WMO SPICE Teleconference

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| Date | 08.01.2015 | Time  | 14:00 – 15:55 (UTC); |
| Purpose | SPICE |
| IOC member attendees(strike though if not attending) | R. Nitu, B. Baker, ~~J. Hendrikx, H. Liang,~~ Y.-A. Roulet,F. Sabatini, ~~V. Vuglinsky~~ |
| ~~IOC ex-officio member attendees(strike though if not attending)~~ | ~~S. Bilish (Australia)~~ C. Smith – ~~D. Yang~~ (Canada), ~~S. MacDonell (Chile~~) O. Aulamo (Finland)  ~~K. Honda (Japan)C. Zammit (New Zealand~~) M. Wolff (Norway) ~~M. Karzynski (Poland)~~~~TBD (Russian Fed.)~~ R. Rasmussen (USA) ~~L. Lanza (Italy)~~S. Morin (France) ~~A. Uriel -~~ S. Buisan (AEMET-Spain)~~G. Diolaiuti, Antonella - D. Bocchiola (Italy/Nepal)~~~~Hyelim Kim (Rep. Korea)~~ |
| Other Attendees(optional) | I. Rüedi, M. Earle, ~~F. Boudala, Andy Gaydos, B. Goodison, J. Hoover, P. Joe, J. Kochendorfer,~~ T. Laine, ~~S. Landolt, A. Senese,~~ E. Vuerich, ~~A. Poikonen,~~ A. Reverdin, ~~Gyu-Won Lee,~~ Floor Heuvel, ~~Hee Jin, Kai Wong, L. Leppänen, H.-R. Hannula,~~ E. Mekis |
| Distribution | All attendees, IOC (including IOC ex-officio members) |
| Moderator | R. Nitu | Recorder | **I. Rüedi** |
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| 2nd Teleconference | **08.01.2015, 02:30 UTC** |
| Participation | **S. Bilish, J. Kochendorfer** |
| Moderator | **R. Nitu** |

Meeting Records (A = Action / D = Decision / I = Information)

| **#**  | **A / I / D** | **Item Description** | **Owner** | **Due Date** |
| --- | --- | --- | --- | --- |
| 1 | **I** | Recalled the WMO perspective for the intercomparison outcomes and interaction with manufacturers: Report should provide guidance to WMO Members for the operation of their network within the WWW and WIGOS context, which means operational network (not for research stations).For Members:* Provide guidance on best practices to follow for solid precipitation measurements
* Evaluation of participating instruments
* Evaluation of tested configurations
* Should help Members procure new instruments/systems
* Should help Members operate/update their systems
* Keep in mind that not all Members staff are specialist on solid precipitation and that most results of the intercomparison should be formulated so as to be also understandable by less specialized staff.

Importance of engaging manufacturers in preparation of the report and evaluation of results:* The SPICE Project is a **partnership with manufacturers**.
* Results will have strong impact on manufacturers (could be a good visit card, but could also endanger their activities)
* Failing to engage manufacturers early enough could delay the publication of the report
* Presentation of results needs to be impartial and fair. Differentiate issues coming from the instruments and possible issues coming from the site management/setup.
* Provide in report recommendations on how manufacturers could improve their systems to better meet the requirements of WMO Members based on experience gained during the intercomparison.

For WMO:* Develop update of the CIMO Guide according to the findings of the interscomparison and present best practices.
* What needs to be done next: are there any requirements for WMO to coordinate future specific activities related to the subject.
 | Isabelle |  |
| 2 | **I** | Overview of the 2015 work plan:* Reference report almost finalized. It will be shared with Francesco and Shane for their review. Then (tentatively in February 2015), it will be shared with manufacturers inviting them to provide feedback.
* Snow on the Ground meeting will be held in Grenoble on 17/18 March 2015.
* May Meeting (Toronto) will focus on 1) completion of the experiment (can instrument be sent back to manufacturers?) and 2) Data analysis.
* Meteohydex (1-3 June, Geneva) could be used to discuss reference report and/or preliminary results with manufacturers.
* It is expected that the Brussels meteorological Exhibition (13-15 Oct. 2015) will be used to discuss with manufacturers on preliminary results of their instruments. Individual face-to-face meeting are likely to bring more feedback than a big meeting with all manufacturers. Preliminary results from their instruments (data-sheet) will have to be provided to them by end of August to allow them sufficient time to review them.
 | Rodica |  |
| 3 | **I** | Brief reports from the sites:CARE: No issues with instruments. Issue with manual observer. Measures have been taken to overcome situation, but it has some impact on the manual observations.Caribou Creek: Had to update some power suppliers. This created additional noise on some instruments because of ground loops. Had then to operate some instruments unheated for a certain period.Bratts Lake: Site is back and running after October major storm. Some data were lost because of malfunctioning loggers. (No instrument under test were damaged by the storm) Weissfluhjoch: Replace on R3 Pluvio2 to have identical heating configuration. Though to have issues with the control unit of one participating instrument. New version of GPS antenna installed. Additional wind-sensor installed at gauge height near R3 reference to assess impact of DFIR on wind-field. All data March 2014 are available on NCAR archive, earlier data will also be available soon. Two MASC will be installed in the DFIR. Site will continue measuring at least on more winter.Marshall: No specific issue. Interesting snow-fall events took place. Detailed analysis to be done.Haukeliseter: Some issues with heating in the DFIR. Corroded cable was found. Some issues with one sensor. Instrument was reset. Manufacturer was consulted, but no solution found yet. Hotplate was mounted in autumn. Data will be provided to manufacturer. Sodankyla: Very minor problems with instruments. Have contact with manufacturers in such cases. All issues are incorporated in logbook. All proposal for modifications of the site made at the time of the Sodankyla SPICE meeting were implemented before the beginning of the snow season. Data transfer to NCAR is nominal.Formigal: DFIR is now operating. Data from new instruments will have to be included on NCAR site. Big accumulation difference (50%) between DFIR and instruments. Manual gauge not installed yet. | Site Managers |  |
| 4 | **I** | Overview of the results achieved in 2014, and summary of recent reported results:Data-QC was done off-line on data that was downloaded from NCAR archive. Off-line QC was applied on 5 selected sites (CARE, Sodankyla, Haukeliserter, Marshall and Formigal). Site managers were contacted to develop the threshold for their sites.Off-line qc-ed data can be downloaded form NCAR site.NCAR presently implementing the automatic QC procedure for all the data available on the archive. | Audrey |  |
| 5 | **D** | Averaging of the Geonor 3 wires: In case some of the wires do not provide any data, should the average be the value of the 3 wires or the value of the wires still providing data, or not a value at all?Decision: average should be the average of the wires providing relevant data, but must be flagged accordingly in order to lose as little data as possible. This will be reflected in higher-level data products,’ or ‘This will be the subject of additional testing for future quality-controlled data products. |  |  |
| 6 | **A** | Final report will have to provide guidance to Members on how to use the output of the 3 transducers, as some Members use only one wire.Compile documentation on processing of Geonor data. | Bruce | March 2014 |
| 7 | **A** | Carry-out comparison on the difference in results if using one or three wires | DAT | Dec. 2015 |
| 8 | **I/A** | Presented list of topics for data analysis to be addressed by the time of the Toronto meeting. Everyone is invited to express interest for specific topics.  | All | 15 January 2015 |
| 9.(2) | I | Sites to clearly document issues on heating, as well as on all interactions with manufacturers. | All | On going |
|  |  | **For next teleconference(s)**:* **15 January 2015:** Work planning
* **22 January 2015:** TBD
* **29 January 2015:** Snow on the Ground
 | Topic specific |  |

Open Actions (strike though actions that were complete since last teleconference, delete actions that were stroked through at time of previous teleconference)

| **#**  | **A / I / D** | **Item Description** | **Owner** | **Due Date** |
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| **From teleconference of 4 December 2014** |
| 4 | **I/A** | The question was raised if SPICE datasheets should include intensity plots and if they can be represented with the same 30min event periods. Recommendation from Emanuele Vuerich, was to include intensity plots in the datasheets. 1min datasets should be generated first, and then aggregated to other time periods (5, 10, 20min), to avoid losing information (compared to aggregating the data directly in bigger time intervals).In proposal, intensity criteria from FI RI to be applied to calculate intensities for gauges in FWRS.Emanuele to investigate further the intensity component for datasheets.Questions: What is minimum accumulation time needed to produce a ‘reliable’ rate? How does this vary by gauge? Further, how do we define what is ‘reliable’? | Emanuele | TBD |
| ~~5~~ | **~~I/A~~** | ~~Presentation of the availability and access to QCed data on the NCAR ftp website. Three sites have been QCed : Sodankyla, Haukeliseter and CARE.~~ ~~Share the information with all the SPICE team.~~ | ~~Mareile~~ | ~~Done~~ |
| ~~6~~ | **~~A~~** | ~~Prepare talk on characterizing the statistics and what to do with the statistics (ASTM standards): Bruce create powerpoint for the next meeting.~~  | ~~Bruce~~ | ~~11 Dec, 2014~~ |
| 7 | **A** | Mike to prepare and present R3 analysis from CARE site at a future telcon. | Mike | 11 Dec, 2014 |
| 8 | **A** | Roy to present slides on the minimum detectable signal as a function of wind speed. | Roy | 11 Dec, 2014 |
| ~~9~~ | **~~A~~** | ~~Prepare plots with higher wind speeds (generate same plots from other sites). Create box and whisker plots from the data presented today and for higher wind speeds.~~ | ~~Audrey~~ | ~~11 Dec, 2014~~ |
| 10 | **A** | John to prepare powerpoint on the approach for uncertainty he did for the reference report (at a later date, according to his schedule). Needs lots of rain data.~~Audrey check if there are enough rain data available in~~ ready datasets.Daqing noted importance of considering winter rain. | John~~Audrey~~ | TBD~~9 Dec, 2014~~ |
| ~~11~~ | **~~A~~** | ~~Rodica share report she wrote on uncertainty and how relate to transfer functions to address the sources of errors.~~ | ~~Rodica~~ | ~~11 Dec, 2014~~ |
| ~~14~~ | **~~A~~** | ~~Think and make recommendations about potential topics to add to this list/table of the data analysis activities.~~ | ~~All~~ | ~~11 Dec, 2014~~ |
| **From teleconference of 27 November 2014** |
| 4 | **A** | Send consolidated reference report to project team | Rodica | Jan 16, 2015 |
| **From teleconference of 20 November 2014** |
| 4 | **A** | Apply, as a test case, the proposed procedures to some qc-ed data sets to demonstrate application and potential of the proposed method using the dynamic field calibration method. | Emanuele | 15 Feb. 2015 |
| 5 | **A/I** | All Site managers are reminded to perform calibrations/field controls and document the process and results.  | All | March 2015 |
| **From teleconference of 13 November 2014** |
| 2 | **A** | Production of plots (NS/DFIR ; SA/DFIR ; NS/SA) for selected sites, see below. | Roy | January 2015 |
| 5 | **D/A** | First-pass datasets processed with the current QC will be produced for Haukeliseter, Marshall, CARE, Formigal and Sodankylä. These first-pass datasets could be delivered in two different ways : QCed datasets (Time + Data + Flags) and event selection datasets. These datasets will be provided as a starting point for the following analysis steps : | ~~Audrey/Floor~~~~(Mike)~~Audrey/Mareile/ Floor/ (Mike) | ~~QCed datasets :~~~~December~~Event selection datasets :Mid-December |
| 7 | **A** | It was recognized that additional work is required to further assess the use of the Bucket RT data from Pluvio 2 gauges, eventually in conjunction with the other data fields produced by Pluvio2.  | Mareile/Audrey | March 2015 |
| 8 | **A** | On the processing of Geonor data: many organizations/groups have been using more advanced processing to improve the Geonor accumulation report (CRN, NCAR, Norway, EC, etc), we acknowledge that we may/should revisit the algorithm to achieve similar improvements. At the minimum, we may use a standard dataset and process it with the algorithms we are aware of, and see the differences. | DAT |  |
| **From teleconference of 6 November 2014** |
| ~~3~~ | **~~I~~****~~A~~** | ~~Thresholds are applied to each instrument types independently. It is expected that the thresholds will be the same for all instruments of one specific type. Thresholds will be refined iteratively, when experience is gained or when problems are encountered.~~~~Selected site managers to provide information on thresholds related to the instruments available on their site to Audrey.~~ | ~~MareielCraigTimo/OsmoRoy/Scott~~~~Mike/Rodica~~ | ~~12 Nov.~~ |
| 6 | **A** | Manual flagging of data is important when a jump is identified, especially because of capping. Procedure to enable site managers to input that information in the archive following identification of a jump by the QC procedure would be a possibility. Need to assess whether this would be feasible and who should be allowed to perform such flagging. The group suggested that site managers and data-analysers could do that. In case of “conflicts” the last edition would be the right one. If the case a data-analyst would flags data from another site, he would have to inform the site manager.  | Roy, Bruce, John | 20 Nov. 2014 |
| **From teleconference of 23 October 2014** |
| 2 | **A** | Craig and Samuel to follow up on data catalogue; update where necessary | Craig, Samuel | Nov 7, 2014 |
| 3 | **A** | Input from site managers required re: derivation of output data (sampling rates, processing at logger level) | Site managers | Dec 5, 2014 |
| 9 | **A** | Adding of snow occurrence information to the manual observations table of PYRAMID site  | Guglielmina | Nov 7, 2014 |
| 10 | **A** | Sending of Forni data to Craig first (in any format) and then with the right NCAR format to NCAR. | Guglielmina, Antonnela | Next week to Craig, then as soon as possible to NCAR |
| 11 | **A** | The SR50, used to select snowfall events, will be changed for a similar model at Forni site as there may be issues with their current instrument | Guglielmina, Antonnela | For season 2014/2015 |
| 12 | **A** | Sending of elevation change as a result of the change in location of the Forni site. | Guglielmina, Antonnela | At the end of the summer season |
| 18 | **D** | Next SoG teleconference will be in January expecting to show some preliminary results. Therefore, QC on SoG data is expected to be done by the end of the year.  | Craig, Samuel | January |
| **From teleconference of 9 October 2014** |
| 4 | **A** | Provide a first draft of the interpretation of terminology used in the project objectives, relative to SPICE specifics, to be used as a starting point for the identification of graphs and analyses to be conducted for the preparation of Data Sheets.  | Roy | Oct 30, 2014 |
| ~~5~~ | **~~A~~** | ~~Review concept of data sheet taken into account above interpretations during teleconference~~ | ~~All~~ | ~~Early Nov. 2014~~ |
| 6 | **A** | Use the opportunity of the review of data availability for assessing the type of plots and analysis that needs to be conducted for meeting project objectives. E.g. developing plots to assess whether there are similarities between climates on different sites, assessment of results on a site by site basis, followed by the corroboration of results, etc | all | End of October |
| 7 | **I/A** | All project members are encouraged to publish results, from their sites, or on proposed methodologies, in the SPICE special issue and to inform the team about their plans. | All | On-going |
| **From teleconference of 25 September 2014** |
| 6 | **A** | Provide R1 data from Marshall to Kai to conduct similar analysis with respect to both Geonor and Pluvio2 of Marshall in R2 configuration. | Roy | 9 Oct. 2014 |
| 7 | **A** | Perform R1/R2 analysis for Marshall with respect to both Geonor and Pluvio2 of Marshall in R2 configuration | Kai | Dec 2014 |
| ~~10~~ | **~~A~~** | ~~Rodica to contact site managers with requests for site descriptions for the Reference Report~~ | ~~Rodica~~ | ~~Oct 9, 2014~~ |
| 11 | **A** | Try to get data from the first WMO intercomparison from sites with a shielded/unshielded pair. If available, these data will be sent to Roy for further analysis | Daqing |  |
| **From teleconference of 18 September 2014** |
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|  | **A** | (resulting from Sept 18th teleconference): the Pluvio firmware version for SPICE remains 1.30.1;All Pluvios in SPICE to be reoriented with the strain gauge towards north, to minimize the temperature variation due to the solar irradiance. | All Site Managers | Nov 2014 |
|  | **A** | Establish instrument champions for all instruments under test in SPICE. A champion would be the focal point for the information regarding a particular sensor/system, and would ensure that the information is captured in the Final Report.All are invited to indicate their preference for contributing to the assessment and tracking of performance of SPICE tested sensors.Rodica to set Doodle poll for all to indicate preferences | All team members | Oct 15, 2014 |

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| **From teleconference of 7 August 2014** |
| 7 | **A** | Finalization of Sodankyla meeting report is still underway. Some presentation summaries are still missing from Antonella, Leena, Niina, Arkady. | ~~Antonella, Leena, Niina,~~ Arkady, Isabelle | 31 Aug. 2014 |
| 11 | **A** | Present a Summary of methods implemented at NCAR in support of SPICE; to be demonstrated during next telecon | Roy/Andy | Next telecon |
| 13 | **A** | Provide a tutorial (demo and written) on how to use all features implemented at NCAR, that are expected to be used by Site Managers, and DAT members | Roy | August |
| 15 | **A** | Assess and discuss methods for tying together SoG with event selection; an NCAR or offline? | Craig | Next telecon |
| ~~19~~ | **~~A~~** | ~~Mike to report on uncertainty assessment of Geonors and Pluvios using John’s approach~~ | ~~Mike~~ | ~~Dec 2014~~ |
| **From teleconference of 20 February 2014** |
| ~~3~~ | **~~A~~** | ~~Sites to clearly document issues on heating, as well as on all interactions with manufacturers.~~ | ~~All~~ | ~~On-going~~ |
| 8 | **A** | Help raise resources for the CIMO Trust Fund to enable hiring someone for that. | All | On going |
| **From teleconference of 23 Jan. 2014** |
| 12 | **A** | Site Managers to send to Rodica picture that are representative of their sites, which would be used for presentations/posters on SPICE | Site Managers | on-going |
| **From teleconference of 19 Dec. 2013**  |
| 9 | **A** | Follow-up on gauge heights (non-DFIR) | Rodica | Jan 16th |
| 16 | **A** | Send Audrey proposals for any terms to be defined | all | ongoing |
| **From teleconference of 24 Oct. 2013** |
| 2 | **A** | The SPICE report will need to provide feedback on calibration procedures as stated in Geonor manual to inform those using these gauges. Key points:* Gauge levelling
* Compare 3-wire average (requires algorithm from DAT) or individual transducers with calibration load
* Comparison impacts procedure in manual: if errors more than 0.5%, Geonor recommends correction of *A*, *f0* coefficients
* Covering of gauge orifice during calibration
 | Rodica | In the Final report |
| **From teleconference of 20 Sept. 2012** |
| 1 | **A** | Look at vertical wind profile: compare measurements with observations at different heights | John | Aug 2013 |

**Attachments:**

None.