

TPOS 2020 Monthly Status Report November 2015

Monthly Status Report (MSR) Release Date: December 15, 2015

Summary:

Building on the momentum gathered at the SC-2 meeting in Hobart, the SC and TT Co-Chairs began the critical work of responding to immediate Actions agreed to at the SC-2 meeting and in the subsequent Report. Activities this month also focused on initial preparations for the content of the 2016 Interim Report. The draft timeline for next year's Interim Report activities are provided below:

- 1. Selection of Coordinating Lead Authors [done] and Lead Authors
- 2. Preparation of 1st draft Interim Report outline
- 3. Agree to a Review Process:
 - a. First Review (by experts; March 2016).
 - b. Preparation of revised/2nd draft
 - c. Second Review (by stakeholders and experts; June-July 2016).
- 4. Preparation of final draft Report
- 5. Acceptance of Report at the 3rd Session of the TPOS 2020 Steering Committee

Ongoing activities related to the Interim Report will be provided in this summary, and tracked within the "Cross-Project Dependencies and Opportunities" section of this document.

Highlights:

Steering Committee:

- Released the TPOS 2020 SC-2 Report (distributed via email and posted on the TPOS 2020 website)
- Supported TT membership formation among the Western Pacific and Modelling and Data Assimilation TTs
- Worked with the Backbone TT on an initial outline of the Interim Report and lead author contributions

Backbone Task Team:

• Review of draft paragraphs with rationale for strawman designs of the TPOS backbone

Biogeochemistry Task Team:

• The team has under consideration the possibility of conducting a questionnaire designed to gather input from the broader community on BGC issues in the tropical Pacific.

Modelling and Data Assimilation Task Team:

• The TT Co-Chairs have agreed to membership and are preparing for an initial telecon in January 2016.

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

Additional Information: Please visit the website at: www.tpos2020.org Send comments and questions to: info@tpos2020.org Follow us on Twitter: @TPOS2020

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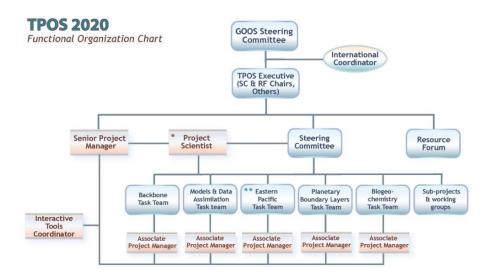
Background: The TPOS 2020 Project will evaluate, and where necessary advocate change in all elements that contribute to the Tropical Pacific Observing System (TPOS), based on a current understanding and technical capability. The project aims for enhanced effectiveness for all TPOS stakeholders, and informed by the development and on-going requirements of the operational prediction models that are primary users of TPOS data. TPOS 2020 embraces the integration of diverse sampling technologies, with a deliberate focus on robustness and sustainability, and will deliver a legacy of improved governance, coordination and supporting arrangements.

The Project will work within the Framework for Ocean Observing developed by the Global Ocean Observing System (GOOS) and use GOOS as a reporting mechanism to other relevant intergovernmental coordination mechanisms. A sustainable TPOS will be the principle outcome and legacy for GOOS. As such, TPOS 2020 will operate primarily as an independent Project and work through its sponsors to ensure all dependencies and links are appropriately managed. Four primary elements are included in the governance of the Project:

- <u>A TPOS 2020 Steering Committee</u> responsible for oversight, coordination, and guidance to the Task Teams, Sub-projects and Working Groups.
- <u>A Resources Forum</u> drawn from sponsors and responsible for coordinating resources.
- An Executive populated from the leadership of the above and responsible for reporting.
- <u>A Distributed Project Office</u> focused on coordination activities, supported and resourced by the sponsors.

It is through its partnerships and governance structure that TPOS 2020 will design a modern, sustained tropical Pacific observing system that meets both science and societal needs.

The project prospectus can be located online at: www.tpos2020.org/prospectus



* This role is currently being explored and developed ** This Task Team and its role are still under consideration

KEY ACCOMPLISHMENTS AND NEAR-TERM PROJECT MILESTONES

Steering Committee

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

Current Month Activities:

- Released the TPOS 2020 SC-2 Report (distributed via email and posted on the TPOS 2020 website)
- Supported TT membership formation among the Western Pacific and Modelling and Data Assimilation TTs
- Worked with the Backbone TT on an initial outline of the Interim Report and lead author contributions
- Neville Smith provided a briefing to Craig McLean (TRF Interim Chairman) and PMEL Director, Dr. Chris Sabine on 13th Nov.
- Billy Kessler and Neville Smith provided a briefing to Joe Pica (NOAA TRF Resource Forum member) and NDBC at on the 13th Nov.

Upcoming Activities:

- Work with Backbone and TTs to Interim Report schedule, coordinating lead authors, and lead authors
- Work with the DPO to establish and Engagement Action Panel and timeline
- Work with the TTs to plan for upcoming meetings and cross-project needs

Last Month's Activities:

A review of SC Co-Chair led discussions at SC-2 are below:

- <u>Initial Assessment of Progress and Achievements</u>: The Steering Committee was comfortable that the Project was largely on track and was garnering interest and engagement appropriate to its status as a major international project. The organisational structure seems appropriate. The SC recognized that the level of engagement across the major stakeholder varied; more needs to be done to grow participation.
- <u>Sequence Of Major Outputs From TPOS 2020</u>: The Co-Chairs outlined a staged process, with an initial "Interim Report" published in 2016; a Mid-term Report publish in 2018, and a Final Report with the closure of the Project in 2020. The Interim Report would contain initial recommendations for the design of the Backbone (the outline was described at this meeting), but also a synopsis of initial results and plans for the various initiatives sponsored by TPOS 2020.
- <u>The Process of Transition</u>: Initial thoughts suggest the transition process should be initiated at around the time of the publication of the Interim Report (late 2016). Change management/transition should be in place in parallel with the staged delivery of advice. The Co-Chairs noted that any process would require consultation and discussion with stakeholders including GCOS, GOOS, JCOMM, CLIVAR, among others.
- <u>The Backbone Review Process</u>: After some discussion it was agreed that an author team should be identified for major reports. In the case of the initial Backbone Report, the BB Task Team Co-Chairs would act as Coordinating Lead Authors, with 6-8 supporting Lead Authors drawn from the BB and other Task Teams. A diversity of views and expertise should be present.
- <u>Additional Backbone Matters</u>: The Steering Committee agreed that TPOS 2020 should seek opportunities to have various backbone options assessed by the ocean and climate modelling and data assimilation communities, along with surface waves and inundation forecasting.
- <u>Planetary Boundary Layer Studies</u>: The SC generatated a series of Actions to promote the cross-project discussions required to progress with the studies discussed during the meeting. (See PBL TT Section)
- <u>Western Pacific Task Team</u>: The Steering Committee welcomed Dr Ken Ando's offer to be the Co-Chair from the TPOS TT and supported his suggestion to contact Alex Ganachaud as a possible Co-Chair. In addition to the items for consideration in the draft report, the SC agreed to Terms of Reference for the TT, the Committee also discussed the important of alleviating risks associated with Western Pacific moorings.
- <u>Follow-up on Modelling Discussion</u>: The SC also noted the requirement to provide advice, and facilitate discussions, between other Task Teams and the external modelling and data assimilation community (e.g., on NWP systems for the Backbone; atmospheric modelling for the Eastern Pacific).

Non SC-2 Activities are below:

- Conducted draft SC-2 Report and conducted an initial review
- Billy Kessler visited FIO and briefed on TPOS 2020. The session was highly rewarding due to the high level of engagement among attendees.
- Billy Kessler also met with Moon-Sik Suk of KIOST and discussed the high-level objectives of TPOS 2020 and the process is to define the variables that need sampling, and the spatial and temporal scales of that sampling. The next step will be to describe an integrated system that takes full advantage of both remote and in situ techniques, and that will be attractive to governments and agencies around the Pacific.
- Neville Smith presented at the GODEA GOV meeting in Sydney generated good discussions, particularly
 around models and systematic errors. Tony Lee was able to develop the discussions around budget
 closure and the GOV MEAP TT will hold discussions with TPOS BGC TT around possible synergies, side
 conversations also focused on Project's satellite challenges.

Published/Posted Materials:

- November 2015: TPOS 2020 SC-2 Report
- October 2015: CLIVAR Exchanges Article: *TPOS 2020 Project: The Role of Research and Innovation* <u>http://www.clivar.org/sites/default/files/documents/Exchanges OceanObs No67 0.pdf</u>
- 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 (<u>http://goo.gl/rKbvh6</u>)
- 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-> amccurdy@oceanleadership.org

Resources Forum

Chair: Craig McLean, NOAA Oceanic and Atmospheric Research

Current Month Activities:

• Participated in briefing from SC Co-Chair Neville Smith.

Upcoming Activities:

• 2015 and 2016 Milestones and opportunities for meetings reviewed by members.

Last Month's Activities:

• No activities reported during this period.

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, modelling, 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-> <u>amccurdy@oceanleadership.org</u>

Executive

This Month's Activities:

• No reported outcomes this month

Upcoming Activities:

• Formal responsibilities and ToR to be drafted in summer 2015

Published/Posted Materials:

• There are no published materials at this time.

Project Function:

Under development by the SC Co-chairs and TRF Chair

Point of Contact:

Sr. Project Manager, Andrea McCurdy-> amccurdy@oceanleadership.org

Backbone Task Team

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

This Month's Activities:

- Chairs from the PBL and EP TT and the BB TT provided initial paragraphs with rationale for strawman designs of the TPOS backbone
- Conducted a meeting to discuss backbone strawman and start preparation of the Interim Report

Upcoming Activities:

- Paragraphs on the major thrusts (listed below) of the Backbone Strawman are being drafted and reviewed by TT members and collated by APM Lara-Lopez.
 - Develop the Wyrtki challenge, initially through undertaking a small simulated sampling study using a high-resolution ocean model output
 - Consider Western Boundary Transports as a pilot activity, in parallel with the initial Backbone recommendations, to refine approach, bring in modelling, etc. with a view to bringing back recommendations later in TPOS 2020.
 - Explore the AMMOR3D quantitative assessment of an integrated Argo, altimeter, mooring observing system, and potentially use the Atlantos OSE/OSSE workshop (December) to develop joint work.

 Through the Modelling and Data Assimilation, and in collaboration with the PBL TT, seek links for atmospheric and wave expertise (e.g., with in JCOMM, WGNE, AOPC) around specific points of concern.

Last Month's Activities:

A review of this Task Team's session at SC-2 is below:

- The TT presented the first set of recommendations on the process for achieving a new configuration of the Backbone of the TPOS, together with a list of pilot elements that could contribute to the evolution and refinement of the TPOS design as prepared at the Nouméa, New Caledonia September meeting.
- The BB TT Co-Chairs then stepped through an initial BackBone Strawmen, emphasising that the presentation was a draft only, to stimulate community input and focus consultation. They noted that the range of capabilities available has changed significantly since the original tropical Pacific/ENSO network was designed. The major new thrusts (measurement characteristics) included:
 - Improved integration of satellite data streams into the observing system design, including for calibration;
 - Tracking ocean variability at *weekly* as well as longer timescales;
 - Higher temporal and vertical resolution in the oceanic boundary layer;
 - Priority on quality and continuity (space and time) to main and strengthen the climate record;
 - Better resolution of near equatorial and near surface ocean physics across ENSO cycles and regimes;
 - A stretch goal of monitoring the volume, heat and freshwater inflows and outflows of the Pacific tropical region including the low-latitude western boundary currents (LLWBCs) and the Indonesian Throughflow (ITF); and
 - Improved ability to diagnose air-sea exchanges of heat and freshwater in all regimes, including the South Pacific Convergence Zone (SPCZ) and the ITCZ.
- The presentation also generated discussion on the way the (initial) Backbone TT Report would be reviewed, and how this process would be coordinated and scheduled with other TPOS 2020 work.
- The session also included a discussion of one of the proposed pilot studies, the so-called "Wyrtki Hypothesis Revisited": an attempt to close the mass, heat, and freshwater budgets in regions of long zonal extent between 8°N and 8°S.

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-> <u>Ana.Lara@utas.edu.au</u>

Planetary Boundary Layer Task Team

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

This Month's Activities:

• Conducted a telecon to review and plan to meet SC-2 Actions. Several near- and mid-term goals were discussed and agreed to.

Upcoming Activities:

- PBL TT Co-Chairs will produce a synopsis of the survey responses for inclusion in the SCV meeting Report
- The Steering Committee also agreed that a small group should investigate the potential value of a followup survey.
- Provide a paragraph describing philosophy of grid-like vs. regime based PBL observations, and propose a strawman of how these should be implemented in the sustained in situ array
- Provide input to US NRC Decadal Survey on Earth Sciences (dealing with satellite needs for TPOS) and to the Wentz et al. report of the International Ocean Vector Winds Science Team.
- Provide Process Study 2-4 page prospectus-like documents that lay out scope and rationale within the context of TPOS, its goals and possible participation. Topics will include YMC, diurnal-multiscale variability, equatorial Pacific upwelling and mixing, and Double ITCZ.

Last Month's Activities:

A review of this Task Team's session at SC-2 is below:

- There are a number of challenges in understanding the requirements for PBL observations (whether in sustained or campaign mode), and then to determine the best design for sampling and technologies to meet those requirements.
- The session included a review of the TT conducted Survey which consisted of eight questions broadly around the design of the PBL observing system component.
 - The questionnaire sent to about 90 tropical Pacific PBL experts worldwide on August 26 with a deadline for responses of September 10, 2015.
 - By October 13, 34 responses had been received but some are still coming in.
 - By most measures, this is an excellent level of response.
- The strawmen that have been developed thus far by the Team were introduced:
 - Years of the Maritime Continent (YMC)
 - o Diurnal cycle
 - Equatorial Upwelling, Mixing Physics
 - o Double ITCZ Process Study

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-> https://www.ucia.upchurch@noaa.gov

Modelling and Data Assimilation Task Team

This Month's Activities:

• The TT Co-Chairs have agreed to membership and are preparing for an initial telecon in January 2016.

Upcoming Activities:

• Final membership and ToR will be posted to the website during December.

Last Month's Activities:

A review of this Task Team's session at SC-2 is below:

- Currently the Co-Chairs are in the process of populating the M&DA TT membership and expect to have their first meeting by the end of 2015.
- The session covered some of the scientific rationale for establishing the TT, including systematic errors in coupled models and data assimilation systems, and the recognition that the current generation of ocean data assimilation systems do not make full use of observational data, e.g., ocean currents.

Published/Posted Materials:

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

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 parameterisations 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:

- A BGC TT meeting was held with most BGC TT members in attendcane .
 - The meeting gave a summary of the SC-2.
 - The team has under consideration the possibility of conducting a questionnaire designed to gather input from the broader community on BGC issues in the tropical Pacific.

Upcoming Activities:

- Consider questions for a survey designed to engage a larger discussion of how best to accommodate BGC in TPOS2020, prioritize a list of BGC variables, and identify needed new technologies.
- Analysis of model output to determine the important time and space scales to resolve.
- Analysis of model data to determine the best longitudes to focus process studies on source waters to the equatorial undercurrent (165°E, 110°W).
- Continued communication on how the draft Backbone observing system is evolving and how it is suiting the needs of the BGCTT.

Last Month's Activities:

A review of this Task Team's session at SC-2 is below:

- The BGC TT had identified 4 core motivating science questions and created writing teams to flesh these out. The Co-Chairs provided some further elaboration of these themes. The BGC TT identified four broad scientific questions/ requirements:
 - Long-term change

- Natural variability
- Source waters: Source waters carry an anthropogenic (preformed) CO2 signal which we need to distinguish from natural variability.
- Ecosystem impact
- The BGC TT also presented a number of Pilot Project ideas, including technology development and process studies that may be necessary to implement biogeochemical contributions to TPOS. These included:
 - Pilot 1: New autonomous surface vessel
 - Pilot 2: Modelling to determine key time and space scales of observations
 - Pilot 3: Biogeochemical sensors on enhanced floats
 - Pilot 4: Long range AUVs

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-> <u>Ana.Lara@utas.edu.au</u>

Eastern Boundary Task Team

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

This Month's Activities:

- Ongoing online discussion regarding further development of TT strawmen
- Participated in the Backbone TT teleconference, providing input on Backbone strawman design and rationale

Upcoming Activities:

- Next teleconference scheduled for Dec. 22
- Take the Eastern Pacific equatorial-coastal waveguide & upwelling system ideas to the next stage in the form of a Pilot Project that might be used to test technology options and to provide further insights on the eastern Pacific elements of the Backbone and other contributions to TPOS.
- Engage atmospheric scientists, modellers and specialists in convection, among others in a dialog focused on a possible Eastern Pacific ITCZ/warm pool/cold tongue/stratus system strawman study.

Last Month's Activities:

A review of this Task Team's session at SC-2 is below:

- The TT has been focused on developing two initial strawmen for the region:
 - Eastern Pacific equatorial-coastal waveguide & upwelling system:
 - This strawman focused on the need to document, monitor and predict the variability of the physical and biogeochemical coastal environment and its impact on the productivity on intraseasonal to interannual scales associated with the forcing from the equatorial region, particularly Kelvin waves, and the local processes.
 - Eastern Pacific ITCZ/warm pool/cold tongue/stratus system:
 - The main thrust here is observing the atmosphere and ocean from the stratocumulus region off South America, northward into the tropical northeast Pacific ITCZ region. This

transect is highlighted as a primary focus area for an eastern Pacific observing system to address the double ITCZ problem, a major bias in nearly all climate models that has persisted through several versions of CMIP with little improvement.

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, <u>lucia.upchurch@noaa.gov</u>

Western Pacific Task Team

This Month's Activities:

- TT Chair Ken Ando will begin coordination of an inaugural teleconference in early 2016
- ToR and membership were agreed to.

Upcoming Activities:

- ToR and Membership to be posted on the website
- Agree to suggested activities at the SC-2 and a timeline:
 - The issue of coordination of ship time (short- and long-term) is a priority. The WPSG Report highlighted the opportunities for better coordination and cooperation and that NPOCE, SPICE, YMC and the WESTPAC-led Cooperative Studies of the Kuroshio (CSK) feasibility study might provide a foundation upon which a more substantial collective effort might be built.
 - The WP TT noted that (a) a forthcoming high-level SOA-NOAA meeting (late 2015) and (b) a delayed China-Japan-RoK high-level officials' workshop (possibly Q1 2016 in Qingdao, China) do provide opportunities to engage, and supported investigating both these opportunities.
 - \circ ~ The Solomon Islands research and SPICE could be important contribution to a process study.

Last Month's Activities:

During the SC-2 it was agreed that this Small Working Group become a Task Team. A review of this Task Team's session at SC-2 is below:

- It was discussed that there would be benefit to all by joining WP activities together as an integrated whole, including connecting up the science rationales. Such integration may raise opportunities for greater collaboration, and could also lead to discussions about what a sustained regional observing system for the Western Pacific could look like post 2020.
- The US, Japan, China, Australia and the Republic of Korea all have plans at various stages of development relevant to the TPOS 2020 period, and beyond. Engagement with SE Asian agencies in these research activities was strong (e.g. Indonesia, Philippines).
- The Steering Committee broadly supported the development of links to the ITF work and Indian Ocean GOOS/Indian Ocean Panel, and to the Years of the Maritime Continent study.
- There is potential to test new technologies (e.g., micro-floats, JAMSTEC TRITON) and strong relevance to intraseasonal timescales (e.g., monitoring and forecasting the Madden-Julian Oscillation).

Published/Posted Materials:

• No publications to date

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: TBD-> info@tpos2020.org

Distributed Project Office

This Month's Activities:

- In collaboration with the SC released the SC-2 Report
- Conducted initial redesign review of website content, layout, and function
- Ongoing support of TT activities responding to new Actions and upcoming Interim Report milestones

Upcoming Activities:

- Work with the SC Co-Chairs to agree on an initial Engagement Action Panel and timeline
- Initial creation and distribution of Action Tables or Annual Work Plan (AWP) for tracking by appropriate TT and groups
- Ongoing review and input into the development website and Intranet

Last Month's Activities:

- Supported the SC-2 meeting needs
- Distributed TT and TPOS Contributions briefs to meeting attendees
- Created a draft Engagement Plan timeline based on discussions during the SC-2
- Assessed TT and project coverage by DPO resources
- Brought online a consultant to assist with the website reorganization

Published/Posted Materials:

- Released: Project Management Plan V1
- Consultative Draft: 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.

CROSS-PROJECT DEPENDENCIES AND OPPORTUNITIES

The draft timeline for 2016 Interim Report activities are provided below. This highly collaborative endeavor will be led by the Backbone TT with contributions from all project groups along with external authors and reviewers:

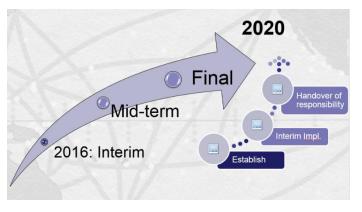
- 1. Selection of Coordinating Lead Authors [done] and Lead Authors
- 2. Preparation of 1st draft Interim Report outline
- 3. Formalize the Review Process:
 - First Review (by experts; March 2016).
 - Preparation of revised/2nd draft
 - Second Review (by stakeholders and experts; June-July 2016).
- 4. Preparation of final draft Report
- 5. Acceptance of Report at the 3rd Session of the TPOS 2020 Steering Committee

PROJECT SCHEDULE

During the SC-2 the Co-Chairs outlined a staged process, with an initial "Interim Report" published in 2016; a Midterm Report publish in 2018, and a Final Report with the closure of the Project in. The Interim Report would

contain initial recommendations for the design of the Backbone (the outline was described at this meeting), but also a synopsis of initial results and plans for the various initiatives sponsored by TPOS 2020.

The Co-Chairs noted that nothing is "final" until 2020 but that interim reports or updates should progressively guide stakeholders on recommended changes, with indications on the degree of confidence (certainty). Within this context of phased reports, the Backbone Task Team can be regarded as the focus of consolidation and prioritisation, with the other Teams leading innovation and change.



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 2015: SC-2, CSIRO as host, IMOS and IMAS providing event support
- 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)