WORLD METEOROLOGICAL ORGANIZATION

INTER-COMMISSION COORDINATION GROUP ON THE WMO INTEGRATED GLOBAL OBSERVING SYSTEM

TASK TEAM ON WIGOS DATA QUALITY MONITORING SYSTEM

Second Session

Reading, United Kingdom, 12-14 December 2017

FINAL REPORT

DISCLAIMER

Regulation 42

Recommendations of working groups shall have no status within the Organization until they have been approved by the responsible constituent body. In the case of joint working groups the recommendations must be concurred with by the presidents of the constituent bodies concerned before being submitted to the designated constituent body.

Regulation 43

In the case of a recommendation made by a working group between sessions of the responsible constituent body, either in a session of a working group or by correspondence, the president of the body may, as an exceptional measure, approve the recommendation on behalf of the constituent body when the matter is, in his opinion, urgent, and does not appear to imply new obligations for Members. He may then submit this recommendation for adoption by the Executive Council or to the President of the Organization for action in accordance with Regulation 9(5).

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EXECUTIVE SUMMARY

The second session of the Inter-Commission Coordination Group on the WMO Integrated Global Observing System (ICG-WIGOS) Task Team on WIGOS Data Quality Monitoring System (TT-WDQMS-2) was held at Reading, United Kingdom of Great Britain and Northern Ireland (UK), from 12 to 14 December 2017, at the headquarters of the European Centre for Medium-range Weather Forecasts (ECMWF). The session was chaired by Mr Stuart Goldstraw (UK), Chair TT-WDQMS, who opened the session at 09:30 hours on Tuesday, 12 December 2017.

The session reviewed and took into account, the guidance and relevant outcomes of the sixth session of ICG-WIGOS and of the sixtieth ninth session of the WMO Executive Council (EC-69).

The session reviewed the outcomes and follow-up from the WDQMS Workshop for the WIGOS component and co-sponsored observing systems, Geneva, 26-29 June 2017 (“Integration Workshop”). It discussed in detail the development of WDQMS Pilot Project with NWP Centers, and reviewed the WDQMS concept and its main functions, in particular the “Top level description of the WDQMS” and the proposed updates to the WIGOS Regulatory Material. The relations between WDQMS and other WIGOS related tools were discussed, in particular the aggregation rules for the exchange of information with OSCAR/Surface. The recent experience in WMO Regional Association VI (Europe) with WDQMS in the context the future Regional WIGOS Centres (RWC), was also discussed, including guidance for RWCs to apply the WDQMS to the surface-based system of the Global Observing System.

Finally, the session agreed on a set of recommendations, conclusions and actions (Appendix II), and updated the work programme/action plan of TT-WDQMS (Appendix III).

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GENERAL SUMMARY

1. ORGANIZATION OF THE SESSION

1.1. Opening of the session

1.1.1. The second session of the Inter-Commission Coordination Group on the WMO Integrated Global Observing System (ICG-WIGOS) Task Team on WIGOS Data Quality Monitoring System (TT-WDQMS-2) was held at Reading, United Kingdom of Great Britain and Northern Ireland (UK), from 12 to 14 December 2017, at the kind invitation of the European Centre for Medium-range Weather Forecasts (ECMWF). The session was chaired by Mr Stuart Goldstraw (UK), Chair TT-WDQMS. He opened the session at 09:30 hours on Tuesday, 12 December 2017, and he welcomed the participants to the headquarters of ECMWF, in Reading, UK.

1.1.2. Dr Lars Peter Riishojgaard, WIGOS Project Manager, WMO Secretariat, thanked the ECMWF Management Board for kindly hosting and co-organizing the TT-WDQMS-2 session at their headquarters, on behalf of Dr Fernando Belda Director of the Observing and Information Systems Department and of the WMO Secretary-General Prof.Petteri Taalas; Dr Riishojgaard also thanked the participants for traveling to Reading to attend the TT-WDQMS-2.

1.1.3. Dr Riishojgaard expressed his appreciation for the work that the TT-WDQMS has been doing and for the progress achieved, namely with the quality monitoring pilot project involving global NWP centres, such as ECMWF.

1.1.4. The list of participants is given in Appendix I.

1.2. Adoption of the agenda

1.2.1. TT-WDQMS-2 adopted the Agenda for the meeting, which is reproduced at the beginning of this report.

1.3. Working arrangements

1.3.1. The session agreed on its working hours and adopted a tentative work plan for consideration of the individual agenda items.

2. REPORT OF THE CHAIR

2.1. Mr Goldstraw briefed the session on the progress achieved by the TT-WDQMS since the last meeting (TT-WDQMS-1, Geneva, Switzerland 13-15 December 2016), which includes the further revision of the three major WDQMS functions, the outcomes from the Workshop of the WDQMS for the WIGOS component and co-sponsored observing systems, Geneva, 26-29 June 2017 (“Integration Workshop”), and the development of guidance for Regional WIGOS Centres (RWC) to operate the WDQMS for the surface-based components of the GOS.

2.2. He also stressed that the goals for this session include the revision of the progress against the work plan and the elaboration of recommendations and actions for the near future, such as the follow-up with the WIGOS Components and Co-sponsored Programmes and the engagement with RWC related initiatives.

3. RELEVANT OUTCOMES FROM ICG-WIGOS-6 AND EC-69

3.1. Mr Luis Nunes, WIGOS Scientific Officer, WMO Secretariat, summarized the relevant outcomes from the sixth session of ICG-WIGOS (12-14 January 2017) as follows:

3.2. ICG-WIGOS endorsed the TT-WDQMS Work-Programme/Action Plan for 2017.

3.3. ICG-WIGOS underlined that closer integration between the Observing Systems Capability Analysis and Review tool for surface-based observing systems (OSCAR/Surface) and WDQMS and other WMO GIS-based applications, e.g., the Country Profile Database (CPDB), should be investigated further.

3.4. ICG-WIGOS requested TT-WDQMS that:

- a draft Concept note for establishing Global WIGOS Centres (GWC) should be submitted to ICG-WIGOS-7;
- “quantitative monitoring information from the WDQMS to become part of the station report in OSCAR/Surface;
- a proposals is made for consideration, on what should be the specific content and frequency of the "Mechanisms for routine reporting of monitoring results to EC, RAs and Members”.

3.5. Mr Nunes also summarized the major outcome from the sixtieth ninth session of the Executive Council (EC-69, 10-17 May 2017) related to WDQMS:
3.5.1. Decision 30 (EC-69) endorsed the "Guidance on Establishing a Regional WIGOS Centre in Pilot Mode During the WIGOS Pre-Operational Phase 2016-2019", while requesting Regional Associations (RAs) to support the establishment of RWC(s) in their Region and urging Members to actively participate in the implementation of RWCs in their Region.

4. OUTCOMES AND FOLLOW-UP FROM THE WDQMS "INTEGRATION WORKSHOP"

4.1. Mr Nunes introduced the draft Final Report from the "Integration Workshop", highlighting that most of the observing components have their own specific monitoring procedures, which are not very well aligned with the concept of WDQMS in the case of Global Atmosphere Watch Programme (GAW) networks, while others are more aligned with the concept, such as in the case of Global Climate Observing System (GCOS) networks and marine networks, managed by the Operations Centre of the Joint Commission for Oceanography and Marine Meteorology (JCOMM-OPS), the latter having an operational incident management system (IMS) in place; The WMO Hydrological Observing System (WHOS) and the Global Cryosphere Watch (GCW) Programme networks are still developing/improving their procedures; The session recognized the different reactions, maturity and openness from each of the various communities to what WDQMS can bring.
4.2. It was also agreed that conclusions and actions from the Workshop need to be followed-up with each of the representatives of the abovementioned systems; A possible goal should be to have a web-portal to allow access to the monitoring results from all WIGOS components, focusing the priority on the global aspects.

5. STATUS AND DEVELOPMENT OF WDQMS PILOT PROJECT WITH NWP CENTERS

5.1. Ms Cristina Prates (ECMWF) delivered a presentation on the status of the WDQMS Pilot Project with Numerical Weather Prediction (NWP) Centres:
5.1.1. From the follow-up discussion, the session recognized that establishing file formats for the quality monitoring outputs has been challenging and, specially, reaching agreement amongst the various NWP centres involved takes time when new fields/contents or structure needs to be implemented; On the other hand, the mechanisms used by each NWP centre need to be described.
5.1.2. Currently, three NWP centres are providing O-B (observation-background) results for surface pressure, temperature, humidity and wind from SYNOP reports; There is a need to decide how to proceed with the integration of marine, as well as aircraft, monitoring files into the processing of this pilot project; There should be a follow-up action for 2018, with JCOMM-OPS to discuss the details about the monitoring files; There is also a need to articulate with the Aircraft-Based Observations (ABO) community and follow-up to check what the World Data Centre is going to do in relation to this.
5.1.3. Pending issues related with processing of upper-air/radiosonde (TEMP) monitoring files are: inclusion of last reported level to be agreed; stations providing both TAC and BUFR – for example for station "DeBilt", JMA uses TAC and ECMWF uses BUFR data - so, a new template is proposed with two additional columns to identify the report types (including the PILOT reports); ECMWF and JMA have already agreed on the new format, therefore, an action was agreed to implement it, i.e. by all NWP centres (Mr Jeff Ator is now representing NCEP; WIGOS PO to check with DWD if they would also be willing to implement the new format); ECMWF is able to identify if the upper-air observations received in BUFR format contain hi-resolution (many levels) data, or if they are just the result of converting TEMP messages from TAC to BUFR.
5.1.4. There was consensus that providing details in the monitoring files, such as what data was used/flagged, by each NWP centre, for each report type and format, consists in important ancillary information that will contribute to the WDQMS Evaluation function; This is complex and specific for surface-based observations of the GOS, not generic to all WIGOS components; We need to update the flagging system to include additional levels.
5.1.5. Capturing the TAC/BUFR migration is important but shouldn't be part of the concept principles; It was mentioned that the outcomes of the Management Group of the Commission for Basic Systems (CBS-MG) Task Team on Upper Air BUFR (TT-UABUFR) proposes 10 people, identified globally, to act as operational contacts to run incident management procedures, similar to

those considered under WDQMS Incident Management Function, but specific to this BUFR issue – such operations haven't started yet.

5.1.6. The session agreed to consider for further discussion the inclusion of additional details in the monitoring files, such as the type of radiosonde and its drift position, so that the metadata exchanged in real time together with the data could be made available to the Evaluation Function; The NWP centres are not yet ready for that, but it is something for the near future; The example of surface pressure O-B residuals in November 2017 for the Uruguayan station Paysandu (86430) was mentioned.

6. REVIEW OF THE WDQMS CONCEPT AND ITS MAIN FUNCTIONS, IN PARTICULAR

6.1. Top level description of the WDQMS

6.1.1. Mr Goldstraw proposed a description of the WDQMS, in a level of detail that sufficient to enable Members to understand its structure, as draft material to eventually be included as an appendix in the Manual on WIGOS; The participants mostly agreed with the text and provided some comments and edits to document 6.1, which should be circulated for review before submitting to the WIGOS Editorial Board (WEdB); For the non-GOS observing components, there should be an action for 2018 towards describing the WDQMS processes in more detail.

6.1.2. The session also discussed which WMO Application Areas and their requirements are more relevant for the WDQMS, to be used to trigger incidents; There is a potential that some users would be happy with a certain station status/performance, while others could be unhappy with that same station status/performance, so there is a need to identify the primary users of each observation which will be the priority incidents to be worked on.

6.2. The Monitoring Tools

6.2.1. Mr Timo Pröscholdt, WIGOS Development Officer, WMO Secretariat, delivered a presentation on the relations, in terms of information exchange, between the WDQMS quality monitoring Webtool (developed by the Secretariat under the pilot project with NWP centres, available from http://128.65.196.37/wdqms/map), the OSCAR/Surface and the CPDB.

6.2.2. He explained that the reporting status available on the WDQMS Webtool uses only surface pressure for the moment.

6.2.3. The session then discussed what results and when/how they should go from WDQMS monitoring function into OSCAR/Surface through a specific field designed to capture the actual current reporting status of stations/platforms – see agenda item 7.1 Aggregation Rules.

6.3. The IMS Tools

6.3.1. Mr Stefan Klink (Germany), Chair of TT-UABUFR, introduced document 6.3 that describes the reporting procedure proposed by TT-UABUFR to allow issues with (upper-air) BUFR reports to be recorded and to provide a work flow to allow their resolution; The mandate covers several observing systems, but not satellites; The timeframe of the TT is over (mandate completed), now what is needed is the operational implementation of the monitoring and incident management procedures.

6.3.2. The session recognized the value of the work done by TT-UABUFR and suggested that the RWCs could be the answer for the operational implementation of the tasks described, although the BUFR issues are not under the remit of RWCs.

6.3.3. It was noted that the procedures proposal from TT-UABUFR includes issues and incidents in the catalogue, whereas the WDQMS only considers incidents to be recorded; The catalogue can be published online and exported in a standard format, e.g. html.

6.3.4. The EUMETNET experience with running an IMS, under the Observations Programme, tells us how important are the personal relationships with the national and other focal points for the success of any IMS.

6.4. Proposals for updates to WIGOS Regulatory Material

6.4.1. Mr Goldstraw introduced a proposed revision to the existing WIGOS regulatory material, with provisions related to WDQMS activities to consider and to make recommendations for changes to enable WIGOS to reflect WDQMS more fully.

6.4.2. The session discussed the scope of the proposed changes as applicable to the observations that are exchanged internationally; What Members already have implemented as their national IMS was also discussed in relation to what they will have to do and how they should respond to the requests from WDQMS.

6.4.3. Additional comments and edits suggested by the session are available on the updated version of document 6.4, which should be reviewed by TT-WDQMS and then submitted to WEdB.

7. WDQMS OUTPUTS AND DELIVERABLES

7.1. Aggregation Rules

7.1.1. Ms Estelle Grüter (Switzerland) delivered a presentation with questions and suggestions about possible aggregation rules to be used in WDQMS; A key question is to whom is addressed the aggregated information? Aggregation is important over time and also over space.

7.1.2. The session agreed with the following basic rules for data monitoring:

- a station is declared "Reporting" (operational) if its observations are received by at least one NWP centre;
- the processing of aggregation should be done at WDQMS level rather than at OSCAR/Surface;
- "categories", e.g. using "traffic lights" approach, or percentages, but not numbers, should be used for the aggregated results per station;
- the aggregation provided to OSCAR/Surface should be by observed variable;
- in some cases, just one, or few NWP centres, should be selected instead of "aggregating" them altogether, e.g. timeliness is only available from DWD files;
- temporal aggregation for OSCAR/Surface is by calendar month;
- the same criteria should be used by all regions, as globally agreed minimum thresholds;
- for OSCAR/Surface the status will be only for data availability, for the monitored variables.

7.1.3. The session agreed to having follow-up discussion via teleconference about other questions raised on Ms Grüter's slides.

7.2. Connection with other WMO/WIGOS Tolls

7.2.1. **OSCAR/Surface**

- Mr Tim Oakley (UK) delivered a presentation on the users perspective of OSCAR/Surface and the main outcomes from the 6th session of the ICG-WIGOS Task Team on WIGOS Metadata (TT-WMD-6, 27-19 November, Zurich, Switzerland);
- He mentioned the major issues with OSCAR/Surface being related with its contents, namely the accuracy of metadata made available, the WSIs and the reporting schedule - the schedule of observation is not being used for the legacy file;
- An example of guidance that is needed for Members is on how to insert metadata into OSCAR/Surface regarding upper-air soundings that use GPS techniques.

7.2.2. **WIS**

- Mr Enrico Fucile (ECMWF) introduced a web-based tool developed at ECMWF, with online maps showing the availability of SYNOP and TEMP reports (TAC and/or BUFR); It includes another webpage of maps that show the issues identified for each station;
- The session agreed that this is relevant information for WDQMS as a complement to the results provided via the WDQMS Webtool;
- The session invited ECMWF to work with WMO Secretariat to identify what kinds of reports could be made available as additional tools/information for the RWCs.

7.2.3. **Others (CPDB)**

- This topic was discussed under agenda items 6.2 and 7.1.

8. THE WDQMS IN THE CONTEXT OF REGIONAL WIGOS CENTRES, INCLUDING GUIDANCE

8.1. "WDQMS for surface-based system of GOS: Guidance on Quality Monitoring, Evaluation and Incident Management Procedures for Regional WIGOS Centres (RWCs)"

8.1.1. Mrs Tanja Kleinert (Germany) introduced the abovementioned document, that she has been developing with Mr Klink and the Secretariat; It was initially developed for the WDQMS demonstration project in RA I, then expanded and updated with contributions from TT-WDQMS members.

8.1.2. It contains monitoring target values, proposed for adoption by RA VI, but other regions may adopt different targets, that better represent their realities; The targets included in this document are recommended, rather than just an example.
8.1.3. The session agreed to make a further revision of chapter 1 (Description of the WDQMS) in order to ensure consistency with the WDQMS top level description (document 6.1).
8.1.4. It was also agreed that the WDQMS incidents are not expected to be captured in OSCAR/Surface.

8.2. WMO RA VI – WG TDI/TT WIGOS – RWC nutshell experiment on WIGOS Data Quality Monitoring

8.2.1. Mr Klink introduced a short report on the results of the "RWC in a nutshell" experiment, in RA VI, which included tasks related to WIGOS metadata and with WDQMS.

8.2.2. One main issue was identified in relation with the accuracy of stations location (geographic coordinates) – it was mentioned that obtaining the correct values with high resolution requires adequate resources, but that is not a priority activity for many NMHSs.

8.2.3. Amongst other conclusions/lessons learnt (see doc 8.2) one main conclusion is that the operational tasks of a RWC related to WDQMS are time consuming and demanding; It was recognized that the engagement by the PRs of the participating countries is critical to the success of a RWC.

9. CONCLUSIONS AND RECOMMENDATIONS

9.1. The session discussed and agreed with a set of recommendations, conclusions, as well as actions, which are described in detail in Appendix II.

10. THE WORK PROGRAMME/ACTION PLAN OF TT-WDQMS

10.1. The session reviewed the Action Plan for TT-WDQMS, which is available in Appendix III.

11. ANY OTHER BUSINESS

11.1. There is nothing to report.

12. CLOSURE OF THE SESSION

12.1. Dr Riishojgaard thanked ECMWF for hosting the session and for all the great arrangements; He also thanked Mr Goldstraw, Chair TT-WDQMS as well as the participants, who provided significant contributions to the development of the WDQMS, noting with satisfaction the progress achieved so far.

12.2. Mr Goldstraw, also thanked ECMWF for hosting the session and he also thanked the participants for their hard work as well as the Secretariat support. He underlined that the development of WDQMS is more complex than previously thought so there is still a long way to go, with many tasks ahead of us; Then he closed the session at 01:00 PM on Thursday, 14 December 2017.

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Appendix I

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Appendix II

RECOMMENDATIONS, CONCLUSIONS AND ACTIONS

Agenda Item 4. Outcomes and Follow-Up from the WDQMS "Integration Workshop"

Conclusions:

- various communities have different levels of maturity in terms of monitoring and incident management and also different levels of openness to what WDQMS can bring;
- we should aim to have a portal to allow access to the monitoring results from all WIGOS components, at global level.

Agenda Item 5. Status and Development of WDQMS Pilot Project with NWP Centers

Conclusions:

- it takes a lot of time to agree on new file formats;
- it is not clear how to proceed with integration of marine monitoring files
- Issues with R/S: last reported level; stations providing both TAC and BUFR reports; A new template/format has been proposed and agreed by ECMWF and JMA with two new additional columns to allow identification of report types, including PILOTs;
- The example of surface pressure O-B residuals [hPa] for the Uruguayan station Paysandu (86430) for November 2017, illustrates those issues.

Action:

- all NWP centres to implement it;

Action:

- WIGOS PO to check with DWD;

Action?

- update the flagging system to include additional level(s)?

Conclusion:

- Capturing the TAC/BUFR migration is complex and important but not generic to all WIGOS components, so it shouldn't be part of the concept principles;

Action:

- follow-up discussion with JCOMM-OPS about the details of monitoring files – 2018

Action:

- to agree on the details of including the type of R/S in the monitoring files;

Action:

- Follow-up with DL, to check what the aircraft Data Centre is going to do related to this – Secretariat;

Action:

- The mechanisms used by each NWP centres need to be described

Agenda Item 6. Review of the WDQMS Concept and its Main Functions

Action:

- To develop the detailed description of WDQMS for each WIGOS component system;

Action:

- to circulate and review the doc before submitting to ICG-WIGOS and then to WEdB – next few weeks

Action:

- Need to agree on what goes, and when, from WDQMS into the OSCAR/Surface field of real reporting status

Conclusions:

- Most of the operational tasks/procedures proposed by the CBS-MG/TT on upper-air BUFR issues could be taken by the RWCs, although the BUFR issues are not under the remit of RWCs;
- The proposal from the TT includes issues and incidents in a catalogue (to be published online), but the WDQMS only considers incidents to be recorded;

- The EUMETNET experience tells us how important are the personal relationships for the success of any IMS

Action:

- To review and submit the proposals to WEdB

Agenda Item 7. WDQMS Outputs and Deliverables

Conclusions:

- A key question is to whom is addressed the aggregated information?
- Aggregation over time and also over space is important;
- Data availability = “Reporting”, if received by at least one NWP centre;
- In some cases only select NWP centre(s) results should be used instead of “aggregating” them altogether, e.g. timeliness is only available from DWD;
- Temporal aggregation for OSCAR/Surface = “calendar month”
- The aggregated results should use “categories” or percentages, not numbers, to be shown as colour codes (traffic light type);
- The same criteria to be used by all regions – globally agreed minimum thresholds
- For OSCAR/Surface the status will be only for data availability for the monitored variables

Action:

- Follow-up discussion on Webex about the questions from Estelle’s slides

Conclusions:

- The schedule of observation is not being used for the legacy file;
- There’s need for guidance for Members on how to insert R/S metadata into OSCAR/Surface regarding soundings using GPS

Conclusions:

- The ECMWF online maps of availability (SYNOPs and TEMPs, TAC/BUFR) and of issues, are complementary to the information provided via the WDQMS Webtool

Action:

TP+Cristiano to discuss what kind of reports as additional tools are useful for the RWCs

Agenda Item 8. The WDQMS in the Context of Regional WIGOS Centres, Including Guidance

Conclusions:

- The targets proposed in the “Guidance on Quality Monitoring, Evaluation and Incident Management Procedures for Regional WIGOS Centres (RWCs)” are recommended for RA VI, but other Regions may adopt different targets;

Action:

- revise the description of the WDQMS (chapter 1 of the “guidance document”) to ensure consistency with the top level description (Stuart’s doc)

Conclusions:

- The accuracy of the geographical location is not a priority for many NMHSs
- Main conclusion from the RA VI – RWC nutshell experiment on WDQMS is that the operational tasks are very time consuming;
- For future demo projects it is recognized that the engagement by the PRs of the participating countries is critical

Agenda Item 9. Conclusions and Recommendations

Generic conclusions/recommendations:

- The Task Team mandate should continue
- The pilot project with NWPs should continue and be extended to other observing components of the GOS
- A demonstration project should be ran to address specific TAC/BUFR issues with GSN and GUAN stations
- The resources needed to address the issues of TAC/BUFR, should be considered, since the BUFR migration will impact on the monitoring of data availability and quality to be covered by the RWCs

- Members should be urged to run WDQMS demonstration projects as part of pilot mode RWCs, which are needed to further develop and implement the WDQMS
- The TT-WDQMS is not recommending any particular IMS tool
- The “Guidance on Quality Monitoring, Evaluation and Incident Management Procedures for Regional WIGOS Centres (RWCs)” is recommended to be published as a technical document, including versions in other WMO languages.

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Appendix III

TT-WDQMS ACTION PLAN FOR THE PERIOD January.2017 TO December.2018

Version	Date	Comments
0	15/12/2016	TT-WDQMS-1
1.0	14/01/2017	ICG-WIGOS-6
1.1	15/02/2017	TT-WDQMS WebEx
1.1a	**17/07/2017**	TT-WDQMS WebEx (comments)
1.2	**14/12/2017**	**TT-WDQMS-2**

No.	Task	Deliverable/Activity	Deadline (if not stated end of month)	Lead responsible	Status*	Comment
~~1~~	~~Continue the demonstration project in RA I~~	~~Gather sufficient information about the quality of pressure measurements and radiosonde observations~~	~~May 2017~~	~~**S.Goldstraw** + WIGOS PO + TT-WDQMS + E.Kidebwana~~	~~Under Stress~~	~~SJG 15/02: No noticeable progress since TT-WDQMS-1 in December, need to follow up with KMD & TMA. Luis will contact KMD&TMA to reactivate demonstration project – date to be agreed with KMD & TMA. Henry – it is possible to extend to gather more information for ~6 months. Henry will ask team to agree to continue project. SG/LN to talk to Henry~~
~~2~~	~~Explore the establishment of a pilot project for East Africa~~	~~Project proposal submitted~~	~~March 2017~~	~~WIGOS PO~~	~~Under Stress~~	~~SJG 15/02: Date of Workshop with TMA postponed, most likely date now April/May 2017. Postponed to late 2017~~

No.	Task	Deliverable/Activity	Deadline (if not stated end of month)	Lead responsible	Status*	Comment
~~3~~	~~Support the RA VI pilot project~~	~~NA~~	~~Ongoing~~	~~**S.Klink** + T.Kleinert~~	~~In progress~~	~~SJG 15/02: Discussion with Kemal (?) ongoing and some INC discussions with Serbia & BHG ongoing. Tanja will follow up with Kemal?~~ ~~1 page update on progress by end of Q2 2017.~~ ~~Check with SK/TK~~
4	Expand the monitoring capabilities of the NWP pilot project	Complete the pressure monitoring functionality, including the input and the display, as well as aggregation rules	~~March 2017~~	**C.Prates** + ~~R.Grumbine~~ Jeff Ator + Y.Ota + A.Cress [Need to add Timo / Project Office into this team]	Complete in 2 of 4 Centres	SJG 15/02: ECMWF & JMA complete. Awaiting info from NCEP & DWD on status.
		Add 2m air temperature to the NWP monitoring files			~~Likely to be delayed~~ In progress	New format agreed SJG 15/02: No progress with Air Temperature as Cristina & Ota have been focusing on refining R/S TEMP monitoring – task below. Deadline for march may be too soon for Ta.
		Develop the monitoring and evaluation functionalities for the radiosonde observations			JMA & ECMWF on track NCEP & DWD delayed?	New version of the Webtool SJG 15/02: Cristina WebEx with Timo at start of Feb to describe the content of files to enable visualization to be progressed. Timo needs to be part of task. Update from Timo on progress required. Again JMA & ECMWF have provided files but NCEP and DWD have not yet provided files. NCEP working on it

No.	Task	Deliverable/Activity	Deadline (if not stated end of month)	Lead responsible	Status*	Comment
5	Update the guidance document (Tanja) with the outcomes of TT-WDQMS-1	Review feedback from TT-WDQMS-1	~~May 2017~~	**T.Kleinert** + WIGOS PO	~~On track~~ Done	Including the aggregation of monitoring results SJG 15/02: Tanja believes goal of May is realistic. TT-WDMQS review the latest version and provide feedback The aggregation rules are still to be agreed
~~6~~	~~Produce version 1.0 of the Users Guide of the monitoring Webtool~~	~~Users Guide available~~	~~April 2017~~	~~WIGOS PO~~	~~Under stress~~	~~SJG 15/02: Luis will follow up with Timo.~~
~~7~~	~~Define the QM reports for EC, RAs and TCs and mechanisms for delivery~~	~~Review user needs, generate report template and rules~~	~~May 2017~~	~~S.Goldstraw~~	~~Under stress~~	~~SJG 15/02: No progress to date on this task. ICG-WIGOS requested for advice and they suggested we propose a solution.…~~
8	Describe the benefits of WDQMS	Flyer/poster – another round of revision	~~May 2017~~	**T.Oakley** + WIGOS PO	On track	SJG 15/02: Tim happy with the Task – need to confirm who the poster is for – need to ensure the communication piece is well targeted. Needs to say what happens if QMS not undertaken. TT-WDQMS to review and provide feedback
9	Propose the WDQMS outputs that could be recorded in OSCAR/Surface	~~Clarify needs~~ Make recommendations, WebEx discussion to follow-up	~~March 2017~~ ~~May 2017~~	**E.Grüter** and WIGOS PO	~~Under stress?~~	SJG 15/02: only just started but Estelle well placed to link to OSCAR development team. Critical task – needs to be followed up – Luis to arrange a task specific webx. LN to check with LPR about the workshop for WDQMS-OSCAR

No.	Task	Deliverable/Activity	Deadline (if not stated end of month)	Lead responsible	Status*	Comment
~~10~~	~~Undertake the Workshop with GAW, JCOMMOPS, GCOS, GCW and hydrology components of WIGOS~~	~~Organize the workshop~~	~~July 2017~~	~~WIGOS PO~~	~~DONE~~	~~SJG 15/02: Outline workshop proposal generated. Luis to discuss with WMO Sec members in coming days / next week. Access to team members will be key. Report/outcomes to be drafted and made available~~
11	Develop the generic description of WDQMS including the responsibilities at global, regional and national levels with diagrams	First draft document ~~Detailed description~~	May 2017 ~~November 2017~~	**S.Goldstraw** + C.Pei	~~Under stress~~ In progress	This will become an annex to the Manual on WIGOS SJG 15/02: No progress to date but SJG ring-fencing in April will be the time for this. Luis – needs to go through WIGOS editorial board in Q3 2017. SG+LN to draft
	Follow-up discussions with the WIGOS observing components	Detailed description of the processes		Chair + WIGOS PO		
12	To propose the necessary amendments to the Manual on WIGOS	Review the Manual on WIGOS Proposed changes	~~September 2017~~ December 2017	Chair TT-WDQMS + WIGOS PO	In progress	Check the role of the Editorial Board in this context SJG 15/02 not yet started.
13	Produce material to the Guide to WIGOS	First draft document	1-Q. 2018			This should follow task 9 and will be based on deliverables from tasks 5, 6, 7, 8

No.	Task	Deliverable/Activity	Deadline (if not stated end of month)	Lead responsible	Status*	Comment
14	Extend the (NWP) monitoring to the aircraft observations	Monitoring results available	September 2017 (perhaps this is harder than marine and so should be Dec 2017)	TT-WDQMS (NWP pilot sub-group, JA) In collaboration with ET-ABO		SJG 15/02: Cristina feels we need to define the format of the template for the results before we can start generate the results. September is reasonable for template but not for results. Maybe 3 months after template is available results will be available (in draft version)
15	Extend the monitoring to the surface marine observations	Monitoring results available	December 2017 (perhaps this is easier than aircraft obs and so should be September?)	TT-WDQMS (JCOMM-OPS?)	On track	SJG 15/02: This will be easier than aircraft and so could be done earlier. (Cristina & Ota have common view) Tim – remember we may only be linking to JCOMMOps existing monitoring functions. Remember the need to use the existing best practice.
16	Extend the monitoring to the climate observations (CLIMAT)	Monitoring results available	1-Q. 2018	TT-WDQMS (C.Paterson + T.Kleinert + T.Oakley)	Ahead of target!	SJG 15/02: Working with / bridging to existing teams. Possible to spin up a little more quickly as team members are different. Tanja – should be straightward in the EUMETNET Obs QM Portal.
	Addressing some specific TAC/BUFR issues	Run a Demonstration project as a global monitoring centre for the GUAN and GSN stations		T.Oakley		

Completed	On-Track	Under-Stress	Overdue

* STATUS column entries will be one of the following descriptors, as determined by the Chair TT-WDQMS based on consultation with the responsible party (in each case, elaborative comments can be added after the standard descriptor or in the "Comment" column):

Other notes: What is the status of CMC in the Monitoring Pilot Project – follow up required.
Don’t lose the ASAP integration from workplan.
Cristina attending SOT meeting in London in March – opportunity to spread the word about WDQMS.
Ota – incident management tool question – are we going to continue to use a google ‘form’ type of tool for the global incident tracking. Action – we need a task to agree what we are going to use to capture and track the *international aspects* of the INCs, noting a number of national tools are already available. What functionality are we going to ‘recommend’ / ‘develop’ / ‘implement’.