

Quality, standards, fitness-for-purpose - what standards are needed in the GWE?

an update

Alessandra Liberto

Campbell Scientific Inc

Global Services – member of GWEF – private sector

What is the Global Weather Enterprise Forum (GWEF).

- GWEF = estd during GWE Seminar of WB Group in cooperation with WMO in Nov. 2017 in Washington DC
- GWEF Platform: Public, Private and Academic sectors to enhance collaboration to improve weather & climate science, infrastructure and services for benefit of all, also established because of changing/growing role of the private sector in the weather enterprise
- GWEF: facilitated by WMO, WB's Global Facility For Disaster Reduction and Recovery (GFDRR) and HMEI
- GWEF working group membership consists of 4 representatives from each of the public, private and academic sectors: total membership of 12 p.

Why GWEF?

- Work towards integrated approach to address extreme weather and climate threats.
- Develop common vision for qualified data and services provided by all GWE sectors.
- build a common People Centric Vision to bring essential information to all in need.

Goals of GWEF, Global Weather Enterprise Forum

- interoperable weather observation networks and systems for Data Collection & Processing, improvement of Weather Forecasting skills through advanced science and technology
- Innovative approaches of service delivery for weather, water and climate that ensure Fit For Purpose Decision Support Information for Users.
- Reduce Capacity Gaps between developed and developing countries, improve global infrastructure and services.

GWEF tasks

1. Make relevant information flow more freely by removing barriers and by supporting a culture that is user oriented and includes all PPA sectors (focus: data policy/exchange/share/quality/standards)
2. Develop and Maintain workforce for GWE (focus: training, competencies, skills enhancement)
3. Strengthen application and research, deployment of proven applied sciences (develop ideas)
4. Advance work on sustainable business models (focus: data provisioning and service delivery)

GWEF- Set, revise, enforce data & information standards

- WiP with Met. Institutes and WMO. Focus on reviewing standards for observation practices.
- Verification, data validation & data quality, : need for reference and methodology for verification – **develop unified standards.**
- Question: Weather Forecasting quality rating & verification-need?
- WMO could fulfil such role as outlined in its PPE Policy Framework. WMO's World Weather Research program (WWRP) main role in defining a verification method similar to the one used for numerical weather forecasts (NWP verification is easier than verification of local public or specialized forecasts).

GWEF – Functional Specifications for weather observation systems and solutions

- 2017: 1st AWS functional specs drafted – initiated by HMEI, in cooperation with World Bank, reviewed by WMO. For all entities who need up to date unbiased functional specs for tendering. Specs currently available for testing from WMO website:

wmo.int/pages/prog/www/IMOP/AWS_tender_spec/aws_Tender_spec.html

- suggest follow up:
 1. Generic Functional Specifications for Meteorological Observation Systems, Products and solutions that are not done yet.
 2. Lifecycle Management: Specifications and Standards for Service Level Agreement models – maintain MET. observation systems, solutions and networks to maximize investment of the initial provisioning.

GWEF - Quality Standards & Checks for Measurements

- **Define Observation Network Standards and Classification in Primary and Secondary networks to achieve uniform data and quality of networks. Investigate different models for this.**
- Quality standards for measurements: well defined by WMO, but Met. Institutes also implement own, additional QA/QC checks; such advanced QA/QC checks could be useful to add to General Quality Standards? To be investigated
- Example: QC automatic tools run on collected data, tool works with machine learning algorithm detecting sensor problem at early stage (with additional QC checks in database to control quality and validity)
- WMO's OSCAR program could be leveraged for the above?

GWEF - Weather Forecasting Quality Rating needed?

- Classify Weather Forecasting quality in levels: primary standard, secondary standard, or first class, second class, etc. For example, aviation weather systems require primary standard, climatology secondary standard, solar energy forecasting requires primary standard. To be discussed with Forecasting Community.
- Define Levels of “standards” by set of highest requirement specifications for primary standard, to less stringent requirement specifications for lower level standards.
- To be Defined for specific needs of the User (not the service provider)
- **How would such standards and categories be defined and by whom?**
- Through WMO and the WFC community
- Through ISO - International Organization for Standardization: to be investigated for setting standards, categorization and processes.

Outlook

GWEF progress will be presented to the hydro-meteorological community on regular basis. Stay tuned.

Comments and suggestions are always welcome.

TO BE CONTINUED..... Thank you!

Alessandra Liberto
aliberto@campbellsci.com