**WORKPLAN: Focus Area: Measurement, Monitoring and Infosystems**  
*(updates in red)*

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| WHOS: development and implementation of WHOS phase II, offering standardized web services, data hosting, archival, data rescue and dissemination, and relevant training, based upon data policies and adopted standards, and provide support to the HydroHub functions related to WHOS; | • Establish user requirement (data providers and data consumers),  
• Definition of WHOS architecture  
• Implementation Plan Development  
• Develop new Statement Of Guidance (SOG) and requirements  
• Implement WHOS:  
  - WHOS Implementation Plan  
  - Technical documents  
  - SOG and contribution to RRR | S. Pecora  
T. Kanyike | WHOS focal points in each RWGH, NHSs  
HydroHub (F. Teichert) | User requirements defined – Sept 2017  
Definition of WHOS architecture – Dec 2017  
Draft Plan presented to EC-70 - June 2018  
SOG Q1 2018 | • RHAs, Global Centers, other observations and information systems, CBS, ... | • Implementa- 
tion plan approved by EC 70 June 2018  
• Implementation started  
• Silvano Pecora started a conversation with Google for possible use of their functionalities  
• Develop a task team (3-5 people) to support Silvano in the implementation, particularly at the regional level |
| GHSF (newly called HydroHub, including WHYCOS): serve as a member of the GHSF advisory council; provide technical guidance on WHYCOS | • Populate and organize meetings the Advisory Council and the InnoC  
• Help implement the approved HydroHub structure and activities to ensure | • Fully operation HydroHub in 2018  
• Sustainable operational & funding model established for HydroHub beyon 
d 2018  
• Continued | Hydrohub (Sophia Sandström for preparing baseline docs and day to day activities, Igor for | • AC populated by June 2017; 1ˢᵗ AC meeting – before Sep 2017  
• -WHYCOS draft strategy June 2017, final August 2017  
• Milestones to be agreed by | • World Bank / GFDRR  
• UNESCO IHP (including HOPE Initiative)  
• RHAs  
• CBS  
• WMO Secretariat | • AC established, 4 meetings done as of 5.10.18 (2 face-to-face),  
• New WHYCOS framework |
activities to the HydroHub; support the hydrological services information platform and liaise with AWG members responsible for WHOS, Project X and Innovation and new data;

- Serve as Chair and members of GHSF Advisory Council
- Help develop the new WHYCOS strategy (including funding and communication), help existing and new HYCOS projects, including integrating them into HydroHub Review, revise and add information needed to transform INFOHYDRO into HISP
- Recruit organisations to provide help via the Help Desk
- Ensure adequate links with other CHy (and wider) activities as appropriate – including WHOS, Project X and Innovation
- Ensure HydroHub links with RA priorities and RAWG Hydrology
- Promote the

it is fully operational in 2018.

- H.Lins and H.Dixon (both in the Advisory Council)
- Conversion of INFOHYDRO into HISP
- Active and fit-for-purpose Help Desk

implementation of existing and new HYCOS projects (Senegal and IGAD transitional phase).

HISP and HelpDesk/CoP
- OPACHE
- AWG members
- Regional HAs and relevant WGs

Advisory Council
- Dec 2018: Fully operation HydroHub
- June 2018: Sustainable operational & funding model established

drafted May 2018
- General and sectoral strategies drafted (e.g., funding, partnership, communication).
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<td>development and use of free and open source software for hydrology (such as MCH).</td>
<td>• Update Management group Membership&lt;br&gt;• Conduct meetings with committee via phone/internet/faceto face&lt;br&gt;• Finalize the first module of UADAT&lt;br&gt;• Comparison Test ADCP software&lt;br&gt;• Compare point meter UA softwares&lt;br&gt;• Support HydroHub goal of free and open software for hydrology UA methods.&lt;br&gt;• Interface with HMEI and ISO to promote vendor and NHS adoption of best UA practices</td>
<td>J.Fulford (Chair)</td>
<td>• Finalize contract with Qualisyst (support: Claudio)&lt;br&gt;• work plan for next period&lt;br&gt;• At least 6 per year (one face-to-face a year)&lt;br&gt;• Hereafter: depending on workplan to be adopted&lt;br&gt;• Software distribution&lt;br&gt;• Field Discharge Survey 2018&lt;br&gt;• Guidance conducting ADCP regattas for QA and recommendations</td>
<td>• WMO secretariat (Dom, Tommaso)&lt;br&gt;• OPACHE members&lt;br&gt;• ISO rep&lt;br&gt;• HMEI rep&lt;br&gt;• IAHS rep&lt;br&gt;• IAHR rep&lt;br&gt;• RAIW GHSH&lt;br&gt;• HydroHub 1 f2f meeting in 2017</td>
<td>April 2017&lt;br&gt;• AWG Review, revise and adopt work plan for next period: July 2017&lt;br&gt;• Hereafter: depending on Work plan&lt;br&gt;• Revise previous survey &amp; conduct survey&lt;br&gt;• Request updating of NHSs Q standards&lt;br&gt;• Regatta guidance doc completed/finalized&lt;br&gt;• ADCP dataset(s) to conduct software comparisons collected&lt;br&gt;• Other meter discharge datasets to</td>
<td>• Innovation Hub&lt;br&gt;• Manufacturers (HMEI)&lt;br&gt;• Others as appropriate</td>
<td>• No major progress due to unavailability of key people&lt;br&gt;• UADAT software tested in Summer 2018&lt;br&gt;• Revised workplan foreseen by the end of 2018</td>
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| uncertainties (with error bands at stated confidence levels); | | | • Repository of Instrument test reports  
• Guidance for ADCP & point meter UA standards  
• Guidance for UA methods for discharge ratings  
• Technical report of developing rating curves with various field conditions  
• Free, Open and easy Software for developing index rating | | conduct UA schemes/software comparisons collected  
• Datasets collected & selected for comparison of rating UA schemes.  
• Conduct ADCP UA software tests w/datasets  
• Conduct other meter UA tests w/ datasets  
• Conduct comparison of rating UA schemes with datasets | | | |
| QMF-H: continue the development of relevant QMF-H guidance material, including training support material; deliver QMS training and guidance material to NHSs at all levels (measurements, monitoring, forecasting and | • Develop and implement QMS training strategy  
• Support to implementation of QMS possibly through the CoP? | J. Danhelka  
A member of the QMS WG  
N.Tuteja (forecasting) | • Training support materials  
• Application results of QMS in RAs | • OPACHE  
• C.Caponi  
• Secretariat support for publishing training materials including paper and online/video  
• QMS Working group | • Concept of the training strategy (AWG-2)  
• Training materials gradually developed | NHSs  
RAs | • Training strategy and material not started  
• Working group on regulatory material established, meeting End of October in Bratislava  
• 2 people agreed to review |
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<td>related products) and promote adoption and appropriate implementation of QMS in NHSs;</td>
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<td>document on uncertainty</td>
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<td>• Guidance on ecoflow: comments from reviewers received, case studies outside Italy missing. Material presented in Japan in August 2018</td>
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<td>• Water Resources assessment: working group started duties in September 2018.</td>
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<td>• Manual on Stream Gauging: review (in cooperation with ISO) being completed – CHy review still needed (Secretariat to highlight the changes from previous)</td>
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<td>Networks: further develop guidance on hydrometric network optimization and</td>
<td>• Establish expert task team taking into</td>
<td>Y. Jianqing</td>
<td>• Task team established</td>
<td>• OPACHE</td>
<td>• List of expert task team–June 2017</td>
<td>• UNESCO IHP</td>
<td>version), and published as an update WMO document (as opposed to a joint WMO/ISO publication)</td>
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<td>prioritization of stations taking into account all users’ needs, including the modelling community; update recommendation on station density; also consider the possibility of promoting the concept of hydrological “heritage” stations;</td>
<td>experts to support the initiative;</td>
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<td>• Report on case study</td>
<td>• RAs WGH</td>
<td>• Report on case study–September 2018</td>
<td>• ISO-TC113, CEN</td>
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<td>• Collect case studies of existing hydrological networks developments</td>
<td>• Review of the existing WMO recommendation</td>
<td></td>
<td>• outline of the guidance</td>
<td>• Expert Task Team</td>
<td>• outline of the guidance - September 2019</td>
<td>• RAs</td>
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<td>• Establish expert task team taking into account RAs experts to support the initiative;</td>
<td>on station density, and network optimization principle</td>
<td></td>
<td>• The guidance.</td>
<td>• WMO Secretariat (lead Igor)</td>
<td>• the guidance – December 2020</td>
<td>• WMO Secretariat</td>
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<td>• Propose new guidance material</td>
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<td>• Review the first version of the guidance on hydrometry network optimization contributed by Korea before RA II WGH meeting</td>
<td>• Research institutes</td>
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Innovation and new data: advise
• Serve as member of GHSF
• H.Dixon
• J.Fulford
• Innovation Hub calls
• OPACHE
• Regional
• Milestone to be agreed by
• World Bank / GFDRR
• Committee established
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| on calls for proposals and assess existing hardware and software issued by the Global Innovation Hub and other developers, with a view to their operational use in NHSs, including non-traditional data sources such as citizen observations, and remote sensing technologies including satellites. In this regard consider new developments and applications with respect to big data. | Innovation Hub Committee.  
- Help design and implement innovation calls.  
- Promote the update of Innovation Hub outputs within NMHSs.  
- Establish links with other similar initiatives outside of WMO  
- Develop links with the private sector regarding monitoring and data technologies | (both in the InnoC)  
successfully  
designed and implemented.  
Some of the outputs of the Innovation Hub applied within NMHSs. | HAs and relevant WGs (for input on priorities)  
HydroHub (Florian) | Innovation Hub Committee.  
- Innovation workshop by Dec 2017  
- Innovation call prepared by Dec 2017, depending on opportunities and funding | UNESCO IHP  
RAs  
CBS, CIMO  
WMO Secretariat  
IAHS+IAHR  
ISO  
Private Sector  
Others as appropriate | and several teleconferences done, 1st face-to-face 4-5 October 2018  
• Innovation strategy ready for approval September 2018  
• 1st Innovation workshop December 2017  
• 1st Innovation call launched June 2018 |