

WORLD METEOROLOGICAL ORGANIZATION

**INTERGOVERNMENTAL OCEANOGRAPHIC
COMMISSION (OF UNESCO)**

**JOINT WMO/IOC TECHNICAL COMMISSION FOR
OCEANOGRAPHY AND MARINE METEOROLOGY
(JCOMM)**

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SHIP OBSERVATIONS TEAM (SOT)

ITEM: 10.1.4

EIGHTH SESSION

CAPE TOWN, SOUTH AFRICA, 20-24 APRIL 2015 Original: ENGLISH

GLOBAL TEMPERATURE AND SALINITY PROFILE PROGRAMME (GTSP) REPORT

(Submitted by Charles Sun (USA), GTSP Chair)

Summary and purpose of the document

This document provides information on the development and activities of the Global Temperature and Salinity Profile Programme (GTSP) since the last SOT meeting, including GTSP daily operations, the first IODE Ocean Teacher Academy Training Course on the Use of the GTSP data, and the integration of the GTSP and WOD (World Ocean Database).

ACTION PROPOSED

The Team will review the information contained in this report, and comment and make decisions or recommendations as appropriate. See part A for the details of recommended actions.

Appendices: A. GTSP Report to SOT-8

- A - DRAFT TEXT FOR INCLUSION IN THE FINAL REPORT

10.1.4.1 Dr. Charles Sun (USA), Chairperson of the Global Temperature and Salinity Profile Programme (GTSP) submitted a written report on the development and activities of the GTSP, including GTSP daily operations, the first IODE Ocean Teacher Academy Training Course on the Use of the GTSP data, and the integration of the GTSP and WOD (World Ocean Database).

10.1.4.2. The Activities implemented between April 2013 and March 2015 include:

- (i) GTSP daily operations to process and preserve both real-time and non-real-time temperature and salinity data and maintained the project web sites (i)¹ by the Center for Coasts, Oceans, and Geophysics (CCOG), former NOAA National Oceanographic Data Center and National Geophysical Data Center, USA and (ii)² by Oceanography and Scientific Data (OSD), Department of Fisheries and Oceans, Canada;
- (ii) Populated the outcomes of the comparison between observed versus model-simulated temperature data for the North Pacific Region (see website³) by Japan Meteorological Agency (JMA), Japan;
- (iii) Held the second session of the Joint IODE-JCOMM Steering Group of the GTSP (SG-GTSP), 17-20 June 2014, Oostende, Belgium;
- (iv) Held the first IODE Ocean Teacher Academy Training Course on the Use of the Global Temperature and Salinity Profile Programme Data, 23-27 June 2014, Oostende, Belgium; and
- (v) Reported to the Twenty-third (23rd) Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXII), 17-20 March 2015, Bruges, Belgium.

10.1.4.3. The Team made the following recommendations:

- (i) Continue GTSP daily operations; and
- (ii) Collaborate with the staff of the WOD (world ocean database) project to process and archive the delayed-mode data submitted by the GTSP partners.

10.1.4.4. The Team decided on the following action items:

- (i) OSD to continue real-time data acquisition from the Global Telecommunication System (GTS) during the period April 2015 to March 2017 (**action; OSD; ongoing**);
- (ii) GTS participants to continue submission of the real-time and delayed-mode data to CCOG during the period April 2015 to March 2017 (**action; GTSP participants; ongoing**);
- (iii) CCOG and OSD to provide data services during the period April 2015 to March 2017 (**action; CCOG and OSD; April 2017**);
- (iv) CCOG to undertake CMD-WOD integration during the period April 2015 to March 2017 (**action; CCOG; March 2017**); and
- (v) The GTSP Chair to organize and identify host for the third meeting of the GTSP steering team in June 2016 (**action; Chair, GTSP; June 2016**).

Appendix: 1

1 <http://www.nodc.noaa.gov/GTSP/>

2 <http://isdmc.gc.ca/isdmc-gdsi/gtsp/index-eng.htm>

3 <http://ds.data.jma.go.jp/gmd/gtsp/data/index.html>

APPENDIX A

**GLOBAL TEMPERATURE AND SALINITY PROFILE PROGRAMME (GTSP)
REPORT TO SOT-8**

(Report prepared by Dr. Charles Sun, GTSP Chair)

1. PROJECT ESTABLISHED BY IODE Recommendation IODE-XV.4: The GTSP was initiated jointly by IODE and IGOSS in 1990 as a pilot project (through Recommendation IODE-XIII.4) and transformed in 1996 into a permanent operational programme under the co-sponsorship of IODE and IGOSS (IODÉ Recommendation IODE-XV.4. In 2001 JCOMM-I defined GTSP as a programme jointly sponsored by JCOMM and IODE.
2. Project Leader(s): Dr. Charles Sun
3. Members of the project Steering Group:

Dr. Charles Sun, NOAA National Centers for Environmental Information (NCEI), USA
Dr. Ann Thresher, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia
Mr. Mathieu Ouellet, Oceanography and Scientific Data (OSD), Department of Fisheries and Oceans, Canada
Mr. Loic Petit De La Villeon, Institute Français pour la Recherche et l'Exploration de la Mer (IFREMER), France
Dr. Gustavo Goni, NOAA Atlantic Oceanographic and Atmospheric Laboratory (AOML), USA
Mr. Hiroshi Ohno, Japan Meteorological Agency (JMA), Japan
4. Objective of the Project:
 - a) To provide a timely and complete data and information base of ocean temperature and salinity profile data.
 - b) To implement data flow monitoring system for improving the capture and timeliness of real-time and delayed-mode data
 - c) To improve and implement agreed and uniform quality control and duplicates management systems
 - d) To facilitate the development and provision of a wide variety of useful data analyses, data and information products, and data sets.
5. Expected outcome of the Project:
 - a) Provide both real-time and non-real-time temperature and salinity for operational forecasting and climate research.
 - b) IODE OceanTeacher Academy training course material
6. Duration of the Project: 1990 ~ Present
7. Activities implemented between April 2013 and March 2015:
 - a) Continued GTSP daily operations to process and preserve both real-time and non-real-time temperature and salinity data and maintained the project web sites at <http://www.nodc.noaa.gov/GTSP/> and <http://isdm.gc.ca/isdm-gdsi/gtsp/index-eng.htm>
 - b) Populated the outcomes of the comparison between observed versus model-simulated temperature data for the North Pacific Region at <http://ds.data.jma.go.jp/gmd/gtsp/data/index.html>.
 - c) Reported to the seventh (7th) Session of the joint WMO/IOC JCOMM Ship Observations Team (SOT) , 22-26 April 2013, Victoria, Canada.

- d) Held the second session of the Joint IODE-JCOMM SG-GTSP, 17-20 June 2014, Oostende, Belgium.
- e) Held the first IODE Ocean Teacher Academy Training Course on the Use of the Global Temperature and Salinity Profile Programme Data, 23-27 June 2014, Oostende, Belgium.
- f) Reported to the Twenty-third (23rd) Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXII), 17-20 March 2015, Bruges, Belgium.

8. Problems experienced and measures taken:

Most of the day to day operations of GTSP are borne by CCOG and OSD. But support for GTSP in both Canada and the U.S.A. is under pressure. There have also been few information technology changes in GTSP operations and archives since it began, and this is risking obsolescence. Measures taken to mitigate the problems were:

- a) Migrated the GTSP continuously managed database (CMD) operated by CCOG from Oracle to PostgreSQL to reduce costs.
- b) Automated the archiving of real-time data circulated on the GTS and dissemination of the GTSP data sets to reduce staff's time.
- c) Collaborated with the staff of the WOD (world ocean database) project to process and archive the delayed-mode data submitted by the GTSP partners such as AOML, CSIRO, IFREMER, Scripps Institute of Oceanography (SIO), Australian Bureau of Meteorology (BOM) and Hydrography & Metoc Branch of Royal Australian Navy (RAN). However, archiving the delayed-mode data are not automated yet.
- d) Inverted the direction of scheduled data exchanges between OSD and NEAR-GOOS (JMA) servers following changes in IT security configuration

9. Results achieved between April 2013 and March 2015:

- a) Populated both real-time and non-real-time temperature and salinity data and maintained the project web sites at <http://www.nodc.noaa.gov/GTSP/> and <http://isdm.gc.ca/isdm-gdsi/gtsp/index-eng.htm>
- b) Published the results of comparison between temperature observations circulated on the GTS and model-simulated temperature data at <http://ds.data.jma.go.jp/gmd/gtsp/data/index.html>
- c) Held the IODE Ocean Teacher Academy Training Course on the Use of the Global Temperature and Salinity Profile Programme Data, 23 – 26 June 2014, Oostende, Belgium.

10. Work plan and Funds for the next period (April 2015 – March 2017):

	Activity (as per work plan)	Timing (month, year)	Funds already identified (and source)
1	Report to SOT-8	April 2015	CCOG
2	Real-time data acquisition from the Global Telecommunication System.	April 2015 - March 2017	OSD
3	Submission of the delayed-mode data from the GTSP participants	April 2015 - March 2017	AOML, BOM, CSIRO, IFREMER, RAN, and SIO
4	Providing data services by the U.S. CCOG and the OSD in Canada	April 2015 - March 2017	OSD and CCOG
5	Host the GTSP Data Product Centre for the region of the North Pacific	April 2015 - March 2017	JMA
6	Working with the IODE/JCOMM Ocean Data Standard and Best Practice (ODSBP) Programme to publish the GTSP CRC document	January – December 2015	CCOG

	in 2015		
7	CMD-WOD integration	April 2015 - March 2017	CCOG
8	Regional GTSP training Course at Tianjin, China	October 2015	the National Marine Data and Information Service in China (pending)
9	Third meeting of steering team	June 2016	IODE (pending)