

Summary of
JMA International Workshop "Towards the Successful Implementation of
WMO Information System in Asia" (9 - 11 March 2010)

The International Workshop "Towards the Successful Implementation of WMO Information System (WIS) in Asia" was organized by Japan Meteorological Agency and was held in Tokyo, Japan from 9 to 11 March 2010 inviting participants from 15 National Meteorological and Hydrological Services (NMHSs) in Asian and neighboring WMO Members as well as lecturers from China, Germany, the United States of America and the World Meteorological Organization.

As the keynote lecture, Mr. David Thomas, WIS Project Manager gave a presentation on the overview of WIS. The current status of GISC development was introduced by China, Germany and Japan, and DCPC development was also presented by Hong Kong, China and the National Centre for Atmospheric Research, USA.

Through a number of presentations, discussion and technical visits, the Workshop provided an opportunity for participants to more deeply understand benefits expected from WIS, current situation of its development and what is needed for each of the NMHSs to prepare for implementation of WIS.

The Workshop concluded that there is a set of requirements for various aspects of WIS in Asian countries, including:

WIS Part A (exchange of time-critical and operation-critical data and its improvement)

- There are continuous and strong demands for further improvement of GTS so as to realize more reliable and timely exchange of data essential for NMHS's daily operation, by having redundant connections with different centers and by replacing the current circuit with a cost-effective communication service with wider bandwidth.
- There is also a demand in some NMHSs to receive more data for global exchange, sea surface data, satellite images, and typhoon warnings which are similar to those issued by Joint Typhoon Warning Center, through GTS.
- Catalogues, e.g. WMO No. 9 Volume C1, should be properly updated by NMHSs concerned to help other centers interrogate and access new or important data and products.
- In some NMHSs, their current information system is not sufficient for data exploitation and they face a deficiency of human resources for management,

exploitation and development of the system. It is also needed to share expertise of other countries in implementing a suitable system for exchange of time- and operation-critical data.

- Although the CBS has confirmed that the migration to Table Driven Code Forms (TDCF) should be completed in November 2010, some NMHSs are experiencing difficulties in meeting the deadline. The workshop recognized that these NMHSs still need data in Traditional Alpha-numeric Codes (TAC), e.g. SYNOP, TEMP, because of lack of function to encode/decode BUFR messages.
- In NMHSs where an HF SSB transceiver is used for collection of weather information from national observing stations, it is critical to complete the collection in time for global distribution and the HF communication should be replaced by any available modernized means. HF is still viable alternative when modern communication system breaks down in natural calamities and independent to third party system.

WIS Part B (new WIS services to support ad-hoc or near real-time access to data)

- NMHSs face difficulties in making progress of WIS implementation, especially its Part B, because of lack of standardization documents such as “Manual on WIS”. It is highly desirable that a guideline on WIS will be published in the very near future.
- Systems to provide new services (i.e. to produce metadata, to provide access to them, to notify subscribers when new data is available, to implement push/pull mechanism, etc.) are not yet implemented or under development. During the implementation phase of the new services, it will be essential that GISCs provide prototype version of metadata in addition to concise and understandable web-based online edit facility.
- It is expected that the new service improves discoverability and subscription of critical information (e.g. tsunami warnings) in the region. However there is much concern that a number of NMHSs will not be able to implement WIS soon because of missing technical and/or financial capabilities. In order to learn more about the new WIS services aiming at their development, implementation and practical use in NMHSs, more technical assistance and training are expected.
- Flexible data discovery, access and retrieval (DAR) services should be easy-to-use and readily available through a standard and unified search interface. It should provide user with a simple, cost-effective and secure way to access data. Continuing evaluation and improvement of the service based on user feedback is also required.

Use of the Internet

- The Internet is now used by many NMHSs to provide public or specific subscribers with access to relevant data and products, to have domestic links to remote meteorological facilities in the country as well as international GTS links, to collect information for real-time or non real-time operation from other centers, etc., because of wide bandwidth, low price and standardized hardware/software. However, dedicated links are still required for services which require very high bandwidth, reliable connectivity and network security.
- It is recognized that rapidly growing usage of the Internet by NMHSs significantly increases the threat to safety of their WIS/GTS operational system. Once the system is infected with a virus, it may receive serious damage which would lead to discontinuation of its operation. NMHSs should be made aware of these threats and the possibility of such damage by various efforts including proper improvement of relevant WMO guidelines.
- Some NMHSs have difficulty in obtaining a static official IP address from a local ISP. Special care should be taken because pull protocol is essential for such environment, and there is also a problem in accessing remote Internet servers that have a security policy to require access from registered IP addresses.