IMOS QC Summit

Hobart, 25 & 26 August 2011

Recommendations and Actions

General Recommendations

- Continue to work closely with the manufacturers (Seabird, Wetlabs and Teledyne) to understand the physics, electronics and mechanics of the instruments
- Build a compendium of sensor pathologies
- Develop a QC manual for the ANMN: informed by the ARGO experience
- All parameters (ADCP, moored and profiling CTD, DO, FLNTU) require working groups for QC
- ANMN QC requires resourcing and dedicated officers
- The QC Summit will be an annual September meeting at CMAR Hobart

QC recommendations

- Undertake delayed mode QC for CTDs with the MATLAB toolbox
- The agreed QC tests will be:
    - impossible date
    - impossible location
    - spike
    - gradient
    - regional range
- Fluorescence, ADCP outputs (velocities/backscatter) turbidity and DO will continue to be FV00 (no QC performed) until the working groups provide a method
- Nominate a person from each node to look at preliminary data for fluorescence and report back to the Bio-optics working group and the Facility leader
- Climatologies for range tests will be developed for Temperature and Salinity

- Bio-optics working group to recommend a strategy for the development of ranges for fluorescence

- Continue with research and development of automatic QC procedures for real-time data streams

Metadata Recommendations

- Include the serial number of the actual sensor as well as that of the instrument in the netcdf file (MATLAB toolbox)

- Include information on sensor model and versions, gain settings, firmware versions and hardware modifications such as the version of the BLIS system for the WQM in the netcdf file (MATLAB toolbox)

- Take photos of the instrument (sensor interfaces and cage) when recovered and upload the photo with netcdf file to eMii

- Calibration history should be included with the sensor history (eMII) and the MATLAB toolbox

- Need to revise storage of metadata (lineage) and what information these records contain (e.g. who is responsible for the data etc…should be part of the QC system)

- Push recommendations for naming back to the cf compliance people for those variables that don't have cf standard names (IMOS standard long names)

- Standard specifications (i.e. time formats, map projections etc…) to appear in the QC manual

Data recommendations

- Annotate the QC flags: why and how the data have been flagged in a specific way

- NetCDF file naming convention for QC is to be used (FV00, FV01, FV02)

- QC'd data (FV01) can be data which has been automatically QC'd and/or automatically and manually QC'd: the level of QC will be specified in the lineage box of the metadata file

- eMii will store both the raw file and latest version of QC'd file only; the lineage field contains the history of all changes to the file with equations (have a close look at current ARGO format and borrow from it)

- For FLNTU provide relative fluorescence using a scale factor

Calibration and pre-deployment recommendations

- Calibrate instruments (5-point calibration) as is done now and increase rigour of pre-deployment checks (2-point verification - characterisation): for the whole sensor package

- Standardised procedure of pre-deployment checks, including Robert Kaye's (CSIRO calibration lab) flat surface cap

- Develop a standard pre-deployment tanks for each site to check according to manufacturer's specifications (see AIMS fig 1)

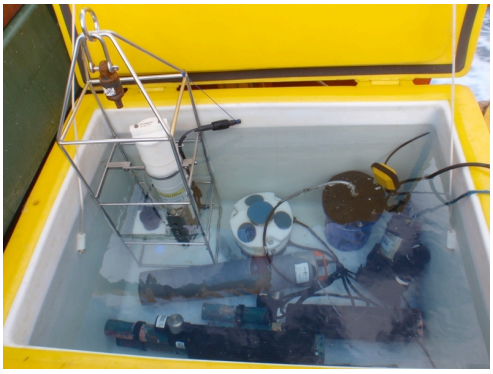

Figure 1. AIMS pre-deployment test rig ('The big esky')

- Calibration will be after 12 months of in-water time; though aqua-loggers and profiling CTD still need to calibrated every year whether they have been in water or not

- Expand the calibration report to include graphical history data

Working groups and forum recommendations

- Craig Steinberg from AIMS to form a working group for the ADCPs (tackling standard processing procedures and QC)

- Tim Ingleton and Brad Morris from SIMS will be resourced as the working group to determine QC for the profiling CTD

- Martina Doblin and the Bio-optics working group will continue to tackle QC standards for FLNTU

- Bee Morrello, Dirk Slawinski, Tim Lynch, Dave Hughes and Ben Howell will continue as the working group for moored CTDs

- Liase with Bronte Tilbrook to determine QC for Dissolved Oxygen

- The ANMN facility leader to join all working groups

- Procedure needed for the compilation of technical reports and a strategy for dissemination
- Procedure to take action on technical reports towards the pathology compendium and QC manual
- Establish an informal forum for user posts regarding deployments/instrument failures. The forum has to include email alerts - ROMS forum as an example.
- Publish recommendations

Resourcing recommendations

- Provide a business plan to the IMOS office for ANMN QC resourcing
- Resource bio-optics working group for research into QC for FLNTU

Actions

- All presenters to send Tim Lynch a paragraph summarising their presentations for preparation of a publication
- Robert Kaye to talk to EMII about how to upload the calibration data
- Tim Lynch to meet with Susan Wijffels and Anne Thresher to discuss the business model in comparison to the established ARGO QC program
- Craig Steinberg to send out an invitation to people to participate in the ADCP WG
- Tim Lynch to provide a business plan to Tim Moltmann regarding resourcing
- Brad Morris to research the type of forum for informal technical communications and its implementation
- Martina Doblin and Robert Kaye to write the procedures for the calibration and routine checks for FLNTU for the ANMN QC procedure manual
- Martina Doblin to propose a business plan for developing QC procedures for FLNTU
- Sub-facility leaders to determine thresholds for spike and gradient tests of CTD and provide to Dirk Slawinski for NRS ROT and ESP and to all others to Bee Morello
- Bee Morello and Ben Howell to co-ordinate with Guillaume Galibert for loading agreed ANMN QC procedures into the MATLAB toolbox