DBCP 32
International Tsunameter Partnership

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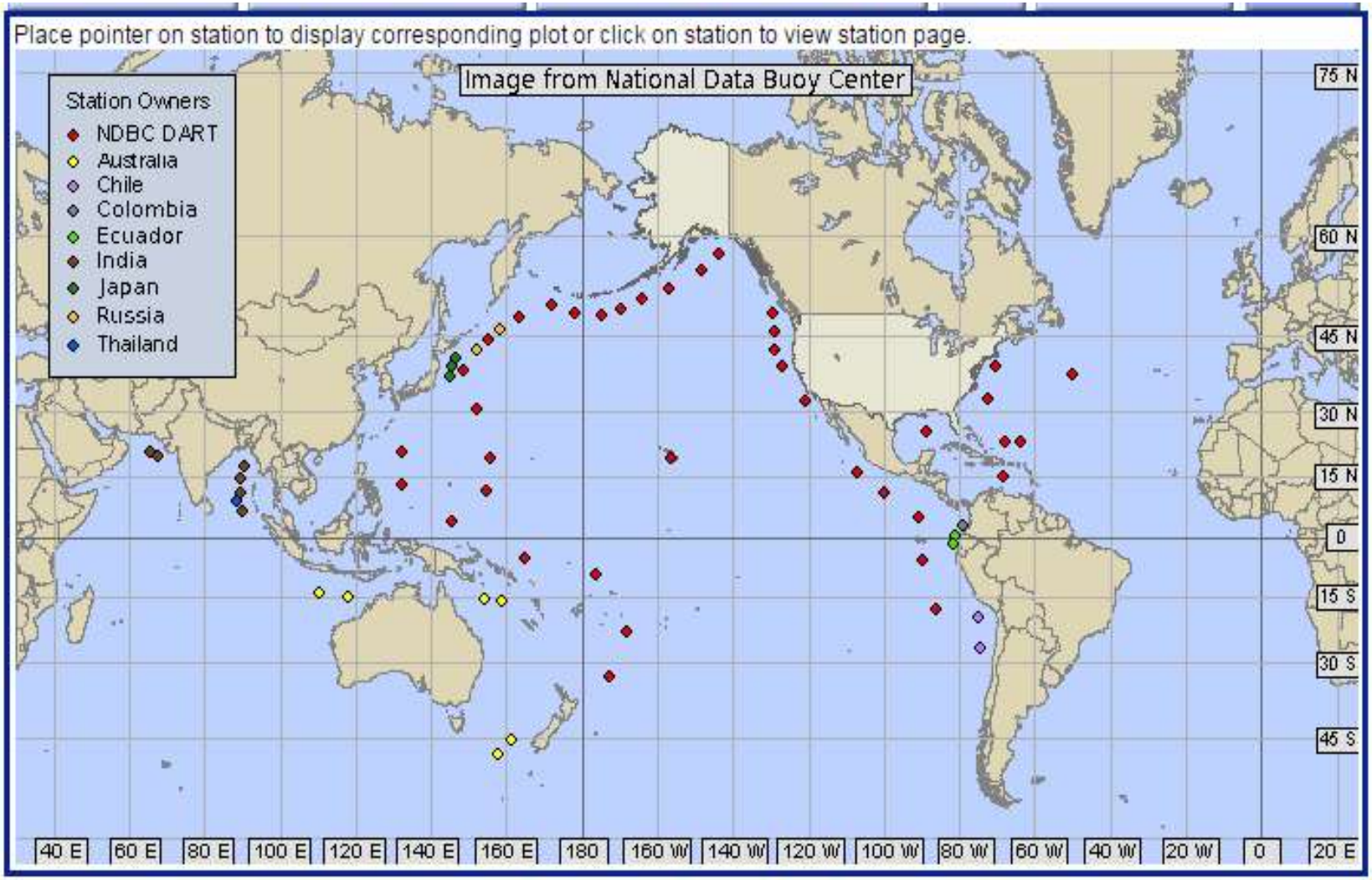
Agenda

1.	Background and Introduction	Chair
2.	National Reports	Country
3.	Product, Technology or Process Developments	Country/ Industry
4.	International Data and Metadata Exchange	Joe Swaykos
5.	Sustainability and challenges including Vandalism	Discussion
6.	DART 4G System Description and Update	Christian Meinig
7.	ITU-IOC-WMO cables	David Meldrum
8.	Presentation and acceptance of Tsunameter standards	ITP members
9.	Review of Actions and Recommendations from Prior Meetings	
10.	Engagement with International Tsunami Warning Groups	
11.	Other Matters	
12.	Election of Officers	
13.	Closure of the meeting	

Major contributions of ITP

- Hosting of water level data at NDBC web site as requested by IOC in ITP 9 in 2014
- Established communication through IOC to Tsunami Warning Centre
- Tsunameter standards
- The ITP is well appreciated by Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG-IX) followed by Forty-ninth Session of the Executive Council IOC on preparation Tsunameter standards
- Discussing on technological developments

Tsunami locations as reported in the NOAA NDBC



12 Countries

Global Tsunameter Network								
Country	Planned Network	Currently Operational	Tsunameter Types	Local Reception	Data to GPS	Data to FTP	Data Formats	Vandalized Stations
Australia	6	5	SAIC - STB SAIC – ETD DART II MF	Yes	Yes	No	NOAA-DART BUFR/CREX	Yes; 1 event
Chile	3	2	SAIC - DART - II SAIC - STB	Yes	Yes	Yes	NOAA-DART	-
China	2	2	DART - STB	Yes	No	No	NOAA-DART BUFR	Yes; 3 - 5 events
Ecuador	2	2	EBM22TS Mediterráneo Señales Marítimas (MSM)	Yes	Yes	Yes	NOAA-DART	-
India	7	7 2 NIOT 5 SAIC	SAIC-STB Indian Buoy Sagar Bhoomi -Sonardyne	Yes	Yes INCOIS	No	BUFR/CREX	Yes; 2 – 1 Event
Indonesia	14	-	InaBuoy SAIC-ETD	Yes	No	No	Local Format NOAA-DART	-
Japan	6	3	SAIC-STB-MF	Yes	Yes	No	CREX	-
Malaysia	3	-	-	Yes	No	No	-	-
Republic of Korea	2	-	-	-	-	-	-	-
Russia	3	2	SAIC-STB SAIC-ETD	No	Yes	Yes	NOAA-DART	-
Thailand	3	1	SAIC-STB Environtec	No Yes	Yes Yes	Yes No	NOAADART -	No No
	39	29	DART – II					

Reports received

1. Australia
2. India
3. USA
4. China
5. SAIC ***Science Applications International Corporation***:
6. *Fugro Oceanor*
7. Sonardyne

Summary on Tsunameter Equipment Performance Standards and Guidelines

1 ITP 9 and ITP 102

2 During the DBCP-31 session held at Geneva from Oct. 19-23, 2015,

- The Panel recommended to be forwarded to TOWS and this document would of great importance to the Tsunami groups and is uplinked to JCOMM DBCP-31 web site
- http://www.jcomm.info/index.php?option=com_oe&task=viewDocumentRecord&docID=17719

3 Then this Draft standard for tsunameter was submitted to TOWS Working Group and its Task Team on Tsunami Watch Operations from 23 to 24 February 2016 followed by TOWS-WG-IX, 9th session of Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG) from 25 to 26 February,2016

The report is available at: http://www.ioc-unesco.org/index.php?option=com_oe&task=viewDocumentRecord&docID=17045

- ITP could not be represented - Fund constraints

DECISIONS AND RECOMMENDATIONS of TOWS-WG IX

- The Ninth Meeting of the Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG-IX) was held in Paris, France, on 25-26 February 2016 under the Chairmanship of Mr Alexander Postnov (IOC Vice-Chair).
- The meeting evaluated progress in actions and decisions taken by the Governing Bodies through IOC-XXVIII/Dec. 8.2.
- The Group appreciated the efforts of the International Tsunameter Partnership Group (ITP) under the Data Buoy Cooperation Panel (DBCP) in preparing the "Tsunameter Equipment Performance Standards and Guidelines", and further requested DBCP-ITP to
- (i) recommend a standard data format and encourage its use by tsunameter manufacturers, station operators and data centres to enable real-time data access to the tsunami service providers,
- (ii) find ways to keep the equipment and operations costs low to ensure sustainability of the tsunameter networks,
- (iii) enhance redundancy of satellite communication channels by using some different satellite communication services to ensure high availability of data and
- (iv) ensure mechanisms to trigger tsunameters based on seismic waves and also the capability for the operator to trigger tsunameters based on requests from authorised TSPs and NTWCs.
- http://unesdoc.unesco.org/images/0024/002451/245120e.pdf

- **(i) recommend a standard data format,**
- **(ii) Equipment and operations costs low to ensure sustainability of the tsunameter networks**

Being addressed by manufacturers

- **(iii) enhance redundancy of satellite communication channels**

India has the experience of doing INSAT and INMARSAT Technolgy is available

- **(iv) ensure mechanisms to trigger tsunameters based on seismic waves**

Subsequently these recommendations were presented in the Forty-ninth Session of the Executive Council IOC of UNESCO held at Paris from 7 to 10 June 2016.
The draft summary report is available at
http://unesdoc.unesco.org/images/0024/002451/2451

- The excerpts are presented below
- 51. The Executive Council adopted Decision EC-XLIX/3.4 below. Tsunamis and other Hazards related to Sea-level Warning and Mitigation Systems
- 3.4.3 Working Group on Tsunamis and other Hazards related to Sea-Level Warning and Mitigation Systems (TOWS-WG), UNESCO, Paris, 25-26 February 2016 47. Mr Alexander Postnov, Chair of the Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG), introduced this item. He reported on the decisions and recommendations of the ninth meeting of TOWS-WG.
- Appreciates also the efforts of the International Tsunameter Partnership Group (ITP) under the Data Buoy Cooperation Panel (DBCP) in preparing the “Tsunameter Equipment Performance Standards and Guidelines” and in making several recommendations towards its improvement;

IOC

- Action Item 1: Call for approximate locations of tsunameters (specifically those not currently shared on GTS). Request information by DBCP 33.

- Action item 2 ITP Tsunameter Equipment Performance Standards and Guideline is recommended by IOC Forty-ninth Session of the Executive Council Paris, 7-10 June 2016 way forward to encourage member countries /manufactiurers to follow this guidelines

- Action item 3: IOC EC and TOWS WG requested DBCP-ITP to recommend a standard data format and encourage its use by tsunameter manufacturers, station operators and data centres to enable real-time data access to the tsunami service providers, find ways to keep the equipment and operations costs low to ensure sustainability of the tsunameter networks, enhance redundancy of satellite communication channels by using some different satellite communication services to ensure high availability of data and ensure mechanisms to trigger tsunameters based on seismic waves and also the capability for the operator to trigger tsunameters based on requests from authorised TSPs and NTWCs. IOC-28 - 28th Session of the IOC Assembly from 18 to 25 June 2015, Paris, France

Thanks to many

- ITP members
- Steve
- Shannon
- Jennifer
- Rob Lawson SAIC
- Chris
- Srinivas
- Champika
- Etienne
- Jon
- Tom
- Thorkild Aarup IOC
- Aliaga, Bernardo IOC
- Ken Past ITP Chair
- Ross Past ITP Chair
- Tony Elliott
- Many more

all were troubled by me

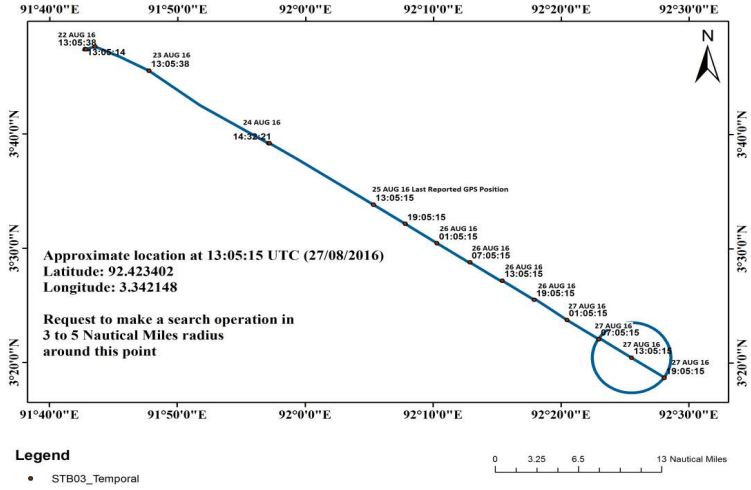
Action to be discussed

- IOC Executive Council (and the WMO Executive Council) a decision was adopted IOC Decision EC-XLIX/3.4) that : *Requests the IOC and WMO, working through the Data Buoy Cooperation Panel and TOWS, to develop a regionally relevant, education and outreach strategy, for discussion at the IOC Assembly at its 29th session in 2017, that could be jointly implemented by IOC, WMO, FAO, regional fisheries management organizations, Member States, the fisheries sector and other relevant organizations in order to substantially reduce damage through vandalism or interference with ocean data buoys*

Vandalism in SAIC Tsunami buoy deployed in the Bay of Bengal

STB03 (IN3) Surface buoy was not reporting data from 23 August 2016 and it was drifting SE direction from it's original position (3.81N, 91.70E). Observed the buoy drifting on 24th August and immediately requested Indian Navy and Coast Guard teams to send their vessels for buoy recovery.

Buoy last GPS position was 3.5639N, 92.0885E on 25 August 2016 at 18:35 hrs IST and it was drifting SE direction with around 0.5 knots speed. Herewith attached last GPS position location.



Recommendations

1. ITP is well represented by member countries and Manufacturers
2. Panel to recommend to uplink Tsunameter standard approved version by IOC and to urge member countries to follow
3. Request member countries to continue to share the data with NDBC
4. Vandalism of buoys is major concern and request higher level on interaction among UN bodies IMO FAO IHO to get support from member countries
5. On technological developments, existing tsunameters are designed to have longer duration to have reduced ship time
6. NOAA PMEL is working on advanced technology for Near shore and would be made available soon
7. Efforts are underway to have technological advancements on power requirement to have seismograph and water level data
8. Under GOOS, Deep ocean observation System is being proposed, ITP discussed on the vital need of seawater temperature data that can be collected along with water level data/ Member countries and manufacturers were requested to attach self contained Temperature sensors with an incremental coast to have very valuable data for climate studies

9 Establish a small working group to better focus efforts during the upcoming year to

- a. Promote inclusion of data stream into GTS
- b. Understand limitations by operators of moving to a common data format
- c. Promote the use of applicable portions of the Tsunameter Standard as a mechanism to help advance and control users' costs

10 Manufacturers are encouraged to follow DBCP Tsunameter guidelines