

## 1. ICOS RI

## 2. Ocean Thematic Centre

### Task 1. General management

In addition to the tasks described below, this task also includes the risk management according to the host institution, RICOM activities according to the RICOM Rules of Procedure, general communication, and dissemination of ICOS Science, involvement in the GA Info Days, meetings with the SAB and other organizational activities.

#### Task 1.1: Management and provision of the OTC capacity and related IT- and data management

Information flow within the network, tracking impact and use of the outputs supplied by the network

Attend MSA meetings twice per year to report on previous years actions and present next years workplan, plus other meetings as requested

Produce workplan for next year in Autumn in discussion with MSA and submit to head office

Monitor delivery of workplan via quarterly reviews

Produce Budget for next year in autumn.

Produce annual report in Spring for submission to GA

Report on Previous years expenditure in spring each year

Organise weekly OTC meetings

Produce newsletter and maintain website, plus social media presence

To welcome new stations and to liaise informally with potential new countries including Ned, Den, Iceland and Portugal not done yet

To run townhalls and similar events to publicise OTC actions ferry box talk

To support station funding renewals via e.g. letters of support or appearing at panels/ interviews

#### Task 1.2 Reporting

This task includes the preparation of the Annual Activity Report, the Annual Financial Report, the Annual Work Plan and the Annual Budget Plan.

**Deliverable 1:** OTC Annual report. This includes the Annual Activity Report submitted to the GA in spring and the financial report, the Annual Work Plan and the Annual Budget for the following year submitted to the GA in autumn and the 5-years Financial Plan, it is based on templates provided by the HO and it is submitted to the General Assembly and RI Committee.

### Task 2. Data management / Data production

#### Task 2.1 Data availability and quality

Track the data collection, flow, processing, quality and availability for all ocean stations. Ensure that data are contributed to relevant global data collections and national data centers where required. Also, to ensure prompt actions to solve potential critical situations.

### **Task 2.2 Maintain metadata records**

Ensure that station metadata is kept up to date in the Carbon Portal in response to updates provided by station PIs.

### **Task 2.3 Raw (Level 0) data transfer**

Ensure that all raw data from sensors deployed at ocean stations are archived in the Carbon Portal.

Ongoing.

### **Task 2.4: Ingest and Process Near Real Time (Level 1) data delivered to the OTC from stations**

Automatically ingest, process, and publish near real time data from those stations that provide it. Apply automatic quality control routines to give an initial quality assessment. Publish the data for community use through the Carbon Portal. Provide quick looks for station PIs to enable instrument monitoring using property-property plots. Monitor NRT data rates and quality to identify possible critical issues and raise them with the station PIs to determine any required actions.

Ongoing. Support for Pro Oceanus sensors added in 2022. Planning in progress for improved data flow and organisation at Carbon Portal.

### **Task 2.5: Produce and transmit of publication quality (Level 2) data**

Station PIs perform manual quality control on received data using the QuinCe tool developed for this purpose. Upon submission by the PI, final quality checks are performed by OTC staff before being published at the Carbon Portal. Transfer published datasets to global data collections (e.g. SOCAT) automatically where possible, or by OTC staff if automatic submissions are not available.

Ongoing. Engaging with Carbon Portal and external standards organisation (CF, BODC) to improve metadata coverage.

### **Task 2.6: Software development and maintenance**

Continuous development of the QuinCe tool used for data ingestion and quality control to improve usability for the station PIs, including support for new sensors, improved automated quality control (to improve L1 data quality), improved manual quality control tools, and reduce total time-to-publication of data from ocean stations.

Ongoing. New features to expand number of supported stations, many minor improvements, and fixes

**Deliverable 2:** Summary of data submissions and quality submitted to the Carbon Portal as part of the main report.

### **Task 3. Network coordination, training, and development**

#### **Task 3.1 Training to optimize and standardize performance of the network.**

To run one in person event per year in collaboration with the MSA on a subject of the MSAs choice (2023 likely to be hands on training).

Training event set up in Paris to focus on QUINCE ...

Ongoing training in Quince as required

Delivery at Paris Workshop  
Initial training for stations as they pass labelling: Polarstern, Thornton Buoy, Trans Carrier  
Continued support to existing users

Support externally funded and organised events (SOLAS; IOCCP; ICOS)

Devise Plan for Associate station membership, particularly around yachts etc. One off campaign.

Report on the Intercomparison from 2021 talk in Utrecht.

#### **Task 3.2 Station support**

Provide guidance and technical support for new installations at individual stations.

Monitor Gas standard distribution and supply

Conduct station ringarounds.

Undertake station visits Station Visits

**Deliverable 3** Report on network training and station support activities within main report (annually):

#### **Task 3.3 Labelling**

To assist stations with labelling process. New stations entering ICOS enter through the Labelling process in two steps which allows them to demonstrate that their methodologies and data quality are consistent with ICOS standards. The OTC assists with all stages of this process finishing with by recommending to the GA that a station should be labelled.

**Deliverable 4:** station labelling reports (continuous, summary in annual report)

2 in spring, one in autumn

#### **Task 3.4: New technology and new platforms**

To present the existing portfolio of work funded via external grants to the Monitoring Station Assembly, inviting collaborators as early adopters of the new technology/partners in future research grants for its exploration. Key current projects include the UK National programme, CLASS, the EU funded Programme George and the saildrone mission.

Focus effort on how stations can get involved George, not just a glossy presentation

Disconnect between MSA want to hear (solutions to problems now), and what is being supplied (very forward looking).

Underspend planning.

To lead on any internally funded technology projects

To assist MSA members with developing proposals for integrating new technology into their observing programmes

**Deliverable 5** Report detailing current status and activities of technology workstream

#### **Task 4. Projects and international (external) cooperation**

International collaboration and standardization are key activities to increase ICOS's visibility and ensure cross-RIs data interoperability. The OTC organizes continuous exchange with other similar RIs

George ENVRIFAIR, BlueCloud

globally and participates in national and international projects that strengthen ICOS's role in the scientific community. This task will ensure a proper flow of information, development, results and connections between the research projects and the ICOS OTC activities.

In 2023 Priorities are as follows

To deliver relevant parts of EU grants as follows

Ocean Improved Carbon Understanding (ICU). This 15MEu OTC lead grant involves a significant work element lead by OTC host institutions Exeter and NORCE focused on using ICOS (and other) data to evaluate the current state of the Ocean C Cycle

GEORGE, Large (10MEu) technology grant led by ICOS head office and OTC in collaboration with EMSO and Argo aimed at supporting the transition to autonomous observing

KADI, Capacity building grant led by ICOS head office aimed at supporting the development of a GHG observing system in Southern Africa with significant ocean element

EuroGOSHIP. EU Infrastructure development grant aimed at supporting network of sections that make inter alia observations of vertical ocean CO<sub>2</sub> profiles.

If funded the CarboAdvance training network due for resubmission at the end of 2022

To support or lead proposals in any areas identified by as being key expansion areas, or where ICOS is identified as a key contributor Thinking session tone OTC meeting, take thoughts to paris

**Deliverable 6** Report on Projects and International and extra-ICOS collaborations as part of the Annual activities report,

#### **Task 5. Other activities**

In addition to activities mentioned above, OTC may perform other activities that align with the processes in the ICOS RI Management Plan

In 2023 these include

To plan phase 3 of ICOS including budget discussions and extension scenarios

To contribute to the ICOS Fluxes document as required

Steve Helped

To contribute to ongoing actions around sustainability of the (Surface) Ocean CO<sub>2</sub> observing system including the JPI Oceans Ocean Carbon Capacities programme, the UN Decade Exemplar, the IOCCP/ G7 FSOI Surface pCO<sub>2</sub> task team and the WMO GHG observing system initiative.

Deliverable 7. Brief report on other activities included within overall report.