



Global Tsunami Warning and Mitigation System – What is the UNESCO IOC Tsunami Ready Recognition Programme

2.2 Pacific Tsunami Warning and Mitigation System (UNESCO-IOC PTWS), PTWS International Alerts by Tsunami Service Providers

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Mandates of the Key Organizations

- **UNESCO – United Nations Educational, Scientific, and Cultural Organization**

The purpose of UNESCO is to contribute to peace and security by promoting collaboration among the nations through education, science, and culture.

- **IOC – Intergovernmental Oceanographic Commission**

The work of the IOC contributes to the mission of UNESCO by promoting international cooperation in marine sciences through coordinating programmes in capacity development, ocean observations and services, ocean science, tsunami warning and ocean literacy to improve management of the ocean, coasts and marine resources.

- **IOC Tsunami Programme**

The IOC Tsunami Programme, through the coordination of regional meetings, capacity building activities and the support of national and regional projects, aims at reducing the loss of lives and livelihoods due to tsunamis. In order to accomplish this, the IOC Tsunami Resilience Section supports IOC Member States in assessing tsunami risk, implementing Tsunami Early Warning Systems (TEWS) and in educating communities at risk about preparedness measures.

IOC Tsunami Programme Organization

- **Four Systems – Each Governed by its Intergovernmental Coordination Group (ICG)**
 - PTWS** - **Pacific** Tsunami Warning and Mitigation System (46 Member States)
 - IOTWMS** – **Indian Ocean** Tsunami Warning and Mitigation System (27 Member States)
 - NEAMTWS** - Tsunami Early Warning and Mitigation System in the **North-Eastern Atlantic, the Mediterranean and Connected Seas** (40 Member States)
 - CARIBE-EWS** - Tsunami and Other Coastal Hazards Warning System for the **Caribbean and Adjacent Regions** (48 Member States)
- **ICG Coordinating Body – Covers Common Issues of the Four Systems**
 - TOWS-WG** - Working Group on Tsunamis and Other Hazards related to Sea Level Warning and Mitigation Systems (TOWS-WG)
- **IOC Secretariat – Provides Structure, Continuity and Overall Support**
 - Head of the Tsunami Unit and Technical Secretaries for each ICG
- **IOC Governance** – IOC Assembly and IOC Executive Council

GLOBAL TSUNAMI WARNING AND MITIGATION SYSTEMS

Intergovernmental Oceanographic Commission of UNESCO
www.ioc-tsunami.org

2005 - 2025

NEAMTWS

- CENALT/France
- IPMA/Portugal
- INGV/Italy
- KOERI/Turkiye
- NOA/Greece

NEAMTIC

4 Regional Systems

NEAMTWS
IOTWMS
PTWS
CARIBE EWS

coordinated
by the IOC
UNESCO

4 Regional Tsunami Information Centres

NEAMTIC
IOTIC
ITIC
CTIC

Supporting
the Regional
System

IOTIC

IOTWMS

- InaRTSP/Indonesia
- ITEWC/India
- JATWC/Australia
- InaTEWS/Indonesia

13 Tsunami Service Providers

- 5 – NE Atlantic, Mediterranean
- 3 – Indian Ocean
- 4 – Pacific Ocean
- 2 – Caribbean

ITIC (1965)

PTWS

PTWC/USA (1965)

- NWPTAC/Japan
- SCSTAC/China
- CATAC/Nicaragua – under trial operations

CARIBE-EWS

- PTWC/USA
- CATAC/Nicaragua – under trial operations

US National Tsunami
Warning Center (national, bi-lateral)



151 MS (IOC, UNESCO, Associate MS)

have established
National Tsunami Warning Focal Points/
National Tsunami Warning Centres

After Frolov, 2023, IOC update 2024

ICG/PTWS Governance Structure

Chair, Vice-Chairs, Steering Committee: 4 Regional Working Groups, 3 Technical Working Groups, 9 Task Teams

Inter-Governmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS) ORGANISATIONAL STRUCTURE, 2025-2027

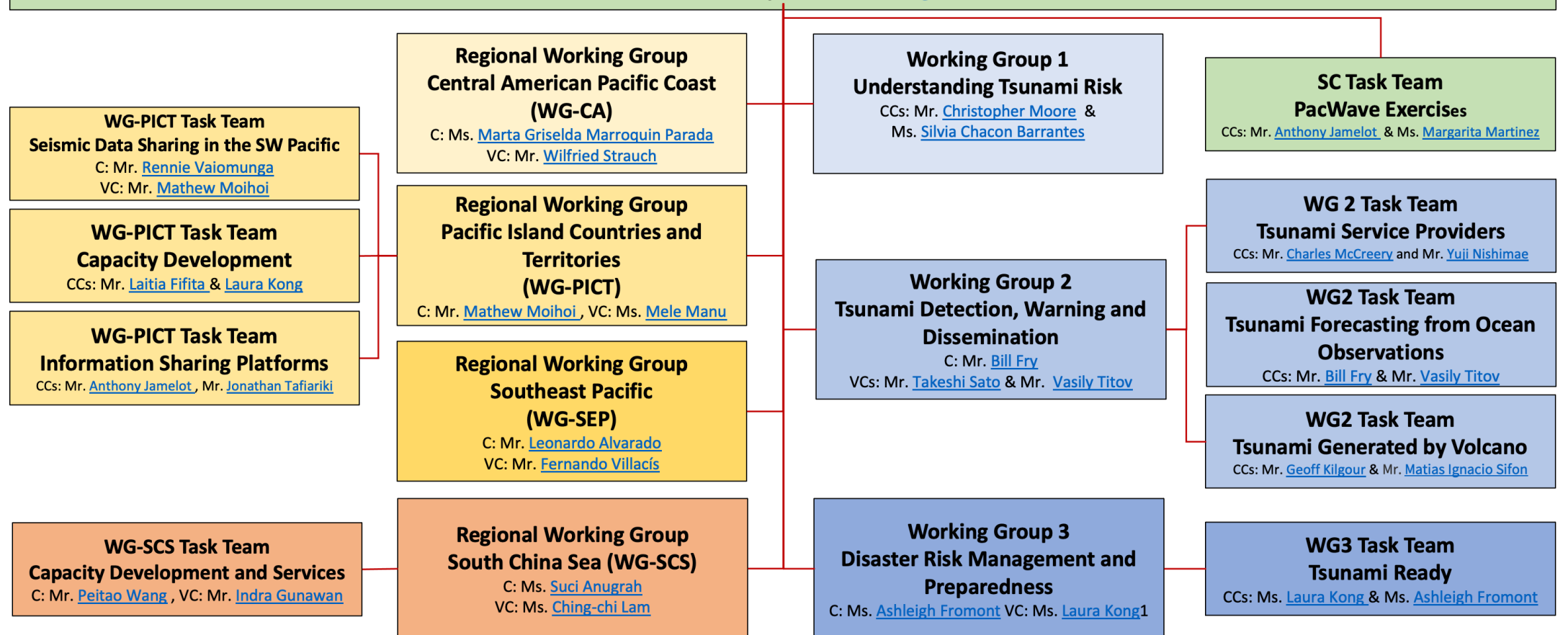
Chair: Mr. [Dakui Wang](#) (China)

Vice-Chairs: Ms. [Lara Bland](#) (New Zealand), Ms. [Mylene Martinez Villegas](#) (Philippines), Mr. [Levu Antfalo](#) (Vanuatu)

Steering Committee: ICG/PTWS Officers (Chair and the Vice-Chairs), Chairs of the Technical and Regional Working Groups, Directors of the TSPs and ITIC, or their delegates, and other members' representatives by invitation of the Chair.

International Tsunami Information Centre (ITIC): Ms. [Laura Kong](#) (Director) & Mr. [Matias Ignacio Sifon](#) (Associate Director)

Technical Secretary: Mr. [Öcal Necmioğlu](#)



TNC, TWFP, and NTWC of each Member State

- **Tsunami National Contact (TNC)** - *Dr. Bacolcol (PHIVOLCS) and Dr. Solidum (DOST)*

The person designated by an ICG Member State government to represent his/her country in the coordination of international tsunami warning and mitigation activities. The person is part of the main stakeholders of the national tsunami warning and mitigation system programme. The person may be the Tsunami Warning Focal Point from the national disaster management organization, from a technical or scientific institution, or from another agency with tsunami warning and mitigation responsibilities.

- **Tsunami Warning Focal Point (TWFP)** - *PHIVOLCS*

A 24x7 point of contact (office, operational unit or position, not a person) officially designated by the NTWC or the government to receive and disseminate tsunami information from an ICG Tsunami Service Provider according to established national Standard Operating Procedures. The TWFP may or not be the NTWC.

- **National Tsunami Warning Center** - *PHIVOLCS*

A centre officially designated by the government to monitor and issue tsunami warnings and other related statements within their country according to established national Standard Operating Procedures.

Roles and Responsibilities of the TSPs

■ **Tsunami Service Provider** – *PTWC, NWPTAC, SCSTAC*

Centre that monitors seismic and sea level activity and issues timely tsunami threat information within an ICG framework to National Tsunami Warning Centres/Tsunami Warning Focal Points and other TSPs operating within an ocean basin. The NTWCs/TWFPs may use these products to develop and issue tsunami warning for their countries. TSPs may also issue Public messages for an ocean basin and act as National Tsunami Warning Centres providing tsunami warnings for their own countries.

4 – Pacific Ocean

3 – Indian Ocean

2 – Caribbean

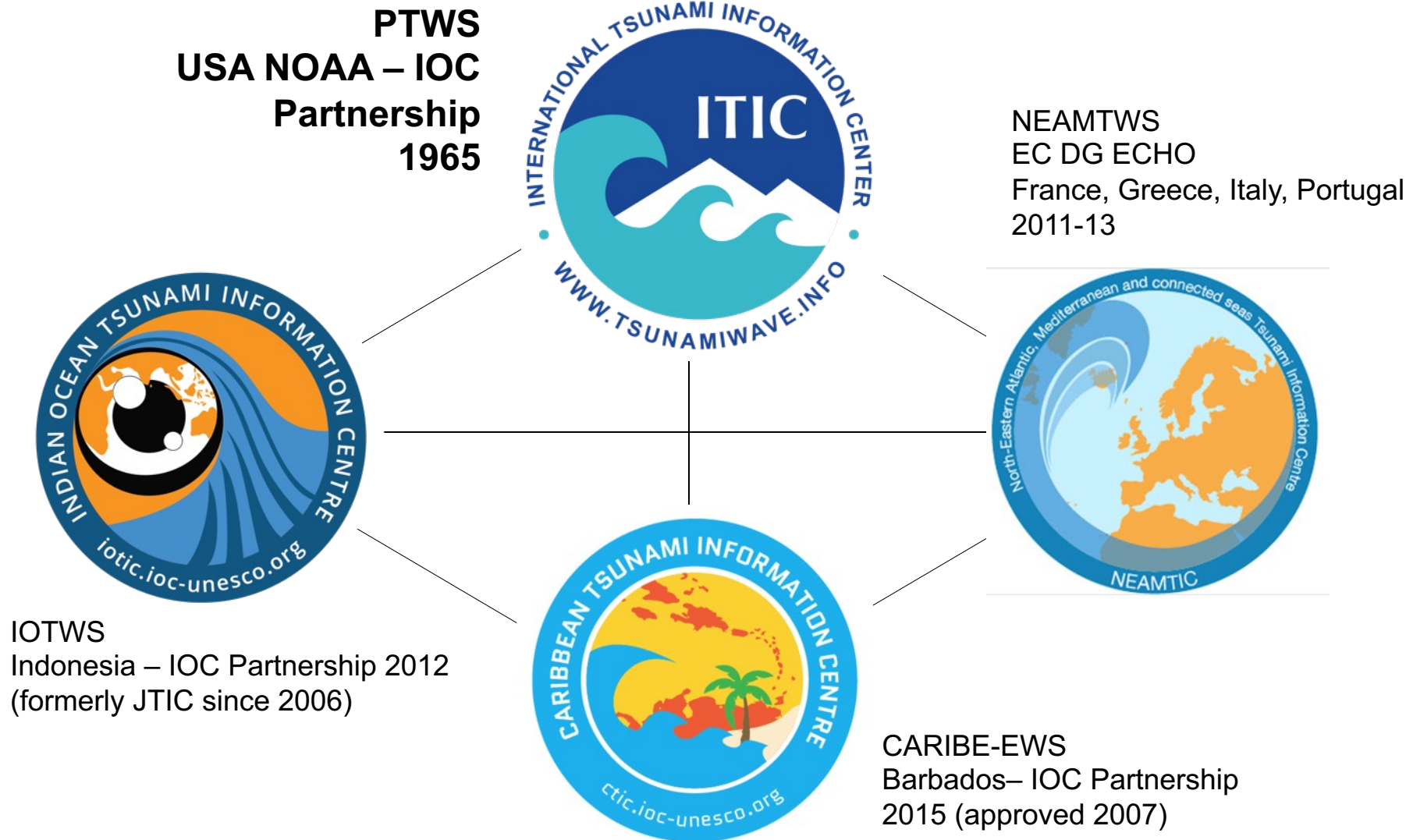
5 – NE Atlantic and Mediterranean

Roles and Responsibilities of the TIC

■ Tsunami Information Center

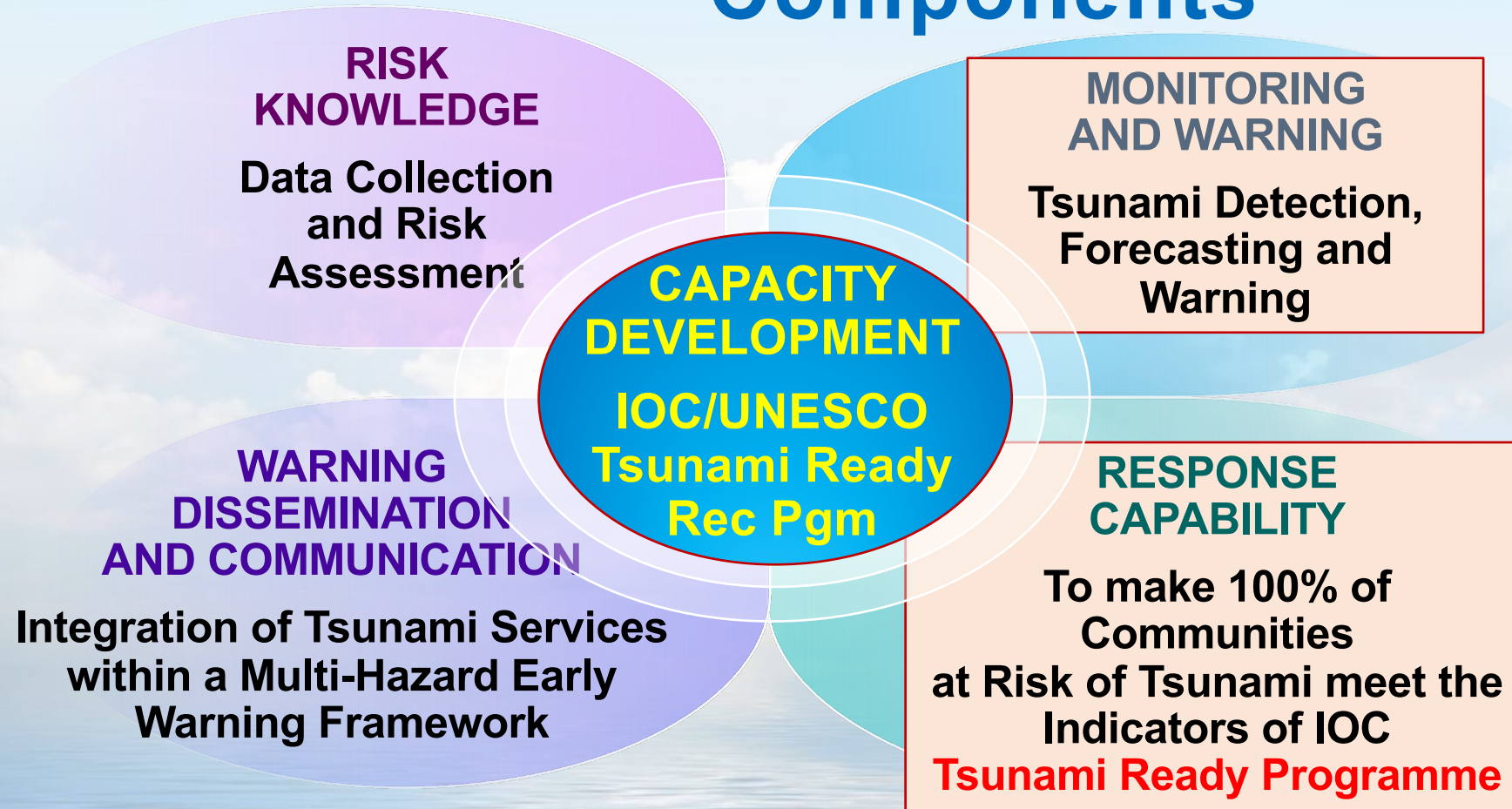
Centres that provide education, outreach, technical and capacity building assistance to Member States and the public in preventing, preparing, and mitigating measures for tsunamis. Among other activities, the centres manage post event performance surveys, serve as a resource for the development, publication, and distribution of tsunami education and preparedness materials and information on tsunami occurrences, and may support risk assessment and mitigation activities. A Tsunami Information Centre has been established in each of the regional tsunami warning systems within the ICG framework.

IOC Tsunami Information Centers



UN OCEAN DECADE TSUNAMI PROGRAMME

Components

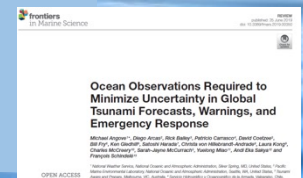


Annex 1 to IOC Circular letter, 2825 “Protecting Communities from the World’s Most Dangerous Waves: A Framework for Action under the UN Decade of Ocean Science for Sustainable Development”
(6 January 2021)

Angove M et al (2019)

Ocean Observations Required to Minimize Uncertainty in Global Tsunami Forecasts, Warnings, and Emergency Response.

Front. Mar. Sci. 6:350. doi: 10.3389/fmars.2019.00350



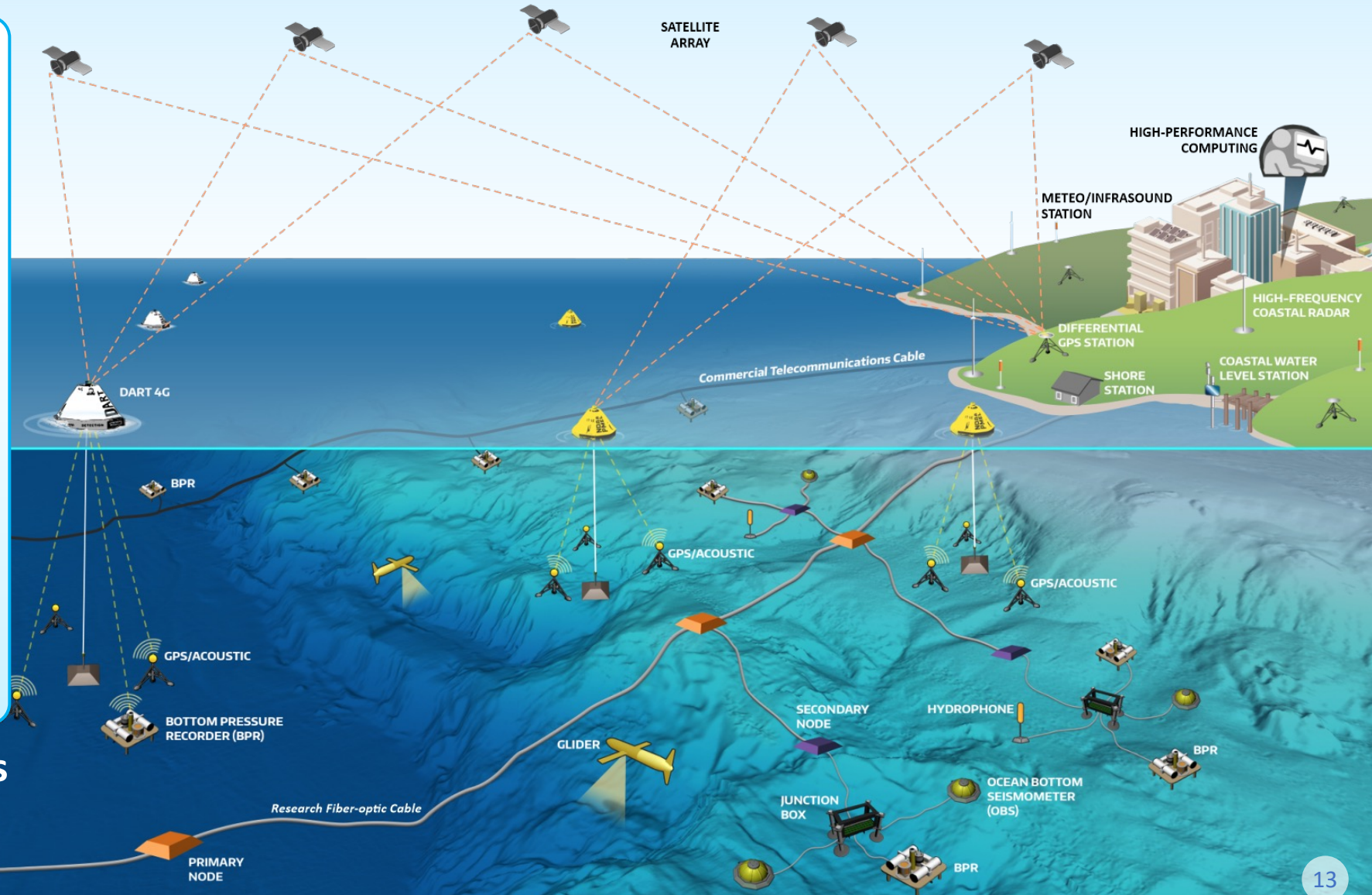
OCEAN DECADE TSUNAMI PROGRAMME: the Focus Areas Related to Tsunami Warning Capabilities

- Expansion of existing observational systems to fill identified gaps
- **Deploy new technologies such SMART cable**
- **Wide expansion of data access, availability and analysis capability for real-time sea level, seismic and GNSS-derived land motion data**
- Increase access and regularly update the collection of coastal topographic and bathymetric data
- Ensure all NTWCs have access to data, tools and communication platforms, protocols and training

Rethinking Ocean Observations

Source:

National Oceanic and Atmospheric Administration



Thank you Salamat po

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