



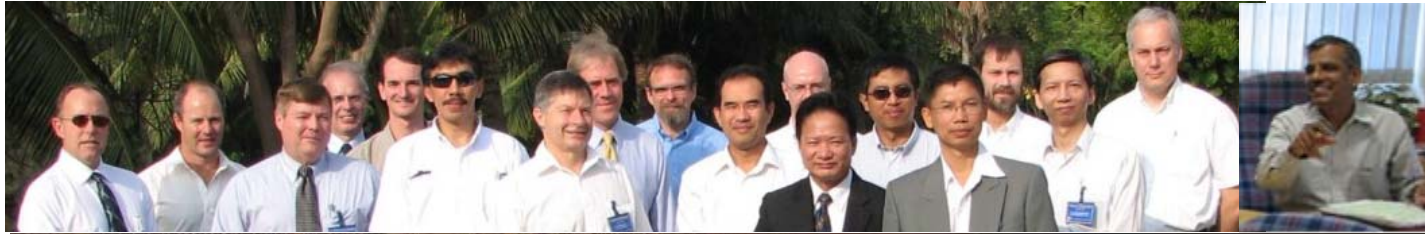
International Tsunameter Partnership

Ken Jarrott

Chair IOC/ICG IOTWS

International Tsunameter Partnership

The Tsunameter Partnership Team



*ITP-1
Chennai
Feb 07*



*ITP-2
Jakarta
Sep 07*

*ITP-3
Malaysia
Apr 08*



- | | <u>SUPPLIERS / DEVELOPERS</u> |
|------------------------------|--------------------------------------|
| India | NOAA-PMEL (USA) |
| Thailand | GFZ (Germany) |
| Malaysia | Fugro Oceanor (Norway) |
| Indonesia | BPPT (Indonesia) |
| Australia | Sonardyne (UK) |
| USA | Envirtech (Italy) |
| Taiwan | SAIC (USA) |
| Germany | Lighthouse R&D (USA) |
| Korea | SeaBird Electronics (USA) |
| Kenya | WinMarine Consulting (India) |
| Oman | WinMarine Consulting (India) |
| Reunion (MeteoFrance) | |



*ITP-4: Bali
14-15 Nov 08*

ITP Role

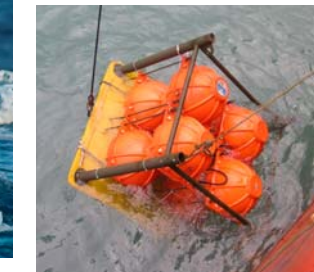
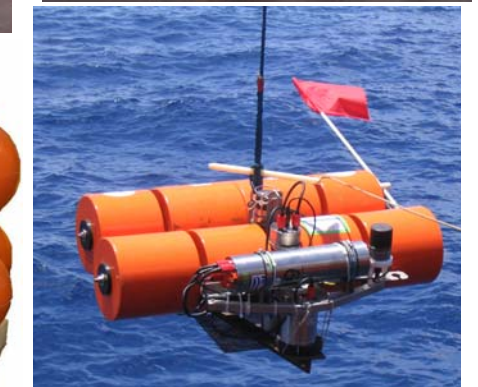
❑ **MISSION:** To support the establishment, effectiveness and on-going viability and enhancement of tsunami detection and warning systems.

- **Set common tsunameter standards** - performance, data exchange, testing, calibration
- **Provide input to sea level observation network design**
- **Maximise the sharing of tsunameter technology & cooperation** among operators and with suppliers
- **Foster cooperation** on siting, deployment, operation & maintenance
- **Help build capacity** to aid viability and success of warning systems.

❑ **CONTEXT:**

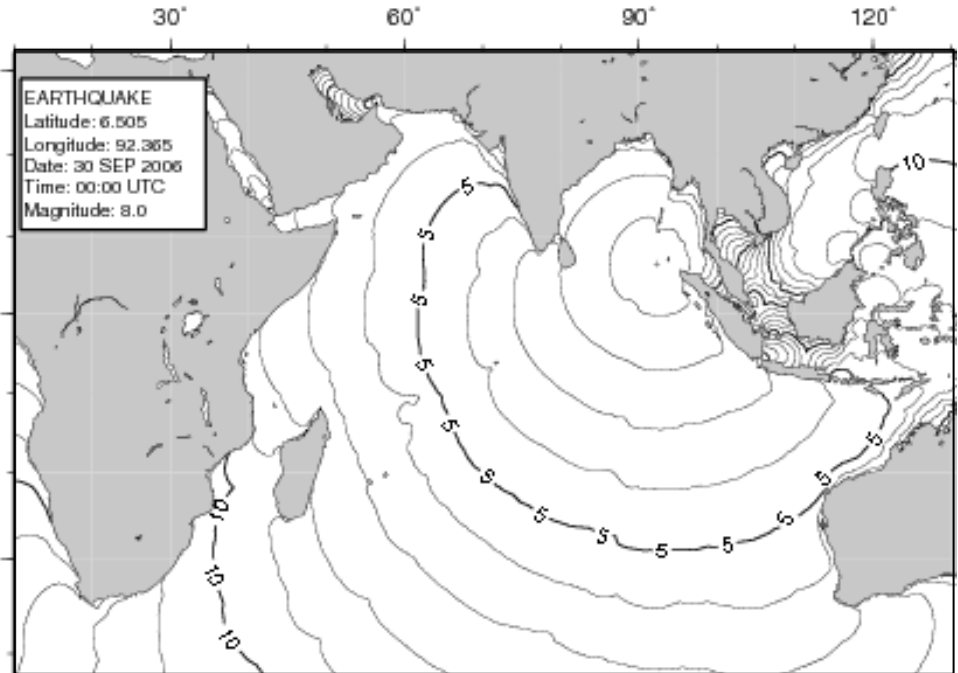
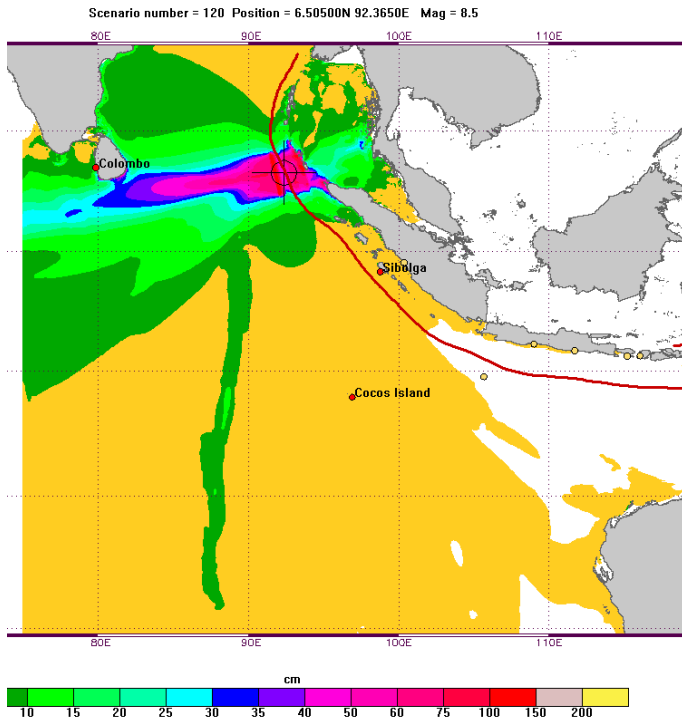
- **High-pressure independent national projects** to establish warning systems by 2008/09, **but high on-going neighbour dependency**
- **New products** in **tough product qualification environment**
- **Variable knowledge / experience baseline in user countries**
- **Transition from project / donor funding** to long term operations

Tsunami Equipment Variants (some) Excluding Cabled Instruments and Satellite Delivery Channels



Fast, Reliable Data Challenge!

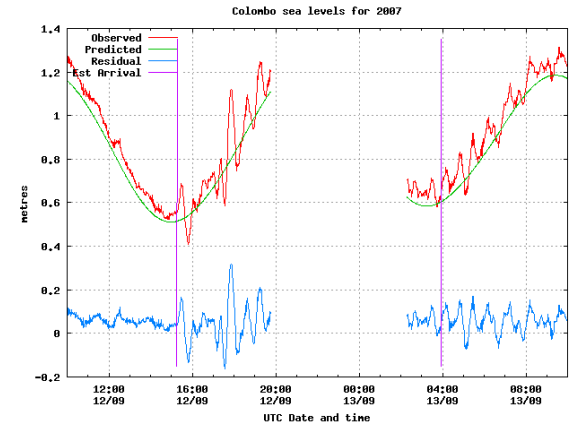
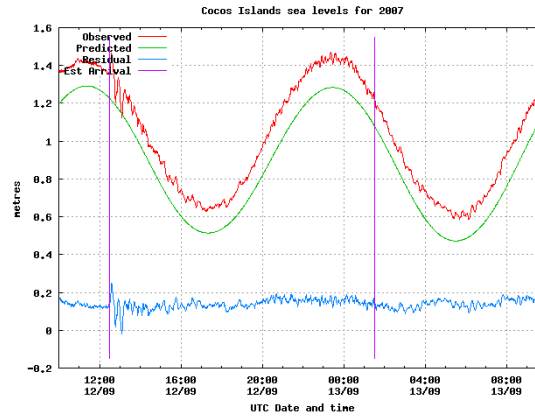
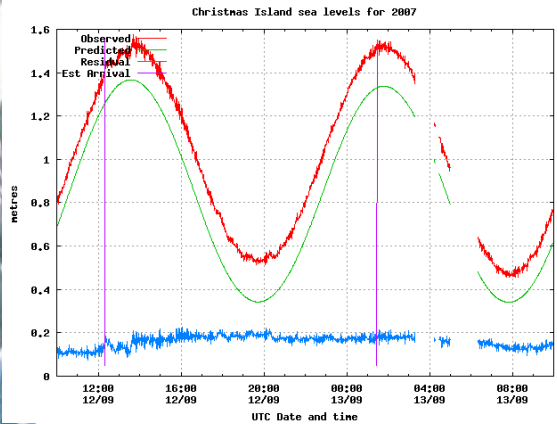
An Indian Ocean Modelled Tsunami Scenario (Apr 08)



	1 st Hour of Event	2 nd Hour of Event
Existing stations providing international data access	2 (1 coastal) (1 tsunameter)	3 (3 coastal)
With addition of current, locally operational stations	5 (2 coastal) (3 tsunameter)	8 (5 coastal) (3 tsunameter)

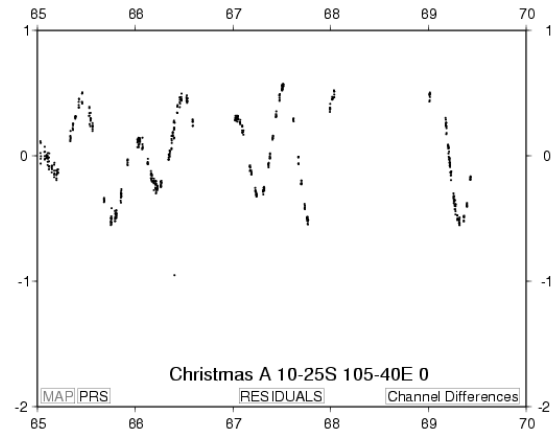
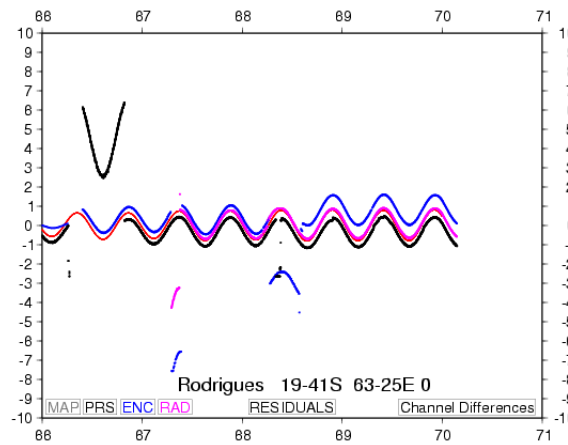
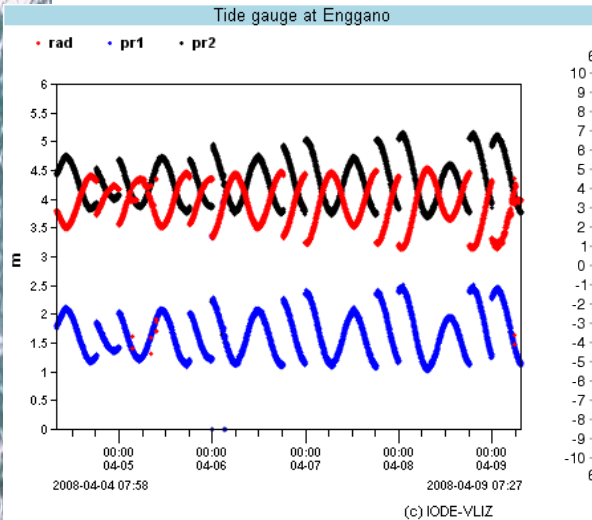
Available Data Isn't Always Perfect

Coastal Gauges Records— 12 September 07 Tsunami Event

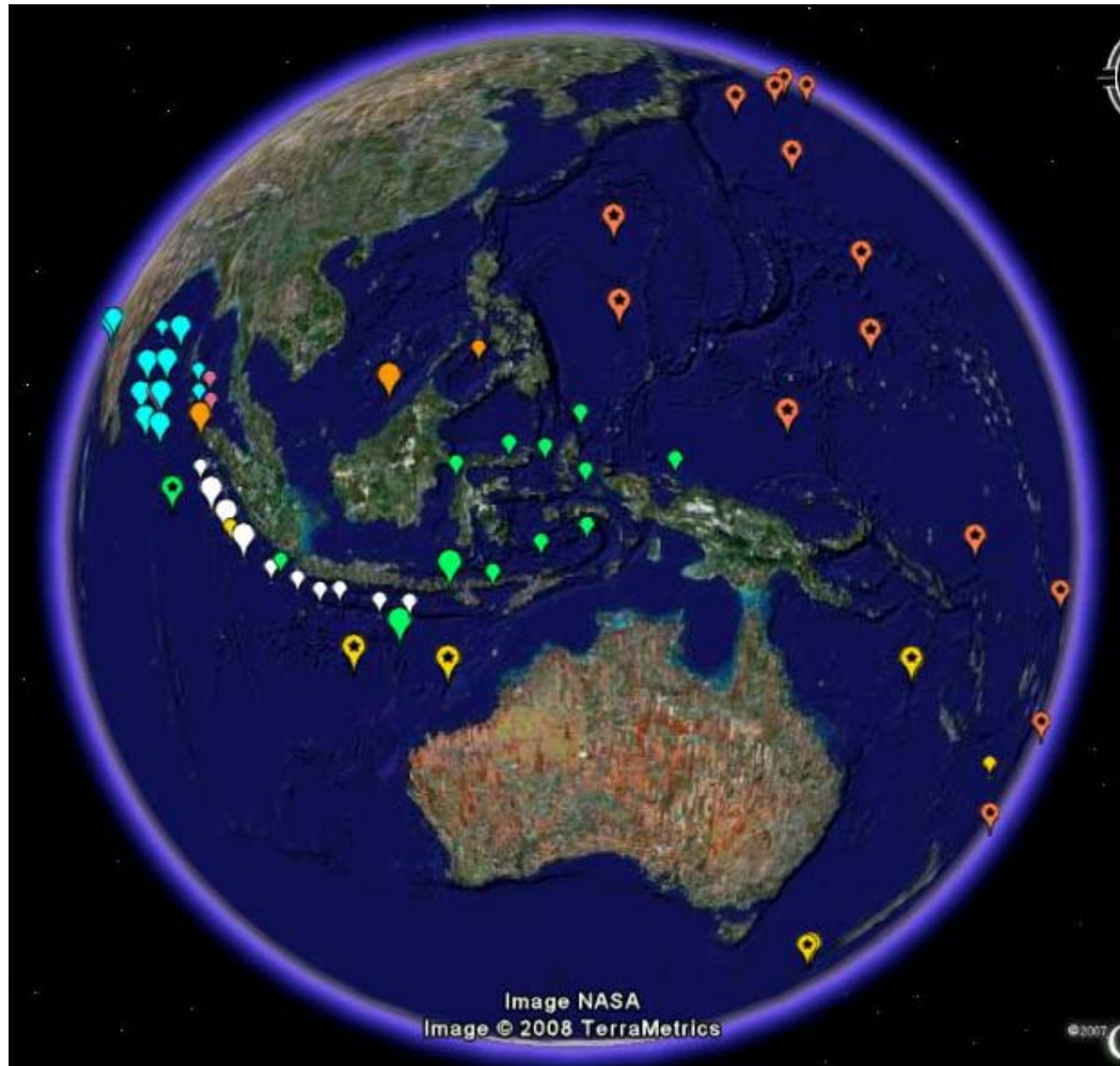


>4 Front-line Tsunameters incapacitated at the time (vandalism)

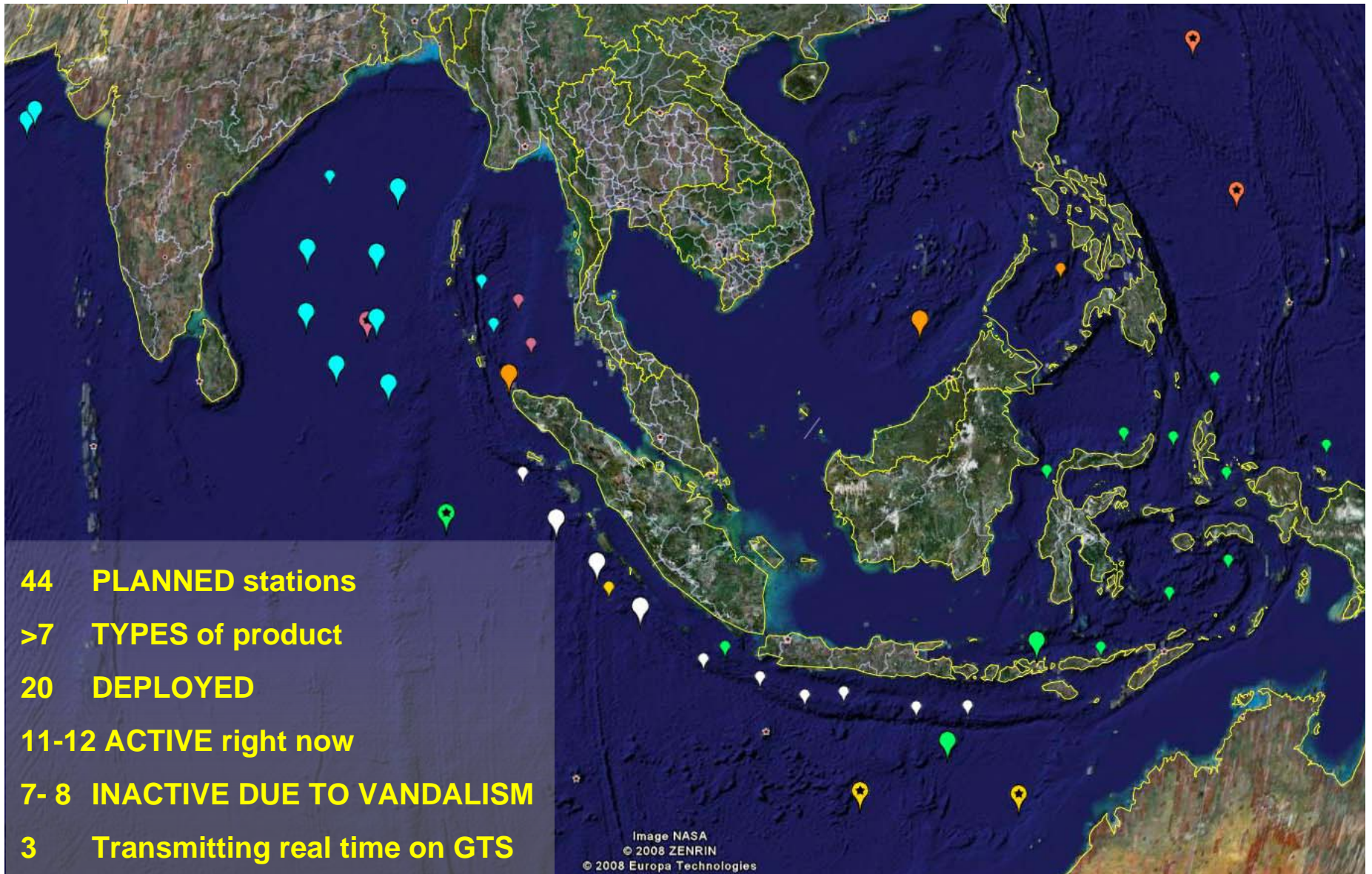
Other Times, Other Places



Half Globe Tsunameter Network Status



Tsunameter Networks – Indian Ocean



Communal Developmental “Metadata”

File Edit View Tools Add Help



Country: AUSTRALIA
Local Station ID: Indian Ocean 1
WMO ID: 56001
Agency: Australian Bureau of Meteorology
Latest Update: 09/10/2008
Regional Tsunami Warning Network Membership: IOTWS

Location

Latitude (E)	Longitude (N)	Depth (m)
-13.985	110.005	5710

Deployed

Test/Trial/Pre-operational	Operational- Local Real Time Data	Operational - Global Real Time Data
	03-Oct-08	08-Oct-08

Station Details

Tsunami Type (Supplier / Model)	DART II Standard
Sea Level Sensor	Bottom pressure sensor
Other Platform Sensors	n/a

International Data Access

Non-GTS Data Access Means	Description
FTP Registered Users	

GTS Transmission Header	Description
SZIOIAMMC	PMEL format, pending global code standard

Station Status

Status	Comments on Status(optional)
ACTIVE	

ITP Success / Progress

○ **Tsunameter Standards**

- Instrument standards developed, with comms performance metrics
- Metadata content elements identified
- CREX/BUFR Template developed (draft, reviewed by WMO Expert Team)

○ **Operational International Data Exchange**

- NOAA / PMEL GTS coding and NDBC web site an interim, but only applies to DART derivative products
- Some bilateral real-time data exchanges (FTP) - Australia

○ **Tech Exchange**

- Tech “seminars” on complex technology
- Several bilateral / multi-lateral workshops / training / tech transfer events (NOAA)

○ **Collaboration / Trust**

- Bilateral formal agreements established – Indonesia, USA, Germany, Australia, covering tech transfer, ship access,
- Malaysia – Indonesia – Philippines cooperation on deployment sites

Challenges – To Do

- ❑ **Tsunameter Standards / Guidelines**
 - New Product Qualification Guide – doc in development – Nov 08
- ❑ **Real Time Data Exchange**
 - Trials of CREX GTS transmissions to start by end 2008
- ❑ **Benchmarking Performance – in IO Neighbourhood “Test Bed”**
 - Reliant on data exchange and “event” opportunities (e.g. tsunami, provocative weather / sea states)
- ❑ **Data Management**
 - Metadata, global data repositories, real time quality control processes – need a consistent international and integrated approach
- ❑ **Tsunameter Network Sustainability**
 - Paper on sustainability issues, gaps, remedial opportunities being formulated for discuss by end 08
 - **VANDALISM RESPONSE**
- ❑ **Creating a “Home”**
 - Web site / other communal repositories – invigorating and sustaining interaction (internal and with external groups)

Issues for DBCP Discussion

- ❑ **How to engage ITP and DBCP at “organisational” level and through informal networks for mutual benefit**
 - **Short Term** (transitional, informal overlap with IOC/ICG/IOTWS ..)?
 - Communication, networking?
 - Resource implications? – effort, tech from the DBCP side of the fence to support or accelerate the ITP mission
 - What can ITP do for DBCP?
 - **Long Term**
 - Institutionalise the relationship – merge / affiliate?
 - Transition plan / timeline?
 - **Individual vs national / agency / national linkages**
 - Thin overlap now
 - “Identity / Allegiance” of tsunameter operators / developers / suppliers
 - **“Governance”, reporting, accountability, resourcing** picture for merged or affiliated bodies