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| **World Meteorological Organization**  **Commission for Basic Systems**  **Management Group, seventeenth Session Geneva, 27 February - 1 March 2017** | **CBS-MG-17/Doc. 8.2.3** |
| Submitted by: Secretariat  24.Jan.2017  **DRAFT 1** |

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# [Support of CBS to the Commission of Hydrology]

### SUMMARY

This document provides information on the main activities of the Commission for Hydrology (CHy) that are related to CBS projects, with a view to define mutual support and possible synergies, in following domains: technical regulation and quality management, observation and data systems as well as water management and flood warning projects.

### DECISIONS/ACTIONS REQUIRED: see part 1

### ISSUES TO BE DISCUSSED: see part 2

### REFERENCES:

1. 15th Session of the Commission for Hydrology, (CHy-15 Rome, Italy, 7 to 13 December 2016)

<http://meetings.wmo.int/CHy-15/SitePages/Session%20Information.aspx>

### ANNEXES:

1. Summary of CHy activities related to CBS programmes

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1. **DECISIONS/ACTIONS REQUIRED**

**The Management Group is invited to decide on the following**:

1. To support the CHy Advisory Working Group (AWG) in the planning and implementation of WHOS, especially links to WIGOS, WIS and OSCAR;
2. To assist the AWG in the developments of GDPFS and the Water Outlook project, from the WIGOS perspective;
3. To assist the AWG in the development of QMF and technical regulations, as well as in the approval process of new WaterML 2.0 components; and
4. To collaborate with the AWG for data and warning transmission (satellite, CAP).

**2. ISSUES TO BE DISCUSSED**

The Commission of Hydrology (CHy) decided in its 15th session in December 2016 to structure its work plans in 3 focus areas: i) Coordination and Implementation Support, ii) Measurement, Monitoring and Infosystems and iii) Hydrological Applications, Products and Services.

The Advisory Working Group of the Commission of Hydrology (CHy-AWG) and the Management Group of the Commission of Basic systems (MG-CBS) might wish to identify collaboration mechanisms and tangible cooperation for the benefit of WMO Members in the following hydrological activities:

1. **Projects**

* Further implement WHOS Phase I and develop an initial implementation plan of WHOS Phase II, including relationships with the WIGOS, WIS and OSCAR. In particular, the CHy-AWG must engage with CBS to ensure that Phase 2 of the WHOS is fully aligned with the WIS 2.0 Strategy.
* To initiate the WMO Global Hydrological Status and Outlook system, including the need to link this initiative with WIGOS (in particular by making use of the opportunities provided by WHOS) and the GDPFS.
* Continued collaboration between the Flash Flood Guidance System (FFGS) and the Severe Weather Forecasting Demonstration Project (SWFDP).
* Coordinate efforts to advance operational sub-seasonal to seasonal prediction.

1. **Technical regulation and quality management**

* Review and update of the Technical Regulations, Volume III: Hydrology (WMO-No. 49) and related regulatory publications
* Further develop the QMF, especially the Project on Assessment of the Performance of Flow Measurement Instruments and Techniques (so-called Project X), and provide training on QMS
* Prepare a new version of the observational requirements and the Statement of Guidance for the Application Area « Hydrology », to be presented to IPET-OSDE in the second half of 2017.

1. **Observations, data and services**

* Ensure that all hydrological aspects and in particular the needs and concerns of NHSs are properly reflected in the development of the new Seamless Data-processing and Forecasting System, and develop a proposal of a comprehensive structure for hydrology within this system that would encompass hydrological data, analysis and forecasting and could include new entities such as World, Regional, and National Hydrological Centres, with clearly defined roles and responsibilities.
* Investigate the applicability and advantages of new protocols, such as the Common Alerting Protocol (CAP), in public alerting for hydrological hazards.
* CHy’s contribution to the CBS initiative on Multi-hazard Impact-based Forecast and Warning Services.
* Use of satellite technology supporting water monitoring and flood warning, including defining user requirement for Satcom.
* Request OGC to continue the developments of WaterML 2.0 (Data representations for hydrological information, CBS-CHy concurred Recommendation).

1. **Representation**

* Representation of CHy in relevant IPETs and other CBS groups and of CBS in CHy groups.

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## Annex 1

### Summary of CHy activities of relevance for CBS

| **CHy-15 Resolution** | **Decision** |
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| 3/1 | To request that the AWG engage the Satcom users’ forum in a discussion of the WMO branded disaster alerting tariff and how best to establish a disaster alerting tariff test case on flood warnings, while encouraging the Satcom users’ forum to establish good links with the WMO Disaster Risk Reduction programme, in order to share best practice and explore the wider requirements for such a tariff. |
| 4.1(1)/1  (QMF-H and CHy’s strategy on regulatory material) | To engage in a review and update of the Technical Regulations, Volume III: Hydrology (WMO-No. 49) and related regulatory publications relevant to its mandate and responsibility by the time of Cg-18 in 2019, according to the following principles:  (i) To adopt in CHy’s Regulatory Material a more prescriptive language when suitable, to promote a culture of compliance, recognizing the specificity of hydrology;  (ii) To address Technical Regulations and selected topics in the Guide to Hydrological Practices, Manuals on hydrology and water resources, and guidance material and technical documents); |
| 4.1(1)/1 | To establish a Task Team of experts, operating under the AWG, to review and assess CHy Regulatory Material, establish a detailed plan for updating it and overview its implementation, and prepare a revised text of Technical Regulations Vol. III to be submitted to the Executive Council in 2018 and consider the benefits and risks of aligning CHy’s hierarchy and naming of regulatory material documents with WMO’s general practice and terminology; |
| 4.1(1)/1 | **Requests** the Secretary-General to continue supporting the president of the Commission and the Advisory Working Group in:  (1) Providing training on QMS development during the next intersessional period to more effectively engage the NHSs in this priority;  (2) Giving priority to the translation of the guidance material on QMS, including the QMS checklist and case studies, in other UN official languages, within the limits of available resources;  (3) Maintaining and further developing the QMF-H dedicated website <http://www.wmo.int/pages/prog/hwrp/qmf-h/index.php>;  (4) Finalizing the preparation and publish the Manuals on Water Resources Assessment and on Flood Risk Mapping;  (5) Considering the preparation of a Manual on Sediment Measurement (bedload and suspended);  (6) Finalizing the update of the *Guidelines on the Role, Operation and Management of National Hydrological Services* (WMO-No. 1003);  (7) Continuing the cooperation with ISO, including identification of other material to be considered for adoption as common documents, and developing similar cooperation arrangements with other international and regional standard setting entities, when relevant; |
| 4.1(3)/1  (Data operations and management) | **Approves** the further implementation WHOS Phase I as well as the initial concept of WHOS Phase II, as described in paragraphs 4.1(3).4 to 4.1.(3).8, and requests the AWG, with the support of the WMO Secretariat, to develop an initial implementation plan, covering issues such as governance, architecture, relationships with the WIGOS and WIS centres, provision of metadata into OSCAR and a clear definition of the roles of CHy, the Secretariat, the global data centres, and the NMHSs, to be presented to EC-70 in 2018 for its endorsement; |
| 4.1(3)/1 | **Requests** the AWG to prepare a new version of the observational requirements and the Statement of Guidance for the Application Area « Hydrology », taking into consideration the implementation plan of WHOS Phase II, to be presented to IPET-OSDE in the second half of 2017 and made available to NHSs through the WHOS web page. |
| 4.1(3)/1 | **Requests** the AWG engage with the Commission for Basic Systems to ensure that Phase 2 of the WHOS is fully aligned with the WIS 2.0 Strategy. |
| Recommendation 4.1(3)/1  (Water ML2.0) | **Concurs** with Recommendation 3.3(2)/1 (CBS-16) to the Executive Council, to adopt the [draft Resolution](#_DATA_REPRESENTATIONS_FOR) *— Data representations for hydrological information,* contained in Annex 1 to this Recommendation, with the addition of the « Requests OGC » indicated therein and Annex 2 to that draft resolution |
| 4.2(1)/1  (CHy’s contribution to the future GDPFS) | **Requests** the president of CHy or delegated AWG members:  (1) To ensure that all hydrological aspects and specifics and in particular the needs and concerns of NHSs are properly reflected in the development of the new Seamless Data-processing and Forecasting System;  (2) To consider reviewing the definitions of forecasting ranges in hydrology included in the Technical Regulations: Vol. III – Hydrology, and recommend to the Executive Council the necessary modifications to be more consistent with those used in meteorology, but retaining differences and including other definitions appropriate for hydrology;  (3) To develop a proposal of a comprehensive structure for hydrology within the new Seamless Data-processing and Forecasting System that would encompasses hydrological data, analysis and forecasting and could include new entities such as World, Regional, and National Hydrological Centres, with clearly defined roles and responsibilities;  (4) To develop documentation describing the procedures for the designation, mandatory functions, and activities of new centers, taking into account the principle that World and Regional Centres shall respect the primary roles and responsibilities of NMHSs in the delivery of flood forecasting and warning services;  (5) To interact with various global and regional forecasting initiatives making them aware of this ongoing process, in particular item (4) above;  (6) To report on progress of the Seamless Data-processing and Forecasting System implementation to CHy-16; |
| 4.2(1)/2 | **Requests** the president of CHy, with the assistance of the appropriate members of the AWG and OPACHE experts:  (1) To ensure that CHy continues to contribute actively to the Disaster Risk Management activities of WMO while promoting the principles of integrated flood management and integrated drought management and increasing the visibility of other hydrological contributions such as the promotion of E2E EWS for flood forecasting;  (2) To coordinate with the president of JCOMM a joint assessment of the initial phase of CIFDP and, depending on its results, to consider the desirability of developing a governance structure and procedures that would transition the CIFDP to a more sustainable platform for the strengthening of national multi-hazard early warning systems to address flooding in coastal areas;  (3) To include under the Focus Area “Hydrological Applications, Products and Services”, an activity consisting in investigating the applicability and advantages of new protocols, such as the [Common Alerting Protocol (CAP)](http://www.wmo.int/pages/prog/amp/pwsp/CommonAlertingProtocol_en.html), in public alerting for hydrological hazards. |
| 4.3/1  (Pilot WMO Global Hydrological Status and Outlook System) | **Decides**:  (1) To initiate the WMO Global Hydrological Status and Outlook system;  (2) To approve the formation of an expert Task Team to oversee the Pilot Phase of the initiative and report to CHy-16 on the findings;  **Requests** the AWG to define the Terms of Reference and Membership of the expert Task Team, giving due consideration to the involvement of representatives from Developing Countries;  **Emphasizes** the need to link this initiative closely with other related WMO activities such as WIGOS (in particular by making use of the opportunities provided by WHOS) and the GDPFS and encourages liaison, as necessary, with other related activities;  **Requests** the AWG, through this initiative, to support development of capabilities of NHSs in the field of sub-seasonal to seasonal hydrological forecasting as a contribution to GFCS;  **Further Requests** the President to explore the opportunities for developing this initiative as an inter-commission activity with participation from other Technical Commissions; |

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