



December 2016 Monthly Status Report

Monthly Status Report (MSR) Release Date: January 18, 2017

Posting of TPOS 2020 First Report and Executive Summary Translations: After nearly a year of writing, multiple review cycles, and numerous hours of collaboration, The First Report of the TPOS 2020 project was published on 30 December 2016. This release marks a major milestone for TPOS 2020. The Executive Summary and the full First Report (Version 2 with an updated Figure 3.2) can be downloaded from the tpos2020.org website. The Executive Summary has been translated into Chinese, Japanese, Korean, and Spanish, (the French translation to be available shortly). These translations can be downloaded at tpos2020.org. Both TPOS 2020 Project members and the broader TPOS community are grateful to all who contributed to this Report. The Report contains a full list of authors, contributors and reviewers, as well as acknowledgments.

TPOS 2020 Resource Forum Second Meeting (TRF-2) Scheduled: In order to take maximum advantage of the 22 Recommendations and 17 Actions articulated in the First Report, and to facilitate the evolution of TPOS 2020 into the next phase of transition and implementation, the timing for a meeting of the TPOS 2020 Resource Forum (TRF) was deemed in order. The TRF-2 will be convened by Chairman, Craig Mclean, Assistant Administrator of the Office of Oceanic and Atmospheric Research, within NOAA. The meeting is scheduled to occur on 16-17 May 2017. The meeting will take place at the Hawaii Imin International Conference Center, East-West Center, Honolulu, Hawaii USA.

TRF-2 outcomes will include agreement on a response to the Recommendations put forth in the TPOS 2020 First Report, and the Roadmap for Transition and Implementation to be generated by the SC under the leadership of its Co-chairs, along with the endorsement of a Transition and Implementation Group (T&IG) and a future governance structure. The meeting will also seek to create a shared understanding of TRF member national interests and planning horizons, as well as the Terms of Reference and membership of the SC.

Formation of a Transition and Implementation Group (T&IG): This ad hoc group met for the second time to discuss TPOS 2020 status and begin consideration of next steps. The meeting informed the participants of the Project status and the TT projects discussed in the First Report. The Roadmap being prepared in advance of the TRF-2 meeting is being considered as a guiding document for the T&IG. It was further discussed that initially this group will function within TPOS 2020 but may ultimately be a part of an intergovernmental framework. During this exploratory call the participants were also asked to consider the group's scope and purpose, Terms of Reference content and context, as well as potential membership and a timeline.

Task Teams:

The Biogeochemistry Task Team Co-chairs Peter Strutton and Adrienne Sutton, were co-conveners of a special session at the American Geophysical Union (AGU) Fall Meeting, San Francisco, Dec, 2016 titled 'Biogeochemistry and Ecosystems of Tropical Pacific and Upwelling Systems'. The session included both talks and posters and several presentations with an emphasis on observing system design.

Modeling and Data Assimilation Task Team Co-chair Eric Guilyardi was one of 7 invited speakers at the AGU, ENSO Union session. The session solicited input from multidisciplinary physical, biological, and social scientists to advance the understanding, forecasting capability, and decision-making related to climate extreme events.

The Monthly Status Reports can be found at: www.tpos2020.org/monthly-status-report

KEY ACCOMPLISHMENTS AND NEAR-TERM PROJECT MILESTONES

Steering Committee

- Co-Chairs: Dr. Neville Smith, Retired / Dr. William “Billy” Kessler, NOAA PMEL

Current Month Activities:

- Provided ongoing content development and editing of the First Report.
- Conducted the second session of the T&IG.
- Provided guidance in support of TRF-2 with regard to planning and engagement.

Upcoming Activities:

- Continue to work with TRF and SC members to take optimal advantage of the upcoming TRF-2.
- Work with the SC to draft a Roadmap document in support of the First Report and its 22 Recommendations and 17 Actions.
- Conduct a series of meetings with WMO and intergovernmental membership.

Last Month's Activities:

- Provided content and leadership toward the completion of the First Report.
- Provided content and review of the SC-3 Report.

Published/Posted Materials:

- December 2016: TPOS 2020 First Report
- December 2016: TPOS 2020 SC-3 Report
- November 2015: TPOS 2020 SC-2 Report
- October 2015: CLIVAR Exchanges Article: *TPOS 2020 Project: The Role of Research and Innovation*
http://www.clivar.org/sites/default/files/documents/Exchanges_OceanObs_No67_0.pdf
- June 2015: The Mercator-Ocean Scientific Newsletter: “TPOS2020: TROPICAL PACIFIC OBSERVING SYSTEM FOR 2020” By S. Cravatte, A. Ganachaud, B. Dewitte, F. Hernandez, Newsletter #52 (<http://goo.gl/rKbvH6>)
- Mar. 2015: Published article in WMO Bulletin: “Progress in Observing and Predicting ENSO”, (Vol 64 (1) – 2015)
- Feb. 2015: US CLIVAR Variations: “ENSO observing system: Past, present, and future”
- Dec. 2014: TPOS 2020 Project Prospectus
- Dec. 2014 TPOS 2020 SC-1 Report
- Mar. 2014: Terms of Reference for TTs

Project Function:

The SC will provide scientific and technical oversight for the planning, system design, and implementation of the TPOS. This group will assess the evolving set of requirements through dialogue with relevant users and stakeholders, and coordinate a set of (pilot) projects designed to test and evaluate options. The SC will assess potential technology options for delivering a more effective and efficient TPOS including relevant scientific/expert panels and bodies. Together with the Resources Forum, the SC will manage communication and reporting.

Point of Contact:

Sr. Project Manager, Andrea McCurdy-> mccurdy@ucar.edu

Resources Forum

- Chair: Craig McLean, NOAA Oceanic and Atmospheric Research

Current Month Activities:

- Responded to TRF member questions related to the TREF-2.

Upcoming Activities:

- Confirm attendance at the TRF-2 (a requested RSVP date of 31 January 2017).
- Make TRF members aware of the translated versions of the Executive Summary.

Last Month's Activities:

- Created internal planning documents in support of the upcoming TRF-2 and extended invitations to TRF members and lead program managers.

Published/Posted Materials:

- July 2015: TRF-1 Report (available on the TPOS 2020 website)
- Mar. 2014: Terms of Reference (available on the TPOS 2020 website)

Project Function:

The TPOS 2020 TRF will facilitate and coordinate the provision of resources by member institutions required to advance TPOS 2020 activities based on recommendations from, and in consultation with, the TPOS SC. It will promote and encourage contributions from institutions, Official Development Assistance agencies, participating and non-participating countries, and expand membership of the TRF as necessary; including the exploration of bilateral and multi-lateral partnerships. The TRF will coordinate resources that may be applied to the TPOS, including necessary observing research, technology development/testing, modeling, scientific analysis, infrastructure (e.g., ship resources and/or deployment of observing assets), along with Project Management and travel support.

Point of Contact:

Sr. Project Manager, Andrea McCurdy-> mccurdy@ucar.edu

Backbone Task Team

- Co-Chairs: Susan Wijffels, CSIRO / Sophie Cravatte (SC Member), Centre IRD

This Month's Activities:

- Provided content and leadership toward the completion of the First Report.

Upcoming Activities:

- Work with TT membership to generate a timeline and milestones for the upcoming 12 to 18 months.

Last Month's Activities:

- Provided content and leadership toward the completion of the First Report.

Published/Posted Materials:

- Dec. 2014: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes)

Project Function:

Through an integrated approach the Backbone TPOS will achieve its objectives through a combination of in situ and remote sensing approaches, augmented as appropriate with advice from models and data assimilation. Sampling for the Backbone has as its goal to:

- (a) Observe and quantify the state of the ocean, on time scales from weekly to interannual/decadal;

- (b) Provide data in support of, and to validate and improve, forecasting systems;
- (c) Support calibration and validation of satellite measurements;
- (d) Advance understanding of the climate system in the tropical Pacific, including through the provision of observing system infrastructure for process studies; and
- (e) Maintenance and, as appropriate, extension of the tropical Pacific climate record.

Point of Contact:

Associate Project Manager, Ana Lara-Lopez-> Ana.Lara@utas.edu.au

Planetary Boundary Layer Task Team

- Co-Chairs: Meghan Cronin, NOAA PMEL / Tom Farrar (SC Member), WHOI

This Month's Activities:

- Provided content toward the completion of the First Report.

Upcoming Activities:

- Work with TT membership to generate a timeline and milestones for the upcoming 12 to 18 months.

Last Month's Activities:

- Provided content toward the completion of the First Report.

Published/Posted Materials:

- Dec. 2014: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes)

Project Function:

The observational needs regarding improved monitoring and modelling of ocean surface and near-surface processes are likely to have two components: sustained detailed observations and process studies. It is the role of this Task Team to identify which requirements are best met via a sustained observing effort (> 5 years-11), and which can be addressed with specific short-term process campaigns.

Point of Contact:

Deputy Project Manager, Lucia Upchurch-> lucia.upchurch@noaa.gov

Modelling and Data Assimilation Task Team

- Co-Chairs: Arun Kumar, NOAA / Eric Guilyardi, IRD

This Month's Activities:

- Co-chair Eric Guilyardi was one of 7 invited speakers at the AGU, ENSO Union session.
- Provided content toward the completion of the First Report.

Upcoming Activities:

- Work with TT membership to generate a timeline and milestones for the upcoming 12 to 18 months.

Last Month's Activities:

- Provided content toward the completion of the First Report.

Published/Posted Materials:

- Dec. 2014: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes)

Published/Posted Materials:

- Dec. 2014: Terms of Reference and Members (available on the TPOS 2020 website, see: Task Teams)

Purpose in Project:

A significant fraction of the observational effort will need to be directed towards improved understanding of processes and mechanisms, which in turn should be coordinated with a program of improved model parameterizations and reduced systematic error; an additional benefit is that such data/model studies also contribute to improved design and reduced inefficiencies of the observing system.

Point of Contact:

Associate Project Manager, Lucia Upchurch, interim-> lucia.upchurch@noaa.gov

Biogeochemistry Task Team

- Co-Chairs: Adrienne Sutton, NOAA PMEL / Pete Strutton (SC Member), Univ. of Tasmania

This Month's Activities:

- Co-chairs were co-conveners of a special session at the AGU Fall Meeting titled 'Biogeochemistry and Ecosystems of Tropical Pacific and Upwelling Systems'.
- Provided content toward the completion of the First Report.

Upcoming Activities:

- Work with TT membership to generate a timeline and milestones for the upcoming 12 to 18 months.

Last Month's Activities:

- Provided content toward the completion of the First Report.

Published/Posted Materials:

- Dec. 2014: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes)

Project Function:

The role of the Biogeochemistry Task Team (BGCTT) is to evaluate and recommend the most promising focii, and to provide advice on possible solutions. The Biogeochemistry Task Team will begin with carbon biogeochemistry as its core scientific concern. Here will be the consideration of the term biogeochemistry to include primary productivity (noting that the Backbone Observing System likely includes ocean color satellites) but not higher trophic levels (zooplankton to fish).

Point of Contact:

Associate Project Manager, Ana Lara-Lopez-> Ana.Lara@utas.edu.au

Eastern Boundary Task Team

- Co-Chairs: Yolande Serra, University of Washington / Ken Takahashi (SC Member), Instituto Geofísico del Perú

This Month's Activities:

- Provided content toward the completion of the First Report.

Upcoming Activities:

- Work with TT membership to generate a timeline and milestones for the upcoming 12 to 18 months.

Last Month's Activities:

- Provided content toward the completion of the First Report.

Published/Posted Materials:

- Jul. 2015: Terms of Reference (available on the TPOS 2020 website, see: Groups and Outcomes).

Project Function:

Task Team to focus on the eastern Tropical Pacific boundary region; giving priority to engaging regional experts and institutions. In addition to defining needed observations, goals of the TT could include: (a) Capacity building for improved sustained observing capability; and (b) Facilitation of the development of a regional research project, which may contribute guidance toward a sustained observing system.

Point of Contact:

Associate Project Manager, interim -> Lucia Upchurch, lucia.upchurch@noaa.gov

Western Pacific Task Team

- Co-Chairs: Janet Sprintall, Scripps / Kentaro Ando, (SC Member) JAMSTEC

This Month's Activities:

- Provided content toward the completion of the First Report.

Upcoming Activities:

- Work with TT membership to generate a timeline and milestones for the upcoming 12 to 18 months.

Last Month's Activities:

- Provided content toward the completion of the First Report.

Published/Posted Materials:

- Feb. 2016: Terms of Reference (available on the TPOS 2020 website, see: Task Teams).

Project Function:

This group will take advice on a project to be conducted in the Western Pacific. Once underway they will advise on mechanism for the project's development and oversight.

Point of Contact: Guang Yang-> gyang@fio.org.cn

Distributed Project Office

This Month's Activities:

- Supported the final edits, formatting, release, and posting of the First Report.
- Coordinated the finalization, formatting, and translation of the First Report Executive Summary.
- Worked with SC Co-chairs and leadership to complete and post the SC-3 Report.
- Supported TRF Secretariat requirements for the invitation and confirmation of TRF-2 attendees and associated member needs.

Upcoming Activities:

- Support TT Co-chair activities related to the drafting of TT 12-18 month milestones and plans.
- Creation of Project Year Three Integrated Master Schedule.
- Ongoing planning and member-related activities in support of the TRF-2.
- Coordinate and launch engagement activities related to the TRF-2 and SC-3 Tracked Actions.

Last Month's Activities:

- Supported the required edits and changes related to the First Report.
- Coordinated the translation of the First Report Executive Summary.
- Worked with SC Co-chairs and leadership to draft the SC-3 Report.
- Supported TRF Secretariat requirements for the invitation and confirmation of TRF-2 invitations and member needs.

Published/Posted Materials:

- Released: Engagement Plan V2
- Released: Project Management Plan V1
- Released: Project Execution Plan V1

Project Function:

The DPO will develop communications, and coordination tools that will facilitate integrated decision-making, and provide access to relevant deployment and observing asset decision making tools. The DPO will support the suite of tools and activities required to track the commitments to all aspects of TPOS 2020 and to facilitate integrated decision making across networks, groups, agencies, and nations; during the project and throughout the lifecycle of the observing system beyond TPOS 2020.

Point of Contact:

Senior Project Manager -> Andrea McCurdy, mccurdy@ucar.edu

CROSS-PROJECT DEPENDENCIES AND OPPORTUNITIES

The Roadmap responding to the Recommendations and Actions articulated in the TPOS 2020 First Report will be drafted and reviewed in March 2017 in preparation for the TRF-2 meeting in May.

PROJECT SCHEDULE

- The TPOS 2020 First Report was released in December 2016. It is posted online at: tpos2020.org
- The Task Teams are now creating 12-18 month timelines and deliverables.
- The TRF-2 meeting scheduled to be conducted in Honolulu, Hawaii on 16-17 May 2017.
- The SC-4 meeting planned to be conducted in Seattle, Washington in October 2017.

SPONSOR CONTRIBUTIONS

In addition to the in-kind self-support agreed to during the January TPOS Workshop, the following explicit sponsorships have been recorded thus far:

- **October 2016: Dirección de Hidrografía y Navegación and Instituto Geofísico del Perú hosting of SC-3 in Lima, Peru**
- June 2016: NOAA announced \$4.5M in funding for new observing technologies for ENSO research and predictions: <http://cpo.noaa.gov/AboutCPO/AllNews/TabId/315/ArtMid/668/ArticleID/537981/NOAA-announces-45M-in-funding-for-new-observing-technologies-for-ENSO-research-and-predictions.aspx>
- February 2016: The project welcomed Dr. Guang Yang as Associated Project Manager sponsored by the First Institute of Oceanography and hosted by the International CLIVAR office in Qingdao, China.
- October 2015: SC-2, CSIRO as host, IMOS and IMAS providing event support in Hobart, Tasmania, Australia
- October 2015: SC-2 and Backbone TT participant travel assistance provided by NOAA, NASA, and IOC
- August 2015: PACE-NET PLUS is supporting expert speaker and participant travel, and local costs at the Backbone Task Team face to face meeting at IRD in Noumea, New Caledonia.
- August 2015: NOAA COD and NASA providing travel support for Backbone Task Team member travel and DPO support of the face to face meeting in New Caledonia.
- April 2015: Launched DPO Node negotiations with the First Institute of Oceanography (FIO) of China, for possible initiation in late 2015
- Mar. 2015: Integrated Marine Observing System (IMOS), DPO Node (Associate Project Manager and SC-2 Support)
- Dec. 2014: NOAA Climate Office, DPO Support (0.5 FTE DPO Project Manager)
- October 2014: KIOST, SC-1 Hosting
- October 2014: GOOS support for SC-1; GCOS for WMO and IOC briefings
- Aug. 2014: NOAA PMEL – Project Management Support (0.2FTE DPO Deputy Project Manager)
- Aug. 2014: NASA - Interim Project Management Support (0.30 FTE in 2014)
- Jul. 2013: OOPC Project Management and Coordination (Secretariat)