological instruments and methods of observation,
(4) The difficulties encountered by several Members, in particular in developing countries and countries with economies in transition, when attempting to calibrate or compare their meteorological instruments against recognized standard instrument,

DESIGNATES the Calibration Laboratory of the Slovak Hydrometeorological Institute and the Calibration Laboratory of the Environmental Agency of the Republic of Slovenia as Regional Instrument Centres for RA VI with the following functions:

(1) To maintain a set of meteorological standard instruments traceable to recognized international or national standards and to keep a continuous record of their performance and traceability;
(2) To assist Members of the Region in calibrating their national standard meteorological instruments or in comparing them with standard instruments mentioned in (1) and to keep the Members of the Region and the WMO Secretariat informed of the available standard instruments;
(3) To advise Members of the Region in their enquiries about the performance of instruments and the availability of relevant guidance material;
(4) To organize instrument evaluations and comparisons;
(5) To assist WMO in organizing regional training seminars or workshops in the maintenance, calibration and comparison of meteorological instruments, by providing laboratory and field space, demonstration equipment and expert advisers;
(6) To maintain a library of books and periodicals on instrumentation science and practice;
(7) To cooperate with other Regional Instrument Centres and to coordinate the use of standards for instrument calibration;

REQUESTS the Secretary-General to include the content of this resolution in the *Manual on the Global Observing System* (WMO-No. 544) Volume II, Regional Aspects, Region VI — (Europe).

RESOLUTION 7 (XIV-RA VI)

REGIONAL METEOROLOGICAL DATA COMMUNICATION NETWORK

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 6 (XIII-RA VI) — Regional Meteorological Data Communication Network (RMDCN),
(2) The WMO-ECMWF agreement on the RMDCN,
(3) The major upgrading of the GTS in Region VI as a result of the implementation of the RMDCN and the large number of RA VI Member countries connected to the RMDCN,
(4) The important contribution of the RMDCN to the GTS as a whole, and in particular to the Improved Main Telecommunication Network (IMTN),
(5) The need to upgrade and maintain the high level of operation of the RMDCN,
(6) That the WMO RMDCN Trust fund and its Members' contributions were instrumental in assisting several countries in joining the RMDCN and in coordinating matters related to the RMDCN,

CONSIDERING:

(1) The need to ensure that the RMDCN continues satisfying the GTS requirements in Region VI, and contributing to the overall GTS, in particular the IMTN,
(2) The need to implement changes in the RMDCN, in particular taking into account the rapid development of the telecommunication technology and the services proposed by telecommunication providers, as well as evolving data exchange requirements,
(3) The need for cost-effective solutions for the connection of the RA VI Member countries not yet connected,

(4) The need to review, in association with the ECMWF, RMDCN contractual arrangements, as required, and in particular prepare a new procurement and implementation, according to the current RMDCN contract and the WMO-ECMWF agreement on the RMDCN,
(5) The need to continue assisting Members in implementing their connection to the RMDCN and coordinating matters related to the implementation and operation of the RMDCN,

DECIDES:

(1) To re-establish the Steering Group on the RMDCN, reporting to the president of the Association with the following terms of reference:
   (*a*) To ensure coordination between all RA VI Member countries and other Members connected to the RMDCN;
   (*b*) To review the matters related to the operation of the transport service of the GTS provided by the RMDCN;
   (*c*) To maintain close liaison with the Sub-group on Regional Aspects of the Information System and Services of the RA VI Working Group on Planning and Implementation of the WWW, in particular to keep abreast of the GTS requirements in Region VI;
   (*d*) To address problems related to the satisfaction of GTS requirements in Region VI through the RMDCN;
   (*e*) To make proposals for upgrading the capacities of the RMDCN with benefits for all Members countries already connected, and for facilitating the connection of the RA VI Member countries not connected;
   (*f*) To maintain close liaison with the CBS/OPAG on Information System and Services, in particular as regards the contribution of the RMDCN to the IMTN;
   (*g*) To prepare in collaboration with ECMWF possible changes in the RMDCN, in particular new procurement and implementation in accordance with the RMDCN contract;
   (*h*) To assist the RA VI Member countries not connected to the RMDCN in joining the RMDCN and implementing their connection;
   (*i*) To direct the utilization of the WMO RMDCN Trust Fund;
(2) That the Steering Group should be composed of representatives from the following countries:
   Austria
   Bulgaria
   Czech Republic
   Germany
   Italy
   Lebanon
   Lithuania
   Russian Federation
   Sweden
   United Kingdom
   ECWF (Observer)
(3) That the chairperson may invite experts from centres of other Regions connected to the RMDCN;
(4) To designate, in accordance with Regulation 32 of the WMO General Regulations, Mr D. André (France) as chairperson of the working group;

REQUESTS the chairperson to inform regularly the president of Association of any change in the network or planned evolution, and to submit a report to the Association six months before its next session;

INVITES Members to continue contributing to the implementation and operation of the RMDCN, in particular by contributing to the WMO RMDCN Trust Fund;

REQUESTS the Secretary-General to arrange for Secretariat support for the implementation and operation of the RMDCN.

NOTE: This resolution replaces Resolution 6 (XIII-RA VI), which is no longer in force.

RESOLUTION 8 (XIV-RA VI)

RE-ESTABLISHMENT OF THE WORKING GROUP ON CLIMATE-RELATED MATTERS

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) The report of the chairperson of its Working Group on Climate-related Matters,
(2) The report of the Meeting of the Working Group on Climate-related Matters (Sofia, Bulgaria, 29 March-1 April 2004),
(3) Resolution 10 (Cg-XIV) — Global Climate Observing System,
(4) Resolution 8 (Cg-XIII) — Climate Information and Prediction Services Project,
(5) Resolution 25 (Cg-XIV) — Sixth WMO Long-term Plan (2004-2011),
(6) The report of the chairperson of the Working Group on Climate-related Matters in Region VI,

CONSIDERING the need for the Association to maintain its activities in climate-related matters of particular importance to the Region,

Taking into account the requirements and capabilities of the Climate Services of the Member countries in the Region,

DECIDES:

(1) To re-establish the Working Group on Climate-related Matters with the following terms of reference:
   (*a*) To keep abreast of climate-related national and

international activities, in particular those undertaken by Members in RA VI and within the World Climate Programme (WCP) and other climate-related programmes;

(*b*) To provide advice, and assist in the implementation of projects, on methods to strengthen and improve climate observations, data management, provision of datasets, and data rescue;

(*c*) To focus more specifically on the projects of the European Climate Support Network

(*d*) To provide advice on, and assist in, the implementation of projects on methods to strengthen and improve climate monitoring activities in RA VI considering different data sources such as *in-situ* data, remote sensing data and model output data;

(*e*) To provide advice on, and assist in, the implementation of CLIPS in the Region with special focus on training, showcase projects and Focal Point networking;

(*f*) To review the progress in research and implementation of predictive capability on seasonal to interannual timescales, including verification, information interpretation and conversion into decisions within each application area, as well as the arrangements necessary to ensure that this capability is channeled effectively through NMHSs;

(*g*) To report on EuroCLIVAR activities with special regard to climate extremes and indices and indicators for climate change detection in RA VI;

(*h*) To provide advice on, and assist in, the implementation of various climate applications in RA VI, especially in the development of bioclimatic indices and urban and building climatology;

(*i*) To provide assistance in the implementation of effective drought monitoring in the Region in close liaison with the Working Group on Agrometeorology and the Working Group on Hydrology.

(*j*) To advise the president of the Association on all matters concerning the WCP;

(*k*) To advise the president of the Association on all matters concerning the implementation of RCCs in RA VI;

(*l*) To carry out (a) - (f) in such a way as to encourage cooperation and networking across the Region for the benefit of the Members and the users of climate services,

(2) To select the following experts to serve on the working group in the capacities indicated:
Mr M. Striz (Czech Republic) to serve as Rapporteur on Observations and Data Management;
Ms E. Koleva (Bulgaria) to serve as Rapporteur on Climate System Monitoring and Analysis;
Ms E. Coelho (Portugal) to serve as Rapporteur on CLIPS: Applications and Climate Information;
Mr M. Linger (Switzerland) to serve as Rapporteur on CLIPS: Long-range Forecasting and Climate Scenarios;
Mr D. Kiktev (Russian Federation) to serve as Rapporteur on Coordination and Implementation of Regional Climate Centre Activities;
Mr A. Van Engelen (Netherlands) to serve as Rapporteur on Data Rescue and Digitalization;
Ms T. Cegnar (Slovenia) to serve as Rapporteur on the European Climate Support Network;
Ms S. Szalai (Hungary) to serve as Expert on Drought Monitoring;

(3) To select Mr P. Hechler (Germany) to act as chairperson of the working group;

(4) That Members may nominate other experts to serve on the working group, as required;

REQUESTS the chairperson of the working group to submit annual progress reports to the president of the Association and a final report not later than six months before the fifteenth session of the Association.

RESOLUTION 9 (XIV-RA VI)

ESTABLISHMENT OF A REGIONAL CLIMATE CENTRE NETWORK IN RA VI (RCC-RA VI)

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 7 (RA VI-XIII) — Re-establishment of the Working Group on Climate-related Matters and Resolution 9 (RA VI-XIII) — Provision of Seasonal to Interannual Forecasts and Regional Climate Services,

(2) The report of the WMO RA VI Working Group on Climate-related Matters (2004),

(3) The *Proceedings of the Meeting on Organization and Implementation of Regional Climate Centres* (WMO-TD No. 1198),

(4) Resolution 9 (RA II-XIII) — Establishment of Regional Climate Centres Network in RA II (RCC-RA II),

RECOGNIZING:

(1) That the fifth-sixth session of the Executive Council had urged regional associations interested in Regional Climate Centres (RCCs) to proceed quickly towards implementation,

(2) That at the thirteenth session of RA VI, Members had considered that it was time to proceed with an approach to provide seasonal to interannual products for RA VI on an operational basis and establish RCC functions as required by Members.
(3) The needs in RA VI, identified by a survey, to establish a system of RCCs in order to enhance the climate services of NMHSs,
(4) That designation procedures for RCCs are subject to agreement between CBS and CCl,

DECIDES:

To take immediate steps to implement a network of multiple multifunctional centres and/or specialized centres on a pilot basis as the structure for implementing RCC activities in RA VI, in order to determine optimal composition of the RA VI RCC network which would best comply with the functions of RCC as described below:

FUNCTIONS OF RCCS

(*a*) RCC functions should be composed of 'Operational function', 'Coordination function', 'Data services function', 'Training and capacity-building function' and 'Research and development function'. A list of potential functions and activities for further consideration by the Working Group on Climate-related Matters (WGCRM), in line with the regional action plan is set out in the annex to this resolution;
(*b*) In order to keep the flexibility of the RCCs, network climate products and services provided by each participating institution may be subject to change over the course of the evaluation process;

ELIGIBILITY AND OVERALL STRUCTURE

(*c*) A NMHS or an organization recommended by a NMHS, responsible for climate-related services that intends to provide RCC services on its own initiative and on a voluntary basis (participating institution), is eligible to participate in the RCC network. A participating institution should have at least some of the listed functions, preferably including several operational activities for all or a part of the Region, and must adhere to WMO regulations and resolutions including data policy (Resolution 40 (Cg-XIII) — WMO policy and practice for the exchange of meteorological and related data and products including guidelines on relationships in commercial meteorological activities and Resolution 25 (Cg-XIII) — Exchange of hydrological data and products);
(*d*) In the RCC network, each participating institution should establish and manage its Web site on its own initiative. All of the Web sites are integrated by linking to the RCC network home page, to ensure the visibility of the whole structure of the system and their activities;
(*e*) Each participating institution should develop its implementation plan and submit it to Region VI WGCRM in advance. In addition, participating institutions should submit activity reports on an annual basis to WGCRM;

REQUESTS:

(1) The WGCRM to make proposals for qualification and eligibility of RCCs to the president of RA VI;
(2) The president of RA VI to distribute guidelines to the Members of Region VI and to invite interested NMHSs to apply for RCCs.

ANNEX TO RESOLUTION 9 (XIV-RA VI)

LIST OF REGIONAL CLIMATE CENTRE FUNCTIONS AND ACTIVITIES

OPERATIONAL ACTIVITIES

- To interpret and assess relevant LRF output products from global prediction centres
- To generate and distribute tailored LRF products to meet NMHSs' needs
- To verify LRF products including the necessary exchange of basic data
- To provide a RA VI-wide operational climate monitoring capability and to provide access to climate monitoring products on NMHSs' Web sites
- To generate, maintain and continue long and homogenised time series
- To generate, maintain and continue (European) climate datasets
- To generate and distribute tailored climate monitoring and analysis products to meet NMHSs' needs

CO-ORDINATION FUNCTIONS

- To co-ordinate (RA VI-wide) common definitions for climate extremes and related indices
- To co-ordinate (RA VI-wide) normalised descriptions of climate-related socio-economic damages/losses
- To provide methodologies on state-of-the-art extremes analyses and enhancement of extremes indicators
- To strengthen collaboration between NMHSs on related observing, communication and computing networks including data collection and exchange
- To develop systems to facilitate harmonisation and assistance in the use of LRF products
- To co-ordinate with climate services' end users, including the organisation of workshops and other forums on users' needs
- To develop media and public awareness strategies relating to LRFs
- To introduce climate information and predictions into early warning and disaster prevention systems

- To exploit GIS potentials for climate services' activities
- To standardise (RA VI-wide) climate services' products and methods/procedures

Data services functions
- To rescue climate datasets
- To develop and maintain software modules for standard applications (especially climate data management including quality assurance)
- To co-ordinate (RA VI-wide) guidelines on standardised quality control/quality assurance methods for climate data processing, methods on homogenisation and interpolation, metadata formats and methods for girded datasets

Training and Capacity-building functions
- To train NMHS staff in LRF methods and characteristics to strengthen services
- To train end-users on the application and impact of LRF products
- To introduce appropriate decision models for end-users, especially as related to probability forecasts
- To provide sustained training of NMHS staff on climate matters
- To provide technical capacity-building on NMHS level

Research and Development functions
- Development of a climate research and development agenda co-ordinated with related key players
- Development of consensus practices to handle conflicting information in the Region
- Development of validation procedures relating to LRF products in co-ordination with other centres and WMO guidelines
- Development and validation of regional models and methods of downscaling of global output products
- Application research and specification and development of sector specific products
- Studies of the economic value of climate information
- To study climate variability, predictability and impact

RESOLUTION 10 (XIV-RA VI)

CLIMATE INFORMATION AND PREDICTION SERVICES

THE REGIONAL ASSOCIATION VI (EUROPE),

Noting:

(1) Resolution 8 (XIII-RA VI) — Climate Information and Prediction Services Project,

(2) That Members of RA VI are contributing to a range of CLIPS activities,

(3) The report of the CLIPS Workshop for RA VI (WMO-TD No. 1164),

Considering:

(1) That international climate variability, including, but not restricted to, variability linked to El Niño/Southern Oscillation, substantially impacts socio-economic activities in the Region,

(2) That effective use of current seasonal to interannual climate information and prediction technology can provide substantial benefit in socio-economic planning,

(3) That improved use of climate information, in addition to, or in combination with, climate predictions, can provide further socio-economic benefit,

(4) That the technology for seasonal to interannual climate prediction is developing rapidly,

(5) That effective application of climate prediction and information services requires capacity-building and development of correctly designed and adequately resourced projects,

(6) That the implementation of CLIPS in the Region should be kept under constant review,

(7) That there is a need for close coordination in the implementation of CLIPS in the Region,

Decides:

(1) To appoint rapporteurs on the Implementation of the CLIPS project in the Region, with the following Terms of Reference (ToRs):
   (*a*) To act in support of all CLIPS activities within the Region;
   (*b*) To act as coordinators of sub-regional networks of national CLIPS Focal Points;
   (*c*) To keep abreast of research activities on climate variability in the Region as well as of applications research pertaining to climate information and prediction services;
   (*d*) To actively support the initiation and conduct of CLIPS showcase projects including any required resource mobilization;
   (*e*) To liaise with relevant CCI Expert Teams;
   (*f*) To liaise with the RCCs in the Region;
   (*g*) To closely liaise with the CLIPS Rapporteur of the Working Group on Climate-related Matters;

(2) To designate the following as rapporteurs to carry out these ToRs for Member countries in RA VI as follows:
   (*a*) Mr C. Almarza (Spain) as Rapporteur for Western Europe (Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United

Kingdom);

(*b*) Mr B. Sen (Turkey) as Rapporteur for Central Europe and the Middle East (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Greece, Hungary, Israel, Jordan, Lebanon, Poland, Romania, Serbia and Montenegro, Slovakia, Slovenia, Syrian Arab Republic, The former Yugoslav Republic of Macedonia, and Turkey);

(*c*) Ms V. Grigoryan (Armenia) as Rapporteur for Eastern Europe (Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakhstan, Latvia, Lithuania, Republic of Moldova, Russian Federation, and Ukraine); and

(3) To request the rapporteurs to submit annual progress reports to the president of the Association, and final reports no later than six months before the fifteenth session of the Association;

URGES:

(1) Those members who have not yet done so, to appoint national CLIPS Focal Points and to provide them with the facilities and the management support necessary to effectively undertake their roles;

(2) Members to supplement, through extrabudgetary contributions, the resources required for the further development and implementation of the CLIPS project;

REQUESTS the Secretary-General:

(1) To provide the necessary coordination support and guidance, within available resources, (including existing coordination mechanisms between WMO and the European Union) to the rapporteurs on the implementation of CLIPS in the Region and to the national CLIPS Focal Points;

(2) To bring this resolution to the attention of all concerned.

NOTE: This resolution replaces Resolution 8 (XIII-RA VI) which is no longer in force.

RESOLUTION 11 (XIV-RA VI)

RAPPORTEUR ON THE GLOBAL ATMOSPHERE WATCH

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 10 (Cg-XIII) — Atmospheric Research and Environment Programme,

(2) *WMO Technical Regulations* (WMO-No. 49), Volume I, Chapter B.2 — Global Atmosphere Watch (GAW),

CONSIDERING:

(1) The ever-increasing awareness of a number of environmental issues which are being addressed through the GAW,

(2) That WMO has a long history of facilitating and coordinating activities concerning the monitoring and assessment of atmospheric chemical composition and related physical characteristics of the background atmosphere,

(3) The approval of the GAW Programme by the forty-first session of the Executive Council,

(4) That Eleventh Congress stated that GAW should be a major component of GCOS,

(5) The need to keep fully abreast of developments related to GAW in the Region, including activities such as the central facilities established, the preparations for assessments and the exchange of experience in research and monitoring,

DECIDES:

(1) To appoint a Rapporteur on the Global Atmosphere Watch with the following terms of reference:

(a) To survey and report on Members' efforts in operating GAW stations;

(b) To advise on the further development of the GAW network in the Region with special emphasis on data quality, data reporting and application to regional and national environmental issues and on integrating ground- and satellite-based observation systems;

(c) To assist Members in the exchange of information and experience and in development of cooperative research projects in the field of atmospheric chemistry and pollution in the Region;

(d) To promote and advise on the establishment of new improvements in the work of existing calibration and quality assurance centres and related activities, including calibration of various monitoring instruments;

(e) To liaise with the RA VI Rapporteur on Atmospheric Ozone on matters of mutual interest;

(2) To invite Mr S. Chicherin (Russian Federation) to serve as the Rapporteur on the Global Atmosphere Watch;

(3) To request the rapporteur to submit an annual report on activities for distribution to Members of the Region and a final report six months before the next session of the Association.

NOTE: This resolution replaces Resolution 10 (XIII-RA VI) which is no longer in force.

RESOLUTION 12 (XIV-RA VI)

RAPPORTEUR ON ATMOSPHERIC OZONE

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 11 (EC-XXIX) — Atmospheric ozone measurements,

(2) Resolution 7 (EC-XXXIX) — Global ozone research and monitoring,

(3) The Vienna Convention for the Protection of the Ozone Layer and the Montreal Protocol on Substances that Deplete the Ozone Layer and its amendments,

CONSIDERING:

(1) The recognized threat to the depletion of stratospheric ozone,

(2) That WMO has a long history of facilitating and coordinating ozone activities,

(3) The approval by the forty-first session of the Executive Council of the Global Atmospheric Watch (GAW) with one of its main components being ozone,

(4) That Eleventh Congress stated that GAW should be a major component of the Global Climate Observing System (GCOS),

(5) The necessity for continued encouragement of activities related to ozone in the Region, including activities such as arrangements for instrument intercomparisons, re-evaluation of past records, preparations for assessments and the exchange of experience in ozone research and monitoring,

DECIDES:

(1) To appoint a Rapporteur on Atmospheric Ozone with the following terms of reference:

(*a*) To survey and report on Members' efforts in operating GAW ozone stations in the Region;

(*b*) To assist, in collaboration with the Secretariat, in the conduct of comparisons and calibrations of Dobson, Brewers, ultraviolet-B measuring and other instruments in RA VI and other Regions;

(*c*) To advise on the establishment of new ozonesonde stations in the Region and on matters relating to the monitoring of ozone by satellites;

(*d*) To assess regional interest in matters relating to, and encourage the monitoring of, tropospheric and surface ozone including ultraviolet-B monitoring;

(*e*) In collaboration with the Secretariat, to keep in contact with cooperative research projects on stratospheric and tropospheric ozone within the Region and to assist Members in the exchange of information and experience;

(*f*) To maintain liaison with the Regional Dobson Calibration Centre and the World Calibration Centre for surface ozone;

(2) To invite Mr H. de Backer (Belgium) to serve as the Rapporteur on Atmospheric Ozone;

(3) To request the Rapporteur to submit an annual report on his activities to the president of the Association and a final report six months before the next session of the Association.

NOTE: This resolution replaces Resolution 11 (XIII-RA VI) which is no longer in force.

RESOLUTION 13 (XIV-RA VI)

RAPPORTEUR ON WWRP-THORPEX

THE REGIONAL ASSOCIATION VI (EUROPE),

CONSIDERING:

(1) The wide interest in participating in the development and implementation of the THORPEX Programme for the benefit of all National Meteorological Services (NMSs) in the Region,

(2) That the Region should be actively involved in and support the broad scope of THORPEX activities,

NOTING that many Members of the Region play a critical role in THORPEX, and that the European THORPEX Regional Committee provides the coordination in RA VI,

DECIDES:

(1) To appoint a Rapporteur on WWRP-THORPEX with the following terms of reference:

(*a*) To serve as a focal point for WWRP-THORPEX in RA VI (Europe);

(*b*) To encourage and facilitate the participation of the NMSs, academia and related organizations and agencies of the Region in THORPEX activities, in particular through the European THORPEX Regional Committee;

(*c*) To keep the Association informed on THORPEX plans and activities in accordance with

the THORPEX International Science Plan and the THORPEX International Research Implementation Plan, and specifically those requiring the support and engagement of the Region;

(*d*) To advise and promote, within the Region, an exchange of information and publication relating to THORPEX activities;

(2) To invite Ms S. Jones (Germany) to serve as Rapporteur on WWRP-THORPEX;

(3) To request the rapporteur to submit annual reports, as appropriate, to the president of the Association and a final report not later than six months before the next session of the Association.

RESOLUTION 14 (XIV-RA VI)

WORKING GROUP ON AGRICULTURAL METEOROLOGY

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 14 (Cg-XIV) — Agricultural Meteorology Programme,

(2) The *Abridged Final Report with Resolutions of the Thirteenth Session of the Commission for Agricultural Meteorology* (WMO-No. 951),

(3) Resolution 13 (XIII-RA VI) — Working Group on Agricultural Meteorology,

(4) The recommendations of the RA VI Working Group on Agricultural Meteorology (Braunschweig, Germany, 17-19 December 2003),

CONSIDERING:

(1) The awareness of environmental aspects of agriculture and of the importance of the quality of agricultural products in RA VI,

(2) The need to promote more active use of agrometeorological research products by the end users for sustainable agriculture in the Region,

(3) The importance of climate change and its potential impacts on agriculture and water resources in the Region,

(4) The need to enhance water use efficiency and availability in European agriculture,

URGES Members:

(1) To undertake studies on the more active applications of agricultural meteorology to promote sustainable agriculture in the Region,

(2) To assess the potential impacts of climate change on sustainable agriculture in the Region and develop appropriate strategies to cope with such impacts,

(3) To strengthen linkages between meteorological services and agricultural sector,

DECIDES:

(1) To establish a Working Group on Agricultural Meteorology with the following terms of reference:

(*a*) To review the various agrometeorological techniques and applications to enhance water use efficiency and availability in European agriculture and suggest more appropriate tools for effective irrigation scheduling;

(*b*) To assess the economic impacts of agrometeorological information in Europe through specific case studies;

(*c*) To review and recommend applications of seasonal to interannual climate forecasts to agriculture in Europe, especially concerning quality and storage of agricultural products, through active collaboration with CLIPS;

(*d*) To assess the feasibility of using numerical weather products in operational applications of agrometeorology;

(*e*) To evaluate the use of remote sensing techniques for monitoring crop growth phases and promote their applications in operational agrometeorology;

(*f*) To promote more active collaboration with the farming community in Europe for improved applications of agrometeorology at the farm level including Internet technologies; and

(*g*) To promote development of common agricultural standards for the Region;

(2) (*a*) To invite the following experts to serve as members of the working group:
Mr V. Alexandrov (Bulgaria)
Ms F. Rossi (Italy)
Ms E. Antipova (Kazakhstan)
Mr P. Struzik (Poland)
Ms R. Guerreiro (Portugal)
Mr E. Mateescu (Romania)
Ms A. Susnik (Slovenia)
Mr P. Calanca (Switzerland)

(*b*) To invite Mr J. Etzinger (Austria) to act as chairperson of the Working Group on Agricultural Meteorology;

(3) (*a*) To request the chairperson to allocate responsibilities in consultation with the members of the group for the various tasks contained in the terms of reference;

(*b*) To request the chairperson to submit a final report comprising individual reports of the members to the president of the regional association not later than six months before the next session of the Association.

RESOLUTION 15 (XIV-RA VI)

RAPPORTEUR(S) ON REGIONAL ASPECTS OF THE AERONAUTICAL METEOROLOGY PROGRAMME IN REGION VI

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) The need for monitoring and keeping under review developments in aeronautical meteorology in the Region,

(2) The need for coordination among RA VI Members of activities related to aeronautical meteorology and for reporting these activities to the Region and to the Commission for Aeronautical Meteorology (CAeM),

CONSIDERING that the monitoring, review and coordination of aeronautical meteorological issues would be of great benefit to Members in the Region,

DECIDES:

(1) To appoint Rapporteurs on Regional Aspects of the Aeronautical Meteorological Programme (AeMP) with the following terms of reference:

(*a*) To review and advise on observational data and product requirements of countries in the Region in the context of the AeMP;

(*b*) To review the status of the implementation of the AeMP in the Region, including observing systems at aerodromes, aircraft data collection, and services provided under the World Area Forecast System (WAFS), and to formulate proposals through the WMO Secretariat to the appropriate International Civil Aviation Organization (ICAO) bodies for its future developments and implementation;

(*c*) To monitor and promote capacity-building activities related to the AeMP within the Region and to identify training requirements;

(*d*) To regularly monitor and report to Members on the situation regarding the implementation of the current Single European Sky (SES) Regulations and future development in this area with particular attention to possible impacts on Members outside the European Union and assist in organizing a seminar on SES to inform Members on developments in this area;

(*e*) To keep abreast of matters related to the implementation of AMDAR programmes and projects in the Region;

(*f*) To liaise by correspondence with CAeM OPAGs and the ICAO meteorological groups through their respective Secretariats on specific regional matters, in particular those related to cost recovery for aeronautical meteorological services;

(*g*) To provide advice to the president of RA VI on aeronautical meteorology matters and to take actions as relevant;

(*h*) To monitor and develop proposals for drafting a MET strategy on CNS/ATM;

(2) To invite Mr D. Lambergeon (France) and Ms M. Petrova (Russia Federation) to serve as Rapporteurs on Regional Aspects of the Aeronautical Meteorology Programme; and

(3) To request the rapporteurs to submit annual reports on their activities to the president of the Association as well as final reports six months before the next session of the Association, copied to the WMO Secretariat;

(4) To request the Secretariat to take the necessary steps to establish a mechanism to review the existing technical regulations on aeronautical meteorological services taking into account the specific issues concerning safety and efficiency of air navigation in the Region, which are connected to the problem of cost recovery on aeronautical meteorological services.

RESOLUTION 16 (XIV-RA VI)

RAPPORTEUR ON REGIONAL MARINE METEOROLOGICAL AND OCEANOGRAPHIC SERVICES

THE REGIONAL ASSOCIATION VI (EUROPE)

NOTING the report of the Rapporteur on Regional Marine Meteorological and Oceanographic Services,

CONSIDERING:

(1) The need for continued development of marine meteorological and oceanographic services in Region VI,

(2) The need to continue close liaison with JCOMM, in particular through its programme area on capacity-building, with regard to matters affecting the Region,

DECIDES:

(1) To appoint a Rapporteur on Regional Marine Meteorological and Oceanographic Services with the following terms of reference:

(*a*) To continuously review the status of the implementation of marine meteorological and oceanographic services and marine observing systems in Region VI and to formulate suggestions for their further development;

(*b*) To take action on marine meteorological and oceanographic matters assigned by the president of RA VI;

(*c*) To liaise with the appropriate JCOMM subsidiary bodies, in particular within the Capacity-building Programme Area, on specific matters concerning Region VI;

(*d*) To liaise with the Subgroup on the Regional Aspects of the Integrated Observing Systems of the RA VI Working Group on Planning and Implementation of the WWW;

(2) To invite Mr H. Savina (France) to serve as the Rapporteur on Regional Marine Meteorological and Oceanographic Services;

(3) To request the rapporteur to submit annual reports, as appropriate, to the president of the Association with a final report to be presented six months prior to the fifteenth session of the Association;

REQUESTS the Secretary-General to assist the rapporteur in his work as appropriate.

NOTE: This resolution replaces Resolution 15 (XIII-RA VI) which is no longer in force.

RESOLUTION 17 (XIV-RA VI)

WORKING GROUP ON HYDROLOGY

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) The report of its Working Group on Hydrology,

(2) Resolution 17 (Cg-XIV) — Hydrology and Water Resources Programme,

(3) Resolution 37 (Cg-XIII) — Terms of Reference of the Technical Commissions,

(4) The Sixth WMO Long-term Plan,

(5) Resolution 19 (XIII-RA VI) — Working Group on Hydrology,

CONSIDERING:

(1) That Regional Association VI plays an important and active role in conducting regional WMO activities relating to the Hydrology and Water Resources Programme (HWRP),

(2) That HWRP is a priority programme for the Region,

(3) That the Working Group on Hydrology (WGH) of RA VI has developed important work within the framework of its various subgroups, participating actively during the last intersessional period,

(4) That the Working Group on Hydrology proposed at its tenth session continuing its same activities during the next intersessional period,

(5) The fruitful cooperation established during the past intersessional period between the WGH and the European Commission in matters concerning the implementation of the EU Water Framework Directive,

DECIDES:

(1) To re-establish the Working Group on Hydrology with the following terms of reference:

(*a*) To provide assistance and advice to the president of the Regional Association on all issues relating to the regional aspects of HWRP;

(*b*) To determine the best way to meet the Region's needs in terms of hydrology and water resources;

(*c*) To carry out the HWRP-related activities listed in the annex to the resolution in close cooperation with the CHy experts;
(*d*) To cooperate with CHy and other WMO bodies on projects relating to hydrology and water resources; including at the strategic planning stage whenever possible;
(*e*) To undertake activities in the priority areas described in the programme of work as given in the annex to this resolution;

(2) To re-establish the subgroup on Flood Forecasting and Warning composed of experts in hydrology and in meteorology from the region;
(3) To invited Members in the Region to designate Hydrological Advisers to Permanent Representatives if they have not already done so;
(4) To invite all Members in the Region to designate experts in hydrology and water resources, preferably including the hydrological advisers to the Permanent Representatives and representatives of the HOMS national reference centers and of other bodies working in the field of water, to participate in the working group on an ongoing basis and attend its meetings. In selecting such participants, Members should take into account that they will have to devote time and effort to the working group's activities;
(5) To appoint Mr J Kubat (Czech Republic) as Regional Hydrological Adviser and chairperson of the working group and Mr J.-M. Tanguy (France) as vice-chairperson of the working group;
(6) To appoint the following experts as core members of the working group:
Mr I. Karro (Sweden) as chairperson of the Subgroup on Flood Forecasting and Warning;
Ms M. Simota (Romania) as expert on Public Relations and Visibility of Hydrological Services;
Mr M. Puuponen (Finland) as expert on Networking for contributions to regional initiatives related to Water;
Mr T. Kokkonen (Finland) as expert on Climate and Water;
Mr V. Vuglinsky (Russian Federation) as expert on Water Monitoring and Assessment;
Mr B. Ozga-Zielinski (Poland) as expert on Potential Extreme Floods;
Ms G. Monacelli (Italy) as expert on Drought Assessment and Forecasting;

Invites the Regional Hydrological Adviser and chairperson of the working group:
(1) To prepare an implementation plan and designate, in consultation with the president of the Regional Association, appropriate Members from the working group to conduct activities on the various aspects of the terms of reference;
(2) To participate in EC sessions, if invited, representing the regional interests in relation to hydrology and water resources and to coordinate the WGH activities with CHy and other regional WGH;
(3) To submit to the president of the regional association an annual report on 31 December every year and a final report no later than six months before the fifteenth session of RA VI;

Requests the Members concerned to give their full support to their country core Members so that they may carry out the tasks entrusted to them;
Invites the Secretary-General to provide assistance to hydrological activities in the Region, including seeking sources of finance and implementing the projects that could be prepared as part of the activities of the RA VI Working Group on Hydrology.

ANNEX TO RESOLUTION 17 (XIV-RA VI)

PROPOSED PROGRAMME OF WORK OF THE WORKING GROUP ON HYDROLOGY

I. Public Relations and Visibility of Hydrological Services

Considering the need to enhance the visibility of the NHSs and the recognition of their role by national authorities, as well as their involvement in the formulation of new international policy tools concerning water:
(*a*) To collect, analyze and disseminate information on the activities undertaken by NHSs in the area of public relations, and on tools and approaches used to enhance their visibility and recognition;
(*b*) To develop a RA VI Working Group on Hydrology Web site, with a link on the WMO Web site, as an operational tool for the activities of the working group, in particular as concerns the exchange of information, the establishment of an address book, the publication of reports, the provision of links for the hydrological community, including in particular information on the current activities of the NHSs;
(*c*) To formulate suggestions for the presentation to the public at large through communication media of daily hydrological bulletins and forecasts for a country or large river basins.

II. Networking for contributions to regional initiatives related to Water - in particular to the Water Framework Directive.

The objective of this proposal is to ensure relevant hydrological contribution for multidisciplinary regional water related programmes or initiatives. Furthermore, it should help National Hydrological Services to plan and adapt their long-term activities. The main task is to develop working relationships and practices to facilitate this development.

(*a*) To define and implement, under the leadership of WMO, the necessary policy actions for NHS participation, e.g. formal cooperation agreements between WMO and the EC;
(*b*) To develop and activate the network of NHSs to communicate, organize and manage activities;
(*c*) To carry out specific projects that are based on NHSs contributions and serve the implementation of the Water Framework Directive;
(*d*) To attend or organize workshops involving the key parties for cooperation, and active participation.

III. Water Monitoring and Assessment (technical aspects)

Considering the present and anticipated responsibilities of the NHSs in the area of monitoring and water assessment in compliance with the EU Water Framework Directive (WFD):

(*a*) To evaluate current methods used for the monitoring and assessment of the surface and groundwater;
(*b*) To prepare a revue of and proposals on:
  (*i*) Monitoring programmes in compliance with the WFD (end of 2006);
  (*ii*) Methods and criteria for the classification of the state of rivers and groundwater bodies;
(*c*) To evaluate the influence of monitoring frequency on the assessment of surface and groundwater quality parameters.

IV. Climate and Water

Considering the potential impacts of climate variability and change on water resources, as well as uncertainties involved in assessing the impacts:

(a) To study and report on how scenarios provided by regional climate models should be presented to hydrologists and end users dealing with water management;
(b) To study and report on how assessments based on environmental simulation models and regional climate scenarios can be condensed and presented to the end users in a readily comprehensible form;
(c) To liaise with and receive feedback from those experts of the Association working on assessing the effects of climate change on water.

V. Potential Extreme Floods

Considering the importance of hydrological design data for the safety of people and security of hydraulic structures (e.g. dams and bridges):

(*a*) To update a literature review of research carried out on hydrological design data for extreme floods occurrences;
(*b*) To continue a survey on best available practices and standards in estimation of hydrological design data for extreme floods occurrences, even in ungauged basins;
(*c*) To carry out an investigation of methods of PMP/PMF derivation and other methods for extreme flood estimation;
(*d*) To liaise with experts and programmes on climate change and water with respect to their results concerning potential impacts on floods.

VI. Drought Assessment and Forecasting

In consideration of the increase of water stress during a period of drought and with a view to ensuring the proper management of water resources during such conditions:

(*a*) To review and evaluate meteorological and hydrological forecasting systems in RA VI countries with respect to droughts occurrence;
(*b*) To assess the use of satellite data in drought monitoring, assessment and forecasting;
(*c*) To identify ways of promoting the exchange of data and products, as well as of forecasts and warnings, during low flow situations;
(*d*) To propose ways for ensuring effective cooperation with other international and regional bodies involved in drought assessment and mitigation;
(*e*) To review and evaluate activities undertaken by end users, in cooperation with NHSs, to mitigate the impacts of drought.

VII. Subgroup on Flood Forecasting and Warning

The subgroup is considered to be composed of meteorologists and hydrologists with the aim of improving the capability of NMHSs in flood forecasting and warning for different types of floods:

(*a*) To study and report on the present applications of:
  (*i*) The development and operational use of common probabilistic methods;
  (*ii*) The development and operational use of ensemble forecasting;
  (*iii*) The development and operational use of methods for estimating and calculating the uncertainty in the forecasts;
(*b*) To promote cooperation between meteorologists, hydrologists and end users, both in operational activities as well as in research and development;

(*c*) To cooperate with relevant actors in the area of flood forecasting and warning, mainly with respective members of CHy AWG on flood forecasting and with the EU Expert Circle on Flood Forecasting (EXCIFF) and the European Flood Alert System (EFAS) initiative.

RESOLUTION 18 (XIV-RA VI)

RAPPORTEUR ON EDUCATION AND TRAINING MATTERS

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 17 (Cg-XIII) — Education and Training Programme,

(2) Paragraph 8.6 of the general summary of the *Abridged Final Report with Resolutions of the forty-eight session of the Executive Council* (WMO-No. 846) on the role of rapporteurs appointed by regional associations on education and training matters,

CONSIDERING:

(1) That there continues to be a pressing need by several Members from the Region for their meteorological and hydrological personnel to be trained both at basic and specialized level,

(2) That the Region possesses a considerable potential to promote distance learning and to share training resources among Members so that they can better plan, direct, organize and carry out suitable training programmes in meteorology, hydrology and related fields,

DECIDES:

(1) To designate a Rapporteur on Education and Training Matters with the following terms of reference:

(*a*) To keep under review relevant education and training developments, aiming at better regional coordination, in particular, to promote coherence in the identification of priority areas for regional and specialized training in meteorology and hydrology;

(*b*) To identify and assess the regional training needs, opportunities and capabilities in order to improve the science-base of national instructors and stimulate their interest in the application of a technology-intensive approach to training;

(*c*) To identify and prioritize requirements for training material and to encourage sharing, particularly through electronic means, of existing training modules, case studies, etc.;

(*d*) To advise on opportunities to access and re-utilize training products of *EUMETSAT/EuMeTRAIN*, EUMETNET/EUMETCAL, ECMWF, RMTCs, and other institutions in the Region;

(*e*) To follow-up on initiatives and developments by the European Meteorological Society, and by other European educational institutions, in the accreditation of educational institutions/programmes and in the academic/professional certification of meteorological personnel in the Region;

(2) To invite Mr J. Hoffman (France) to serve as Rapporteur on Education and Training Matters;

(3) To request the rapporteur to submit annual progress reports, with a final report to be presented to the president of the Association at least six months prior to the next session of the Association;

REQUESTS:

(1) The Secretary-General of WMO to assist the rapporteur in his work as appropriate;

(2) Members and relevant international organizations to facilitate the work of the rapporteur, by providing, upon request, information related to items (*a*) to (*e*) above.

RESOLUTION 19 (XIV-RA VI)

WORKING GROUP ON NATURAL DISASTER PREVENTION AND MITIGATION IN REGIONAL ASSOCIATION VI (EUROPE)

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 29 (Cg-XIV) — Natural Disaster Prevention and Mitigation Programme,

(2) Paragraphs 7.4.1 to 7.4.21 and 3.4.1.23 of the general summary of the *Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress* (WMO-No. 960),

(3) Resolution 5 (EC-LVI) — Executive Council Advisory Group on Natural Disaster Prevention and Mitigation (EC AGDPM),

(4) Paragraphs 11.1 to 11.13 of the general summary of the *Abridged Final Report with Resolutions of the Fifty-sixth Session of the Executive Council* (WMO-No. 977),

(5) The *Abridged Final Report with Resolutions of the Fifty-seventh Session of the Executive Council* (WMO-No. 988),

(6) The Revised Implementation Plan of DPM,

(7) The outcome documents of the World Conference on Disaster Reduction (Kobe, Hyogo, Japan, 18-22 January 2005), including the Hyogo Declaration and the Hyogo Framework for Action 2005-2015 (HFA): Building the Resilience of Nations and Communities to Disasters,

(8) That several NMHSs have established partnerships with disaster risk management agencies at the national and regional levels and their experience would be valuable for the formulation of DPM Programme,

CONSIDERING:

(1) That RA VI is exposed to various hydrometeorological natural disasters including floods, severe storms, heat waves, droughts, forest fires, avalanches, etc.,

(2) That natural disaster prevention and mitigation is a major regional concern for human socio-economic activities and environmental protection,

(3) That natural disaster reduction activities cover a wide range of programmes of WMO,

(4) That there is a need to establish an effective framework for support to regional activities on natural disaster prevention and mitigation to ensure that all gaps and needs are addressed in a prioritized, systematic and sustainable manner through a coordinated framework,

(5) That there is the need for adequate reflection of issues relating to natural disasters of hydrometeorological origin in the World Conference on Disaster Reduction, and follow-up events thereafter,

DECIDES:

(1) To establish a Working Group on Natural Disaster Prevention and Mitigation in RA VI with the following terms of reference:

(*a*) To consider natural disaster prevention and mitigation problems within the context of the specific characteristics and needs of the Region and then make recommendations and contribute to the preparation of appropriate and targeted regional plans of action;

(*b*) To identify and evaluate best practices at regional level on policy and activities related to natural disaster prevention and mitigation;

(*c*) To coordinate the exchange of information on current best practices at regional and subregional levels with the respective network of focal points in natural disasters;

(*d*) To propose/review regional contingency plans in case of emergency and disaster;

(*e*) To contribute to the establishment of mechanisms and partnerships of regional interest;

(*f*) To evaluate the need and priorities for capacity-building at regional level and propose adequate actions;

(*g*) To contribute actively to the projects: Regional level DPM Assessments, Cataloguing of Hydro-meteorological Hazards and their impacts and Methodologies for Hydrometeorological Hazard Mapping and Risk Assessment, by proposing regional activities, methodologies and case studies;

(*h*) To propose mechanisms to coordinate its actions with other regional teams working in natural disaster prevention and mitigation, including networks of focal points, and complementary disaster risk reduction structures outside of WMO, etc.;

(*i*) To coordinate its activities with the WMO DPM Programme at the Secretariat;

(*j*) To advise on how NMHSs can strengthen their linkages to national emergency and disaster risk management, and emergency structures and national disaster reduction platforms in their countries, and in the Region;

(2) To invite the following experts to serve as members of the working group:
Mr M. Sanxhaku (Albania)
Mr B. Ivancan Picek (Croatia)
Mr R. Tolasz (Czech Republic)

Mr H. Wollkopf (Germany)
Mr G. Frustaci (Italy)
Mr J. Sunde (Norway)
Mr C. Tavares (Portugal)
Ms V. Khan (Russian Federation)
Mr P. Ronĉák (Slovakia)
Mr J. Segovia (Spain)
Ms M. Agren (Sweden)
Mr V. Spiridonov (Federal Republic of Macedonia)
Ms G. Ryall (United Kingdom)

(3) To invite Mr M Heikinheimo (Finland) to act as chairperson;

(4) To request the chairperson to allocate responsibilities in consultation with the members of the group for the various tasks contained in the terms of reference;

(5) To request the chairperson to submit annual reports as appropriate, to the president of the Regional Association with a final report to be presented six months prior to the next session of the Association;

REQUESTS the Secretary-General to take the relevant actions to support the activities of the working group within the available budget.

RESOLUTION 20 (XIV-RA VI)

RAPPORTEUR FOR THE WMO SPACE PROGRAMME

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 5 (Cg-XIV) establishing the WMO Space Programme as a new and major cross-cutting programme,

(2) Resolution 6 (Cg-XIV) establishing the WMO Consultative Meetings on High-level Policy on Satellite Matters,

RECOGNIZING the importance and great potential available through exploitation of satellite data, products and services from the expanded space-based component of the GOS as described in the WMO Space Programme Implementation Plan for 2004 through 2007,

FURTHER RECOGNIZING the necessity for involvement by Members in regional implementation activities for the WMO Space Programme,

DECIDES:

(1) To appoint a Rapporteur for the WMO Space Programme with the following terms of reference:
   (*a*) To coordinate with the WMO Space Programme Office on regional aspects of the WMO Space Programme Implementation Plan;
   (*b*) To evaluate the WMO Space Programme Implementation Plan and advise Members on regional activities that will contribute fully to the exploitation of satellite data, product and services;
   (*c*) To coordinate with other Regional WMO Space Programme rapporteurs on relevant Space Programme activities;
   (*d*) In collaboration with the Rapporteur for the Global Earth Observation System of Systems (GEOSS), to coordinate the relevant regional aspects of the WMO Space Programme for the GEOSS; and
   (*e*) To provide the president of the Association with appropriate information, advice and recommendations for presentation under appropriate agenda items in sessions of technical commissions, joint sessions of the presidents of technical commissions and presidents of regional associations, and the Executive Council;

(2) To invite Mr A. Uspensky (Russian Federation) to serve as the rapporteur for the WMO Space Programme;

(3) To request the rapporteur to submit annual reports, as appropriate, to the president of the Association and a final report six months before the next session of the Association.

RESOLUTION 21 (XIV-RA VI)

RAPPORTEUR FOR THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) The Declaration from the First Earth Observation Summit, held in Washington, DC, on 31 July 2003, for improved coordination of observing systems towards a comprehensive, coordinated and sustained Earth observing system of systems,

(2) The Communiqué from the Second Earth Observation Summit, held in Tokyo, Japan, on 25 April 2004, adopting the Framework Document that describes principal benefits of Earth observations to a broad range of user communities and the fundamental elements to be included in the 10-Year Implementation Plan for what will henceforth be called a Global Earth Observation System of Systems (GEOSS), and the invitation to the governing bodies of international and regional organizations sponsoring existing Earth observing systems to support the action of the Summit,

(3) Resolution 9 (EC XLVI) — Global Earth Observation System of Systems (GEOSS),

RECOGNIZING the significant opportunity for GEOSS to provide societal benefits, capacity-building and sustainable development through improved observations and a better understanding of the Earth system, its atmosphere, ocean, land surface and fresh water, geology, natural resources, ecosystems and natural and human-induced hazards and the vast experience and considerable expertise throughout the Region,

URGES Members to become fully involved in the planning and implementation of GEOSS,

STRESSES the importance of assisting the NMHSs of developing countries in the Region to participate fully in GEOSS through the strengthening of their observing networks and the enhancement of their provision of services in support of social and economic benefits of their national commitments;

ENCOURAGES the Permanent Representatives of Members to work closely with other Earth observation agencies at the national level to ensure the development of well-coordinated national plans for GEOSS implementation;

DECIDES:

(1) To appoint a Rapporteur for the Global Earth Observation System of Systems (GEOSS) with the following terms of reference:

(*a*) To evaluate the GEOSS Implementation Plan and advise Members on regional activities that will contribute fully to the development and implementation of GEOSS including enhanced operation of the World Weather Watch and other WMO-sponsored and jointly sponsored observing systems and components relevant to GEOSS;

(*b*) To coordinate with other regional GEOSS rapporteurs on relevant GEOSS activities;

(*c*) To provide the president of the Association with appropriate information, advice and recommendations for presentation under appropriate agenda items in sessions of technical commissions, joint sessions of the presidents of technical commissions and presidents of regional associations, and the Executive Council;

(*d*) In collaboration with relevant regional working groups and rapporteurs, to coordinate the regional contributions to the GEOSS;

(*e*) To inform the WMO Secretariat on a regular basis of regional GEOSS activities;

(2) To invite Mr A. Douglas (United Kingdom) to serve as the Rapporteur for the Global Earth Observation System of Systems (GEOSS);

(3) To request the rapporteur to submit annual reports, as appropriate, to the president of the Association and a final report six months before the next session of the Association.

RESOLUTION 22 (XIV-RA VI)

REGIONAL STRATEGIC PLAN FOR THE ENHANCEMENT OF NATIONAL METEOROLOGICAL AND HYDROLOGICAL SERVICES IN REGIONAL ASSOCIATION VI (EUROPE)

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 23 (Cg-XIV) — Sixth WMO Long-term Plan,

(2) The Report on the first meeting of the Regional Association VI Advisory Working Group (2004),

(3) The collaboration of WMO with international and regional organizations, including EUMETSAT, ECMWF, COST, EUMETNET, EUMET and the European Commission,

(4) The strategic plans which have already been developed for Region II and Region V,

REITERATING the strong interest of Members of RA VI in participating in the cooperative activities that can emerge from a strategic plan for RA VI and in contributing to these activities,

RECOGNIZING:

(1) The purpose of NMHSs and the essential role of the NMHSs in advancing meteorology, hydrology and related disciplines as well as their applications in environmental and natural resources management, food security, agricultural system, air and water quality, capacity building, natural disaster reduction and sustainable development planning towards improving the quality of life,

(2) The wide gap between the developed NMHSs with very advanced facilities and the capacity of NMHSs with very limited budgets, shortages of observation equipment, spare parts, and consumables, a lack of data collection and processing facilities and a lack of qualified staff,

(3) The inadequacy that exists in quality management and in the networks of observations, telecommunications, data-processing facilities and information technology in some NMHSs,

(4) The available resources from international organizations and advanced NMHSs in Europe with regard to remote sensing, data assimilation and modelling, telecommunications and other key techniques as well as training,

CONSIDERING the need to strengthen the capabilities of the NMHSs in RA VI in providing appropriate meteorological, hydrological and related services as well as the important role of the WMO and its Members in the prevention and mitigation of natural disasters, the protection of live and property, safeguarding the environment and contributing to sustainable development,

DECIDES:

(1) That a Regional Strategic Plan for the Enhancement of National Meteorological and Hydrological Services (NMHSs) in Regional Association VI shall be developed in line with the WMO Long-term Plan, addressing in particular:

(*a*) A vision and a set of goals for Regional Association VI;

(*b*) The requirements of the user community regarding the improvement of accuracy and usefulness of the analysis, forecasts, warnings and risk assessments of natural hazards of meteorological and hydrological origin;

(*c*) The importance of studies to demonstrate the social and economic benefits of meteorological, hydrological and related services to the public, decision-makers and specialized users;

(*d*) The synergy resulting from partnerships and interactions with persons and institutions from other sectors and disciplines including those in the social sciences, development planning and disaster preparedness communities;

(*e*) The need to work more closely together in order to bridge gaps and achieve a better equilibrium of the level of NMHSs throughout the Region;

(*f*) the optimization of the use of the available resources, including the services of WMO and regional organizations like EUMETSAT, ECMWF and EUMETNET;

(*g*) the potential for collaboration with development partners like the European Commission, World Bank and OECD in the realization of the regional strategies.;

(2) That the Strategic Plan shall incorporate the following Guiding Principles:

1. Assess the needs and requirements and the current capabilities of Members to maximize use of current capabilities to meet those needs and requirements as well as to bridge the gap in the level of relevant services;
2. Enhance Members' preparedness to meet global and regional concerns like natural disaster prevention and mitigation, climate change and water resources management;
3. Seek better integration of weather, water and climate related activities in the region.
4. Assess the mechanisms for coordination within the region;
5. Work better with the EU for the benefit of all Members in the region;
6. Take into account opportunities provided by the prevailing political situation and expected developments;

Key Elements:
1. Trends, developments and challenges;
2. Meet user requirements and respond to new opportunities through improved services;
3. Improved regional infrastructure;
4. Visibility and sustainability of NMHSs;
5. Regional and international cooperation;
6. Resources to support improvements and cooperation;

(3) To adopt the RA VI Action Plan in Annex I to this resolution for implementation until such time as the RA VI Strategic Plan is adopted;

(4) To establish a task team with the terms of reference given in Annex II to this resolution in order to oversee and monitor the implementation of the Action Plan and to develop the Strategic Plan; with the following composition:

Ms G. Ryall (United Kingdom) (chairperson)
Czech Republic
Finland
France
Georgia
Russian Federation

URGES the Members of RA VI to play an active role in the preparation of the Strategic Plan and the implementation of the Action Plan;

REQUESTS:

(1) The president and the RA VI Management Group to oversee and monitor the progress of the development of the Strategic Plan and implementation of the Action Plan;

(2) The Secretary-General to provide the necessary support and assistance in this connection.

ANNEX I TO RESOLUTION 22 (XIV-RA VI)

RA VI (EUROPE) ACTION PLAN

The RA VI action plan is based on the Sixth WMO Long-term Plan (2004-2011), specifically Chapter 4 (Desired Outcomes, Strategies and Associated Goals) and Chapter 5 (Linkage to WMO Programmes). The primary drive is to encourage regional cooperation, rather than concentrate on national interests. The suggested responsible groups are based on WMO's current structure.

STRATEGY 1

To enable the delivery of increasingly accurate and reliable warnings of severe events related to weather, water, climate, and the related natural environment throughout the world, and ensure that they are able to reach their target audience (individuals, emergency services, decision makers) in a timely and useful manner.

OBJECTIVE 1.1

In support of the WMO Disaster Prevention and Mitigation Programme, review the requirements for warnings of hydrometeorologically-related hazards (natural and man-made) that have the greatest impact on the region such as floods, strong winds, droughts, forest fires, severe storms, avalanches, pollution events and periods of intense relative heat and cold, taking into account particular circumstances and thresholds and the needs of users in different countries) by mid 2006. This should include assessing, where possible, the current vulnerable areas and where they will be in the future in relation to the potential impacts from climate change. By mid 2006.
Suggested responsible group: PIW subgroup on PWS.

OBJECTIVE 1.2

Supporting objective 1.1, assess the capability of RA VI Members to deliver warnings of high impact environmental events to the public, decision makers and the media, and to develop an appropriate training programme of seminars or workshops to address Members needs by end 2006.
Suggested responsible group: SRO(E) in association with PIW subgroup on PWS.

OBJECTIVE 1.3

Region VI RSMCs for geographical specialisation to provide advisories on high impact weather events to Region VI Members; high impact weather criteria for the provision of advisories to be developed by end 2006.
Suggested responsible group: PIW subgroup on DPFS in association with RSMCs.

OBJECTIVE 1.4

Investigate Members' needs for advisories such as on volcanic ash, chemical releases, wildfires and air-borne diseases in addition to those currently provided by RSMCs for emergency response by end 2006. Undertake a feasibility study on the required capability to provide such advisories, with a view to implementing operational services by 2009.
Suggested responsible group: PIW subgroup on DPFS in association with RSMCs.

OBJECTIVE 1.5

Propose mechanisms for monitoring and improving the exchange of high impact weather warnings between Members of RA VI, building upon existing international projects and mechanisms such as the use

of a network of forecasters and EMMA, in a manner consistent with the WMO severe weather Web site hosted by the Hong Kong observatory, where possible, by end 2007
Suggested responsible group: PIW subgroup on PWS.

Objective 1.6
Review the needs and capabilities for flood forecasting within the region, including consideration of the need to integrate meteorology and hydrology, relevant EU directives, regional initiatives such as the European Flood Alert System and existing cooperation between NMHSs, and propose mechanisms for improvements, including sharing of capabilities and the exchange of flood warnings within trans-boundary river basins in RA VI (taking note of objective 1.5) by end 2006.
Suggested responsible group: PIW subgroup on DPFS in association with the WG Hydrology.

Objective 1.7
Regarding the development of a multi-hazard warning system, propose ways to improve the integration between meteorology, hydrology and climate change impacts with regards to extreme events such as floods and droughts, and mechanisms to promote the use of the WMO operational infrastructure within the region with the EU and other relevant organisations. Assess current requirements and capabilities within the region and propose how to improve and develop the system, including linking with other relevant organisations as appropriate, to include non-hydrometeorological warnings. By end 2006.
Suggested responsible group: RA VI WG DPM in cooperation with other WGs and subgroups as appropriate.

Strategy 2
To enable the provision of increasingly beneficial weather, water and climate and related environmental services to the public, governments and other users/customers throughout the world.

Objective 2.1
Monitor and keep Members informed of developments regarding the Single European Sky regulation, assess the needs of affected RA VI Members to deliver aeronautical meteorological services under the regulation and raise awareness through a training seminar(s) of the possible implications for Members (including consideration of the possible effects on Members of RA VI who are not Members of the EU), with the aim of establishing a common understanding of the implications and any RA VI action related to them, by mid 2006.
Suggested responsible group: Rapporteurs on Aeronautical Meteorology in association with SRO(E).

Objective 2.2
In conjunction with the Commission for Aeronautical Meteorology, by end 2006:

(1) Review ICAO Annex 3 in the light of new technical capabilities regarding the provision of aeronautical services, including nowcasting for severe weather warnings, and consider liaison with ICAO to discuss potential amendments;
(2) Encourage RA VI Members to be proactive in understanding and meeting the aviation users' needs, including improving NMHSs' knowledge and understanding of cost recovery.

Suggested responsible group: Rapporteurs on Aeronautical Meteorology.

Objective 2.3
Provide a report on the potential contribution of the private sector to the work of the PWS programme; provide guidance on (1) essential and (2) recommended components of a national PWS programme; provide advice and guidance on possible WMO involvement in accreditation schemes, by end 2006.
Suggested responsible group: PIW subgroup on PWS (these actions have already been agreed as deliverables 2004-2008 by CBS for the entire PWS programme).

Objective 2.4
Assess the capabilities and needs of RA VI Members in delivering marine, agriculture, and health services and propose methods for improving coordination of effort, by end 2007.
Suggested responsible group: Rapporteur on Regional Marine Meteorological and Oceanographic Services, WG on Agricultural Meteorology, WG on Climate-Related Matters.

Strategy 3
To enhance WMO's role as the United Nations system's authoritative voice on the state and behaviour of the Earth's atmosphere, its interaction with the oceans, the climate it produces and the resulting distribution of water resources, including ensuring that it contributes to relevant international conventions, protocols, and other legal instruments, and that relevant agreements are scientifically based.

Objective 3.1
In conjunction with the WMO Disaster Prevention and Mitigation Programme, develop a proactive and coordinated approach among Members of the Region to participation in the Early Warning Conference III in Bonn, Germany and in the International Conference on the Problems of Hydrometeorological Safety in Moscow, Russian Federation, which will be held in 2006, promoting the capabilities and operational warning systems of the NMHSs in the Region and encouraging use of this system for the exchange of warnings of other types of hazards.
Suggested responsible group: RA VI WG-DPM, in cooperation with SRO(E) and RA VI network of international focal points

STRATEGY 4

To inform and educate the public, governments and other interested parties about the socio-economic benefits of understanding the weather, water, climate and related environment.

OBJECTIVE 4.1

Coordinate an investigation of the socio-economic benefits of NMHSs for each Member of RA VI and for the Region as a whole for input into the WMO International Conference on Socio-Economic Benefits to be held in early 2007, and encourage participation of regional entities such as the EU. Whilst carrying out this task, and in conjunction with other relevant sections of the WMO Secretariat, consider how NMHSs could improve their understanding of societies' needs, and how statistics could be developed to enable improvements in warnings as well as their benefits to be measured. By mid 2006.
Suggested responsible group: SRO(E) in association with the World Bank.

OBJECTIVE 4.2

Review current approaches within the Region to educating the public (including children) regarding weather, water and climate and the role and benefits of NMHSs, and encourage cooperative approaches.
Suggested responsible group: PIW subgroup on PWS.

STRATEGY 5

To understand and improve the modelling of the processes which affect the current and future state of the atmosphere, the weather, water resources, the physical state of the oceans, climate change and related environmental states such as air quality and pollution levels.

OBJECTIVE 5.1

Review the existing NWP capabilities in the Region with a view to maximizing the use of existing capabilities and products for the benefit of all Members across the Region. This will include promoting discussion to improve the collaboration and co-ordination between the NWP centres in the Region to develop the best possible products and facilitating their use (for example, from high resolution predictions systems covering the whole Region).
Suggested responsible group: PIW subgroup on DPFS.

OBJECTIVE 5.2

Assess the needs of RA VI Members to interpret and use ensemble prediction system products and to develop an appropriate training programme of seminars and workshops by end 2006.
Suggested responsible group: SRO(E) in association with the PIW subgroup on DPFS.

OBJECTIVE 5.3

Facilitate the participation of RA VI Members in the THORPEX programme and strengthening the European Regional THORPEX Committee with the aim of involving NMHSs and universities, organizing regional experiments and establishing at least one demonstration project with a developing country in the Region by 2009.
Suggested responsible group: Rapporteur on WWRP-THORPEX.

OBJECTIVE 5.4

Coordinate the assessment of the current and future capabilities and needs of the Members in predicting air quality and air pollution by 2008.
Suggested responsible group: PIW subgroup on DPFS.

OBJECTIVE 5.5

Review needs of Members for Regional Climate Centres, and develop detailed specifications for the services and products to be provided by Regional Climate Centres, whilst concurrently establishing the scope and remit of such centres by mid 2006.
Suggested responsible group: Working Group on Climate-related Matters.

OBJECTIVE 5.6

Assess the current capabilities within the region for undertaking climate change vulnerability studies, including impacts, by end 2006, including work under the auspices of WCRP and the European Union.
Suggested responsible group: Working Group on Climate-related Matters.

STRATEGY 6

To observe, record and report on the weather, water resources, climate and the related natural environment, to use these data for the preparation of operational forecast and warning services and related information, and to maintain and enhance systems to exchange these data, products and information.

OBJECTIVE 6.1

Identify an optimum in-situ terrestrial and marine observing network complemented by space borne observations sufficient for NWP needs (taking note of the planned EUMETNET EUCOS OSEs and network design studies), and develop a rolling action plan to remedy any silent or underperforming stations in the network with a target for 90% observations on the GTS in real-time, as well as a mechanism for the development of a system of integrated observing systems to enhance the effectiveness of the use of observation data in the interest of the Region by 2009.
Suggested responsible group: PIW subgroup on IOS in association with a EUCOS representative.

Objective 6.2
Establish a mechanism to monitor and respond to changing circumstances in RA VI to ensure the delivery of the RBSN, which meets WMO requirements by end 2006.
Suggested responsible group: PIW subgroup on IOS.

Objective 6.3
Establish a mechanism to monitor and respond to changing circumstances in RA VI to ensure the delivery of the RBCN, which meets both GCOS and WMO requirements by end 2006.
Suggested responsible group: PIW subgroup on IOS.

Objective 6.4
Using key points of contact in Members' NMHSs, and taking account of its current status, identify and prioritise means of improving data collection and data exchange systems within RA VI, assess the Region's future needs for data exchange systems, and coordinate the development of the WMO Information System for Region VI by end 2006.
Suggested responsible group: PIW subgroup on ISS.

Objective 6.5
Establish a mechanism to link RA VI observation strategies to GEO by inviting the GEO Secretariat in Geneva to the next RA VI PIW WG meeting, and by keeping RA VI Members, who are not Members of GEO, informed of developments in that area, with the aim of encouraging membership.
Suggested responsible group: Rapporteur on GEOSS.

Objective 6.6
Assess the observational requirements of the Region to provide forecasts of air quality and other trans-boundary environmental pollutants and report to the next session of RA VI.
Suggested responsible group: Rapporteur on GAW.

Objective 6.7
Coordinate the development and implementation of a trans-boundary hydrological observing system for real-time flood forecasting applications and water resource assessments by end 2010.
Suggested responsible group: Working Group on Hydrology.

Objective 6.8
Produce a status report on NMHSs' use of EUMETCast dedicated channel within RA VI. Consolidate a proposal for the transmission programme of EUMETCast for WWW RA VI. By mid 2006.
Suggested Responsible Group: PIW subgroup on ISS in association with EUMETSAT.

Objective 6.9
Establish a Table-driven Code Form (TDCF) migration plan for RA VI Members by 2006, supported by a training workshop to be hosted in 2005.
Suggested responsible group: PIW subgroup on ISS.

Objective 6.10
Provide WMO Secretariat with relevant URL addresses of quality monitoring centres in RA VI by end 2005.
Suggested responsible group: PIW subgroup on IOS in association with quality monitoring centres.

Objective 6.11
Invite RSMCs to hold at least one workshop for participants from around RA VI to exchange ideas relating to RSMC products and services, and to improve contact between forecasting staff in neighbouring NMHSs, by end 2010.
Suggested responsible group: SRO(E) in association with RSMCs.

Objective 6.12
Consider and propose mechanisms to strengthen collaboration between CCI, CIMO and CBS, to ensure the effectiveness, appropriateness, and accuracy of observing systems and networks for climate purposes, and complete a statement of requirements for observations, as well as for networks, by early 2006.
Suggested responsible group: CCI Expert Team.

Objective 6.13
Organise a training workshop on CLIREP software with the aim of providing the software to Members of RA VI by late 2005. Investigate the possibility of conducting expert missions to RA VI Members that urgently need assistance in climate data management and data rescue, and explore the possibility of financial support through VCP, of providing NMHSs with Cliware software and related applications and equipment, by end 2006.
Suggested responsible group: CCI/CLIVAR Expert Team in association with ROSHYDROMET.

Objective 6.14
Initiate a mechanism to inform Members of developments in GRID technology that may offer opportunity for new services and new ways of sharing computer resources by end 2005.
Suggested responsible group: PIW subgroup on ISS.

Objective 6.15
Review the regional requirement for RICs by end 2006.
Suggested responsible group: PIW subgroup on IOS.

Objective 6.16
Review the regional requirement for enhanced availability and use of radar data and composite maps, and make necessary recommendations by end 2006.
Suggested responsible group: PIW subgroup on IOS and SRO(E).

STRATEGY 7
To enhance the capabilities of NMHSs to deliver services, and improve cooperation and collaboration between them.

OBJECTIVE 7.1
Identify and prioritise means of improving the capability of NMHSs that will benefit the Members and the Region as a whole by late 2006 with the help of, but not limited to, experts who are able to identify gaps as well as potential donor material and resources, and the use of country profiles.
Suggested responsible group: SRO(E).

OBJECTIVE 7.2
Propose a mechanism for a twinning programme that will enable the transfer of capability within the Region, concentrating on those services with greatest need by late 2006.
Suggested responsible group: SRO(E).

OBJECTIVE 7.3
Regularly inform non-EUMETNET Members about developments in EUMETNET, especially in relevant EUMETNET programmes which could help to improve service provision and effectiveness and enhance collaboration between NMHSs in the Region.
Suggested responsible group: SRO(E) in association with the EUMETNET Coordination Officer.

OBJECTIVE 7.4
Prepare an appropriate draft intergovernmental agreement on the concept of hydrometeorological security in Europe, and develop a proposed process for consideration and approval of the document at the level of Heads of State or Government for consideration by EC-LVIII. By mid-2006.
Suggested responsible group: RA VI Management Group.

STRATEGY 8
To work more effectively with international partners, other relevant organisations, academia and the private sector.

OBJECTIVE 8.1
Enhance the visibility of NMHSs within the Member States, and particularly within the EU, encouraging recognition of NMHSs' capabilities and values, by establishing an advocacy mechanism early in 2006.
Suggested responsible group: SRO(E) in association with EUMETNET.

OBJECTIVE 8.2
Inform the EU of the existing infrastructure within the Region, particularly those elements relating to multi-hazard warning services by mid 2006. Continue to work with the EU to maximise the development of services using that infrastructure, including the use of GMES to support key NMHS services, whether EU Members or not.
Suggested responsible group: PIW subgroup on PWS in association with EUMETNET.

OBJECTIVE 8.3
Review new EU legislation affecting NMHSs in the Region, in particular the INSPIRE initiative. Continue to discuss the impact of INSPIRE on meteorological and hydrological data networks in RA VI with the EU, and if necessary, obtain an exemption of meteorological and hydrological data and products from INSPIRE by mid 2006.
Suggested responsible group: SRO(E). The representative of RA VI to INSPIRE and the president of RA VI.

OBJECTIVE 8.4
Arrange a MoU with UNESCO IHP, as appropriate, to further establish international cooperation by end 2006.
Suggested responsible group: WMO Secretariat.

OBJECTIVE 8.5
Elaborate within the draft strategic plan for RA VI the desired relationship between regional activities undertaken by designated centres, specific activities undertaken by a few NMHSs/institutions and activities in every NMHS by mid 2007.
Suggested responsible group: RA VI Management Group.

OBJECTIVE 8.6
Produce a report reviewing the possibilities of accommodating the likely increasing role of the private sector in the provision of meteorological services to air navigation in the Region by end 2006.
Suggested responsible group: Rapporteur on Aeronautical Meteorology.

OBJECTIVE 8.7
Establish a mechanism for dialogue between RA VI Members and the European Broadcasting Union with the particular aim of strengthening the single official voice policy by mid 2006.
Suggested responsible group: RA VI subgroup on PWS.

OBJECTIVE 8.8
Initiate joint effort with the International Standardization Organization (ISO) on international standards for observation and forecasting.
Suggested responsible group: RA VI Management Group.

STRATEGY 9
To improve the effectiveness, efficiency and flexibility of the structure and working mechanisms and practices of WMO, to enable it to respond more rapidly to the

changing needs of society and to the new opportunities provided by technological advances.

OBJECTIVE 9.1
Develop a strategic plan for the region by 2007. Monitor and encourage the delivery of the Region's objectives.
Suggested responsible group: Task team on RA VI action and strategic plan together with the RA VI Management Group.

OBJECTIVE 9.2
Establish and maintain an informal network of international focal points of NMHSs of RA VI to facilitate cooperation with the SRO(E) and exchange of information within the Region, beginning 2005.
Suggested responsible group: Informal network of international focal points of NMHSs.

OBJECTIVE 9.3
Identify areas where there are divergence of views within the Region (including data exchange policy and specifically WMO resolutions 40 and 25, commercialisation, the relationship with the private sector, and the use of Quality Management Systems) and task the RA VI Management Group to identify how they should be addressed by mid 2006.
Suggested responsible group: RA VI Management Group.

GLOSSARY

DPFS	Data Processing and Forecasting Systems.
EMMA	European Multiservice Meteorological Awareness system is a contribution of the meteorological community to European risk management. It is sponsored by the Network of European Meteorological Services (EUMETNET).
GEO	Group on Earth Observations.
IOS	Integrated Observing Systems.
ISS	Information Systems Services.
PIW	RA VI Working Group on Planning and Implementation of World Weather Watch.
PWS	Public Weather Services.
RBCN	Regional Basic Climatological Network.
RBSN	Regional Basic Synoptic Network.
RSMC	Regional Specialized Meteorological Centre.
SRO(E)	Sub Regional Office (Europe).
THORPEX	Global atmospheric research programme aimed at accelerating improvements in the accuracy of high-impact 1-14 day weather forecasts for the benefit of society and economy.

ANNEX II TO RESOLUTION 22 (XIV-RA VI)

TERMS OF REFERENCE OF THE TASK TEAM ON THE RA VI STRATEGIC PLAN AND ACTION PLAN

1. To carry out its work under the general guidance of, and in coordination with, the president of RA VI;
2. To develop the draft RA VI Strategic Plan on the basis of the guidance provided by the XIV-RA VI;
3. To oversee and monitor the implementation of RA VI Action Plan, in coordination with the various rapporteurs and groups with responsibilities for the implementation of the different objectives;
4. To regularly report to the president of RA VI on progress made, and to liaise with the RA VI Management Group, as needed;
5. To undertake any other consultation and coordination that may be required;
6. To take into account relevant developments that may occur in the course of its work.

RESOLUTION 23 (XIV-RA VI)

MANAGEMENT GROUP OF THE REGIONAL ASSOCIATION VI (EUROPE) (RA VI MG)

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) The *Abridged Final Report with Resolutions of the Fourteenth World Meteorological Congress* (WMO-No. 960),

(2) The *Abridged Final Report with Resolutions of the Thirteenth Session of Regional Association VI (Europe)* (WMO-No. 942),

(3) The reports of the sessions of the RA VI Advisory Working Group (2004 and 2005),

CONSIDERING the proposal of the Advisory Working Group of the Association,

RECOGNIZING the need to have a mechanism to address issues not handled by other working groups or rapporteurs,

DECIDES:

(1) To establish a Management Group of the Regional Association VI (Europe) (RA VI MG) with the following terms of reference:

(*a*) To advise the president on matters related to the work of the Association, in particular, on matters requiring actions which cannot wait for the next regular session of the Association;

(*b*) To assist the president in planning and coordinating the work of the Association and its subsidiary bodies;

(*c*) To review the structure and work of the subsidiary bodies of the Association, including advice on the implementation of their recommendations and taking into account financial and other resources needed in the work of these bodies;

(*d*) To address other issues not covered by working groups or rapporteurs;

(*e*) To coordinate, monitor and regularly report on the progress of the implementation of the Action Plan for RA VI and the preparation of the Regional Strategic Plan for RA VI;

(*f*) To monitor the implementation of the Regional Programme in relation to the WMO Long-term Plan;

(*g*) To advise the president on the requirements and priorities of events to be organized in the Region;

(*h*) To advise the president on ways and means of enhancing technical assistance to Members in the Region for the implementation of national and regional meteorological and hydrological programmes and projects;

(2) To invite the president, Mr D. Keuerleber-Burk (Switzerland) to act as chairperson of the Management Group which is composed of the president, the vice-president, Mr A. Leitass (Latvia), the Regional Hydrological Advisor to the president, Mr J. Kubát (Czech Republic), and four Directors of NMHSs invited by the president, Mr I. Čačić (Croatia), Mr W. Kusch (Germany), Mr M. Jonsson (Iceland) and Mr J. Rabadi (Jordan);

(3) The president may invite as appropriate other directors of NMHSs, chairpersons of RA VI working groups or rapporteurs to participate in the meetings of RA VI MG, subject to availability of financial resources;

REQUESTS the president to ensure that subregions are represented as appropriate on the Management Group and that the group meets annually or as needed, preferably in conjunction with other meetings or events;

AUTHORIZES the president to take needed decisions on behalf of the Association, and after consultation, with the Management Group, on important matters;

REQUESTS further the president to report to the Association during the intersessional period, as needed and at its next regular session on the activities of the Management Group and relevant decisions taken on behalf of the Association;

REQUESTS the Secretary-General to take into account the work of the Management Group in the provision of support to the Region, especially through the Subregional Office for Europe.

NOTE: This resolution replaces Resolution 20 (XIII-RA VI), which is no longer in force.

RESOLUTION 24 (XIV-RA VI)

REVIEW OF PREVIOUS RESOLUTIONS AND RECOMMENDATIONS OF THE ASSOCIATION

THE REGIONAL ASSOCIATION VI (EUROPE),

NOTING Paragraph 3.7.1 of the general summary of the *Abridged Final Report with Resolutions of the ninth Session of the Executive Council*, (WMO-No. 67.RC.14),

CONSIDERING:

(1) That a number of its resolutions adopted before its fourteenth session have been revised and incorporated in resolutions of the fourteenth session,

(2) That others of its previous resolutions have been incorporated in appropriate WMO publications or have become obsolete,

(3) That some of the previous resolutions are still to be implemented,

DECIDES:

(1) To keep in force the following Resolutions: 11 (XI-RA VI); 5, 6, 7, 13 and 16 (XIII-RA VI);

(2) Not to keep in force the other resolutions adopted before its fourteenth session;

(3) To publish the text of the resolutions kept in force in the annex to this resolution.

ANNEX TO RESOLUTION 24 (XIV-RA VI)

REVIEW OF PREVIOUS RESOLUTIONS AND RECOMMENDATIONS OF THE ASSOCIATION

RESOLUTION 11 (XI-RA VI)
USE OF INMARSAT FOR THE COLLECTION OF SHIPS' METEOROLOGICAL AND OCEANOGRAPHIC REPORTS

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 19 (Cg-XI) — The collection and dissemination of marine meteorological and oceanographic information using INMARSAT,

(2) The operation of Coast Earth Stations (CES) of INMARSAT in Region VI,

(3) The equipping of an increased number of ships participating in the WMO Voluntary Observing Ships (VOS) scheme with Ship Earth Stations (SES) of INMARSAT, in particular with the INMARSAT-C facility,

CONSIDERING:

(1) The need to increase the number of ships' meteorological and oceanographic reports from most of the sea areas of Region VI,

(2) The considerable improvements to be expected in the receipt of marine meteorological and oceanographic observations from ships at sea through the enhanced use of the INMARSAT system,

(3) The cost-savings which will accrue to those Members collecting such reports through INMARSAT by the increased use of the new INMARSAT-C facility for this purpose,

RECOGNIZING WITH APPRECIATION that certain Members operating INMARSAT CES have already arranged through their CES to accept ships' meteorological and oceanographic reports that are of general value to all Members of WMO,

BEING CONCERNED, however, that problems continue to be related to the timely redistribution to the countries closest to the geographical origin of reports collected through INMARSAT,

URGES:

(1) Members concerned to make every effort to ensure the timely redistribution of reports collected through INMARSAT to countries in the areas of the geographical origins of those reports;

(2) All Members in the Region operating VOS equipped with INMARSAT-C to make every effort for those ships to be supplied with the new software package for the compilation and transmission of meteorological reports through INMARSAT-C, to ensure the maximum efficiency and cost-effectiveness of such an operation;

REQUESTS the Secretary-General to assist Members in the implementation of this resolution.

RESOLUTION 5 (XIII-RA VI)

GLOBAL HARMONIZATION OF THE REPORTING OF PRECIPITATION

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) General summary paragraph 6.3.18 of the *Abridged Final Report with Resolutions and Recommendations of the Twelfth Session of the Commission for Basic Systems* (WMO-No. 923) on the feasibility of quality control of amounts of precipitation in synoptic reports,

(2) The report of the Working Group on Planning and Implementation of the WWW in Region VI (paragraph 5.5.6),

CONSIDERING:

(1) The requirement to harmonize globally the reporting of precipitation and especially the reporting of zero and past 24 hours precipitation,

(2) The need to make mandatory the reporting of zero precipitation (at least by human observers and new automatic weather stations),

(3) The need to encourage reporting three hours and hourly precipitation amounts,

DECIDES that the amendments as listed in the annex to this resolution to the *Manual on Codes* (WMO-No. 306), Volume II, Region VI — Europe, A — Regional coding procedures, A.1 — International code forms, notes and regulations, FM 12 SYNOP and FM 13 SHIP, be adopted for implementation on 5 November 2003;

REQUESTS the Secretary-General to arrange for the inclusion of these amendments in Volume II of the *Manual on Codes* (WMO-No. 306).

ANNEX TO RESOLUTION 5 (XIII-RA VI)

AMENDMENTS TO THE *MANUAL ON CODES* (WMO-No. 306), VOLUME II, REGION VI — EUROPE, A — REGIONAL CODING PROCEDURES, A.1 — INTERNATIONAL CODE FORMS, NOTES AND REGULATIONS, FM 12 SYNOP AND FM 13 SHIP

Amend Regulation 6/12.10 from to read:

6/12.10 Group(7 . . . .)

6/12.10.1 In the form $7R_{24}R_{24}R_{24}R_{24}$, this group shall be included in Section 3 at 0600 UTC.

6/12.10.2 The inclusion of group $7R_{24}R_{24}R_{24}R_{24}$ at 0000, 1200 and 1800 UTC and at intermediate observation times shall be left to national decision.

6/12.10.3 If the group is included, the precipitation amount for the preceding 24 hours shall be reported for $R_{24}R_{24}R_{24}R_{24}$.

Amend Regulations 6/12.9.2 and 6/12.9.3 to read:

6/12.9.2 This group may be used at all observation times.

6/12.9.3 The inclusion of this group in Section 3 shall be left to national decision. When included, at both main and intermediate observation times RRR should be used to report the precipitation amount over the preceding three hours; at the other observation times, RRR should be used to report the precipitation amount over the preceding hour.

RESOLUTION 6 (XIII-RA VI)

REGIONAL METEOROLOGICAL DATA COMMUNICATION NETWORK

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 5 (XI-RA VI) — Regional Meteorological Data Communication Network,
(2) Resolution 4 (XII-RA VI) — Regional Meteorological Data Communication Network,
(3) The WMO/ECMWF agreement on the RMDCN,
(4) The date of 15 March 2000 for the beginning of the RMDCN service,
(5) The major upgrading of the GTS in Region VI as a result of the implementation of the RMDCN and the large number of RA VI Member countries connected to the RMDCN,
(6) The high level of operation of the RMDCN,
(7) That the WMO RMDCN Trust Fund and its Members' contributions were instrumental in assisting several countries in joining the RMDCN and in coordinating matters related to the RMDCN,

CONSIDERING:

(1) The need to ensure that the RMDCN continues satisfying the GTS requirements in Region VI,
(2) The need to prepare possible changes in the RMDCN, in particular taking into account the rapid development of the telecommunication technology and the services proposed by telecommunication providers, as well as evolving data exchange requirements,
(3) The need to review, in association with the ECMWF, RMDCN contractual arrangements, as required, and in particular prepare a new procurement and implementation, according to the current RMDCN contract and the WMO/ECMWF agreement on the RMDCN,
(4) The need to continue assisting Members in implementing their connection to the RMDCN and in coordinating matters related to the implementation and operation of the RMDCN,

DECIDES:

(1) To re-establish the Steering Group on the Regional Meteorological Data Communication Network, reporting to the president of the Association with the following terms of reference:
   (*a*) To ensure coordination between all RA VI Member countries connected to the RMDCN;
   (*b*) To review the matters related to the operation of the transport service of the GTS provided by the RMDCN;
   (*c*) To maintain close liaison with the Subgroup on Regional Aspects of the Information Systems and Services of the Working Group on Planning and Implementation of the WWW in Region VI and the CBS Open Programme Area Group/Information Systems and Services, in particular to keep abreast of the GTS requirements in Region VI;
   (*d*) To address problems related to the satisfaction of GTS requirements in Region VI through the RMDCN;
   (*e*) To prepare, in collaboration with ECMWF, possible changes in the RMDCN, in particular a new procurement and implementation in accordance with the RMDCN contract;
   (*f*) To coordinate the RA VI Member countries not connected to the RMDCN to join the RMDCN and to implement their connection;
   (*g*) To coordinate the utilization of the WMO RMDCN Trust Fund;
(2) That the Steering Group should be composed of representatives from the following countries: Austria, Bulgaria, Czech Republic, Germany, Italy, Lebanon, Lithuania, Russian Federation, Sweden, United Kingdom and the ECMWF as observer;
(3) To designate, in accordance with General Regulation 32, Mr D. André (France) as chairperson of the Group;

REQUESTS the chairperson to submit a report in December of each year to the president of the Association and to submit a report to the Association six months before its next session;

INVITES Members to continue contributing to the implementation and operation of the RMDCN, in particular by contributing to the WMO RMDCN Trust Fund;

REQUESTS the Secretary-General to arrange for Secretariat support for the implementation and operation of the RMDCN.

NOTE: This resolution replaces Resolution 5 (XI-RA VI), which is no longer in force.

RESOLUTION 7 (XIII-RA VI)

WORKING GROUP ON CLIMATE-RELATED MATTERS

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) The reports of the rapporteurs and chairperson of its Working Group on Climate-related Matters,

(2) The Fifth WMO Long-term Plan,

(3) The *Abridged Final Report with Resolutions and Recommendations of the Thirteenth Session of the Commission for Climatology* (WMO-No. 938),

(4) The discussions on climate-related issues in the *Abridged Final Report with Resolutions of the Thirteenth World Meteorological Congress* (WMO-No. 902) and in the *Abridged Final Report with Resolutions of the Fifty-third Session of the Executive Council* (WMO-No. 929), with particular reference to the CLIPS Project and the policy and practice for the exchange of meteorological and related data and products,

CONSIDERING the need for the Association to maintain its activities in climate-related matters of particular importance to the Region,

DECIDES:

(1) To re-establish the Working Group on Climate-related Matters with the following terms of reference:

(*a*) To provide advice on methods to strengthen and improve climate observations, data management, climate monitoring and provision of data sets;

(*b*) To cooperate closely with the coordinator of the RA VI Subgroup on Regional Aspects of the GOS in the revision of the RBCN;

(*c*) To provide advice on, and assist in, the implementation of various climate data and climate application projects, including CLIPS and data rescue;

(*d*) To examine and report on the use of GIS in the provision of climate services;

(*e*) To report on EuroCLIPS activities and ECSN and to encourage cooperation on CLIPS activities, and especially as related to climate outlooks and forecasts;

(*f*) To report on EuroCLIVAR activities with special regard to climate extremes and indices and indicators for climate change detection in RA VI;

(*g*) To provide advice on, and assist in, the implementation of various climate applications in RA VI, especially in the development of bioclimatic indices and urban and building climatology;

(*h*) To provide a report on the climatological requirements for, and assist in, the implementation of RCC functionalities within RA VI;

(2) To select the following experts to serve on the Working Group in the capacities indicated:
Mr A. Van Engelen (Netherlands) to serve as Rapporteur on Observations and Data Management;
Mr A. U. Komuscu (Turkey) to serve as Rapporteur on Climate System Monitoring and Analysis;
Ms A. Gocheva (Bulgaria) to serve as Rapporteur on Applications and CLIPS;
Mr P. Hechler (Germany) to serve as Rapporteur on Coordination and Implementation of RCC Activities;
Messrs A. Furshpan (Israel), N. Karatarakis (Greece) and Ms F. Coelho (Portugal) to serve as experts, with tasks to be determined by the chairperson;

(3) To select Mr G. Gruza (Russian Federation) to act as chairperson of the Working Group;

(4) That Members may nominate other experts to serve on the Working Group, as required;

REQUESTS the chairperson of the Working Group to submit annual progress reports to the president of the Association and a final report not later than six months before the fourteenth session of the Association.

NOTE: This resolution replaces Resolution 5 (XII-RA VI), which is no longer in force.

RESOLUTION 13 (XIII-RA VI)

WORKING GROUP ON AGRICULTURAL METEOROLOGY

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 12 (Cg-XIII) — Agricultural Meteorology Programme,

(2) The *Abridged Final Report with Resolutions and Recommendation of the Twelfth Session of the Commission for Agricultural Meteorology* (WMO-No. 900),

(3) Resolution 8 (XII-RA VI) — Working Group on Agricultural Meteorology,

(4) The report of the Working Group submitted to the thirteenth session of the Association, including its recommendations,

RECOGNIZING:

(1) The increased awareness for environmental aspects of agriculture and of the importance of the quality of agricultural products Region VI (Europe),

(2) The impact of droughts and floods on agriculture and forestry in the Region,

(3) The need to develop appropriate adaptation strategies to cope with climate variability and climate change,

(4) That maintenance of phenological observation networks is crucial for crop modelling and yield forecasting,

(5) The use of new technologies such as remote sensing in agrometeorological applications,

RECOGNIZING FURTHER:

(1) The need for collaboration for early warning and detection,

(2) That educational facilities in agrometeorology at various levels are insufficient in the Region and that lack of facilities creates a bottleneck for the progress of agrometeorology in the Region,

DECIDES:

(1) To re-establish the Working Group on Agricultural Meteorology with the following terms of reference:

   (*a*) To summarize recent developments in drought and flood management and promote greater collaboration for early warning and detection keeping in mind the user needs for this information;

   (*b*) To review the current status and recommend ways of strengthening phenological observation networks;

   (*c*) To encourage and identify specialized training facilities across Europe with a group of specialists to develop and conduct a unique agricultural meteorology training programme;

   (*d*) To assess the impact of climate variability/climate change on agriculture across Europe;

   (*e*) To review the effective use of remote-sensing applications in agricultural meteorology;

   (*f*) To provide advice on, and assist in, the application of agricultural climatology in order to enhance food production;

(2) To invite the following experts to serve as core members of the Working Group:
Mr H. Friesland (Germany);
Mr Z. Dunkel (Hungary);
Mr R. Jilderda (Netherlands);
Ms A. Marica (Romania);
Mr A. Kleschenko (Russian Federation);
Mr J. D. Corredera (Spain);
Mr S. Cinar (Turkey);

(3) To invite Mr G. Maracchi (Italy) to act as chairperson of the Working Group on Agricultural Meteorology;

(4) To request the chairperson to allocate responsibilities in consultation with the members of the Working Group for the various tasks contained in the terms of reference;

(5) To request the chairperson to submit a final report comprising individual reports of the members to the president of the Association not later than six months before the next session of the Association.

_____

NOTE: This resolution replaces Resolution 8 (XII-RA VI), which is no longer in force.

RESOLUTION 16 (XIII-RA VI)

SUPPORT FOR THE JOINT WMO/IOC TECHNICAL COMMISSION FOR OCEANOGRAPHY AND MARINE METEOROLOGY

REGIONAL ASSOCIATION VI (EUROPE),

NOTING:

(1) Resolution 14 (Cg-XIII) — Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM),

(2) IOC Assembly Resolution XX-12 — The Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM),

(3) The *Abridged Final Report with Resolutions and Recommendations of the First Session of the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology* (WMO-No. 931),

CONSIDERING that oceanographic and marine meteorological observations not only make a significant contribution to operational meteorology and the provision of marine services, but are also essential to global climate studies generally,

RECOGNIZING:

(1) That JCOMM is now the appropriate and sole WMO body for the international coordination and regulation of a global operational ocean observing, data management and services system,

(2) That some Members of the Association are actively involved in the deployment and maintenance of a variety of ocean observation facilities, for both operational and research purposes,

(3) That Members of the Association are also increasingly being required to provide coordinated meteorological and oceanographic services for a large variety of marine user groups,

(4) That GTS will continue to be essential for the operational collection and exchange of many types of ocean data,

RECOGNIZING FURTHER that a substantial increase in the amount of ocean data available operationally is needed to satisfy the requirements of operational meteorology, oceanographic services and research and global climate studies for such data,

URGES Members:

(1) To continue and, where possible, expand their existing operational ocean observing system facilities and activities, as contributions to the WWW, GCOS and GOOS and with international coordination effected through JCOMM;

(2) To participate actively in the planning and implementation of these systems and in the work of JCOMM;

(3) To coordinate with appropriate national oceanographic agencies and institutions to ensure the long-term operational maintenance of oceanographic observing systems;

(4) To coordinate with appropriate national oceanographic agencies and institutions in developing oceanographic data management capabilities and oceanographic services;

(5) To enhance two-way ship-shore telecommunication arrangements for oceanographic data and products, in particular through the greater use of satellite-based telecommunications facilities such as the Inmarsat and Argos systems;

REQUESTS the Secretary-General to take any action considered necessary, and within the available budgetary resources, to assist Members to participate in the development and maintenance of JCOMM.

_____

NOTE: This resolution replaces Resolution 10 (XII-RA VI), which is no longer in force.

ANNEXES

ANNEX I
Annex to paragraph 4.1.5 of the general summary

SPECIFIC TASKS OF THE RA VI WORKING GROUP ON PLANNING AND IMPLEMENTATION OF THE WORLD WEATHER WATCH

1. To review the design of the RBSN and RBCN, assess the existence of gaps in the observing network and maintain the master station list and the list of focal points.

2. To liaise with EUCOS and support the EUCOS initiative to develop and maintain the monitoring capabilities.

3. To develop a strategic plan for RICs with a view to attaining an optimal system of RICs in the Region, which would meet all requirements of the Members and take into account the existing and emerging capabilities and initiatives, such as relevant EUMETNET programmes.

4. To keep under review and modernize the status of implementation and operation of the RMTN including RMDCN especially in the eastern part of the Region.

5. To support the introduction of WIS and the development of a GISC within RA VI.

6. To support the implementation of table-driven code forms.

7. To keep under review the EUMETCast/WWW-RA VI service for the provision of basic meteorological data during the trial period and to improve the content of the dissemination programme and the transmission schedule.

8. To keep abreast of developments in data-processing and forecasting systems such as limited area models, data assimilation, ensemble prediction systems and nowcasting systems; in particular, keep under review the structure, responsibilities and capabilities of the RSMCs in the Region taking into account relevant newly-emerging programmes and initiatives.

9. To direct support to less advanced NMHSs through scientist visiting programmes, staff exchanges, training courses or workshops targeted to the use of NWP products and forecasting methods.

10. To improve the exchange of warnings on the experience gained in the pilot project and build up a collective warning system in Europe and RA VI.

11. To extend education and training through workshops and training seminars as well as guidance and training material.

12. To encourage Members to use verification statistics to help improve the quality of forecasts and the efficiency of the forecast process.

13. To identify deficiencies in RA VI countries by updating WMO databases using country profiles.

14. To assist and advise NMHSs, when necessary, by sending experienced consultants and holding cooperation meetings.

15. To identify possible resources among Members as well as from international funding institutions in Europe, and to promote actions to access such resources.

ANNEX II

Annex to paragraph 4.3.10 of the general summary

STATEMENT OF ACCOUNTS OF THE RMDCN TRUST FUNDS AS AT 31 DECEMBER 2004

Funds available on 1 January 2000	96 929
Interest	9 778
Savings on cancellation of prior years' obligations	11 465
Total receipts	118 172
4th session of the ROC	9 290
5th session of the ROC	9 786
6th session of the ROC	10 110
7th session of the ROC	9 013
8th session of the ROC	5 866
9th session of the ROC	15 139
Total expenditures	59 204
Total funds available on 31 December 2004	58 968

ANNEX III

Annex to paragraph 15.2.19 of the general summary

EC STATEMENT ON THE ROLE AND OPERATION OF NATIONAL METEOROLOGICAL AND HYDROLOGICAL SERVICES (FOR DECISION-MAKERS)

Key Social and Economic Drivers

1. Governments are striving to improve the well being of their citizens. Population growth, reducing poverty, water security, food security, increasing prosperity, and improving public health, safety and security are key drivers. To deal with these issues, governments have to develop and implement effective policy, promote fundamental tenets of societal and environmental governance. However, as regards environment, it is common knowledge that we are challenged by our natural environment, made worse by changes in the climate, which threatens the sustainable development of human societies through extreme weather events causing disasters, reduced food security, reduced availability of uncontaminated freshwater, and the rise and spread of diseases. This is further compounded by growing urbanization and the expansion of human habitation into previously unoccupied places, such as arid zones, mountain slopes, flood plains and the sea's edge is exposing populations to air and waterborne diseases, heat stress, drought, landslides, floods, storm surges and tsunamis.

The safety of life and protection of property is important for all countries but especially for the sustainability of emerging economies. These countries are highly vulnerable to natural disasters, which can wipe out 10 to 15% of a developing nation's GDP on average. Only with a clear understanding of the potential threats, advanced warning, and adequate disaster reduction and mitigation efforts can we properly protect our societies.

These are issues that must be dealt with if the global community is to attain the targets set through the 2000 Millennium Declaration, which are highlighted by the 2002 Johannesburg Plan of Implementation of the World Summit on Sustainable Development.

The role of National Meteorological and Hydrological Services

2. As has been the case since the beginning of the modern era of societal and environmental management, knowledge of weather and climate is key to all aspects of human endeavours. It is within this framework that National Meteorological and Hydrological Services (NMHSs) in various countries have been well positioned to identify and deal with a wide range of weather, climate and water related issues that affect human life and socio-economic development. For example, with regard to natural hazards, NMHSs have been tasked to sensitize the population to their impacts, and to provide warnings of individual events, to save lives, to sustain productivity, and to reduce damage to property.

3. NMHSs constitute the single authoritative voice on weather warnings in their respective countries, and in many they are also responsible for climate, air quality, seismic and tsunami warnings. To reduce and mitigate disasters requires well prepared NMHSs as well as governments and populations to take appropriate action in response to warnings. NMHSs, within the framework of the World Meteorological Organization (WMO), are working to help governments improve decision-making to enable populations to adapt to climate change, mitigate natural hazards and sustain development. By helping governments and the people to avert potential disasters, NMHSs are a fundamental component of the crisis management infrastructure of countries in their nation-building endeavours and indeed a contributor to sustainable development, particularly the poverty alleviation effort. NMHSs are working together to implement the WMO Multi-hazard Prevention Strategy, which aims to reduce by 50 percent over the decade 2010-2019 the number of fatalities caused by meteorological-, hydrological- and climate-related natural disasters compared with the ten-year average fatalities of 1995-2004.

4. NMHSs are continuously monitoring the environment through observations of the earth system and predict changes in this system. They provide governments with timely and precise warnings of most potential natural hazards and contribute essential environmental information and services for urban planning, sustainable energy development, access to freshwater, and food production.

5. Cooperation between various organizations is essential to provide governments with these services. Partnerships between NMHSs and academia, government departments, international and non-governmental organizations, and where appropriate and possible, the private sector, help society make better decisions based on more complete and accurate weather, water and climate information. These partnerships provide better data coverage and information processing, higher resolution models, and more precise and useful specialized products for societal benefits, including opportunities to better support government and other decision makers regarding safety, economics, and security. NMHSs are encouraging these partnerships by adopting open and unrestricted data policies which make their information easy to access in real time, in useful forms, and at low cost.

Future requirements

6. In the year 2000, through the internationally-agreed development goals, including those contained within the Millennium Declaration, the international community set forth specific targets to be reached by 2015. To ensure that these goals are met, it is essential that governments take advantage of the myriad advances in science and technology provided by NMHSs and their partners, that include the provision of multi-hazard warnings and related services, 24 hours a day, seven days a week for 365 days in a year, which when properly applied can provide societies with the underpinning information to reduce and mitigate natural disasters. International cooperation is essential, both between countries and within the larger UN framework of specialized agencies.

7. Access to good communication ensures that information is available wherever it is needed. Governments must recognize the importance of continuous monitoring of the environment and recognize the ability of their NMHSs to provide timely and accurate information to inform critical decisions. They are to continuously support NMHSs and their modernization and development.

8. It is essential that societies be prepared to act appropriately in response to warnings. Education and training is paramount for improvement of preparedness. Early warning systems for natural hazards work only if governments and their public know how to respond. Information must be easy to understand and use.

9. Climate change requires societies to understand and assess impacts and to develop the necessary adaptation strategies. By providing fundamental knowledge of the climate system and predictions based on climate models, NMHSs can help societies transform.

10. To be completely effective, NMHSs and their international network, coordinated through the WMO, must be recognized as critical partners in societies' goal to reduce poverty and increase the prosperity of the world's citizens.

APPENDIX A

LIST OF PERSONS ATTENDING THE SESSION

A. Officers of the session

D. Keuerleber-Burk	Acting president
A. Leitass	Vice-president

B. Representatives of WMO Members

Member	*Name*	*Capacity*
Albania	M. Sanxhaku	Delegate
Armenia	L. Vardanyan	Principal Delegate
	V. Grigoryan (Ms)	Delegate
Austria	F. Neuwirth	Principal delegate
Azerbaijan	S. Shiraliev	Principal Delegate
	S. Khalilov	Alternate
Belarus	A. Palishchuk	Delegate
Belgium	H. Malcorps	Principal delegate
	G. R. Demarée	Alternate
	A. Neukermans (Ms)	Delegate
Bosnia and Herzegovina	M. Kujundžić	Principal delegate
	E. Sarač	Delegate
	D. Trkulja	Delegate
	Z. Božović	Delegate
	M. Muminovic	Delegate
Bulgaria	K. Tzankov	Principal delegate
Croatia	I. Čačić	Principal delegate
	D. Trninić	Delegate
	K. Pandžić	Delegate
	D. Klarić	Delegate
Cyprus	K. Theophilou	Principal Delegate
	M. Zacharioglou	Alternate
Czech Republic	I. Obrusník	Principal delegate
	J. Kubát	Delegate
	R. Tolasz	Delegate
Denmark	P. Aakjaer	Principal delegate
	L. Wester-Andersen (Ms)	Alternate
Estonia	J. Saar	Principal delegate
Finland	P. Taalas (4.9)	Principal Delegate
	K. Soini (Ms) (8-10.9)	Principal Delegate
	M. Heikinheimo (12.9)	Principal Delegate
	M. Puupponen	Delegate
	M. Hurtola (Ms)	Delegate
France	C. Blondin	Delegate
	A. de Billy (Ms)	Delegate
	D. Lambergeon	Delegate
	J.-L. Gaumet	Delegate
	J.-M. Tanguy	Delegate
Georgia	R. Chitanava	Principal Delegate
	G. Kordzakhia	Delegate
Germany	W. Kusch	Principal Delegate
	U. Gärtner	Alternate
	G.-R. Hoffman	Delegate
	G. Steinhorst	Delegate
	D. Frömming	Delegate
	P. Hechler	Delegate
	S. Demuth	Delegate
	G. Adrian	Delegate
Greece	D. Skourgias	Principal delegate
	D. Katsimardos	Delegate
Hungary	Z. Dunkel	Principal Delegate
	G. Kis-Kovács	Delegate
	Zs. Buzas (Ms)	Delegate
Iceland	M. Jónsson	Principal Delegate
	A. Snorrason	Delegate
Ireland	G. Fleming	Principal delegate
Israel	I. Setter	Principal Delegate
Italy	M. Capaldo	Principal Delegate
	S. Pasquíni	Delegate
	G. Maracchi	Delegate
	C. de Simone	Delegate
	M. Abbafati (Ms)	Delegate
	G. Monacelli (Ms)	Delegate
Jordan	J.K. Rabadi	Principal delegate
Kazakhstan	T. Kudekov	Principal Delegate
	Z. Kubakov	Delegate
Latvia	A. Leitass	Principal delegate
Lithuania	V. Augulienė (Ms)	Principal delegate
Netherlands	F. Brouwer	Principal Delegate
	A. Kattenberg	Delegate
	B. Van Engelen	Delegate
Norway	A. Eliassen	Principal delegate
	J. Sunde	Alternate
	L. Svendsen (Ms)	Delegate

Member	*Name*	*Capacity*
Poland	J. Zielinski	Principal delegate
	R. Klejnowski	Alternate
	B. Ozga-Zielinski	Delegate
Portugal	A. Serrão	Principal Delegate
	L. Nunes	Alternate
	T. Diniz Abrantes (Ms)	Delegate
Republic of Moldova	V. Cazac	Principal Delegate
	N. Berghi (Ms)	Delegate
Romania	I. Sandu	Principal Delegate
	P. Stanciu	Delegate
Russian Federation	A. I. Bedritsky	Principal delegate
	V. Bakumov	Delegate
	M. Shaimardanov	Delegate
	M. Petrova (Ms)	Delegate
	R. Vilfand	Delegate
	V. Trukhin	Delegate
	E. Utkin	Delegate
Serbia and Montenegro	J. Andrejevic (Ms)	Principal Delegate
	L. Mitrovic	Delegate
	D. Jovanovic	Delegate
	R. Vuckovic	Delegate
Slovakia	P. Ronĉák	Principal delegate
	Š. Škulec	Delegate
	V. Pastirĉák	Delegate
	M. Mirtová (Ms)	Delegate
	I. Zahumensky	Delegate
Slovenia	J. Roskar	Principal delegate
	J. Jerman	Alternate
Spain	F. Cadarso	Principal Delegate
	J. Segovia	Alternate
	B. Orfila	Delegate
Sweden	M. Agren (Ms)	Principal Delegate
	T. Kvick	Alternate
	G. Wennerberg (Ms)	Delegate
	I. Karro	Delegate
Switzerland	D. Keuerleber-Burk	Principal delegate
	G. Müller	Alternate
	A. Rubli	Alternate
	P. Morscher	Delegate
	H. Hodel	Delegate
Syrian Arab Republic	E. Eddin Al-Beik	Principal Delegate
The former Yugoslav Republic of Macedonia	V. Spiridonov	Principal delegate
	S. Monevska (Ms)	Delegate
Turkey	M. Kayhan	Principal delegate
	R. Sagir	Delegate
	C. Oktar	Delegate
Ukraine	V. Lipinsky	Principal delegate
United Kingdom of Great Britain and Northern Ireland	J. Mitchell	Principal Delegate
	G. Pankiewicz	Alternate
	M. Hutchinson	Delegate
	A. Douglas	Delegate
	G. Ryall (Ms)	Delegate
	C. Muller	Delegate
	A. Calver (Ms)	Delegate

C. Representatives of WMO Members outside Region VI

Sudan	O. Mohamed	Observer
United States of America	J. Jones	Observer

D. Lecturers

P. Bessemoulin
G. Tetzlaff
K. Groves

E. Representatives of international organizations

Organization	*Name*
International Civil Aviation Organization (ICAO)	G. Vega
World Bank	D. Rogers
	L. Hancock (Ms)
Association of Hydro-Meteorological Equipment Industry (HMEI)	L. Gomez
	E. Peters
	D. Peters
Economic Interest Grouping of the Western European National Meteorological and Hydrological Services (ECOMET)	R.A. Hoenson
European Centre for Medium-Range Weather Forecasts (ECMWF)	D. Marbouty
European Commission (Joint Research Centre)	A. de Roo
European Meteorological Services Network (EUMETNET)/Composite Observing System (EUCOS)	J. Caughey
European Organization for the Exploitation of Meteorological Satellite (EUMETSAT)	P. Valabrega

APPENDIX B
LIST OF ABBREVIATIONS

ACSYS	Arctic Climate System Study
AeMP	Aeronautical Meteorology Programme
AgMP	Agricultural Meteorology Programme
AGW	Advisory Working Group
AIC	Argo Information Centre
AMDAR	Aircraft Meteorological Data Relay
AMIP	Atmospheric Model Intercomparison Project
AML	Additional Military Layers
AMMA	African Monsoon Multidisciplinary Analysis
ANSP	Air navigation service provider
APFM	Associated Programme on Flood Management
APT	Automatic Picture Transmission
AREP	Atmospheric Research and Environment Programme
ASAP	Automated Shipboard Aerological Programme
ASAPP	Automated Shipboard Aerological Programme Panel
AUPISG	Aviation Use of the Public Internet Study Group
AWS	Automatic Weather Station
BALTEX	Baltic Sea Experiment
CAeM	Commission for Aeronautical Meteorology
CAgM	Commission for Agricultural Meteorology
CAS	Commission for Atmospheric Sciences
CASPAS	Integrated Programme on Hydrometeorology and Monitoring of Environment in the Caspian Sea Region
CASPCOM	Coordination Committee on Hydrometeorology and Pollution Monitoring of the Caspian Sea
CBS	Commission for Basic Systems
cCASHh	climate Change and Adaptation Strategies for Human health
CCl	Commission for Climatology
CDMS	Climate Database Management Systems
CEP	Caspian Environment Programme
CHy	Commission for Hydrology
CIMO	Commission for Instruments and Methods of Observation
CIS	Commonwealth of Independent States
CliC	Climate and Cryosphere
CLICOM	Climate Computing
CLIMAG	Climate Prediction for Agriculture
CLIPS	Climate Information and Prediction Services
CLIVAR	Climate Variability and Predictability
CMIP	Coupled Model Intercomparison Project
CMM	Commission for Marine Meteorology
CNES	National Centre for Space Studies
CNRS	National Scientific Research Center
COMET	Co-operative Programme for Operational Meteorology Education and Training
COP	Conference of the Parties
COPES	Coordinated Observation and Prediction of the Earth System
COSMO	Consortium for Small-scale Modeling
COST	European Cooperation in the Field of Technical Research
CPA	WMO Communications and Public Affairs Office
CSM	Climate System Monitoring
CSV	Comma-separated-value

DARE	Data Rescue Project
DBCP	Data Buoy Cooperation Panel
DIVERSITAS	International programme of biodiversity science
DPM	Natural Disaster Prevention and Mitigation
DWD	*Deutscher Wetterdienst*
E-SURFMAR	EUCOS Surface Marine Programme
EARLINET	European Aerosol Research Lidar Network to Establish an Aerosol Climatology
EBU	European Broadcasting Union
EC	Executive Council
ECDIS	Electronic Chart Display and Information System
ECMWF	European Centre for Medium-range Weather Forecasts
ECSN	European Climate Support Network
EEA	European Environment Agency
EFAS	European Flood Alert System
EMEP	Cooperative Programme for the Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe
EMMA	European Multiservice Meteorological Awareness
EOS	Earth Observation Summit
EPS	Ensemble Prediction System
ERA	Emergency Response Activities
ESA	European Space Agency
ESSP	Earth System Science Partnership
ET	Expert Team
ETAC-MET	Expert Team on Accreditation and Certification in Meteorological Education and Training
ETMSS	Expert Team on Maritime Safety Services
ETRP	Education and Training Programme
EU	European Union
EUCOS	EUMETNET Composite Observing System
EUMETNET	European Meteorological Services Network
EUMETSAT	European Organization for the Exploitation of Meteorological Satellites
EUROCONTROL	European Organization for the Safety of Air Navigation
EXCLIFF	Expert Circle on Flood Forecasting
FAO	Food and Agriculture Organization
FDP	Forecast demonstration programme
FTP	File Transfer Protocol
FWIS	Future WMO Information System
GAIM	Global Analysis, Integration and Modelling
GAW	Global Atmosphere Watch
GAWSIS	GAW Station Information System
GAWTEC	GAW Training and Education Centre
GCC	Global Collecting Centre
GCM	GCOS Cooperation Mechanism
GCOS	Global Climate Observing System
GDPFS	Global Data-processing and Forecasting System
GDSIDB	Global Digital Sea Ice Data Bank
GEO	Group on Earth Observations
GEOSS	Global Earth Observation System of Systems
GEWEX	Global Energy and Water Cycle Experiment
GIFS	Global Interactive Forecasting System
GIS	Geographical Information System
GISC	Global Information System Centre
GLFE	Great Lakes Fleet Experiment
GLOSS	Global Sea-Level Observing System
GMDSS	Global Maritime Distress and Safety System
GMES	Global Monitoring for Environment and Security
GOOS	Global Ocean Observing System
GOS	Global Observing System

GPC	Global Producing Centre
GRDC	Global Runoff Data Centre
GSN	GCOS Surface Network
GTN-R	Global Terrestrial Network – River Discharge
GTS	Global Telecommunication System
GTSPP	Global Temperature Salinity Profile Programme
GUAN	GCOS Upper-Air Network
GURME	GAW Urban Research Meteorology and Environment Project
GWP	Global Water Partnership
HIRLAM	High Resolution Limited Area Model
HOMS	Hydrological Operational Multipurpose System
HRM	HOMS Reference Manual
HRPT	High-Resolution Picture Transmission
HWRP	Hydrology and Water Resources Programme
HYCOS	Hydrological Cycle Observing System
IABP	International Arctic Buoy Programme
IAEA	International Atomic Energy Agency
IAPSAG	WMO/IUGG International Aerosol Precipitation Science Assessment Group
ICAO	International Civil Aviation Organization
ICEAWS	International Conference on Experiences with Automatic Weather Stations
ICH	Interstate Council for Hydrometeorology
ICSC	International Centre for Scientific Culture
IDRC	International Development Research Centre
IFI	International Flood Initiative
IFM	Integrated Flood Management
IGACO	Integrated Global Atmospheric Chemistry Observations
IGBP	International Geosphere-Biosphere Programme
IGC	International Geophysical Co-operation
IGDDS	Global Data Dissemination Service
IGOS	Integrated Global Observing Strategy
IGOSS	Integrated Global Ocean Services System
IGRAC	International Groundwater Resources Assessment Centre
IHDP	International Human Dimensions Programme on Global Environmental Change
IHO	International Hydrographic Organisation
IHP	International Hydrological Programme
IMO	International Maritime Organization
IMOP	Instruments and Methods of Observation Programme
IMSO	International Maritime Satellite System
INSPIRE	INfrastructure for SPatial InfoRmation in Europe
IOC	Intergovernmental Oceanographic Commission
IODE	International Oceanographic Data and Information Exchange
IOS	Integrated Observing Systems
IPA	Information and Public Affairs
IPCC	Intergovernmental Panel on Climate Change
IPM&IS	Integrated Project for a Monitoring and Information System
IPO	THORPEX International Programme Office
IPY	International Polar Year
IRI	International Research Institute for Climate and Society
ISABP	International South Atlantic Buoy Programme
ISC	International Seismological Centre
ISDR	International Strategy for Disaster Reduction
ISO	International Organization for Standardization
IUGG	International Union of Geodesy and Geophysics
IWTC	International Workshop on Tropical Cyclones

JCOMM	Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology
JCOMMOPS	JCOMM In Situ Observing Platform Support Centre
JRC	Joint Research Centre
JSC	Joint Scientific Committee (WMO/IOC/ICSU)
LAM	Limited area model
LDCs	Least developed countries
LRF	Long range forecasting
LRTAP	Convention on Long-range Transboundary Air Pollution
LTP	Long-term Plan
MAP	Mesoscale Alpine Programme
MCSS	Marine Climatological Summaries Scheme
MDG	Millennium Development Goal
MEDEX	Mediterranean Experiment on Cyclones that Produce High Impact Weather in the Mediterranean
MEDSEEME	Mediterranean, South-east Europe and Middle East countries
MMOP	Marine Meteorology and Oceanography Programme
MOU	Memorandum of Understanding
MPERSS	Marine Pollution Emergency Response Support System
MPLS	Multi-Protocol Label Switching
MSG	METEOSAT second generation
MSI	Maritime Safety Information
MTN	Main Telecommunication Network
NCDC	National Climatic Data Center
NGO	Non-governmental organization
NHS	National Hydrological Service
NMC	National Meteorological Centre
NMHS	National Meteorological and Hydrological Service
NMS	National Meteorological or Hydrometeorological Service
NOAA	National Oceanic and Atmospheric Administration
NPDBAP	North Pacific Data Buoy Advisory Panel
NPS	North Pole station
NWP	Numerical Weather Prediction
OECD	Organization for Economic Cooperation and Development
OIS	Operational Information Service
OPACHE	Open Panel of CHy Experts
OPAG	Open Programme Area Group
PMO	Port Meteorological Officer
PPCWMR	Programme on Physics and Chemistry of Clouds and Weather Modification Research
PWS	Public Weather Services
QMF	Quality Management Framework
QMS	Quality Management System
QPF	Quantitative precipitation estimation
R&D	Research and Development
RA	Regional Association
RBCN	Regional Basic Climatological Network
RBO	River Basic Organization
RBSN	Regional Basic Synoptic Network
RCC	Regional Climate Centre
RCD	Regional and Technical Cooperation Activities for Development Department
RIC	Regional Instrument Centre
RMDCN	Regional Meteorological Data Communication Network
RMTC	Regional Meteorological Training Centre
RMTN	Regional Meteorological Telecommunication Network

ROC	RMDCN Operating Committee
ROSHYDROMET	Russian Federal Service for Hydrometry and Environmental Monitoring
RSMC	Regional Specialized Meteorological Centre
RTH	Regional Telecommunication Hub
7LTP	Seventh WMO Long-term Plan
6LTP	Sixth WMO Long-term Plan
SAF	Satellite Application Facility
SAG	Scientific Advisory Group
SBSTA	Subsidiary Body for Scientific and Technical Advice
SBSTTA	Subsidiary Body on Scientific, Technical and Technological Advice
SCHOTI	Standing Conference of Heads of Training Institutions of National Meteorological Services
SDSIDS	Sustainable Development of Small Island Developing States
SES	EU Single European Sky
SIDS	Small Island Developing States
SIP	Seasonal to interannual prediction
SOLAS	International Convention for the Safety of Life at Sea
SOOP	Ship-of-Opportunity Programme
SOOPIP	Ship-of-Opportunity Programme Implementation Panel
SOT	Ship Observations Team
SPARC	Stratospheric Processes and their Role in Climate
START	SysTem for Analysis, Research and Training
SWIC	Severe Weather Information Centre
TAMDAR	Tropospheric Airborne Meteorological Data Reporting
TCOP	Technical Co-operation Programme
TCP	Tropical Cyclone Programme
TDCF	Table Driven Code Forms
THORPEX	Observing System Research and Predictability Experiment
TIGGE	THORPEX Interactive Grand Global Ensemble
TMRP	Tropical Meteorology Research Programme
TRACECA	TRAnsport Corridor Europe - Caucasus – Asia
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNU	United Nations University
UTCI	Universal Thermal Climate Index
UV	Ultra violet
VCP	Voluntary Cooperation Programme
VGISC	Visual (distributed) Global Information System Centre
VL	Virtual laboratory
VOS	Voluntary Observing Ship
VOSP	Voluntary Observing Ship Panel
VPN	Virtual Private Network
WAFC	World Area Forecast Centre
WAFS	World Area Forecast System
WAMIS	World AgroMeteorological Information Service
WCASP	World Climate Applications and Services Programme
WCDMP	World Climate Data and Monitoring Programme
WCDR	World Conference on Disaster Reduction
WCIRP	World Climate Impact Assessment and Response Strategies Programme
WCP	World Climate Programme
WCRP	World Climate Research Programme
WCSMP	World Climate System Monitoring Programme

WEFAX	Weather Facsimile
WG-PIW	Working Group on Planning and Implementation of the WWW
WGCM	JSC/CLIVAR Working Group on Coupled Modelling
WGNE	Working Group on Numerical Experimentation
WGH	Working Group on Hydrology
WHO	World Health Organization
WHYCOS	World Hydrological Cycle Observing System
WIS	WMO Information System
WMD	World Meteorological Day
WMO	World Meteorological Organization
WMOSP	WMO Space Programme
WSSD	World Summit on Sustainable Development
WWDR	World Water Development Report
WWIS	World Weather Information Service
WWR	World Weather Records
WWRP	World Weather Research Programme
WWW	World Weather Watch
XBT	Ependable Bathythermograph