**WIGOS Workshop for Regional Association VI (RA-VI) with Focus on Marine Meteorological and Oceanographic Observing Requirements (Split, Croatia, 5-7 September 2016)**

**PROPOSED WORKSHOP RECOMMENDATIONS**

**(DRAFT/NOT DISCUSSED YET)**

**Group 1 - Observational user requirements and gaps filling**

1. More marine meteorological and oceanographic observations are needed in support of WMO Application Areas and Maritime Safety in particular. Efforts are being made to bring metocean services of NMHSs and their partner (including oceanographic) organizations to a common service level. It is critical to collect more data, especially in real time but also continuing long time-series, using drifters, gliders, tide gauges, weather radar, HF radars, moored buoys (incl. wave buoys), voluntary observing ships, oceanographic vessels, profiling floats (Argo), river discharge, sub-regional satellite products, in particular in the Adriatic and Ionian sea.
	* A comprehensive modernization national plan for coastal observing systems in the Adriatic Sea has been drafted in Croatia; The group supports this inter-disciplinary approach;
	* The group recommends a review of the current capacity and of its recording in the JCOMMOPS metadata database;
	* The group recommends the integration and qualification of data (e.g., if not exchanged in real-time) and the harmonization of best practices;
	* Adriatic countries with modernization plans are encouraged to regularly gather and update requirements from users (including partner organizations and international data platforms and infrastructures), share their plans, and provide an updated plan to feed the WMO Rolling Review of Requirements for the sub-region;
	* Sub-regional partners are encouraged to seek committments to sustain this infrastructure and take actions to limit vandalism;
	* RA-VI is invited to take action in this regard, and initiate a strategy and work plan.
2. RA-VI Members, if not having done so, are urged to nominate national focal points for WIGOS, national focal points for OSCAR/Surface, and national focal points for the monitoring of actions of the EGOS-IP.
3. For storm surge and coastal inundation prediction and services in the sub-region,
	* there is a need to better observe and predict wind (both direction and speed), air pressure, and sea level in particular using well positioned tide gauges where data are needed;
	* there is a need to better observe and predict river flows;
	* all countries in the sub-region should report flood and coastal warnings to meteoalarm;
	* efforts should be made to enhance exchange of tide gauge data between countries and between oceanographic and meteorological institutes/agencies around the Adriatic;
	* there is a need to better understand the causes of the noted forecasting errors and what observations are needed for improving storm surge forecasting; forecasters are encouraged to make use of all available products such as ensemble predictions; ECMWF and NWP centres should be invited to make impact studies and provide information on the causes of forecasting errors and what observations are needed to minimize them;
	* MonGOOS is working on storm surge prediction in the Mediterranean Sea; there is a need to further develop such activities, integrating local ones such as Istituzione Centro Previsioni e Segnalazioni Maree (Tidal Forecasting and Early Warning Center) (ICPSM), for the whole sub-region, integrating also observations and models, including multi-model approaches;
	* participants of the workshop involved in storm surge prediction are invited to participate in the WMO Coastal Inundation Forecasting Demonstration Project (CIFDP[[1]](#footnote-1));
	* there is a need to review the legal framework and clarify responsibilities for implementation of measures for protection from storm surge and coastal inundation.
4. Maritime traffic is growing in RA-VI, involving a mix of an increasing number of recreational small crafts (not subject to the SOLAS convention), increasingly larger container ships, and increasingly larger cruise passenger ships. Especially important to these warnings are observations from voluntary observing ships, drifters, HF radars, satellite products, and systems that can be deployed on demand.
	* The number of voluntary observing ships is steadily declining. RA-VI members with registered vessels and/or coastal responsibilities are invited to take action to invert this decline and benefit from new opportunities and partnerships in RA-VI (noting EUMETNET modernization program for Ship Automated Weather Stations).
	* ETMSS to consider the issue of harmonizing small craft warnings, with a view of possibly discussing the topic at the next WMO-IMO meeting
	* Participation of RA-VI Members in ETMSS should be reinforced
5.

**Group 2 - Data and metadata exchange**

1. The workshop noted that the Members should review and update the information of their observing systems on OSCAR/Surface.
2. The workshop encourages exchange of data in real-time, near real time and delayed mode between all actors in the region and above all sub-region, in particular where gaps exist.
3. Members are encouraged to be part of the operational weather radar data exchange, and RWCs should be able to play a role in this regard.
4. WMO and NMHSs should take steps to facilitate access to marine meteorological and oceanographic data from WIS by the oceanographic community and vice versa; beyond obligation of Members per existing data policies such as Res. 40 (Cg-12).
5. NMHSs and their partner organizations making marine meteorological observations using data buoys, ships, profiling floats, and tide gauges are urged to provide the WIGOS metadata about these observing systems to OSCAR via JCOMMOPS (exchanging metadata does not necessarily mean that the observational data are exchanged in real-time, but gives visibility to the activities of the data producers, and helps WMO to identify potential partnerships and take action).
6. WMO is invited to introduce a filter on OSCAR/Surface so that only active observing platforms are displayed on the home page.
7. JCOMM is invited to consider and take action for transitioning WMO Publication No. 47 (i.e. voluntary observing ship metadata) to WIGOS Metadata Standard and their recording in OSCAR.
8. JCOMM is invited to engage in HF radar activities and coordinate with EuroGOOS, MedGOOS, and other groups involved in such activities, with the goal to better standardize practices and data exchange protocols and formats, and promote cross-boundary data exchange.
9. Efforts must be made to better coordinate and develop common vocabularies and/or translators interfacing vocabulariesin the WIGOS framework, and in cooperation with partners (e.g. SeaDataNet via JCOMM). JCOMMOPS to assist with regard to referring and mapping existing vocabularies within WMO and with partner Organizations.
10. If/once established, MedOS is invited to contribute data in real-time to WMO applications, including through regional WIS DCPCs.

**Group 3 – Partnerships and Regional WIGOS Centres (RWCs) and WMO-IOC Regional Marine Instrument Centre (RMIC)**

1. Verification of the observational data from different observing systems can be realized by cooperation among the Members (may be coordinated by RWCs).
2. Some NMHSs have been operating well developed systems/software for the real time monitoring of the status of the network, following and carrying out the maintenance and calibration activities, and managing the spare part inventory. The experiences can be shared with the others and a project under the coordination of WMO can be developed and implemented to deliver the monitoring systems/software used by those Members to the others not having such systems.
3. Participants at the workshop are invited to discuss at the national level in the view to have their home institution/agency to
	* participate and contribute to WIGOS implementation at the national level
	* strengthen existing partnerships among Members of RA-VI, or
	* have them to consider becoming partners through either existing or proposed or new mechanisms (e.g. JOZO, national board, EuroGOOS, MedGOOS, E-SURFMAR, EMODnet, MedOS, Copernicus).
4. Partnerships could be realized by contributing to some functions of the future Regional WIGOS Centre(s), and/or Regional Marine Instrument Centre(s) in RA-VI.
5. RA VI Members should make efforts to better collaborate at the Europen level, particularly with Copernicus. WMO and its RA-VI should reach out and make the case with the European Commission in this regard.
6. NMHSs and their partner organizations must provide feedback on how they can benefit from the Regional WIGOS Centres (RWCs).
7. Croatia to consider making an application for becoming a WMO-IOC Regional Marine Instrument Centre (RMIC), possibly in partnership with other partner organizations in Croatia and, if appropriate, other partners in RA-VI.
8. Germany, Turkey are candidate for hosting a Regional Instrument Centre (RIC), and there may be an opportunity for them to also provide the function of WMO-IOC Regional Marine Instrument Centre (RMIC). They are invited to discuss the issue with Croatia in the view to elaborate proposal(s).

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1. <http://www.jcomm.info/index.php?option=com_content&view=article&id=167> [↑](#footnote-ref-1)