WORLD METEOROLOGICAL ORGANIZATION

QUESTIONNAIRE on Snow on the Ground Instruments

Addressed to potential participants applying for participation in the  
  
***WMO Solid Precipitation Intercomparison Experiment (SPICE)***

*Note: please complete a separate questionnaire for each type of Sensor /System proposed.  
If necessary, attach additional pages.*

*Electronic version of the Questionnaire is available at:* [*http://www.wmo.int/web/www/IMOP/intercomparisons.html*](http://www.wmo.int/web/www/IMOP/intercomparisons.html)

|  |  |
| --- | --- |
| 1. | **Name of institution/company applying for participation** |
|  | You are applying for participation as  WMO Member  Company |
|  | Are you an HMEI member (www.hydrometeoindustry.org)?  Yes  No |
|  | Address |

|  |  |  |
| --- | --- | --- |
| 2. | **Contact Person for the Intercomparison** | |
|  | Surname | First name |
|  | Tel.: | Fax: |
|  | E-mail: | Other: |
|  | **Alternative contact person** | |
|  | Surname | First name |
|  | Tel.: | Fax: |
|  | E-mail: | Other: |

|  |  |
| --- | --- |
| 3. | **Name and address of the manufacturer** *(if different from no.2 above)* |
|  | Address |

| 4. | **Instrument specifications** | |
| --- | --- | --- |
|  | Instrument manufacturer | |
|  | Instrument name | Model/Type |
|  | Which parameter(s) does the proposed instrument report?  Snow Depth  Snow Density  Snow Water Equivalent  Others (please specify) | |
| 4.1 | Principle of operation:  Ultrasonic distancemeter  Laser distancemeter  Other  please describe: | |
| 4.2 | Measurement area on the ground:  Does the actual measurement area on the ground vary with target distance?  YES  No  Please explain (e.g. by giving the aperture angle)  Minimum distance between sensor and snow/ground surface       cm  Minimum footprint required for a reliable measurement: | |
| 4.3 | Operating temperature range: from      °C to      °C | |
| 4.4 | Measurement range:  from       cm to       cm  Other (provide details): | |
|  | Measurement Resolution*:*       cm (other units; please specify) | |
|  | Measurement uncertainty*:* | |
|  | What is the time interval over which the measurements are averaged?        minutes | |
|  | Delay time for Snow Depth measurements*:*       minutes. | |
|  | Internal update cycle for the calculation of a new measurement value*:*       s.  Do you have a procedure for synchronization of the instrument’s calculation cycle with the clock of the data acquisition system?  *(You can refer to another document if available).* | |
| 4.5 | Do the original measurements require any corrections (e.g. temperature correction)?  Yes  No  Please give details which variables are used for correction and what kind of sensors:      If you need input from sensors of the station, please indicate and give details:    Are the values internally corrected  Yes  No  Algorithm for external correction: | |

| 5. | **General qualification for participation** |
| --- | --- |
|  | Total number of operational installations, at the time of the submission:  In case of new instruments: Number of intended installations in 2013: |
|  | How many instruments/systems do you intend to provide for SPICE?  Note: the SPICE IOC will decide where the instruments will be installed for the experiment.  Do you intend to provide any backup (full system or components of the system)?  Yes  No  If Yes, please provide details.  *Given the fact that it is a multi site experiment an increased number of instruments would allow testing of pairs as well as testing in different climatic regimes.*  *The International Organizing Committee will decide on the appropriate test site based on instrument properties, site climatology and logistic aspects.)* |

| 6. | **Sensor Interface** | |
| --- | --- | --- |
| 6.1 | *Serial Digital Output* | RS485  RS422  Ethernet |
|  | *Data Protocol* | SDI-12  proprietary ASCII  Other:  Please refer to manual |
|  | *Analogue output* | Current Voltage  Other  Please describe |
|  | *Note: If any interface than other Ethernet or RS485/422 is provided the participating institution/company should submit an appropriate converter (1 piece) with RS485/422 output.* | |
| 6.1 | *Does the instrument/system proposed require any specific data logging storing hardware and/or software?*  YES  No  *If Yes, please provide details, to allow a full assessment of the submission.*  *If Yes, the Instrument Provider is expected to provide any specialised interface (hardware, software) which is required to operate the instrument/system.*  *Sufficient information and support to the SPICE team is required to enable the configuration of the system.* | |

| 7. | **Information for field installation** | | |
| --- | --- | --- | --- |
|  | *Notes on the power supply: if necessary converters must be provided for available voltages at the Intercomparison sites* ***(e.g. 110 V for North America, 220 V for Europe)*** | | |
|  | Nominal power supply voltage:       V | Maximum total power consumption       W | |
|  | Heating of the instrument  Which parts of the instrument are heated and at what heating power?        heated by       W        heated by       W        heated by       W  Total maximum heating power:       W | | |
|  | Cable length for power supply      m for signal cable      m | | |
|  | *Notes on the cable lengths: Cable lengths for power supply and signal cable should be at least 6 m.* | | |
|  | *Notes on the amount of space for installation:* | | |
|  | Overall dimensions of the instrument, in cm  Length       **x** Width       **x** Height       cm | | Total weight        kg |
|  | Will you provide a mast that is suitable for the expected snow depth at the site? Yes  No  *Note: This is a multi-site Intercomparison. Depending on technical criteria and availability of space your instrument(s) will be proposed for installation at one or more sites.* | | |
|  | Dimensions: Length x Width x Height (in cm); and Weight (in kg) of main elements | | |
|  | Part id       L      x W      x H            kg | | |
|  | Part id       L      **x** W      **x** H            kg | | |
|  | Part id       L      **x** W      **x** H            kg | | |
|  | Part id       L      **x** W      **x** H            kg | | |
|  | Part id       L      **x** W      **x** H            kg | | |
|  | Requirements for installation (e.g. special mast, foundation etc.): | | |
|  | Will an expert give assistance with the field installation? Yes  No | | |
|  | Will an installation tools kit be provided? Yes  No | | |
|  | Any special tools required for the installation? Yes  No  Please describe | | |
|  | Special fixtures required for the installation? Yes  No  Please describe | | |
|  | Siting restrictions (e.g. clearance)? | | |

| 8. | **Operation and Maintenance** |
| --- | --- |
|  | Average maintenance period:       Maintenance tools and software required: |
|  | Any other special requirements to ensure proper operation? Yes  No  Please specify |
|  | Is additional equipment required for its operation? Yes  No  Please specify: |

| 9. | **Calibration** |
| --- | --- |
|  | *Note: Your instrument has to be calibrated before shipment and the calibration certificates shall be supplied with the instrument(s).* |
|  | Calibration reference used: |
|  | Recommended calibration intervals |
|  | Calibration procedure |

| 10. | **Shipment information** | |
| --- | --- | --- |
|  | *This section has to be filled out only if shipment is necessary.*  *The information should reflect one instrument.* | |
|  | Approx. commercial value       Euro | Total weight of consignment       kg |
|  | Number of boxes | Overall volume of boxes       cm3 |
|  | Overall dimension, in cm (i.e. for storage purposes)  Length       **x** Width       **x** Height       cm | |
|  | Other information concerning shipping | |

| 11. | **Documentation** |
| --- | --- |
|  | Appropriate documentation including detailed   * installation instructions and manuals * operation and maintenance manuals * calibration procedures   shall be provided in advance , but not later than the time of the shipment of the instrument (in electronic format). |
|  | Please note any other relevant information. |

| 12. | **Motivation** |
| --- | --- |
|  | What are your expectations from SPICE as an instrument proponent in excess of the objectives that are already stated in SPICE?  (see: http://www.wmo.int/pages/prog/www/IMOP/intercomparisons/SPICE/PR-6601-SPICE\_en-Annex.pdf)? |

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|  |  |  |
| Date |  | Name of person who completed this form |

Please return an electronic copy (MS-Word document) of the completed Questionnaire, as soon as possible, but not later   
than **15 March 2013** to**:**

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