

JERICO QUESTIONNAIRE

Task 4.1.1 Physical Sensors

(* Please provide a separate sheet for each parameter)

Laboratório de Calibração - Instituto Hidrográfico

Part b: Calibration

Parameter/measurand*: Conductivity

Unit of measurement: mS/cm

Range: 0-65 mS/cm

Accuracy: 0.005

Precision: -

Calibration uncertainty (if available): 0.005

1. How often do you calibrate the sensor/s or sensor system/s you are presently using for the specified parameter/measurand: please list the typical calibration interval/s you are employing; note that if you are calibrating irregularly, kindly specify why and when (e.g. before a deployment, following a malfunction, etc.).

Before a deployment or once a year.

(Add lines as necessary)

2. Please provide a brief description of the calibration setup, including a list of the principal equipment, reference material (certified and/or conventionally accepted) and instrumentation involved in a typical calibration operation.

- Conductivity reference: IAPSO standard sea water from OSIL;
- Salinometer Autosal 8400 B from Guildline with Autosal interface and software from OSIL;
- SBE 4 Conductivity sensor and pump from Seabird;
- 5 calibration bath with sea water and salinity from 2-40.

(Add lines as necessary)

3. Do you employ reference material which are mutable or unstable (e.g. secondary standards, reagent solutions, gas mixtures, pressure generators, etc.) to calibrate the sensor/s or sensor system/s you are presently using for the specified parameter/measurand. **No**

(if **Yes**, please list the types of this kind of reference material you are employing; kindly specify also the measures you take to guarantee the reliability of the reference material in terms of batch-to-batch uniformity of characteristics)

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(Add lines as necessary)

4. In your view, does your facility ensure an effective traceability chain for the specified parameter/measurand? **Yes**

5. Please provide a brief description of the procedures employed to ensure adherence of the performances of the principal equipment and reference instrumentation of the calibration setup to factory specifications (in-house monitoring of performance, in loco re-calibration, servicing by the manufacturer, etc.).

(Add lines as necessary)

6. Does your facility maintain a Manual with a description of the calibration method and the measuring procedures, together with details of sample treatment and preparation when these steps are present? **Yes**
(If **Yes**, kindly attach a copy to the completed questionnaire, otherwise please provide a short, description below)

__Based on the CTD Calibration Course by OSIL

(Add lines as necessary)

7. In your view, is regular factory calibration/servicing necessary to obtain optimal performances from your sensors/instrumentation for the specified parameter/measurand in the field? **Yes**
(If **Yes**, please provide details of the sensors/instrumentation, indicating also the intervals you recommend for factory calibration/servicing, below)

___Every two years the salinometer needs to come to the factory for servicing and calibration if necessary.

(Add lines as necessary)

8. Do you perform field calibrations for the specified parameter/measurand? **Yes**
(If **Yes**, please provide a brief description of the method and procedures)

__During oceanographic cruises *in-situ* calibration is performed accordingly with SCOR Working Group 51

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(Add lines as necessary)

9. Does your facility perform:

- internal quality audits to monitor and assess its calibration system for the specified parameter? **Yes**
- independent quality audits to monitor and assess its calibration system for the specified parameter? **No**

(If **Yes** to any of the above, please provide a brief description of the procedure/s applied, including a list of the principal equipment and instrumentation involved)

___ **ISO 17025**

(Add lines as necessary)

10. Does your facility actively maintain an archive containing issued calibration reports/certificates for the specified parameter/measurand? **Yes**

(If **Yes**, please specify the document retention time/s)

___ **three years**

11. Do you have any suggestions or ideas for improving the quality of your calibrations for any particular sensor/sensor system you are presently using for the specified parameter/measurand (e.g. innovative reference material, modifications to existing methodologies or new methodologies you have developed, etc.)? **No**

(if **Yes**, please provide a brief description of your ideas and/or suggestions, including the details of the sensor/s or sensor system/s)

(Add lines as necessary)

12. Do you have any suggestions or ideas for improving the general quality of the calibration of sensors or instruments for measuring the specified parameter/measurand (e.g. testing and promoting the use of new reference material, development of new methodologies, etc.)? **No**

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(if **Yes**, please provide a brief description of your ideas and/or suggestions)

(Add lines as necessary)

Submitted on: 2012-01-20

(Date)

Compiled by: Manuel Marreiros

(Name of respondent)