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Intergovernmental Oceanographic Commission

Information Workshop on NEAMTWS: Reducing Tsunami Risk through EWS, Preparedness and Awareness

The Governance, the Status and the Architecture of the Tsunami Warning and Mitigation System in the NEAM region

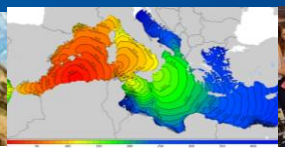
Dr Denis Chang Seng

ICG/ NEAMTWS Technical Secretary

Prof.Dr. Ahmet Cevdet & Yalciner

Chair UNESCO/ICG/NEAMTWS

25-26 September, Madrid, Spain



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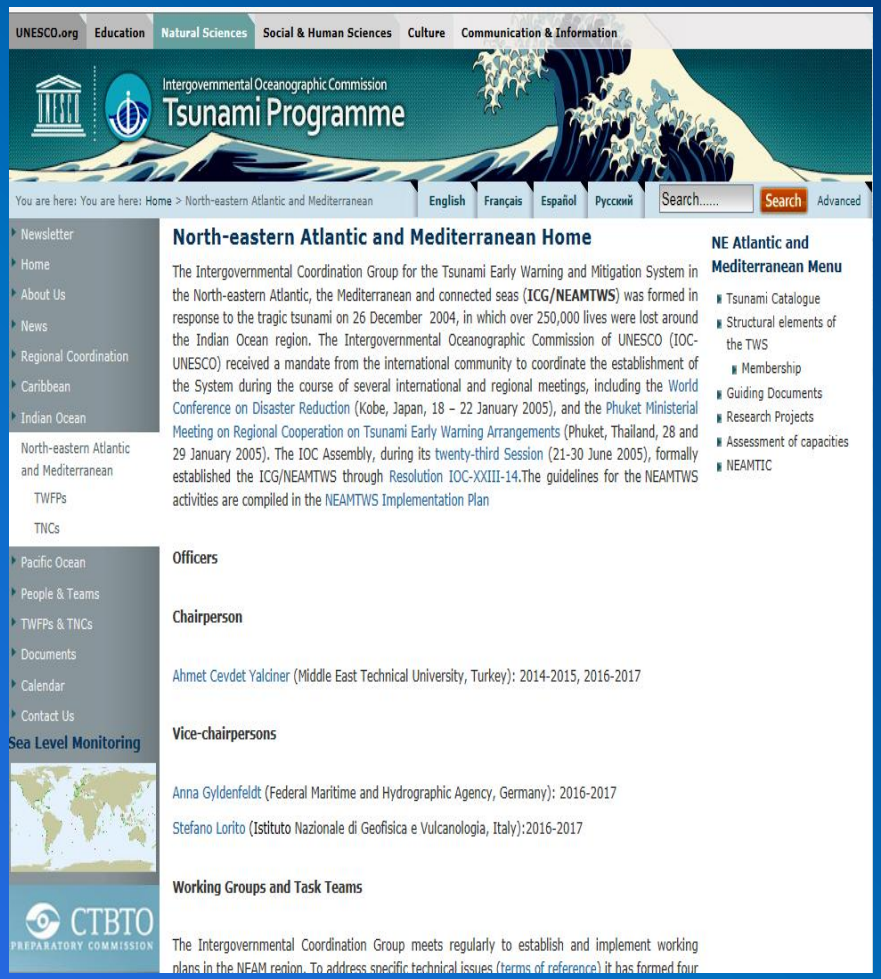

ICG/NEAMTWS

Establishment

ICG/NEAMTWS was formally established during the twenty-third IOC Assembly Session (21-30 June 2005) through Resolution IOC-XXIII-14

Purpose

To coordinate the establishment of the tsunami Early Warning System and its activities in NEAM region

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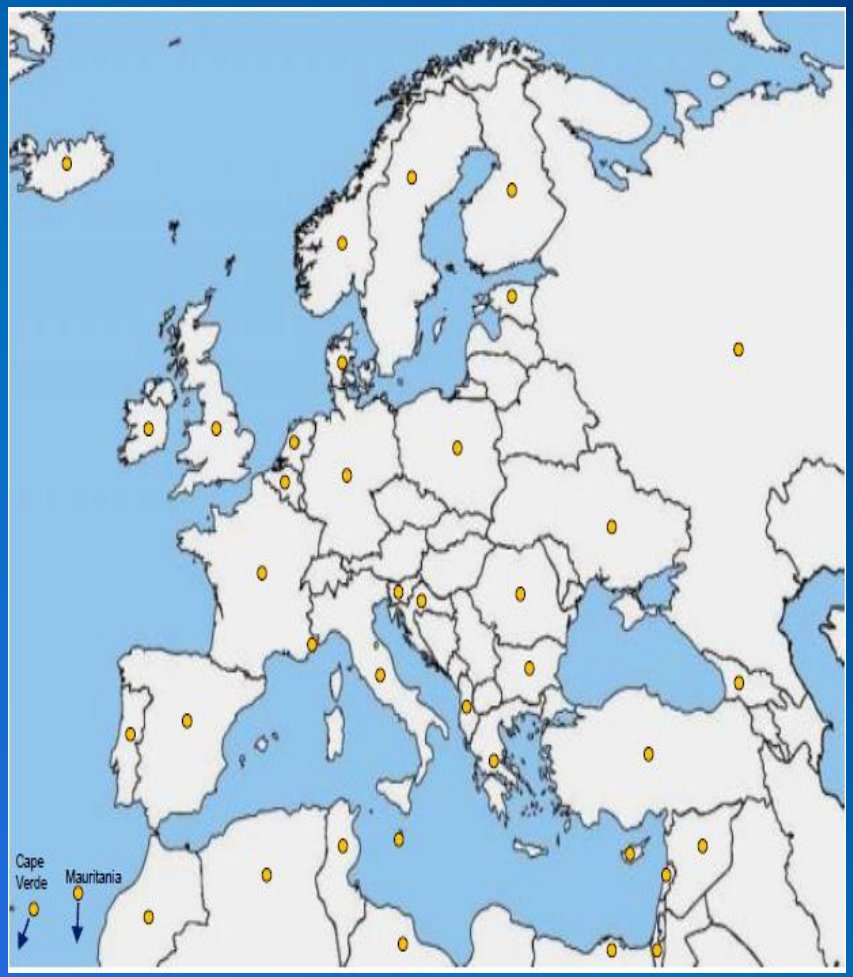

Member States

39 Member States

Albania
Algeria
Belgium
Bulgaria
Cape Verde
Croatia
Cyprus
Denmark
Egypt
Estonia
Finland
France (TSP)
Georgia
Germany
Greece (TSP)
Iceland
Ireland
Israel
Italy (TSP)
Lebanon
Libya
Malta
Mauritania
Monaco
Morocco
Netherlands
Norway
Poland
Portugal (NTWC)
Romania (NTWC)
Russian Federation
Slovenia
Spain
Sweden
Syria
Tunisia
Turkey (TSP)
Ukraine
United Kingdom

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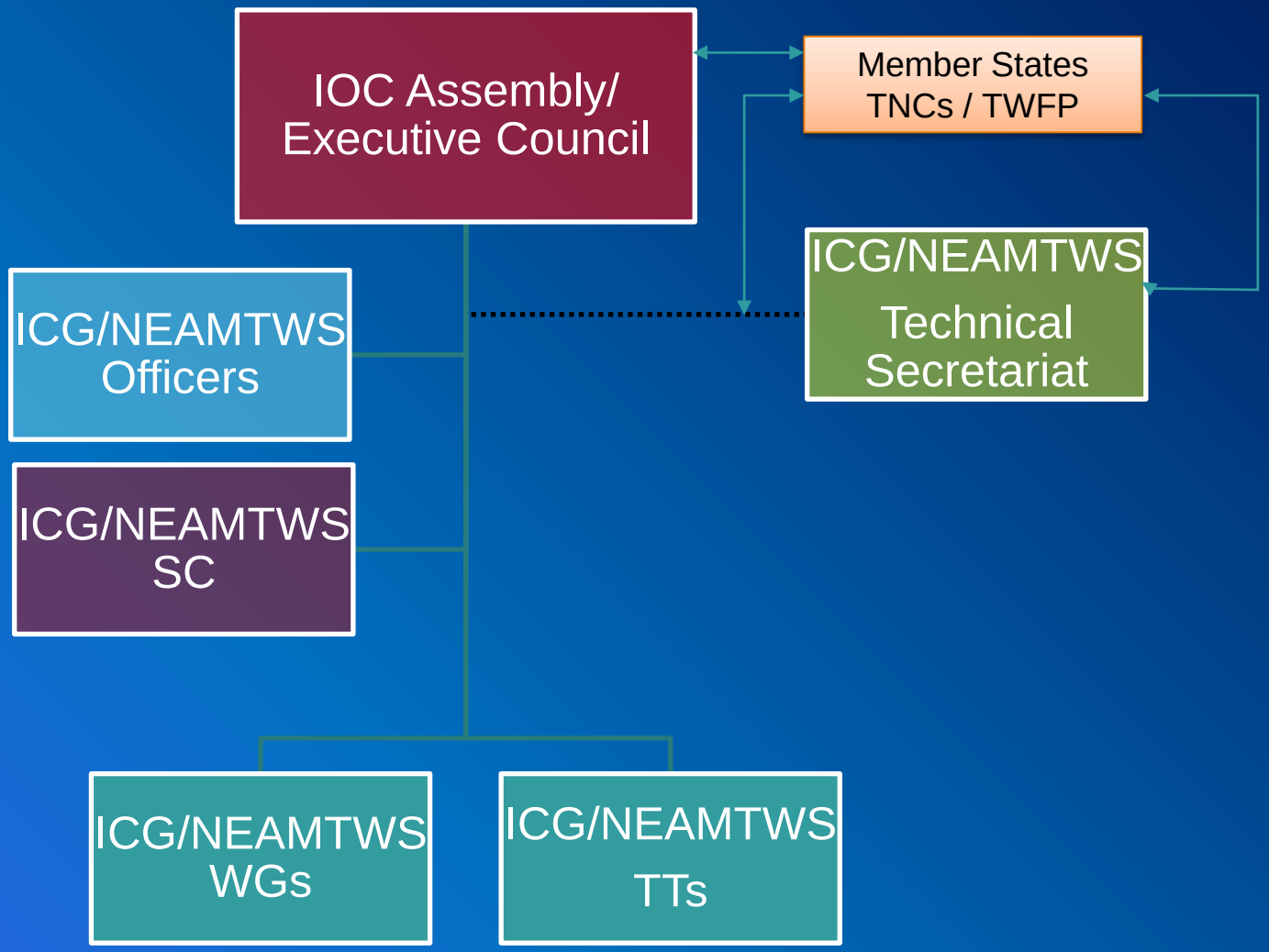

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Officers

Chairperson

Ahmet Cevdet Yalciner (Middle East Technical University, Turkey): 2014-2015, 2016-2017

Vice-chairpersons

Anna Gyldenfeldt (Federal Maritime and Hydrographic Agency, Germany): 2016-2017

Stefano Lorito (Istituto Nazionale di Geofisica e Vulcanologia, Italy):2016-2017

Technical Secretariat

IOC/UNESCO

Head of Tsunami Section

Thorkild Aarup

ICG/NEAMTWS Technical Secretary

Denis Chang Seng

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Technical Working Groups

There are four technical Working Groups (WGs):

- **Working Group 1 - Hazard Assessment and Modelling**

Co-chairs:
Mauricio González (University of Cantabria, Spain)
Jörn Behrens (University of Hamburg, Germany)

- **Working Group 2 - Seismic and Geophysical Measurements**

Co-Chairs:
Marinos Charalampakis (Institute of Geodynamics, National Observatory of Athens, Greece)
Alberto Michelini (National Institute of Geophysics and Volcanology, Italy)

- **Working Group 3 - Sea Level Data Collection and Exchange, Including Offshore Tsunami Detection and Instruments**

Chair:
Dov S. Rosen (NEMA, Israel)

- **Working Group 4 - Public Awareness, Preparedness and Mitigation**

Co-chairs:
Areti Plessa (Institute of Geodynamics, National Observatory of Athens)
Marzia Santini (Department for Civil Protection, Italy)

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Task Teams

Task Team on NEAMWave17

Co-chairs:
Ceren Ozer Sozdinler (Kandilli Observatory and Earthquake Research Institute, Turkey)
Eleonora Panunzi (Department of Civil Protection, Italy)

Task Team on Operations

Co-chairs:
François Schindele (CENALT, France)
Fernando Carrilho (Portugese Sea and Atmosphere Institute, Portugal)

Governance & Architecture-Cross Cutting Across ICGs

TOWS WG Task Teams

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- **TOWS WG Task Team on Operations**

François Schindele (CENALT, France)
Fernando Carrilho (Portugese Sea and Atmosphere Institute, Portugal)

- **TOWS WG Task Team on Disaster Management and Preparedness**

Gerassimos Papopoulos (Institute of Geodynamics, National Observatory of Athen)
Amir Yahav (National Emergency Management Authority, Israel)

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Accreditation of NEAMTWS Tsunami Service Providers (TSPs)

Following an Accreditation process established by the ICGNEAMTWS, the ICG/NEAMTWS- XIII session in Bucharest, Romania, 26-28 September 2016 granted the status of NEAMTWS Tsunami Service Providers (TSP) to the following institutions:

1. **CENALT – Centre national d'alerte aux tsunamis (France)**
2. **NOA-Institute of Geodynamics, National Observatory of Athens (Greece)**
3. **INGV-Centro Nazionale Terremoti, Istituto Nazionale di Geofisica e Vulcanologia (Italy)**
4. **KOERI-Kandilli Observatory and Earthquake Research Institute (Turkey)**

Portugal and Romania to start their National Tsunami Warning Centers during 2017.

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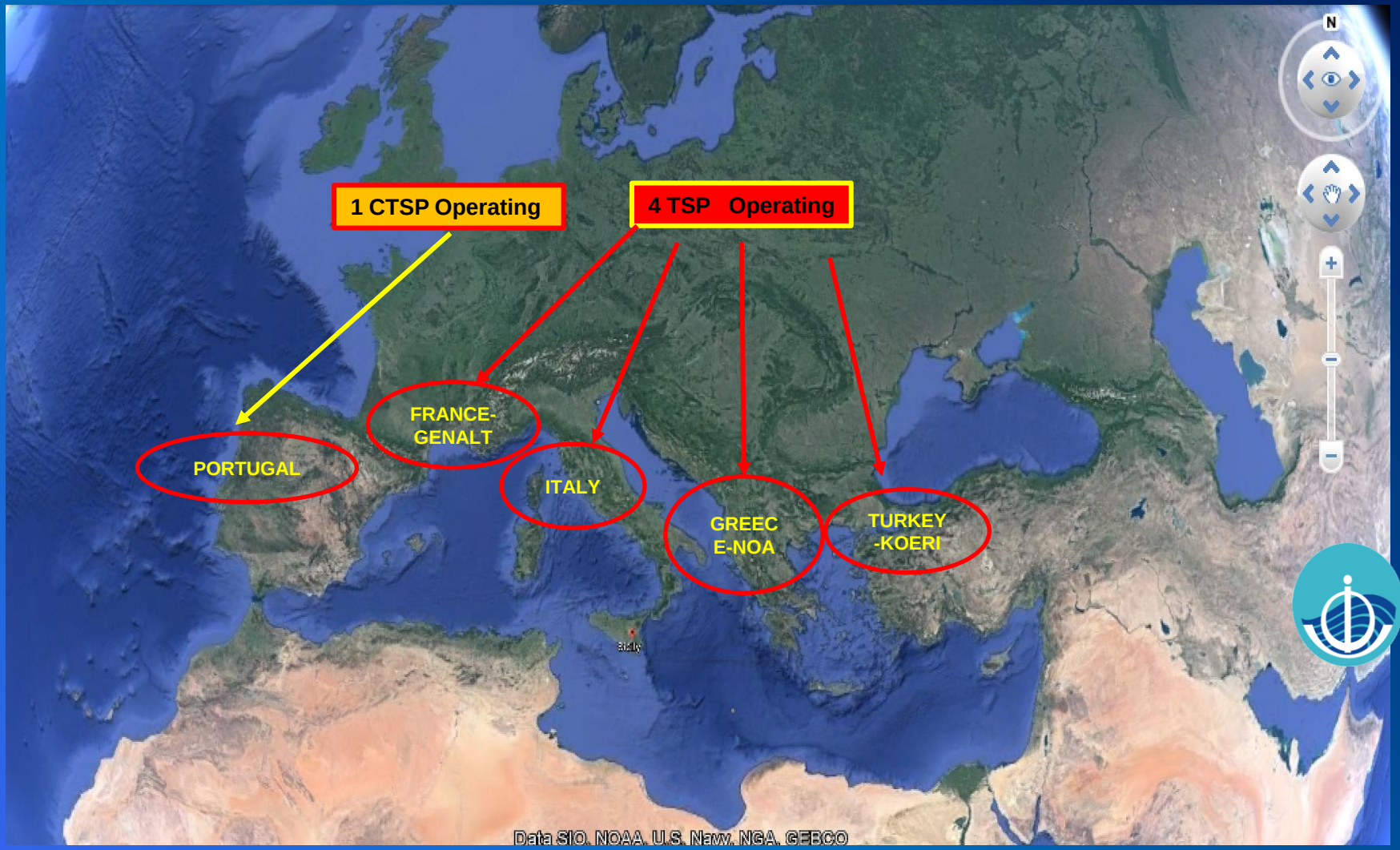
Tsunami Service Providers (TSPs)



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IOC-UNESCO ICG-TWS Regional Tsunami Service Providers

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7 New TSPs established since 2004 IO Tsunami

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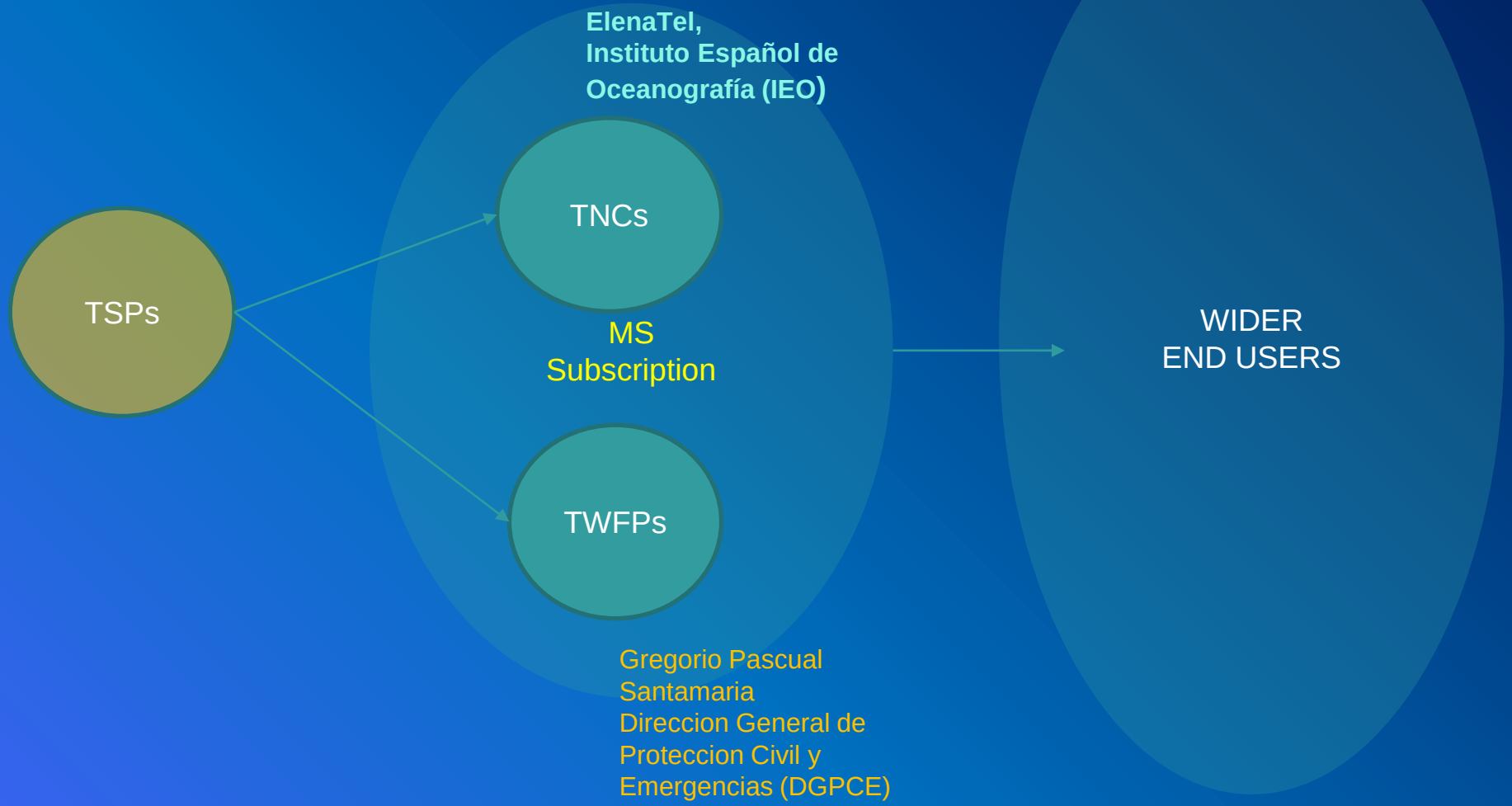
Tsunami Information Chain



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Seismic Network

- In Europe alone, there are currently more than 1000 broadband seismic stations operating.
- At least 50% of these are available in real-time through various transmission means.
- For the purpose of NEAMTWS it is important to ensure the availability of geographically balanced seismic station coverage.

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Sea Level Network

- Sea Level stations have increased from 15 in 2007 to 185 in 2015

- Gaps exist particularly South of Mediterranean

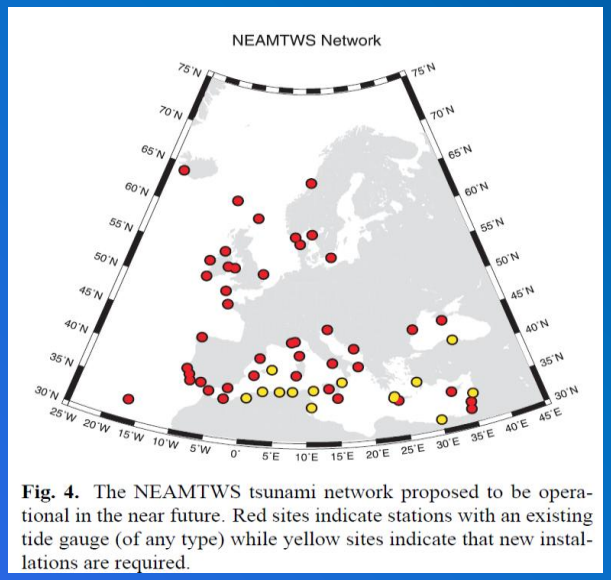
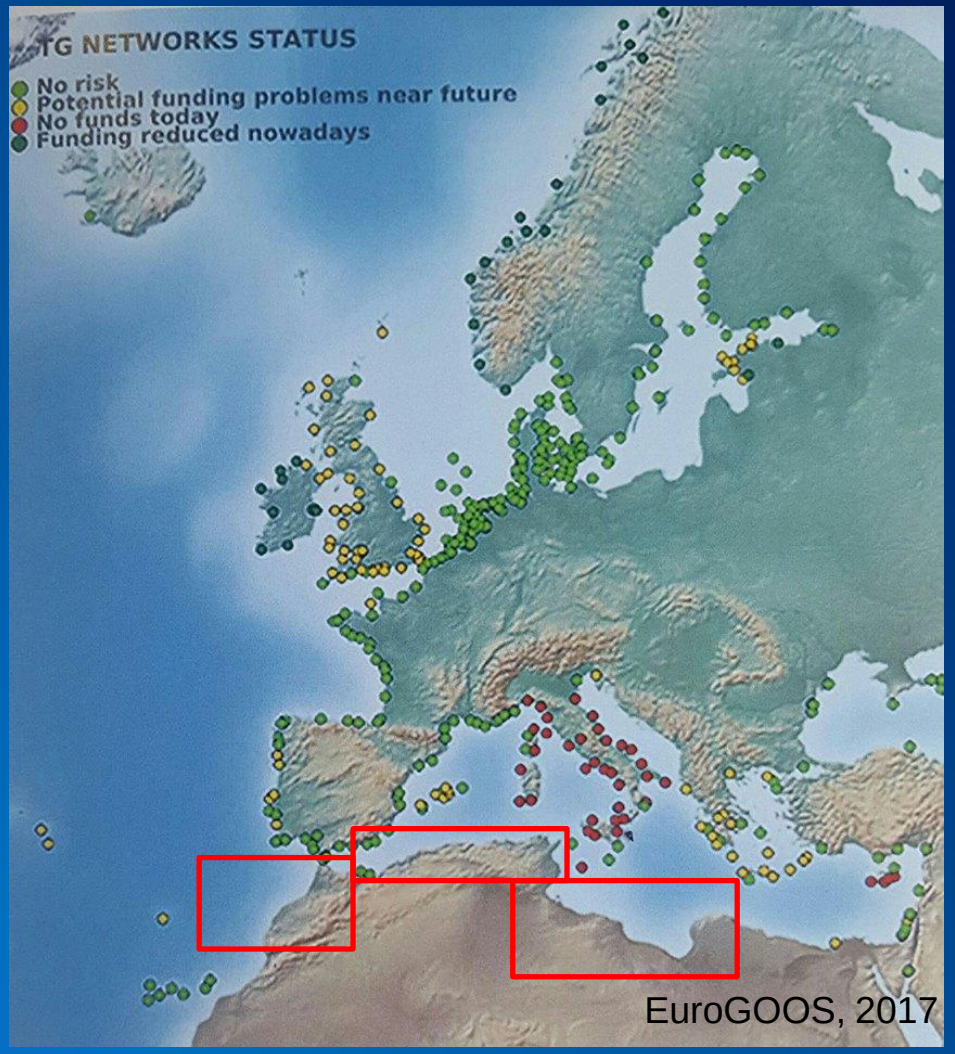


Fig. 4. The NEAMTWS tsunami network proposed to be operational in the near future. Red sites indicate stations with an existing tide gauge (of any type) while yellow sites indicate that new installations are required.



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Tsunami Information Meetings

The TSUMAPS-NEAM Project Final Meeting

TSUMAPS-NEAM is a project funded by the European Commission under the auspices of the Directorate General of the European Civil Protection and Humanitarian Aid Operations (DG-ECHO)

Location: Tunis, Tunisia
Date: 11-12 September 2017

Final meeting aims to present the first homogeneous region-wide long-term Probabilistic earthquake-induced Tsunami Hazard Assessment (PTHA) for the coastlines of the NEAM region to all potential stakeholders.

IOC UNESCO Information Meeting on NEAMTWS: Reducing Tsunami Risk through Early Warning System, Preparedness and Awareness

Location: Tunis, Tunisia
Date: 13 - 14 September 2017

Meeting is planned to maximize the dissemination of information related to the awareness, preparedness, and mitigation of tsunami risk.

Information Meeting on NEAMTWS: Reducing Tsunami Risk through Early Warning System, Preparedness and Awareness

Location: Madrd, Spain
Date: 25 - 26 September 2017

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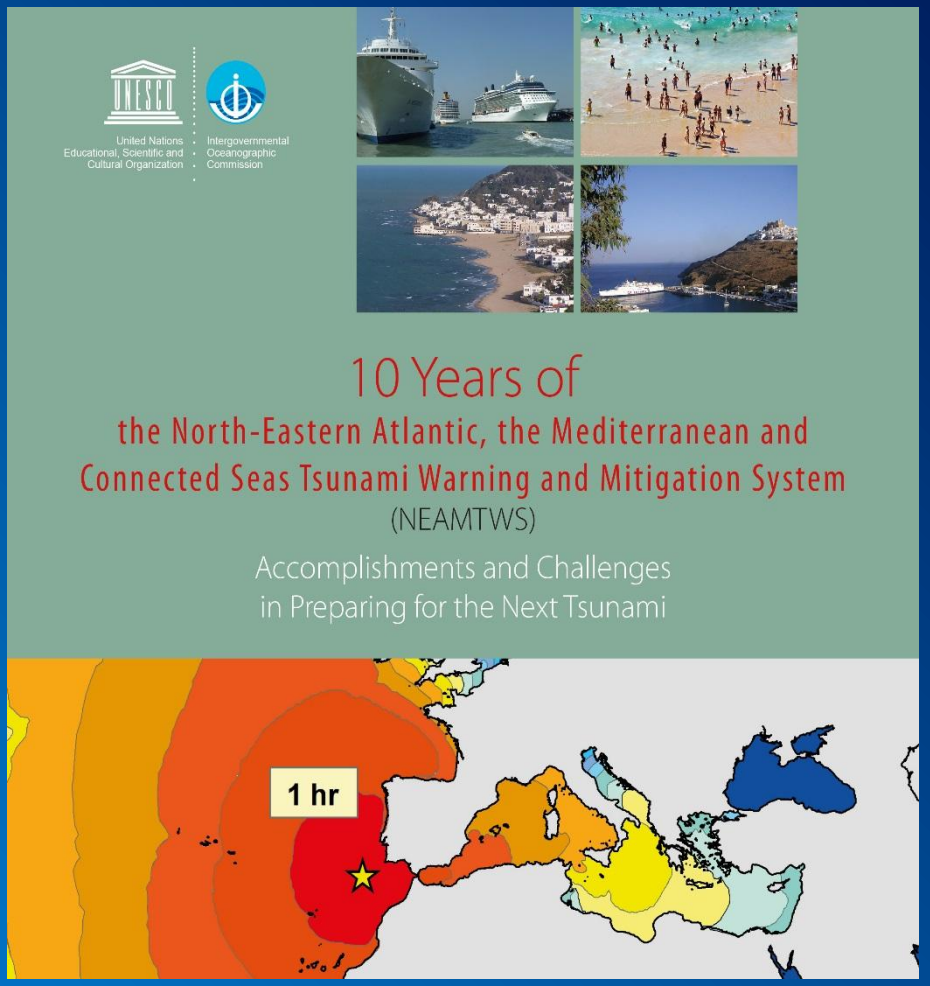
10th Anniversary of NEAMTWS

Publication Booklet

10 Years of the North-Eastern Atlantic, the Mediterranean and Connected Seas Tsunami Warning and Mitigation System (NEAMTWS):

Accomplishments and Challenges in Preparing for the Next Tsunami



NEAM Tsunami Information Centre (NEAMTIC)

- **NEAM Tsunami Information Centre (NEAMTIC)** was established to provide information on warning systems, risks and good practices in respect of tsunamis and other sea-level related hazards

- Users include:
  - CPAs
  - Disaster Management organizations
  - Decision makers
  - schools
  - industries in the coastal zone
  - General public.

- NEAMTIC supports the development of the NEAMTWS.

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NEAMTWS Participation in TOWS-X Meeting

Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation

Paris,

25-26 February 2016

and

23-24 February 2017

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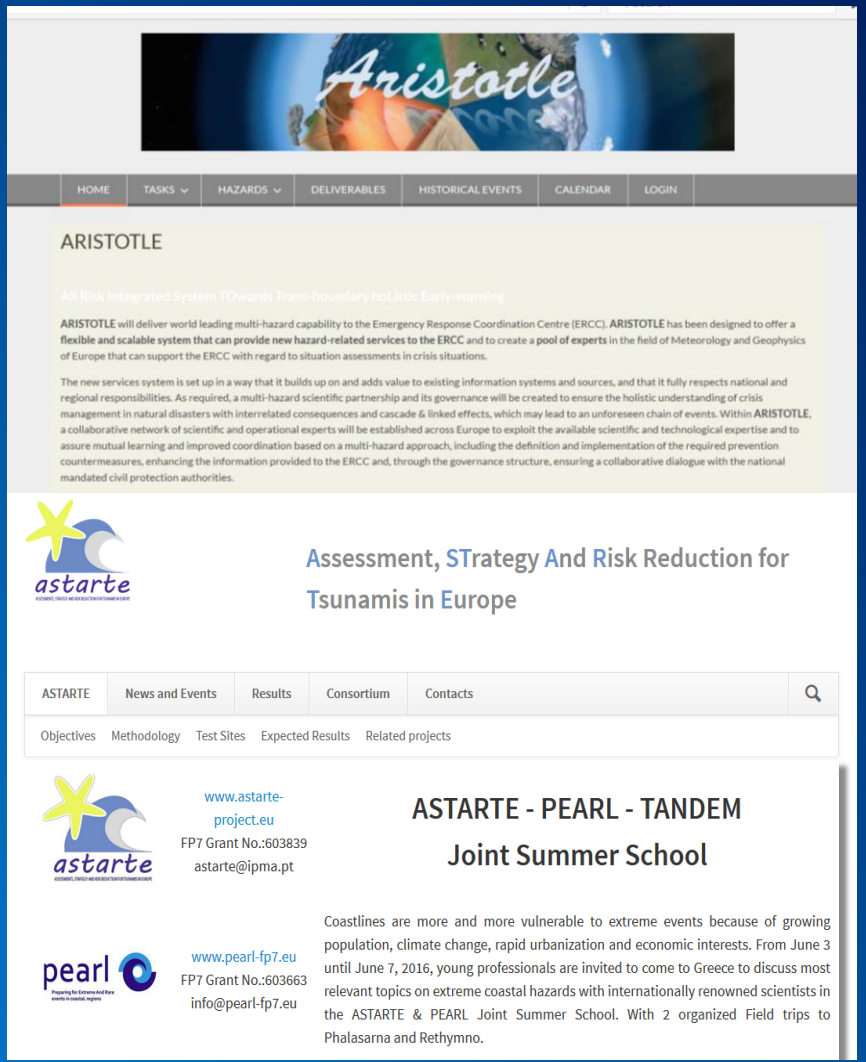
NEAMTWS Related EU Funded Projects

- **ARISTOTLE** (All Risk Integrated System Towards Trans-Boundary Holistic Early-warning) pilot project which started in 2015 in the area of Early Warning System for natural disasters. It is a multi-hazard scientific partnership for Early Warning Services. It is designed to deliver world leading multi-hazard capability to the Emergency Response Coordination Centre (ERCC).

- **ASTARTE** (Assessment, Strategy, and Risk Reduction for Tsunami in Europe) project. It is a three-year project ending in 2016.There are 26 partners from 16 countries.



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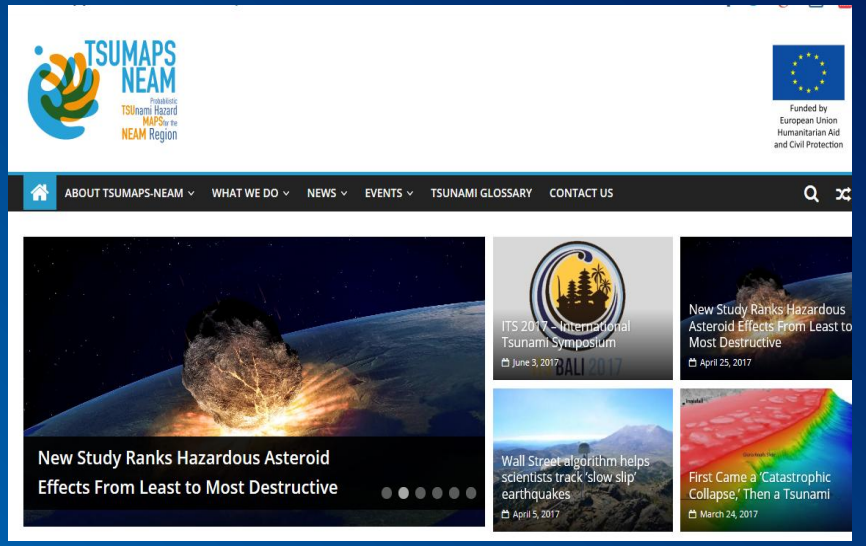
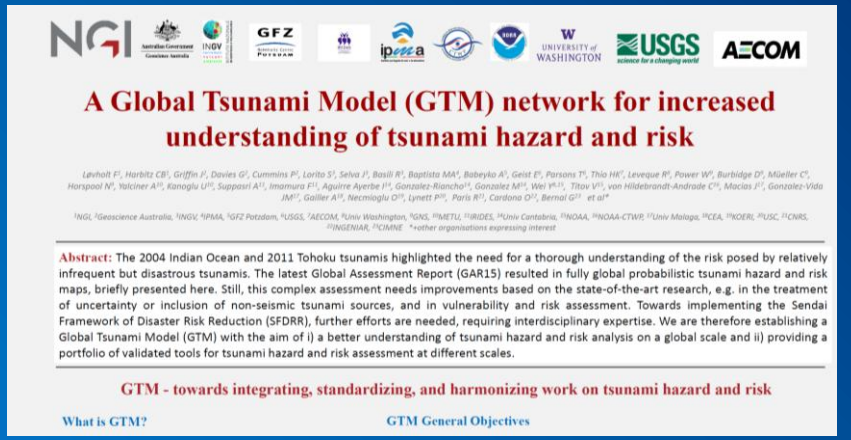
NEAMTWS Related EU Funded Projects

- **TSUMAPS-NEAM**(Probabilistic Tsunami Hazard Maps for NEAM) project; a co-funded project of the European-Union Civil Protection Mechanism. TSUMAPS-NEAM will provide the NEAMTWS region with the first community-based and homogeneous region-wide probabilistic tsunami hazard assessment.
- The duration of the project is 18+3 months from January 2016 to the end of September 2017.
- **GLOBAL TSUNAMI MODEL GTM**
- Network for increased understanding of tsunami hazard and risk
- Towards integrating, standardizing, and harmonizing work on tsunami hazard and risk





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Challenges and Opportunities

Risk Knowledge

A holistic assessment of tsunami hazard and risk in the NEAM region, as a basis for long term risk mitigation planning, and as a tool for evacuation planning in case of a tsunami warning

Monitoring, warning and forecast

- Improved Real Time Detection. Increased efforts to maintain and improve real time seismic and sea level observing networks ensuring a more uniform coverage around the NEAM region.

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Challenges and Opportunities (Con't)

Dissimination and communication of risk and information

- Clear and Simple Message.The NEAMWave exercise has shown that there is a need to further simplify the message distributed by TSPs.
- This will further improve the information flow to the end users.
- Provide tsunami information to maritime communities (Shipping)

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Challenges and Opportunities (Con't)

Response capability

- CPA and Actors Understanding of TEWS. NEAMTWS activities need to focus on providing civil protection personnel in all member states with a basic understanding of the early warning elements and features of NEAMTWS.
- Ability to Respond to rare & potentially devastating event. The procedures for evacuation planning and the need for Civil Protection organizations to demonstrate and maintain a capability to respond effectively to a rare, though possibly devastating event by carrying out regular drills and exercise.

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Challenges and Opportunities (Con't)

NEAMTWS Sustainability

- TEWS rooted within the communities at risk
- Broader participation of stakeholders and partners
- Projects –Downstream and Inclusive
- Education and Awareness

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Up-coming Activities

- **NEAMWave17 exercise** has been prepared by NEAMTWS team and it will be held between **31st October to 3 November 2017**, with the participation of five tsunami message providers (France, Greece, Italy, Portugal and Turkey) prior to the World Tsunami Awareness Day (5 November 2017)
- **ICGNEAMTWS XIV**, Lisbon, Portugal 21-23 Nov 2017

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SPECIAL THANKS

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