

WORLD METEOROLOGICAL ORGANIZATION

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RA-V WORKING GROUP ON THE PLANNING
AND IMPLEMENTATION OF THE WWW

ITEM: 6.4

THIRD MEETING
SYDNEY, 3 to 7 DECEMBER 2001

ENGLISH ONLY

Report from the Rapporteur on Regional Aspects of Data Management and Codes

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1. General comments on the status of Data Management RA-V

Recent Data Management activities

Charles Sanders, Bureau of Meteorology, and Fred Branski, US National Weather Service, attended the Expert Team Data Representation and Codes (ET/DR&C), held in Toulouse, France, 23 to 27 April 2001.

The Executive Summary of the Expert Meeting:

The Meeting of the Expert Team Data Representation and Codes (ET/DR&C) was held in Météo-France International Conference Centre in Toulouse from 23 to 27 April 2001.

The Team reviewed the status of validation tests for the new FM 92 GRIB Edition 2 encoding/decoding. Further validation tests and experimental exchanges were recommended with a view to the use of GRIB 2 at the end of 2001/beginning of 2002, especially for the exchange of Ensemble Prediction System products.

The Team discussed and recommended additions to BUFR/CREX tables for the transmission of automatic stations (AWS) observations, for approval by CBS Ext. 02. The Meeting examined also a proposal for BUFR/CREX templates for AWS

The Meeting recommended for approval by fast track in 2001 additions to entries in Common tables for originating centres, satellites and radiosondes. The Team recommended also other additions to BUFR/CREX tables for height assignment method (from satellite), for a new significance qualifier on method of derivation of percentage confidence, for the representation of last known buoy position and of the ascending or descending orbit. A new set of additions for oceanographic data to represent in BUFR/CREX XBT, XCTD and sub-surface float information was also recommended.

At the request of CBS XII, the requirements for reporting zero and twenty-four hours precipitation in synoptic reports were discussed. New regulations for the global harmonization of precipitation reporting were proposed in FM 12 SYNOP, with a view to their approval by CBS Ext. 02.

At the request of the Chairman of the Expert Team on Migration to Table Driven Code Forms, the ET/DR&C considered the migration to table driven code forms. The members of the Team agreed that more work needed to be done to complete a full set of

templates, including consideration of the existing reporting regulations, as well as regional and national practices for each code form. It was noted the original intended use of CREX has changed from only being used for new requirements. It seems there will be significant use of CREX in several Regions as a step in the transition away from traditional codes. In many locations the transition directly to BUFR will not be able to be done. In some areas, even though encoding in BUFR may be locally possible in their RTHs, transmission to these Centres and downstream may have to be done in CREX because of communication limitations. The urgent need for co-ordinated training of forecasters and observers, especially in RA I, to start late this year/early next year was emphasized.

The Meeting considered if and how XML could be used in a standard to exchange (in addition to display) meteorological information. As regards Data Representation and Codes issues, concerns were expressed about combining XML with binary data (BUFR or GRIB-encoded). Overhead associated with XML was also mentioned as a negative issue, except for data base access or visualisation. More generally, the Team felt that though it could have a potential usage, it was too early to take firm decisions about XML use for Meteorological Data Representation. In the broader context of WMO, applications well suited to XML were mainly related to metadata handling.

The Team recommended the production by a consultant of a new guide on table driven codes (BUFR and CREX) as an updated version of the current Guide to BUFR with a view to help the migration process. The Volume I.2 of the Manual on Codes on binary codes does not contain rules on reporting practices. The Team agreed that this required the creation of a new type of Manual on Reporting Practices. It also agreed to the production of a Guide on GRIB Edition 2 as an updated version of the current Guide to GRIB but in second priority. The Team recommended the merging of BUFR and CREX Tables B and D in the Manual on Codes. For the publication of supplements to the Manual, the Team stressed that a Master copy of the Manual kept on the WMO Web server would greatly reduce the delays, and asked the Secretariat to study this possibility, as had been done for Pub. 9, Volume A.

CREX (Character Form for the Representation and Exchange of Data)

The Fiji Meteorological Service began issuing tropical cyclone trajectory forecasts in CREX format in 2000. The US National Weather Service Forecast Office in Honolulu began issuing automated rainfall reports in CREX format in 2001.

20th Status Report on Implementation of the World Weather Watch

At its 12th session, CBS recommended that Edition 2 of FM 92 GRIB be adopted as from 7 November, 2001. Edition 2 of GRIB would enable the coding of new products, such as the output of ensemble prediction systems, long-range forecasts, climate prediction systems, climate predictions, transport model products, ensemble wave forecasts and ocean models. GRIB Edition 1 is still a valid code and will remain in use.

CBS also recognized that the table-driven codes BUFR and CREX offered great advantages compared to the traditional alphanumeric codes, and did agree to milestones leading to a plan for the migration to table-driven codes and the gradual phasing out of traditional character codes.

The Working Group should consider advising NMHSs to update their national training (within NMHSs) on meteorological codes to put in first priority BUFR and CREX for their full understanding, instead of traditional alphanumeric codes. This may require trainers being trained. Members should:

- 1) Plan resources (staff and finance) for migration to Table Driven Codes Forms (TDCF),
- 2) Nominate a national migration focal point
- 3) Develop a national migration project and schedule, based on CBS directives that have been approved

This will also facilitate, for those members who have the capability, to generate graphical products for end users.

WMO Bulletin Update Project for North Pacific Island Met Offices

U.S. National Weather Service Pacific Region Bulletin Headings Update Project

The United States National Weather Service (NWS) Pacific Region (PR) has completed an update the communications bulletin headings for all products issued by all Pacific Island meteorological offices affiliated with the United States, including the countries and territories of American Samoa, the Republic of the Marshall Islands, the Federated States of Micronesia, the Republic of Palau, Guam, and the Commonwealth of the Northern Mariana Islands. The purpose of the project is to bring the bulletin headings into conformance with the U.S. NWS Communications Header Policy.

Project Status Update (November 28, 2001): The bulletin update project which began in July 1999, has resulted in a thorough review of all of the products issued by all Pacific Island meteorological offices north of the Equator, and was intended to identify which products were required to be retained, which products were obsolete, and if any new products needed to be added. Each WMO header was reviewed for compliance with WMO standards.

On October 11, 2000, Weather Service Office Pago Pago, American Samoa implemented the new WMO formatted products with the correct country identifier. The change request for WSO Pago Pago included the change to a new WMO assigned country code of "ZS" for American Samoa. Prior to the change, WSO Pago Pago had been using the [Western] Samoa country code of "ZM" incorrectly, and the Samoa Meteorological Division had been using the country code for Tokelau.

Products reviews were completed for the other north Pacific Island meteorological offices, including the Pacific Tsunami Warning Center; and meteorological offices at Majuro, Republic of the Marshall Islands; Pohnpei, Federated States of Micronesia (FSM), Chuuk, FSM; Yap, FSM; and Koror, Republic of Palau. Change requests were implemented in early 2001.

A similar review was completed for the Meteorology Division, Samoa (MDS), who provided formal notification to WMO. An implementation date will coincide with the establishment of the AFTN/MET terminals for the Meteorology Division, Samoa, now planned for the second or third weeks in December, 2001, when the products and bulletins will be entered onto the GTS.

Current Status on EMWIN on GOES-10 and GOES-7

EMERGENCY MANAGER'S WEATHER INFORMATION NETWORK (EMWIN)

As has been noted in documents of recent WMO sponsored meetings, the U.S. GOES's EMWIN satellite broadcast on both GOES-East and GOES-W has provided a reliable mechanism for direct distribution of hydrometeorological data, products, graphics, and satellite images to remote users, including National Meteorological Services within the Pacific. The GOES-W broadcast can reach to about 145 degrees East longitude.

As was reported at the Implementation Co-ordination Meeting on the GTS in Region V in Nouméa, New Caledonia, 7-10 December 1999, one of the critical issues facing RA V is improving on the dissemination and receipt of meteorological reports, bulletins, warnings, and advisories by many Pacific Island countries, whose communications capability has been severely reduced recently.

This RA V ad-hoc group has not been established. The U.S. National Weather Service has placed the EMWIN Program within its Configuration Management System, and has established an on-line review and approval mechanism for adding data and products to the EMWIN data stream on GOES-W to support RA V users. Customers and users of the data streams from WAFS and ISCS will then be consulted in a more organized fashion, and requests will be received and processed.

In addition, the EMWIN data stream is now being up-linked experimentally to the PEACESAT (Pan-Pacific Education and Communication Experiments by Satellite) Satellite on GOES-7 (now located near 175 degrees West. This was completed in late September, 2001, and testing of the GOES-7 signal from several locations in the Western Pacific has shown it to be quite reliable. Because the GOES-7 satellite is being allowed to have a daily east-west and a north-south drift, a prototype moveable tracking system has been under development by a SPREP Consultant Colin Schulz. A prototype tracking system will be installed at the Weather Forecast Office on Guam in early 2002. Once testing of the prototype tracking system has been completed, an announcement will be made about its availability for purchase and deployment to sites west of 145 degrees west longitude.

William Brockman will provide an additional report on the planned EMWIN broadcast on the GOES N-Q Satellites.

MINI-EMWIN AND MANUAL ENTRY DCP UPLINK DEVELOPMENTS

Several developments continue, based on the pressing needs of the national meteorological services at remote Pacific Island sites. The first is a mini-EMWIN terminal, which will be a scaled down EMWIN receiving terminal that will operate without a PC, or commercial power. A prototype is under development by Colin Schulz, telecommunications consultant to the South Pacific Regional Environment Programme. A similar development is underway by Mr. Schulz, to build a manual entry device DCP platform ruggedized for use at remote sites. Both development projects seek to extend the capability to receive and transmit via the GOES satellites to remote islands, and to insure the delivery of critical metadata.

2. Activities

I did not attend any ICT or OPAG meetings on Data Management or Data Representation/Codes since April, 2000, due to the restructuring of the CBS.

Not being located at a national centre with Data Management functions has placed me at a disadvantage in monitoring Data Management activities, which requires interaction and followup on the Monitoring activities of the regional Centres. The Working Group is going to consider a proposal to be forwarded to the next Session of WMO Region V Association, which assigns the duties of the Rapporteur on Data Management and Codes to a Sub-Group led by the Co-ordinator on Regional Aspects of the Global Telecommunications System. I strongly support this recommendation, as this will be the best way to advance the WWW Data Management Program within Region V.

3. Follow-up on action items from XII-RA V

No items were specifically tasked to the Rapporteur on the Regional Aspects of Data Management and Codes

4. Action items from the 53rd Executive Council

CBS Migration to Table Driven Code Forms has already been addressed above (3.1.20)

5. Other Items

Establishment of Direct GTS Connectivity between the NADI RSMC and the NWS Telecommunications Operations Center in Washington, D.C.

Discussions are continuing between the US National Weather Service and the US Federal Aviation Administration (Federal Aviation Administration) regarding the possibility of re-configuring an existing 2400 bps AFTN link (out of a 9600 bps circuit) between the Airports Fiji Limited Communications Switch in Nadi, Fiji and the US FAA Communications Switch at the Oakland, California FAA Air Route Traffic Control Center. The US FAA, and the AFL both have upgraded their aviation telecommunications multiplexing systems, which allow for transmitting AFTN and WMO bulletins along the same circuits, but each going on different communication paths. There is also a possibility that the 9600 bps link might be upgraded to allow for increased bandwidth between the two aeronautical centres. These discussions are underway. If agreement is reached to upgrade the 9600 bps link, there is a possibility that some bandwidth will be available for meteorological use. As it stands in late November, 2001, technical discussions are proceeding that will allow a direct communications link to be established between the Nadi RSMC and the NWS Washington DC Telecommunications Center using the US FAA communications network. This would allow meteorological bulletins to be exchanged between the two centres, without having to be sent on the GTS. Meteorological data and products are now exchanged via routing through Tokyo, Japan and Melbourne, Australia.