

DECISIONS AND RECOMMENDATIONS

Paris, France, 24–26 November 2021

Decision ICG/NEAMTWS-XVII.1

The Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-Eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS),

Having met online for its 17th Session 24–26 November 2021;

Having reviewed the progress made in the implementation of the NEAMTWS;

Notes the positive results of the fourth tsunami exercise for the region, NEAMWave21 conducted between 8-10 March 2021 and the major increase in media interest;

Expresses its thanks to Co-Chairs of the Task Team on Exercises and members for drafting the NEAMWave21 Evaluation Report and **requests** to finalize the report in the first quarter of 2022;

Recognizes the continued awareness raising efforts on tsunami hazards and preparedness by Member States during the intersessional period in line with and as a contribution to World Tsunami Awareness Day, 5 November 2021;

Appreciates the Tsunami Exercises conducted in France and Malta to commemorate the World Tsunami Awareness Day (WTAD);

Takes note of the work carried out by the Tsunami Ready Group within the Working Group 4 on Public Awareness, Preparedness and Mitigation during the intersessional period;

Appreciates the progress made by the communities of Bouches-du-Rhône and Cannes (France); Kos (Greece); Israel; Minturno, Pachino, Palmi (Italy); Marsaxlokk (Malta); Azores, Cascais, Lagos, Lisboa, Madeira, Portimão, Setúbal (Portugal); Chipiona (Spain), Bodrum and Istanbul (Turkey) towards becoming Tsunami Ready and prepared;

Welcomes the finalization of the ICG/NEAMTWS 2021-2030 Strategy Document, **expresses** its thanks to the Co-Chairs of Task Team on Documentation and **encourages** Member States and partners to contribute to its implementation;

Urges those Member States who have not yet subscribed through the IOC to the services of the TSPs to do so as soon as possible;

- **Requests** the Executive Secretary to contact Member States: Who have not nominated or verified both Tsunami Warning Focal Points (TWFPs) and Tsunami National Contacts (TNCs),
- Who have not provided Tsunami Forecast Points (TFPs), and remind them to urgently do so;

Welcomes the TNC and TWFP nominations of Libya;

Encourages the TSPs to finalize their work to produce a harmonized list of Tsunami Forecast Points (TFPs), including coastal zones of NEAMTWS where no officially communicated TFPs exist;

Takes note of the 31st IOC Assembly Decision A-31/3.4.1 concerning Tsunami and Other Coastal Hazards Warning Systems, the approval and the establishment of the Ocean Decade Tsunami Programme (the programme) and a Scientific Committee to prepare the Draft 10-Year Research, Development and Implementation Plan and the programme will be an important theme of the TOWS-WG 15th session, 24–25 February 2022;

Further welcomes the new European Union DG-ECHO project on “Strengthening the Resilience of Coastal Communities in the North East Atlantic, Mediterranean Region to the Impact of Tsunamis and Other Sea Level-Related Coastal Hazards”;

Sets the target to establish at least ten Tsunami Ready recognized communities in Mediterranean countries in the next two years, contributing to making 100% of communities at risk of tsunami prepared for and resilient to tsunamis by 2030 through the implementation of the UNESCO/IOC Tsunami Ready Programme and other initiatives;

Takes note of the study prepared by the Secretariat on Coastal Multi-Hazard Risk Perception, Resilience and Survey Questionnaires to contribute to the implementation of the new European Union DG-ECHO project concerning understanding and communication of tsunami and other sea-level related risk, and task Working Group 4 and new Task Team on Tsunami Ready to examine the survey questionnaires;

Notes the progress in the NEAM Region towards the establishment of a Tsunami Thematic Core Service (TCS) within EPOS – The European Plate Observing System, and European Research Infrastructure Consortium (ERIC) and its approval as a Candidate TCS;

Acknowledges and will follow with interest the COST Action AGITHAR - Accelerating Global Science in Tsunami Hazard and Risk Analysis; EPOS and Smart Cables initiatives;

Acknowledges the support of the European Commission (EC) and the Joint Research Centre (JRC) in capacity development, including infrastructure and research and new sea-level instrumentation and provision of measurements, especially for the Last Mile Project Phase 2 implemented in Malta and the support provided to the organisation of the first end-to-end tsunami exercise in Marsaxlokk (Malta) to address the requirements of tsunami warning, awareness, and mitigation at the local level;

Appreciates the installation of new tide-gauges network in Italy;

Requests the Co-Chairs of the Working Groups and of the Task Teams to prepare, in consultation with the members of their respective Working Groups or Task Teams, a plan of action for the intersessional period, and to submit it to the IOC Secretariat no later than the end of January 2022;

Accepts Additional recommendations of Working Groups and Task Teams as outlined in Annex I;

Decides:

- i. To continue the merged activities of Working Groups 2 and 3 in accordance to the revised Terms of Reference in Appendix I;
- ii. To continue the Task Team on Documentation according to the revised Terms of Reference in Appendix 2;
- iii. To continue the Task Team on Tsunami Exercises according to the revised Terms of Reference in Appendix 3;
- iv. To continue the activities of the Task Team on Operations according to the revised Terms of Reference in Appendix 4;
- v. To formally establish a Task Team on Tsunami Ready with Terms of Reference in Appendix 5;
- vi. To continue the activities of the Steering Committee during the intersessional period according to revised Terms of Reference in Appendix 5;
- vii. To conduct NEAMWave23 within the first week of November 2023;

Recommends:

- i. To increase the involvement of Member States in the ICG activities, with particular focus on tsunami education, awareness and preparedness, and to further explore and share experiences in piloting of Tsunami Ready for the NEAM region, Tsunami Hazard and Tsunami Evacuation Maps, Plans, and Procedures (TEMPP);
- ii. TSPs, NTWCs, WGs, TTs and Member States to provide key documents and reports to the IOC Secretariat at least one month before next ICG/NEAMTWS Session;
- iii. To make available the reports of TOWS meetings to the TNCs and to the ICG/NEAMTWS Working Groups and Task Teams for review;

Further recommends:

- i. That each TSP continues to provide alert level information based on their best practices, including (possibly different) decision matrices, scenario databases or other methods, these methodologies needing to be documented in the NEAMTWS Operational Users Guide;
- ii. That TWFPs, in close connection with their NTWCs, if applicable, to develop SOPs in order to handle diverging TSP warning messages as provided in the guidance

document “Guidelines on TSP Messages Uncertainty” by Working Group 1 in 2017;

- iii. That all sea-level data should be made available to the TSPs and NTWCs using bilateral agreements, between TSPs/NTWCs, whenever possible;
- iv. To increase the number of seismic and sea level stations available in the North of Africa, and for sea level, especially in consideration of tsunamis originated from non-subduction zones, as well as from non-seismic sources, to increase sampling rate (towards 1sps) and reduce the latency to 1 minute or less as far as possible;
- v. That Member States should encourage the active involvement of their national Civil Protection Authorities (CPAs);

Encourages Member States to host ICG/NEAMTWS-XVIII;

Thanks the Secretariat for hosting the online Seventeenth Session of ICG/NEAMTWS.

Appendix 1 to Decisions and Recommendations ICG/NEAMTWS-XVII

Terms of References for Working Groups 2 and 3 on Seismic and Sea Level Measurements

Mandate

The working group will be responsible for:

- i. Defining, based on existing organizations and functions, detection transnational networks, like seismic, geophysical and sea-level/marine networks as part of early warning tsunami detection instruments;
- ii. Providing recommendations on the data processing and analysis;
- iii. Providing a list of possible sea level stations for the NEAMTWS.

Appendix 2 to Decisions and Recommendations ICG/NEAMTWS-XVII

Terms of Reference of the ICG/NEAMTWS Task Team on Documentation

Mandate

The Task Team will:

- i. Coordinate inputs from Tsunami Service Providers (TSPs), Working Groups and the Task Team on Operations and the Technical Secretariat to produce the NEAMTWS Strategy and Operational User Guide(OUG);
- ii. Report to ICG/NEAMTWS Steering Committee in March/April 2022 and subsequent ICG/NEAMTWS-XVIII.

Modus operandi

The Task Team will mainly work by correspondence, but will meet by teleconference as required.

Membership

- The ICG/NEAMTWS Officers;
- All TSP representatives;
- Co-Chairpersons of existing NEAMTWS Task Teams and Working Groups;
- Co-Chairpersons of the Task Team will be appointed by the ICG/NEAMTWS Chairperson in consultation with Vice-Chairpersons for a one-year term;
- Reappointed, if needed, on a rotational basis.

Appendix 3 to Decisions and Recommendations ICG/NEAMTWS-XVII

Terms of Reference of the ICG/NEAMTWS Task Team on Tsunami Exercise

Mandate

The Task Team will:

- i. Finalize NEAMWave21 Evaluation report by the ICG/NEAMTWS Steering Committee in the first quarter of 2022;
- ii. Work on the preparations of NEAMWave23 in cooperation with the exercise team members and the IOC Secretariat;
- iii. Prepare the NEAMWave23 Exercise Manual and evaluation questionnaires in collaboration with Task Team on Documentation, Working Group 4, the Exercise Task Team and the IOC Secretariat;
- iv. Support the IOC Secretariat in the preparation of an online system for exercise subscription and evaluation.

Appendix 4 to Decisions and Recommendations ICG/NEAMTWS-XVII

Terms of Reference of the ICG/NEAMTWS Task Team on Operations

Mandate

The Task Team on Operations will facilitate improvements and harmonization of operational implementation of warning centres/systems through:

- i. Continue to improve the Performance Monitoring Framework for NEAMTWS upstream components, based on the functions-requirements defined in the approved accreditation procedure and performance indicators developed for Communication Test Exercises;
- ii. Advice on the modalities of operation, interoperability, methods and standards for the development and issuance of warnings, such as methods and reporting of magnitudes, and requirements in terms of coordination and operation of NEAMTWS;
- iii. Foster and propose a technical solution for real-time data exchange among TSPs and possible new CTSPs;
- iv. Evaluate the recommendations made by inter-ICG/TOWS Working Group on Tsunami Operation for possible implementation by ICG/NEAMTWS;
- v. Advice on arrangements for redundancy and back-up arrangements;
- vi. Support the Task Team on Documentation;
- vii. Continue the assessment of the Global Service Definition Document and investigate its adaptability by the NEAMTWS and report progress to ICG/NEAMTWS-XVIII.

Modus operandi

The Task Team will mainly work by correspondence and if required, another one in preparation for the next ICG meeting.

Membership

- The ICG Officers;
- All TSP Representatives;
- NTWC, TWFP and CPA Representatives;
- Co-Chairpersons of existing NEAMTWS Task Teams and Working Groups;

Co-Chairpersons of the Task Team will be appointed by the ICG/NEAMTWS Officers and will be reappointed on a rotational basis every year.

Appendix 5 to Decisions and Recommendations ICG/NEAMTWS-XVII

Terms of Reference of the ICG/NEAMTWS Task Team on Tsunami Ready

Mandate

The Task Team on Tsunami Ready Team will:

- i. Promote the Tsunami Ready programme in the NEAM region and encourage Member States to join the program;
- ii. Coordinate and foster cooperation among NEAM countries and other regions worldwide on Tsunami Ready programme in place, as well as exchange knowledge, experiences and best practices;
- iii. Provide advice on the procedures to achieve a Tsunami Ready recognition;
- iv. Adapt the standards in NEAM region according to the IOC UNESCO Tsunami Ready guidelines;
- v. Report to and have a strong interaction with the ICGNEAMTWS/WG4.

Modus operandi

The Task Team on Tsunami Ready will mainly work by correspondence. Online meetings will be scheduled as required and agreed.

Membership

- Nominated experts by Member States according to [the IOC Circular Letter No2821](#). The list of experts can be updated by Member States, if needed;
- WG 4 members on request to join the Task Team of Tsunami Ready through their respective Tsunami National Contacts;
- Steering Committee members.

Appendix 6 to Decisions and Recommendations ICG/NEAMTWS-XVII

Terms of Reference of the ICG/NEAMTWS Steering Committee

Mandate

The Steering Committee shall coordinate and integrate the work of ICG/NEAMTWS in the intersessional periods, as implemented through the various Working Groups and Task Teams, including but not limited to:

- i. Monitor performance and interoperability of the NEAMTWS and report to ICG/NEAMTWS;
- ii. Implement decisions and recommendations of the ICG and provide strategic advice on the implementation of the NEAMTWS;
- iii. Identify relevant funding sources taking account of the resource implications of approved activities;
- iv. Facilitate implementation at the level of the ICG of relevant resolutions, decisions and recommendations of the IOC governing bodies;
- v. Evaluate the feasibility of implementation of the recommendations of the Working Group on Tsunamis and Other Hazards related to Sea-Level Warning and Mitigation Systems (TOWS-WG) in NEAMTWS;
- vi. Develop and maintain the NEAMTWS Implementation Plan and Interim Operations Users Guide;
- vii. Examine continuing compliance of Tsunami Service Providers (TSPs) with the adopted operational and organizational function and requirements;
- viii. Implement the procedures as adopted and the Terms of References (ToRs) for the accreditation of Candidate Tsunami Service Providers (CTSPs);
- ix. Nominate accreditation teams, foster the accreditation process during the coming year;
- x. Liaise with the Steering Committees of equivalent structures of other ICGs;
- xi. Consider the potential re-organization of Working Groups and Task Teams structure;
- xii. Promote increased awareness of NEAMTWS.

Modus operandi

The Steering Committee will mainly work by correspondence, but hold a coordination meeting prior to each ICG session. Other meetings will be held as needed.

Membership

- The ICG/NEAMTWS Officers (Chairperson and two Vice-Chairpersons);
- The Co-Chairpersons of ICG/NEAMTWS Working Groups and Task Teams;
- Representatives of (C)TSPs
- Representatives to TOWS Task Team on Disaster Management and Preparedness (TT-DMP) and Task Team on Tsunami Watch Operations (TT-TWO)
- Members of Tsunami Decade Scientific Committee and Tsunami Coalition

Annex I to Decisions and Recommendations ICG/NEAMTWS-XVII

Recommendations of Working Groups and Task Teams

Recommendations of Working Group 1 on Hazard Assessment and Modelling

- To collect Probability Tsunami Hazard Assessment (PTHA) methodologies and application guidelines developed in the different countries, in order to have a document showing the state of the art, methodologies and application guidelines in regards PTHA for the NEAM region. It could be an effort conducted within the framework of the COST Action AGITHAR;
- To organize at least one conference with WG 1 participants to present and discuss PTHA methodologies;
- To create guidelines to elaborate Tsunami Ready flooding and evacuation maps in the NEAM region & for local emergency plans;
- To include new benchmark cases provided by NEAM member states to be included in the Web page;
- To elaborate in collaboration with TT on Operations on specific SOPs for cancellation of tsunami hazard in relation to different characteristics of local and remote source tsunami events;
- To continue the activities of the WG1 during the intersessional period.

Recommendations of Working Group 2 and 3 on Seismic, Geophysical and Sea level Measurements

- Member States are encouraged to actively participate in WG 2 and 3;
- Member States, the JRC, other data providers and repositories to identify further needs for public access for any real time sea-level data for tsunami operations;
- Promote the improvements of the communication channels for the most updated information of station status in the NEAM region;
- Support the IOC Secretariat to explore possible high level approaches to data exchange from detection and monitoring networks in the North African countries, along

- with active engagement (workshops, technical visits, scientific projects etc.) in order to encourage their involvement and contribution in the NEAMTWS operations;
- v. Investigate and follow ongoing developments in the region about the feasibility of using smart cables, deep-sea observatories and buoys to measure sea level in offshore locations, analyzing optimal configurations for the different NEAMTWS basins;
 - vi. Support the development associated with initiatives such as the SMART - CAM and MEDUSA.

Recommendations of Working Group 4 on Public Awareness, Preparedness and Mitigation

Recommendations

- i. To promote the Tsunami Ready initiative in the NEAM region through webinars, social media, videos etc.;
- ii. To continue activities aiming to keep the NEAMTIC website updated and informative in its contents;
- iii. To align future activities with the new ICG/NEAMTWS 2030 Strategy Document;
- iv. To contribute to the Decade Tsunami Programme;
- v. To interact, support and share experiences with the new established Task Team on Tsunami Ready;
- vi. To promote and contribute to a study on threat levels and social risk perceptions;
- vii. To promote the creation of an international network of scholars, Universities and research institution to be involved in such a study across NEAM area countries;
- viii. To link with international and national Ocean Literacy networks to raise general awareness and spread knowledge on tsunamis. (e.g. <https://webgate.ec.europa.eu/maritimeforum/en/node/4510>, EU4 Ocean platform, EuroGOOS working group on OL)

Recommendations of the Task Team on Tsunami Ready

Recommendations

- i. To support all countries implementing Tsunami Ready in communities, including countries participating in the IOC/UNESCO European Union DG-ECHO project;
- ii. To define the most critical points of the TR guidelines, adapting procedures to the peculiar characteristics of NEAM Countries;
- iii. To promote the Tsunami Ready programme in the NEAM region using web sites, social media, videos and webinars etc.;
- iv. Support education programs through Tsunami Ready initiatives (e.g. education programmes in schools, temporary or permanent exhibition etc.);

- v. To continue monitoring the Tsunami Ready initiatives in the NEAM region and sharing knowledge and experiences through meetings and webinars;
- vi. Continue to develop the study on the impact of Tsunami Ready guidelines on the responsibilities of scientists, public administrators and civil protection officers;
- vii. To identify common best practices in order to facilitate the dissemination of the Tsunami Ready programme in the NEAM region;
- viii. To promote longitudinal studies assessing the knowledge gained by communities in which the Tsunami Ready programme is implemented;
- ix. To share Tsunami Ready experience and knowledge with TOWS WG and Task Team on Disaster Management and Preparedness;
- x. To formally establish a Task Team on Tsunami Ready with Terms of Reference as provided in Appendix 5;

Recommendations of the Task Team on Documentation

- i. To finalise the figures and publish the NEAM Strategy 2021-2030 document before the end of 2021;
- ii. Coordinate input from TSPs and the Task Team on Operations to prepare a draft of selected sections of the revised Operational Users Guide before the next SC meeting in the spring of 2022.

Recommendations of the Task Team on Tsunami Exercises

- i. To plan and conduct the next NEAMWave tsunami exercise in 2023 (NEAMWave23);
- ii. To revise NEAMWave Exercise Manual, Part II – Exercise Supplements. Part I – Exercise Instructions updated, only if needed;
- iii. To revise the online tools (subscription and evaluation) to become more user friendly. Subscription mechanism should be clearer in regard to TSPs ordinary recipients and subscribers to the exercise;
- iv. To share the NEAMWave Exercise Manual with the exercise participants early to facilitate the necessary preparations and organizations;
- v. To organize regular online meetings between the Task Team on Tsunami Exercise (including the secretariat) and targeted participant groups, including TSPs, TWFPs, CPAs etc.;

- vi. To organize online meetings with the Emergency Response Coordination Centre (ERCC) and representatives of Civil Protection Authorities before implementing NEAMWave exercises in order to encourage them to participate in the exercises;
- vii. TNCs to encourage Civil Protection Authorities in their country to participate in future NEAMWave exercises;
- viii. Tsunami Service Providers to continue sending exercise messages to their regular message recipients as default;
- ix. IOC Secretariat to continue updating Member States tsunami contact points (TNC & TWFP) through circular letters;
- x. To request Civil Protection Authorities with exercises experience to prepare a one-page guiding document to share with other non-experienced CPAs, describing their experience in implementing Phase B of NEAMWave Exercises;
- xi. Secretariat to prepare a concept information paper to inform CPAs about the general concept of NEAMWave;
- xii. TSPs to co-operate and prepare joint exercise scenarios

Recommendations of the Task Team on Operations

- i. TSPs to further collaborate to develop the Tsunami Service Provider Interoperability Tool (TSP-IOT);
- ii. TSPs to develop sea-level readings procedures for NEAMTWS purposes and formalizing which and how non-instrumental information/observations can be included in the ONGOING messages;
- iii. TSPs start defining a common TSU-CAP template to issue tsunami messages that may serve both NEAMTWS and national needs at the same time;
- iv. TT on Operations to provide inputs to the TT on Documentation to prepare/update the ICG/NEAMTWS Operational User Guide;
- v. The Steering Committee attends to the accreditation when a TSP implement major updates in their SoP.