**Workplan of the Expert Team on Developments in In-Situ Technologies (2014-2018)**(Version: as approved by CIMO-MG-13 in Dec. 2014, with minor updates on 09 June 2017)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Task description** | **Person responsible** | **Action** | **Deliverable** | **Deadline for deliv.** | **Status**  **[%]** | **Comments** |
| 1. | **Performance of new in situ technologies: a) Upper Air**  **b) Surface T, P, RH**  **c) Wind**  **e) Precip**  **f) AWS (including low cost AWS)**  **h) Clouds, Vis, Pwx**  **i) Trace Gas Measurement**  **j) Solar radiation,  k) individual lightning sensors.** | **a) Dubovetsky**  **b) DiPasquale**  **c) Hietanen**  **e) Warne**  **f) de Podesta,** Warne  **h) Wauben**  **i) Warne**  **j) N/A**  **k) Warne** | 1. Monitor and review performance of new in situ surface and upper-air technologies and measurement techniques 2. Identify and report significant developments and trends | 1. Report on findings 2. Recommended updates to CIMO Guide 3. Documentation on guidance for the use of Low Cost AWS. | 06/2016  06/2017 | On- oing | CIMO-16 §4.19  Guo to link with ET-A1 on impacts of siting class, rather than include it here  Re j), liaise with relevant ET tackling these topics. |
| 2. | **Review outputs of assigned Lead Centres**  **(Lindenberg, Chupungnyeong)** | **Dubovetsky**  Di Pasquale | 1. Inclusion of guidance material in IOM reports 2. Update CIMO Guide as required to take into account technological developments | 1 Documentation on guidance material  2. Recommended updates to CIMO Guide | 06/2016  06/2017 | On-going | Task Leaders are in contact with the Lead Centres and gathering relevant information. (Mar 16) |
| 3. | **Investigate and provide guidance concerning design and installation of, a) instruments and b)measurement infrastructure , to sustain measurements in extreme weather conditions, such as in polar and alpine regions** | **a) Warne,** Miller,Guo **(Instruments)**  **b) Miller,** Nomura**,** Guo **(Infrastructure)** | 1. Identify and review existing guidance material and develop new material on the optimal use of methods to measure severe hydrometeorological events and conditions. | 1.1 Update list of existing documents  1.2 Draft report on severe conditions  1.3 New text for CIMO Guide on hardening methodologies | 1.1 09/2016  1.2 09/2016  1.3 06/2017 | 60 %  -  - | CIMO-16 Doc. 4, §4.14, 4.26, 7(3).8, 7(4).4  Progress on 3b slowed due to the lose of Peter Lejbjuk proposed delay in first deliverable to Sept 16  Note: include guidance developed in collaboration with EC-PORS.  Collaborate with Uni Wisconsin expert(s) |
| 4. | **Polar Observations** | **N/A** | 1. Assist GCW in defining best practices for snow measurement, based on outcomes of SPICE. 2. Identify sensors and systems suitable for Polar and Alpine operation. | 1. Provide guidance document to GCW. 2. Possible IOM Report or other document | 12/2016  12/2016 | On-hold | Liaison with SPICE Project Team  New liaison with SPICE required |
| 5. | **Review development of new radiation reference instruments** | **N/A** | No action required this intersessional period. This task dealt with by TT-RadRef | Nil | N/A | N/A | ET-MR&ACM-2, para 7.2.2  CIMO-16 §4.15  Dealt with by TT-RadRef. |
| 6. | **Automatic cloud type and amount observations** | **Wauben**,  Guo,  De Podesta  Di Pasquale | 1. Review automatic cloud observation practices and instrumentation. 2. Identify the measurands 3. Investigate the prospects for establishing traceability of such observations to recognized standards. | 1a Guidance on best practices  1b Update of CIMO Guide chapter  2 Guidance document or IOM Report  3 Report on the scope for establishing traceability for these observations | 1a. 06/2016  1b 06/2017  2 06/2017  3 12/2017 | 30%  -  -  - | CIMO MG-11 |
| 7. | **Instrument performance monitoring** | **Warne**  De Podesta,  Guo,  Hietanen,  Ariffudin | 1. Undertake analysis of performance of sensors in the field and impacts. 2. Review draft national practices with review to wider review. 3. Develop a framework on instrument performance monitoring, including what to monitor and how. | 1. Instrument performance monitoring framework.  2. Draft national trial survey  3. Update of CIMO Guide | 1. 06/2016 2. 09/2016   3. 06/2017  4. 09/2016 | 20%  - | CIMO-16, §4.13, §6.27  Note: focused on instrument performance metadata (e.g., battery voltage)  Link with ET-A1 Task 4  and with ET-B1 |
| 8. | **Use of environmentally friendly radiosondes** | **Dubovetsky**  Nomura  Warne  Hietanen | 1. Propose WMO position on the use of environmentally friendly radiosondes 2. Collaborate with other international organizations (CEN, HMEI) if and as relevant in development/ review of related standards | 1. Report including recommendation to be submitted for approval to CIMO-MG 2. Development of joint standard | 1a. 06/2017  1b. 09/2017  2. As needed | 30%  - | CIMO-XV, §5.9  Where possible use existing guidelines (national, HMEI member) |
| 10. | **Soil Moisture** | **Warne**  **Wauben** | 1. Review national practices | 1. Information document 2. Discussion paper on traceability of soil moisture measurement 3. CIMO Guide update (if appropriate) | 1. 06/2017  2. 09/2017  3. 12/2017 | 25%  - | Liaise with CHy, CAgM |
| 11 | **Economical AWS measurements** | **Warne**  **Ariffudin** | 1. Review alternative technologies | 1. Guidance documentation for Members on economical alternatives to traditional AWS 2. CIMO Guide update | 1. 09/2017 2. 12/2017 | 50% | Consider TAHMO project,  Farmers raingauges,  etc  Include low-cost all-in-one AWS |

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_