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REGIONAL ASSOCIATION II (ASIA)

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EXPECTED RESULT 4

AGENDA ITEM 4.4: ENHANCED CAPABILITIES OF MEMBERS TO ACCESS, DEVELOP, IMPLEMENT AND USE INTEGRATED AND INTEROPERABLE EARTH- AND SPACE-BASED OBSERVATION SYSTEMS FOR WEATHER, CLIMATE AND HYDROLOGICAL OBSERVATIONS, AS WELL AS RELATED ENVIRONMENTAL AND SPACE WEATHER OBSERVATIONS, BASED ON WORLD STANDARDS SET BY WMO

AGENDA ITEM 4.4: WMO INFORMATION SYSTEM

SUMMARY

DECISIONS/ACTIONS REQUIRED:

(a) Adoption of the draft text for inclusion in the general summary of RA II-15;

(b) Identify Principal and Associated GISCs for RA II National Centres;

(c) Review RA II WIS Implementation Plan and schedule.

REFERENCES:

1. *Abridged Final Report with Resolutions of the Sixteenth World Meteorological Congress* (WMO-No. 1077) [Agenda item 11.4];
2. *Abridged Final Report with Resolutions of the Sixty-fourth Session of the Executive Council* (WMO-No. 1092) [Resolution 12 (EC-64)];
3. *Abridged Final Report with Resolutions and Recommendations of the Fifteenth Session of the Commission for Basic Systems* (WMO-No. xxxx) [CBS-15-d04-3(1)-approved-WIS-AND-MANUAL_en (1).doc].

CONTENT OF DOCUMENT:

The Table of Contents is available only electronically as a Document Map[1].

[1] In MS **Word 2003** or **2007**, go to "**View**" > "**Document Map**", or click on the "DocMap" button on the WMO Toolbar.
In MS **Word 2010**, go to "**View**" > "**Navigation Pane**".
On a **Mac**, go to "**View**" > "**Navigation Pane**", select "**Document Map**" in the drop-down list on the left

APPENDIX A:
DRAFT TEXT SUPPORTING THE DECISIONS OF THE ASSOCIATION – FOR INCLUSION IN THE GENERAL SUMMARY OF RA II-15

4.4 Enhanced capabilities of Members to access, develop, implement and use integrated and interoperable Earth- and space-based observation systems for weather, climate and hydrological observations, as well as related environmental and space weather observations, based on world standards set by WMO (agenda item 4.4)

4.4.2 WMO Information System (WIS)

Global Information System Centres (GISCs)

4.4.2.1 The Association was pleased with the progress of WIS Implementation in the Region noting that GISCs Beijing and Tokyo have been operational since January 2012. It noted that GISC Seoul had also been successfully audited by CBS and that it will become operational in early 2013. GISCs Jeddah, Moscow, New Delhi and Tehran are preparing for their audits with an aim to beginning operations in 2013. Seven GISCs are expected to be directly supporting RA II by the end of 2013. The Association expressed its appreciation to GISCs Beijing and Tokyo for providing WMO Interim Metadata Management Services (WIMMS[2,3]) to support those WIS centres that do not yet have access to an operational GISC. It further noted that GISC Seoul will be able to provide WIMMS starting from early 2013. The Association noted the important role of GISCs in ensuring effective exchange of information between Members, and encouraged Members to work with GISCs on network and data management issues and to participate in the WIS Application Pilot Project in Regions II and V (former WIS VPN Pilot Project) focusing on pragmatic applications providing benefits from GISC services via internet.

National Centres (NCs) and Data Collection or Production Centres (DCPCs)

4.4.2.2 Recalling Resolution 51 (Cg-XVI) – Designation of WIS Centres and Recommendation 4.3.1/1 (CBS-15) – Amendments to Appendix B Table B.3 "National Centres" in the *Manual on the WMO Information System* (WMO-No. 1060)", the Association noted that the Region has 28 DCPCs and 36 NCs. Seventeen DCPCs have been endorsed by CBS for operations, five are under review and six have still to be submitted to CBS for endorsement. The Association, noting the request from the Sixteenth World Meteorological Congress (Cg-XVI) to initiate the coordination and consultations as a tentative solution so that each National Centre should be linked to a principal GISC and to a secondary GISC, reviewed the list of NCs provided by CBS. The Association adopted Resolution 4.4.2/1 – WMO Information System.

RA II WIS Implementation Plan

4.4.2.3 The Association recalled that Cg-XVI stated that WIS has moved from a development stage into an operational stage and that WIS activities in 2012-2015 should be: (1) complete WIS implementation across all WMO Centres; (2) capacity-building to ensure support of all WMO Members; (3) leverage WIS advantages for all WMO Programmes; and (4) take advantage of WIS in all WMO Data Management..The Association noted that capacity building has been given an effective start through the contributions of China, Japan and the Republic of Korea by running international workshops on WIS, and through the successful incorporation of WIS into telecommunication-related training workshops undertaken by Regional Training Centres in the

[2] GISC Beijing WIMMS http://wisportal.cma.gov.cn/wis/jsp/UserGuide/downloadFile.jsp?file=WIMMS_Service_in_GISC_Beijing.pdf
[3] GISC Tokyo WIMMS http://www.wis-jma.go.jp/cms/help-desk/user-guide/guide-to-maintenance-of-gts-metadata-at-giscwimms-tokyo/

Islamic Republic of Iran and Turkey. The Association noted that a training workshop on the BUFR and WIS matters was held (26-30 November 2012, Moscow) for Russian speaking countries. It emphasized that all Regional Training Centres should consider ways to incorporate WIS, to improve current training programmes, improve the trainers' understanding of WIS, and to ensure that the principles of WIS data management are taken up in other WMO Programme activities. The Association noted the initiatives of CBS for developing training strategies and encouraged Members to monitor this activity and to take advantage of CBS guidance and initiatives on capacity building.

4.4.2.4 The Association noted with satisfaction that Kazakhstan carried out significant modernization of the National Meteorological Service and in this regard, it planned to expand the participation in the WIS program during the next intersessional period. In particular, it expected to upgrade the WIS national center up to DCPC status as one of the elements of the North Eurasian Climate Center. In parallel, the meteorological communication links with neighbouring countries and other WIS centers will be upgraded.

4.4.2.5 The Association reviewed the draft RA II Regional WIS Implementation Plan and expressed its appreciation to China, Japan and the Republic of Korea for their contributions to development of the plan. It agreed that fully implementing WIS in the Region was an essential step toward the efficient implementation of WIGOS, GFCS and other priority areas. The Association noted the effectiveness of having a virtual WIS Implementation Project Office, utilizing local secondments in Beijing and Seoul. It encouraged other centres, especially GISCs, to provide similar resources towards completing the implementation of WIS in all centres in the Region. The Association noted the draft plan and agreed that the virtual WIS Implementation Project Office should continue to refine the plan and assist the RA II Management Group to guide Members through the implementation process. It agreed that the aim was to have WIS implemented in all RA II Members' centres by the Seventeenth World Meteorological Congress in 2015 and that it was important to regularly review the progress of WIS implementation, with a major review in mid-2014 with an aim to accelerating WIS implementation for those centres which are not likely to meet the 2015 target.

WIS discovery metadata

4.4.2.6 The Association noted that CBS-15 recommended an updated version of the WMO Core Profile of the ISO 19115 metadata standard that is used to represent WIS discovery metadata. This update introduces features that are needed to manage WIS. It also noted that CBS-15 recommended a standard way of managing changes to the metadata standard that clearly identifies those changes that will need software changes and subjects these to tighter change controls than for changes that have lower impact. Centres that create information that is exchanged through the WIS should work with their GISC to ensure that there are appropriate WIS discovery metadata records associated with the information.

Quantitative monitoring of the World Weather Watch

4.4.2.7 The Association noted that the analysis of the Annual Global Monitoring results for October 2011 shows that availability of SYNOP, TEMP and CLIMAT reports continues to be sustained at the higher level achieved since 2005. The proportion of CLIMAT reports received is lower than the proportion of SYNOP reports. The Association urged Members to ensure that CLIMAT reports are created and distributed correctly.

Data Rescue and Climate data sets

4.4.2.8 The Association urged Members to further accelerate, as a matter of high priority, the recovery and digitization of old climate records which remain critical for climate change assessment and the development of climate services in the context of climate change adaptation

and the GFCS. The Association further agreed that the ongoing WMO plans for accelerating climate data recovery and digitization efforts worldwide in view of developing high-quality climate data sets is a practical approach to link together Data Rescue on one side and regional climate assessment and adaptation efforts on the other side. These regional initiatives should set up the regional pillars for establishing a worldwide International Data Rescue initiative which was recommended by CCl-XV.

4.4.2.9 The Association agreed on the need for Members to collaborate actively for developing a regional collaborative data rescue and data set initiative. The objectives of this initiative can be similar to the existing ones in other Regions, i.e. MEDARE and ECA&D. It welcomed the plan for the organization, in early 2013, of a training workshop on Data Rescue and Data Management for RA II Members, which will be hosted in China and co-sponsored by the China Meteorological Administration and WMO. It appreciated that the event will include other applications such as Climate Data Management System and the calculation of climate indices.

Climate Data Management Systems (CDMSs)

4.4.2.10 The Association was pleased to note that the Region collaborated actively in the WMO survey on the status of climate data management and related systems worldwide. It noted that a total number of 12 NMHS in the Region responded to the WMO survey. The response reflected the gaps and needs for modernizing the CDMS worldwide and in the Region.

4.4.2.11 The Association noted with appreciation the work being finalized by the CCl Open Panel on Climate Data Management Expert Team on Climate Data Management Systems (ET-CDMS) on the provision of an updated guidance on the specifications for modern Climate Data Management Systems (CDMSs).

4.4.3 The Association was pleased to note that the Qatar Meteorological Department would hold a WIS Workshop from 26 to 30 January 2013 in Doha and invited RA II Members to participate in the Workshop.

APPENDIX B:
DRAFT RESOLUTION

DRAFT RESOLUTION 4.4.2/1 (RA II-15) –
WMO INFORMATION SYSTEM

THE REGIONAL ASSOCIATION II,

Noting the *Abridged Final Report with Resolutions of the Sixteenth World Meteorological Congress* (WMO-No. 1077),

Noting further Resolution 12 (EC-64) – Designation of the Centres of the WMO Information System,

Having considered Recommendation 4.3.1/1 (CBS-15),

Recognizing that the Area Meteorological Data Communication Networks (AMDCNs) in RA II will be defined by formally recording the association between WIS centres and GISCs,

Recommends:

(1) That Table B.3 of Appendix B of the Manual on the WMO Information System be updated to reflect the association between National Centres in Region II and their Principal GISCs provided in the annex to this resolution;

(2) That the initial AMDCNs for GISCs supporting RA II include the NC and GISC associations listed in the annex to this resolution;

Requests Members:

(1) To confirm to the Secretary-General the details of their WIS Focal Points;

(2) To register authorized Discovery Metadata editors with their Principal GISCs and WIMMS centres identified in the annex to this resolution;

(3) To put in place, in consultation with their principal and associated GISCs, agreements for the authorization of users to access GISCs' services;

Requests the Commission for Basic Systems (CBS) to develop a management procedure to deal with the future requests for possible changes of the associations between National Centres and their Principal GISCs and Associated GISCs.
Requests RA II GISCs to take a leading role in implementing WIS functionality and to assist their associated centres in implementing WIS;

Further requests the Secretary-General to inform CBS and EC-65 of the RA II recommended WIS centres/GISCs associations as provided in the annex to this resolution;

Urges all RA II Members to:

(1) Review the WIS Discovery Metadata for their centres via their principal GISC or nominated WIMMS centre;

(2) Publish Discovery Metadata for other data, products and services they provide so these can be discovered by national users via WIS;

Encourages all RA II WIS centres to:

(1) Facilitate participation of their experts and WIS Focal Points in training and capacity building activities aimed at enhancing their ability to create and manage Discovery Metadata and to benefit from WIS;

(2) Make the new functionality of WIS available to their national users through their centres' web interfaces and/or associated GISCs.

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Annex: 1

Annex to draft Resolution 4.4.2/1 (RA II-15) –
WMO Information System

List of Principal and Associated GISCs for National Centres in RA II and, where relevant, WIS Interim Metadata Management Service

Member / Organization	Centre Name	GTS Function	Centre Location (City)	Principal GISC	Associated GISCs	Interim WIMMS	Constituent Body
Afghanistan	Afghan Meteorological Authority	NMC	Kabul	Beijing	Tehran		CBS
Bahrain	Bahrain Meteorological Service	NMC	Manama	Jeddah	Beijing	Beijing	CBS
Bangladesh	Bangladesh Meteorological Department	NMC	Dhaka	New Delhi	Tokyo	Tokyo	CBS
Bhutan	Council for Renewable Natural Resources Research	NMC	Thimphu	New Delhi			CBS
Cambodia	Department of Meteorology	NMC	Phnom Penh	Tokyo			CBS
China	China Meteorological Administration	NMC	Beijing	Beijing			CBS
Democratic People's Republic of Korea	State Hydro-meteorological Administration	NMC	Pyŏngyang	TBD			CBS
Hong Kong, China	Hong Kong Observatory	NMC	Hong Kong	Beijing			CBS
India	India Meteorological Department	NMC	New Delhi	New Delhi	Tokyo		CBS
Iran, Islamic Republic of	Islamic Republic of Iran Meteorological Organization	NMC	Tehran	Tehran		Tokyo	CBS
Iraq	Iraqi Meteorological Organization	NMC	Baghdad	Tehran	Jeddah	Beijing	CBS
Japan	Japan Meteorological Agency	NMC	Tokyo	Tokyo			CBS
Kazakhstan	Kazhydromet	NMC	Almaty	Moscow			CBS
Kuwait	Department of Meteorology	NMC	Kuwait City	Jeddah	Tokyo	Tokyo	CBS
Kyrgyzstan	Main Hydro-meteorological Administration	NMC	Bishkek	Moscow			CBS

Member / Organization	Centre Name	GTS Function	Centre Location (City)	Principal GISC	Associated GISCs	Interim WIMMS	Constituent Body
Lao People's Democratic Republic	Department of Meteorology and Hydrology	NMC	Vientiane	Tokyo			CBS
Macao, China	Meteorological and Geophysical Bureau	WSO	Macau	Beijing			CBS
Maldives	Department of Meteorology	NMC	Malé	New Delhi	Tokyo	Tokyo	CBS
Mongolia	National Agency for Meteorology, Hydrology and Environment Monitoring	NMC	Ulaanbaatar	Beijing			CBS
Myanmar	Department of Meteorology and Hydrology	NMC	Yangon	Tokyo			CBS
Nepal	Department of Hydrology and Meteorology	NMC	Kathmandu	Beijing	New Delhi		CBS
Oman	Department of Meteorology	NMC	Muscat	Jeddah	Tokyo	Tokyo	CBS
Pakistan	Pakistan Meteorological Department (Karachi)	NMC	Karachi	Beijing	Seoul		CBS
Qatar	Civil Aviation Authority	NMC	Doha	Jeddah	Tokyo		CBS
	Civil Aviation Authority	Aviation Centre	Doha	Jeddah	Tokyo		CAeM
Republic of Korea	Korea Meteorological Administration	NMC	Seoul	Seoul			CBS
Russian Federation	Roshydromet (Khabarovsk)	WSO	Khabarovsk	Moscow			CBS
	Roshydromet (Novosibirsk)	WSO	Novosibirsk	Moscow			CBS
Saudi Arabia	Presidency of Meteorology and Environment	NMC	Jeddah	Jeddah			CBS
Sri Lanka	Department of Meteorology	NMC	Colombo	New Delhi			CBS
Tajikistan	Main Administration of Hydrometeorology and Monitoring of the Environment	NMC	Dushanbe	Moscow			CBS
Thailand	Thai Meteorological Department	NMC	Bangkok	Tokyo			CBS
Turkmenistan	Administration of Hydrometeorology	NMC	Ashgabad	Moscow	Seoul		CBS

Member / Organization	Centre Name	GTS Function	Centre Location (City)	Principal GISC	Associated GISCs	Interim WIMMS	Constituent Body
United Arab Emirates	Meteorological Department	NMC	Abu Dhabi	Jeddah			CBS
Uzbekistan	Uzhydromet	NMC	Tashkent	Seoul	Moscow		CBS
Viet Nam	Hydro-meteorological Service	NMC	Hanoi	Tokyo			CBS
Yemen	Yemen Meteorological Service	NMC	Sanaa	Jeddah			CBS

Note:

* An associated GISC is defined by a bilateral agreement between a centre and a GISC for the purposes of uploading or downloading data. A centre can have multiple associated GISCs but shall identify a principal GISC for uploading and management of metadata.

* WIMMS (WIS Interim Metadata Management Service) is a temporary service for those centres whose Principal GISC is not yet operational. WIMMS is provided by volunteer operational GISCs, currently GISCs Beijing and Tokyo and GISC Seoul in the near future.

APPENDIX C:
PROGRESS REPORT FOR INFORMATION – NOT TO BE INCLUDED IN THE GENERAL SUMMARY

WMO INFORMATION SYSTEM (WIS)

Status of WIS Implementation in RA II

Global Information and System Centres (GISCs)

1. Implementation of WIS is proceeding well in RA II with GISCs Beijing and Tokyo beginning operations in January 2012 and GISC Seoul having been successfully audited for going operational in early 2013. GISCs Jeddah, Moscow, New Delhi and Tehran are preparing for their audits with an aim to beginning operations in 2013. Seven GISCs are expected to be directly supporting RA II by the end of 2013. In addition, GISCs Beijing and Tokyo have been offering interim metadata management services (WIMMS[4]) to support all centres across the globe that have yet to have access to an operational GISC.

National Centres (NCs) and Data Collection or Production Centres (DCPCs)

2. RA II has 28 DCPCs and 36 NCs. Seventeen DCPCs have been endorsed by CBS for operations, five are under review and six have still to be submitted to CBS for endorsement. Although two of the NCs are operational (Beijing and Tokyo), the list of NCs has still to be approved by the Executive Council. Ensuring NCs are operational and compliant with WIS is the responsibility of the Member. It is expected that the Member's WIS Focal Point will work closely with the centre's agreed Principal GISC for testing of WIS compliance. Thus, identification of each centre's principal GISC and WIS focal point should be a priority for Members as a part of their WIS implementation strategy.

3. Sixteenth Congress requested that RA II initiate the coordination and consultations as a tentative solution so that each National Centre should be linked to a principal GISC and to a secondary GISC, taking into account the efficiency of options, the cost effectiveness for both NCs and GISCs, data distribution capacity of the GISCs, and the current structure of the GTS. In particular, Congress felt that the area of responsibility of each RA II GISC should be officially agreed upon at the 2012 RA II session. CBS-15 (Indonesia, 2012) agreed to a list of NCs to be proposed to EC-65 as an amendment to Annex B3 of the *Manual on the WMO Information System* (WMO-No. 1060). The list from CBS was based mostly on the current GTS connectivity, and incorporated those centres that already had agreements in place with their principal GISC. CBS, noting that RA II will be considering the association between GISCs and WIS centres, left RA II NCs as "To Be Determined" (TBD) expecting that RA II will provide a completed list following RA II-15. The list of RA II centres is reproduced in Attachment 1. Agreeing on each Centre's principal and associated GISCs, and in identifying which Interim Metadata Management Service Centre, each Member will use will be an important part of the RA II WIS Implementation.

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[4] GISC Beijing WIMMS
http://wisportal.cma.gov.cn/wis/jsp/UserGuide/downloadFile.jsp?file=WIMMS_Service_in_GISC_Beijing.pdf
and
GISC Tokyo WIMMS
http://www.wis-jma.go.jp/cms/help-desk/user-guide/guide-to-maintenance-of-gts-metadata-at-giscwimms-tokyo/

Networks and connectivity

WIS Core Network

4. The implementation of WIS networks in RA II is also proceeding well. As described in the *Manual on the WMO Information System* (WMO-No. 1060, paragraph 3.5.8), GISCs have an important role in ensuring connectivity to WIS centres is sufficient to meet the information exchange requirements within each GISC's area. GISCs shall also connect to each other via a WIS Core Network which is based on the MTN (WMO-No. 1060, paragraph 1.3) so that they can share information between centres in their area and other GISC areas with minimal delays. China, India, Japan, Republic of Korea and the Russian Federation are now connected to the WIS Core Network supplied by Orange Business Services (OBS) as a part of the RA VI RMDCN contract managed by ECMWF. Unfortunately, Saudi Arabia has cancelled its connection to the RMDCN and the Islamic Republic of Iran has still to connect, although, it is hoped that both these issues can be addressed simply in the near future. The Region has also successfully demonstrated secure use of the Internet for WIS purposes with the very successful RA II/RA V VPN project. Ensuring connection of GISCs supporting RA II centres to the WIS Core Network will be included in the RA II WIS Implementation Plan as will the next phase of the VPN implementation project.

Area Meteorological Data Communication Networks (AMDCNs)

5. As defined in the *Manual on WIS* (WMO-No. 1060), AMDCNs shall connect each GISC to DCPCs and NCs in the GISC area of responsibility. An AMDCN may span multiple Regional Meteorological Telecommunication Networks (RMTNs) and parts thereof. CBS-15 proposed an amendment to the *Manual on WIS* clarifying some aspects of GISCs' roles, but in particular CBS clarified the concept of associated and principal GISC as follows. "An associated GISC is defined by a bilateral agreement between a centre and a GISC for the purposes of uploading or downloading data. A centre can have multiple associated GISCs but shall identify a principal GISC for uploading and management of metadata." Thus for RA II, defining the list of Principal GISCs in Attachment 1 will help define the AMDCNs in RA II.

RA II WIS Implementation Plan

6. WIS implementation and the GTS management are conducted by the RA II Working Group on IOS/WIS. Several parallel activities are addressing WIS implementation; in particular, the group has established a WIS implementation coordination team utilizing local secondments from China (Mr. WANG Fudi) and Republic of Korea (Mr DO Sung Soo) to draft an RA II WIS Implementation Plan (R2-WIS-IP). An ad hoc expert meeting on development of Regional WIS implementation Plan for RA II was held in Beijing, China, from 17 to 19 October 2012. The meeting reviewed 81 comments from more than 30 Asian colleagues on the initial draft implementation plan and structure. The output from this activity will be provided as an information paper to RA II-15 and is expected to be available in the first week of December 2012. The structure of the draft R2-WIS-IP is shown in Attachment 2 to this document.

7. A workshop on WIS implementation in Tokyo, Japan (22-24 October 2012), reviewed the analysis of traffic volume of a 64 Kbps GTS circuit and the results of the survey over the current status at each centre. To meet the growing demand of data and product volume, including satellite products, the workshop recommended updating the minimum requirement for GTS links to be 128 Kbps. The workshop also reviewed the progress on management of discovery metadata in WIS. It noted that WIS metadata management has started in some DCPCs operated by JMA associated to GISC Tokyo. Participants noted with satisfaction that a JMA developed Excel-based WIS metadata creation tool is proving to be a useful solution for collecting information needed for populating WIS discovery metadata. The workshop supported further refinement of this tool and requested that the development should be part of WIS Application Pilot Project.

Capacity Building

8. A major component of the RA II WIS Implementation plan will be to ensure training for all RA II Members in the use of WIS, with a priority being the use and management of Discovery Metadata. GISCs Tokyo, Beijing and Seoul have already held International Workshops for RA II Members in 2010, 2011 and 2012 respectively demonstrating the important role of GISCs in capacity building activities. GISC Tehran utilized the Regional Training Centre Iran in collaboration with the WIS Jump Start offer to develop a training course on WIS in 2011 and will be working with other Regional Training Centres to share their experience. Regional Training Centre Turkey, which supports some RA II Members, incorporated training on WIS to its 2010 and 2012 International Workshops on Meteorological Telecommunications and METCAP Software. GISC New Dehli had also planned a workshop for 2012 but this had to be postponed until 2013. The CBS Expert Team on WIS Centres is developing a training strategy that will also be usable by Regional Associations (See Report[5] on ET-WISC 5th session, paragraphs 4.4 and 4.5 and Document 4.3 of ET-WISC[6]). Training and implementation of WIS has included many WIS Jump Starts being provided by the Secretariat. Experts from WIS centres are encouraged to participate in the WIS Jump Start initiative supporting other centres in their Region.

VPN Pilot Project – the next phase

9. Following the successful outcome of the VPN Pilot Project in Regions II and V, CMA and JMA agreed on reforming it to a Project focusing on the development of software applications for support WIS functions. The applications include visualization of WWW and near-real time monitoring results, automatic data acquisition software and the evaluation of visualization techniques. With the agreement of the other steering group Members, BoM, HKO and New Zealand MetService, CMA and JMA started user testing for several software applications in November 2012, and are looking for new test users. Those who are interested in joining this project as test users of WIS application software are kindly requested to contact the coordinator of WIS Application Pilot Project at Mr Yoshitomo Kojoh at y.kojoh@met.kishou.go.jp or fax number: +81 3 3211 8404.

Data Representation, Monitoring and Metadata

10. The China Meteorological Administration (CMA) is developing a tool to analyse the results from the World Weather Watch quantitative monitoring exercises that will assist the Secretariat in preparing the summary statistics. This is being tested to ensure that it reproduces the statistics from the 2010 Annual Global Monitoring (AGM), and for those calculations for which the tests show that the results are the same, it has been used to investigate the results of the 2011 AGM. Once the software has reproduced all the results for 2010, it will be used to analyse the Special MTN Monitoring, Integrated Global Monitoring and AGM exercises of 2011 and 2012.

11. Figures 1, 2 and 3 of attachment 3 respectively show the percentage of SYNOP, TEMP and CLIMAT reports received during the AGM for each year from 2004 to 2011. In Region II, the increase in delivery of reports achieved between 2005 and 2006 has been maintained, but the proportion of expected CLIMAT reports is 9% lower than for SYNOPS. Figure 4 of attachment 3 shows an analysis of the results of the 2011 AGM that, although not performed by the CMA application, has been made possible by the structured storage of information used by that application; in this case the receipt of TEMP reports for 00Z is compared with that for reports for 12Z. This analysis makes it clear that some countries have adopted an observing schedule based mainly on 00Z ascents, some have chosen a mainly 12Z schedule, while others produce reports equally at both times.

[5] http://www.wmo.int/pages/prog/www/ISS/Meetings/ET-WISC_Melbourne2012/FReport-ET-WISC2012.doc
[6] http://www.wmo.int/pages/prog/www/WIS/wiswiki/tiki-download_wiki_attachment.php?attId=869

Climate Data Monitoring and Word Weather Records

12. CBS-15 invited "CBS Lead Centres for GCOS" to actively participate in the collection, compilation and the dissemination of these records as described in EC-64 Resolution 14. The WMO Guidelines, WCDMP No. 77, provides the technical guidance on the content, format, and the dissemination mechanism including the area of responsibility for CBS lead centres for GCOS in collecting the WWRs. WMO has set up a web page on the WWRs history, definition and content: http://www.wmo.int/pages/prog/wcp/wcdmp/GCDS_2.php. WMO and NOAA's NCDC collaborated in the development and provision of a technical document (WCDMP No. 77) which provides guidelines on the submission of the WWRs http://www.wmo.int/pages/prog/wcp/wcdmp/documents/WWR_guide.pdf. The WMO Secretariat will invite Members to submit their WWRs based on these guidelines.

Data Rescue and Climate Data sets

13. The High Level Task Force of the GFCS emphasized the critical importance of Data Rescue in developing local climate services. The GFCS Implementation Plan which was endorsed by the Extraordinary Congress includes the acceleration of Data Rescue worldwide as one of fast track projects to be implemented in the early stage of the GFCS implementation.

Climate Data Management Systems

14. Background information on CDMS is available from the report from the meeting[7] in June 2012 of CCl Expert Team on CDMS (ET-CDMS) and from the ET-CDMS Assessment Survey[8], also available online.

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Attachments: 3

[7] ET-CDMS Meeting Report (June 2012)
http://www.wmo.int/pages/prog/wcp/wcdmp/documents/Report_ET_CDMS_meeting_June2012.pdf
[8] ET-CDMS Assessment Survey
http://www.met-elearning.org/moodle/mod/forum/discuss.php?d=4428#p19049

Attachment 1
List of RA II National Centres proposed for inclusion in Table B3 of Appendix B of the Manual on WIS (WMO No. 1060) next amendment

(Extracted from CBS Document "CBS-15-d04-3(1)-approved-WIS-AND-MANUAL_en.doc")

Member / Organization	Centre Name	GTS Function	Centre Location Region/City	Principal GISC	Constituent Body
Afghanistan	Afghan Meteorological Authority	NMC	RA II / Kabul	TBD	CBS
Bahrain	Bahrain Meteorological Service	NMC	RA II / Manama	TBD	CBS
Bangladesh	Bangladesh Meteorological Department	NMC	RA II / Dhaka	New Delhi	CBS
Bhutan	Council for Renewable Natural Resources Research	NMC	RA II / Thimphu	TBD	CBS
Cambodia	Department of Meteorology	NMC	RA II / Phnom Penh	TBD	CBS
China	China Meteorological Administration	NMC	RA II / Beijing	Beijing	CBS
Democratic People's Republic of Korea	State Hydrometeorological Administration	NMC	RA II / Pyŏngyang	TBD	CBS
Hong Kong, China	Hong Kong Observatory	NMC	RA II / Hong Kong	Beijing	CBS
India	India Meteorological Department	NMC	RA II / New Delhi	New Delhi	CBS
Iran, Islamic Republic of	Islamic Republic of Iran Meteorological Organization	NMC	RA II / Tehran	Tehran	CBS
Iraq	Iraqi Meteorological Organization	NMC	RA II / Baghdad	TBD	CBS
Japan	Japan Meteorological Agency	NMC	RA II / Tokyo	Tokyo	CBS
Kuwait	Department of Meteorology	NMC	RA II / Kuwait City	TBD	CBS
Kyrgyzstan	Main Hydrometeorological Administration	NMC	RA II / Bishkek	TBD	CBS
Lao People's Democratic Republic	Department of Meteorology and Hydrology	NMC	RA II / Vientiane	TBD	CBS
Macao, China	Meteorological and Geophysical Bureau	WSO	RA II / Macau	TBD	CBS
Maldives	Department of Meteorology	NMC	RA II / Malé	TBD	CBS

Member / Organization	Centre Name	GTS Function	Centre Location Region/City	Principal GISC	Constituent Body
Mongolia	National Agency for Meteorology, Hydrology and Environment Monitoring	NMC	RA II / Ulaanbaatar	Beijing	CBS
Myanmar	Department of Meteorology and Hydrology	NMC	RA II / Yangon	TBD	CBS
Nepal	Department of Hydrology and Meteorology	NMC	RA II / Kathmandu	TBD	CBS
Oman	Department of Meteorology	NMC	RA II / Muscat	TBD	CBS
Pakistan	Pakistan Meteorological Department (Karachi)	NMC	RA II / Karachi	Seoul	CBS
Qatar	Civil Aviation Authority	NMC	RA II / Doha	Jeddah	CBS
Qatar	Civil Aviation Authority	Aviation Centre	RA II / Doha	Jeddah	CAeM
Republic of Korea	Korea Meteorological Administration	NMC	RA II / Seoul	Seoul	CBS
Russian Federation	Roshydromet (Khabarovsk)	WSO	RA II/ Khabarovsk	Moscow	CBS
Russian Federation	Roshydromet (Novosibirsk)	WSO	RA II/ Novosibirsk	Moscow	CBS
Saudi Arabia	Presidency of Meteorology and Environment	NMC	RA II / Jeddah	Jeddah	CBS
Sri Lanka	Department of Meteorology	NMC	RA II / Colombo	TBD	CBS
Tajikistan	Main Administration of Hydrometeorology and Monitoring of the Environment	NMC	RA II / Dushanbe	TBD	CBS
Thailand	Thai Meteorological Department	NMC	RA II / Bangkok	TBD	CBS
Turkmenistan	Administration of Hydrometeorology	NMC	RA II / Ashgabad	TBD	CBS
United Arab Emirates	Meteorological Department	NMC	RA II / Abu Dhabi	TBD	CBS
Uzbekistan	Uzhydromet	NMC	RA II / Tashkent	Seoul	CBS
Viet Nam	Hydrometeorological Service	NMC	RA II / Hanoi	TBD	CBS
Yemen	Yemen Meteorological Service	NMC	RA II / Sanaa	TBD	CBS

Attachment 2 - Structure of Regional WIS Implementation Plan for RA II (Asia)

Forwards

- Scope of the document
- Organization of the document

Section 1 Background

- Background information
- Overview of the WIS

Section 2 Objectives of R2-WIS-IP

- Guidelines to achievable implementation to seek maximum benefits and minimum overhead investment
- Strategic approach to effective and efficient capacity building

Section 3 Guidelines

- Outline of the guidelines for achievable implementation in RA II

Section 4 Approaches for capacity building

- Practical approaches for capacity building and highlights some key issues on technical implementation and designation requirement for WIS centres

Section 5 Staged implementation –Timeline

- Timeline of WIS implementation with milestones

Section 6 Support Activities

- WIS Application Pilot Project (former WIS VPN Pilot Project)
- WIS monitoring
- WIS technical and usage Interaction

Appendixes

- RA II implementation status (include network status)
- NC list with principal GISCs
- RA II tasks tables
- WIS Application Pilot Project details information
- List of WIS centre Focal Points
- Reference documentation URLs list
- CMACast and other satellite broadcasting services information materials
- Regional requirements and other feedback summary from RA II members
- Glossary of terms and abbreviations

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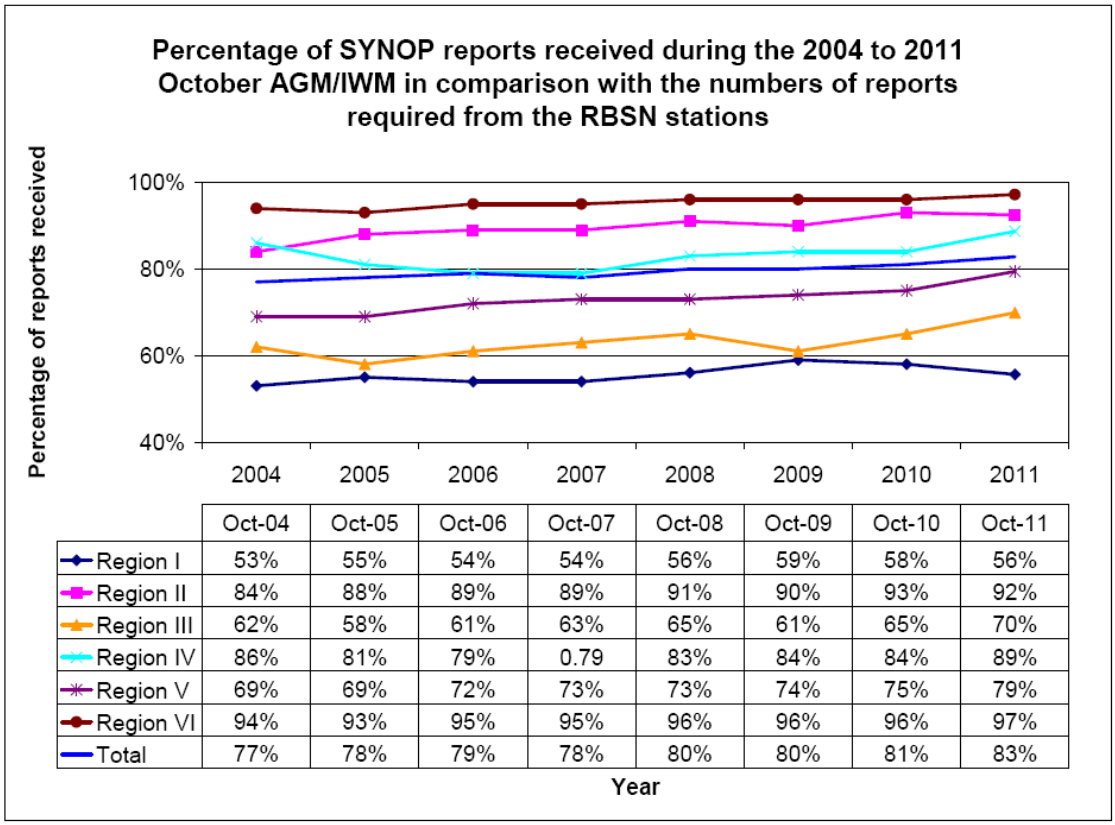
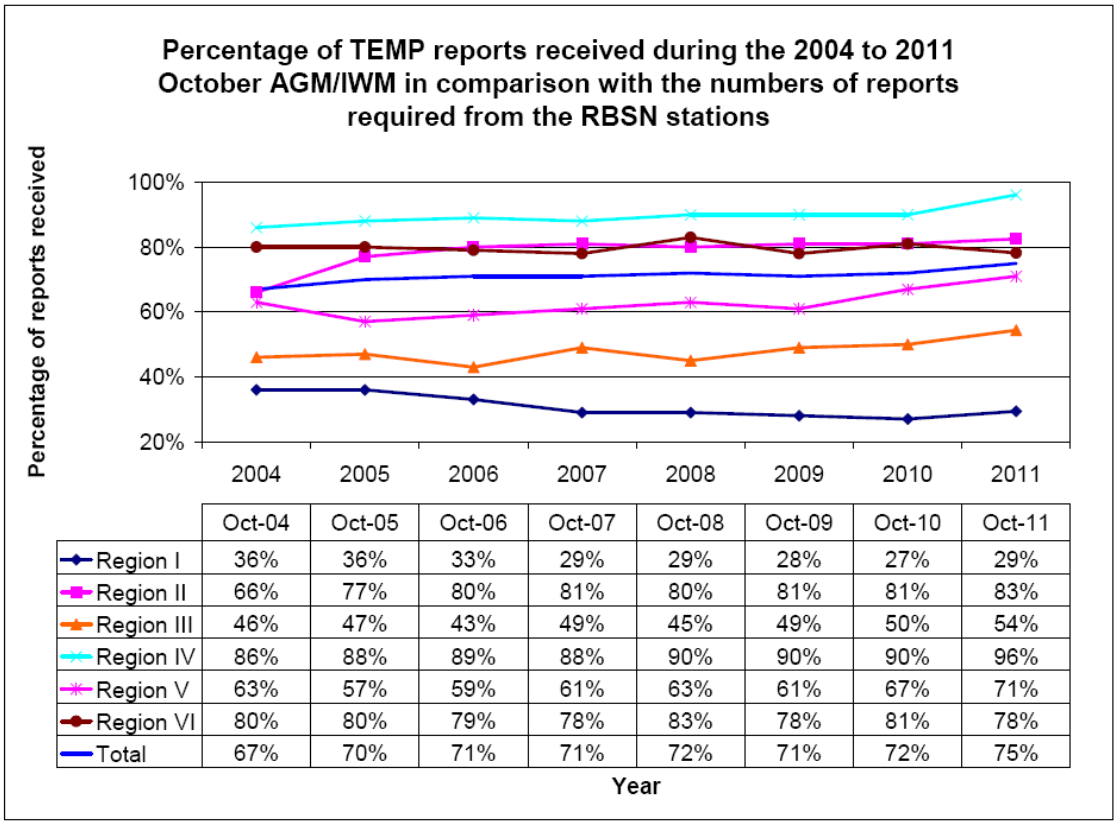
Attachment 3 – World Weather Watch Quantitative monitoring for Region II



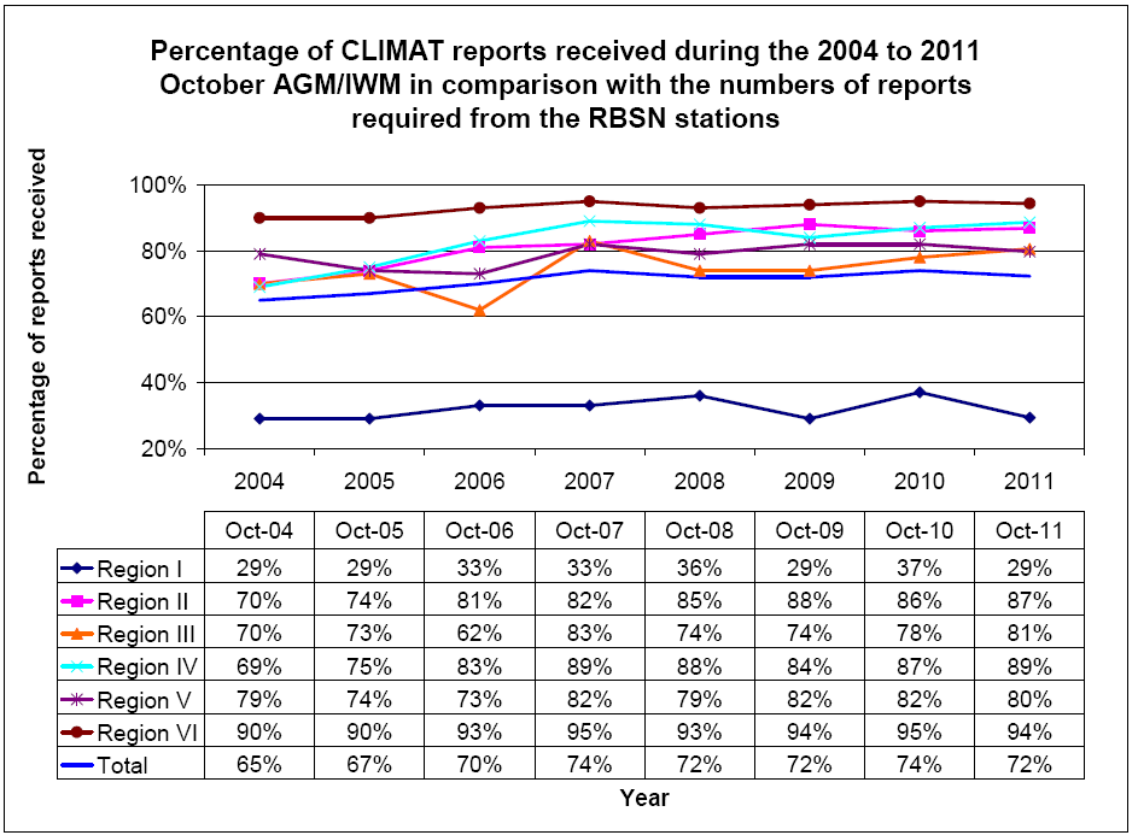
	Oct-04	Oct-05	Oct-06	Oct-07	Oct-08	Oct-09	Oct-10	Oct-11
Region I	53%	55%	54%	54%	56%	59%	58%	56%
Region II	84%	88%	89%	89%	91%	90%	93%	92%
Region III	62%	58%	61%	63%	65%	61%	65%	70%
Region IV	86%	81%	79%	0.79	83%	84%	84%	89%
Region V	69%	69%	72%	73%	73%	74%	75%	79%
Region VI	94%	93%	95%	95%	96%	96%	96%	97%
Total	77%	78%	79%	78%	80%	80%	81%	83%

Figure 1. Percentage of SYNOP reports received during the 2004 to 2011 October Annual Global Monitoring exercises in comparison with the number of reports required from the RBSN stations.



	Oct-04	Oct-05	Oct-06	Oct-07	Oct-08	Oct-09	Oct-10	Oct-11
Region I	36%	36%	33%	29%	29%	28%	27%	29%
Region II	66%	77%	80%	81%	80%	81%	81%	83%
Region III	46%	47%	43%	49%	45%	49%	50%	54%
Region IV	86%	88%	89%	88%	90%	90%	90%	96%
Region V	63%	57%	59%	61%	63%	61%	67%	71%
Region VI	80%	80%	79%	78%	83%	78%	81%	78%
Total	67%	70%	71%	71%	72%	71%	72%	75%

Figure 2. Percentage of TEMP reports received during the 2004 to 2011 October Annual Global Monitoring exercises in comparison with the number of reports required from the RBSN stations.



	Oct-04	Oct-05	Oct-06	Oct-07	Oct-08	Oct-09	Oct-10	Oct-11
Region I	29%	29%	33%	33%	36%	29%	37%	29%
Region II	70%	74%	81%	82%	85%	88%	86%	87%
Region III	70%	73%	62%	83%	74%	74%	78%	81%
Region IV	69%	75%	83%	89%	88%	84%	87%	89%
Region V	79%	74%	73%	82%	79%	82%	82%	80%
Region VI	90%	90%	93%	95%	93%	94%	95%	94%
Total	65%	67%	70%	74%	72%	72%	74%	72%

Figure 3. Percentage of CLIMAT reports received during the 2004 to 2011 October Annual Global Monitoring exercises in comparison with the number of reports required from the RBSN stations.

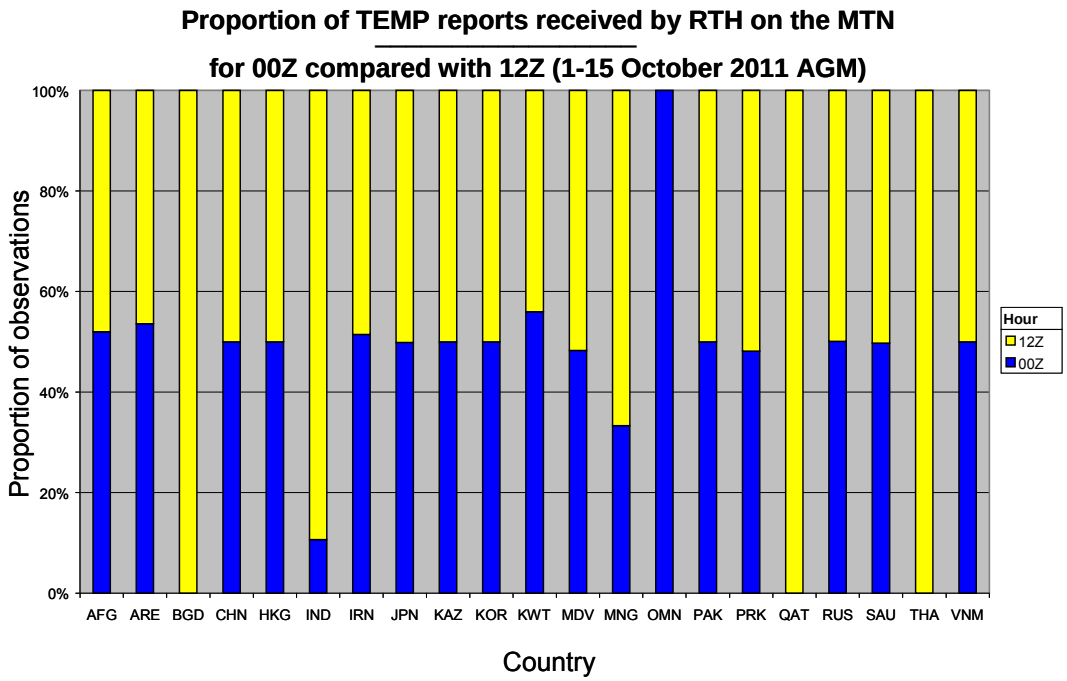


Figure 4. Distribution of TEMP reports categorized by observing hour, for those reports received by Regional Telecommunications Hubs on the Main Telecommunications Network during the 2011 Annual Global Monitoring exercise (1-15 October 2011).