Lettre circulaire IOC No. 2437
(disponible en anglais et français)

À: Points focaux nationaux d’alerte aux tsunamis du NEAMTWS (TWFP) et Points de contact nationaux (TNC)
Comité directeur de l’ICG/NEAMTWS

Copie: Principales agences nationales officielles de coordination chargées d’assurer la liaison avec les États membres de la COI
Délégués permanents/missions d’observation des États membres de la COI auprès de l’UNESCO

Sujet: Exercice d’alerte tsunami dans la région de l’Atlantique du Nord-est, la Méditerranée et les mers adjacentes — “NEAMWave12”

Après le succès du test de communication du 10 Août 2011, fort de la participation de 31 points focaux nationaux d’alerte aux tsunamis de la région, le Groupe intergouvernemental de coordination pour le système d’alerte aux tsunamis pour l’Atlantique du Nord-est, la Méditerranée et les mers adjacentes, a décidé au cours de sa 8e session (Santander, Espagne, 22–24 novembre 2011), le lancement d’un exercice à grande échelle nommé « NEAMWave12 » dans le courant du 4e trimestre 2012 afin de tester l’état de préparation du système et celui des États membres. Cette lettre informe sur l’exercice NEAMWave12 auquel tous les États membres NEAMTWS sont encouragés à participer.


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Les principes directeurs pour la planification et le scenario de l'exercice NEAMWave12 sont détaillés dans l'annexe 1 (NEAMWave12 Concept Paper) et dans l'annexe 2 (Draft Scenario Guidelines for NEAMWave1) pour votre information. De plus amples détails seront discutés et approuvés au cours d'un atelier sur la préparation d'urgence aux tsunamis dans les zones côtières méditerranéennes, qui se tiendra à Stromboli, en Italie, du 30 mai au 2 Juin 2012. Cet atelier est organisé par le projet PPRD South (Prévention, préparation et réponse aux catastrophes naturelles et catastrophes d'origine anthropique) et coordonné par le Département de la protection civile italienne et la COI avec le financement de la Commission européenne.

Afin d’assurer la meilleure coordination possible et permettre l’engagement des États membres pendant l’exercice, nous sollicitons la nomination d’un contact national dans votre pays pour l’exercice NEAMWave12 avec qui nous échangerons pour planifier la conduite de l’exercice. Les personnes désignées seront appelées à confirmer les dispositions existantes en cas d’alerte aux tsunamis dans leur pays, et identifier les points de contact opérationnels pour la réception et la diffusion d’alertes aux tsunamis. Ces personnes seront également chargées de coordonner l’évaluation de l’exercice, dont les détails seront diffusés dans le cadre du Manuel « NEAMWave12 exercice ».

Lors de sa dernière session, le GIC a reconnu les progrès constants réalisés dans la mise en place de services d’alerte aux tsunamis dans la région. La France, la Grèce, l’Italie, le Portugal et la Turquie ont confirmé qu’ils opéreront des centres nationaux d’alerte aux tsunamis dans un bref délai, dont certains seront en place dès 2012. En 2012, certains centres nationaux d’alerte aux tsunamis offriront également des services d’alerte régionale, à titre provisoire, à la demande d’États membres de la région NEAM. L’exercice NEAMWave12 permettra aux États membres du NEAMTWS d’évaluer leur capacité réelle dans le système à venir. Nous prions donc tous les États membres de participer à l’exercice NEAMWave12 dans toute la mesure de leurs possibilités.

Nous vous serions reconnaissant de faire parvenir par email ou par fax au Secrétariat du GIC/NEAMTWS (neamtws-secretariat@unesco.org; fax +33 (0) 1 45 68 58 12) les coordonnées de votre contact national pour l’exercice NEAMWave12 d’ici au 24 septembre 2012. Nous vous invitons à diffuser des copies de cette lettre aux organisations et autorités compétentes dans votre pays.

Cordialement,

François Schindelé, Président
ICG/NEAMTWS

Wendy Watson-Wright, Secrétaire Exécutive, COI
Sous-Directrice générale, UNESCO

Pièces jointes :
Annexe 1 NEAMWave12 Concept Paper
Annexe 2 Draft Scenario Guidelines for NEAMWave1
**Scope**

Regional and national tsunami warning systems in every ocean must maintain a high level of readiness so as to be able to efficiently and effectively act to provide for the public’s safety during fast-onset and rapidly-evolving natural disasters such as tsunamis. Because of the relative infrequency of tsunamis, but knowing that tsunamis can have widespread impact across oceans and seas, the UNESCO/IOC and its Member States have been advocating through their Intergovernmental Tsunami Coordination Groups (ICGs) for the regular conduct of tsunami exercises. To maintain a high state of operational readiness, National Tsunami Warning Centres (NTWCs) and Civil Protection agencies must regularly practice their emergency response procedures to ensure that vital communication links work seamlessly, and that agencies and response personnel know the roles that they will need to play during an actual event.

End of 2011, The North-eastern Atlantic, Mediterranean and Connected Seas region is the only region in the world where a Tsunami Warning System is not in operation yet. Several NTWCs have been established so far, some have also declared their availability of operating as a Tsunami Watch Provider in interim status, subject to an accreditation procedure to be further developed and approved by the ICG/NEAMTWS in its 9th Session in September 2012. Two initial communication test exercises in 2010 were followed by the 1st Enlarged Communication Test Exercise (ECTE1) in 2011 with the involvement of all Tsunami Warning Focal Points (TWFP) in 31 countries in the NEAM region. NEAMWave12, as the first Tsunami Exercise in NEAM, will attempt to assess the national and local warning dissemination and response mechanisms put in place by Member State Civil Protection Agencies upon the reception of a Tsunami warning from their Tsunami Warning Focal Points. In addition NEAMWave12 will also address the questions related to the evaluation of alerts by Candidate Tsunami Watch Providers and the issuance of the tsunami messages to TWFPs, as in the previous Communication Test Exercises.

**Exercise Team**

An Exercise Team has been established by the TT-CTTE (Task Team on Communication Test and Tsunami Exercises) for NEAMWave12 with the following members: current and previous co-chairs of TT-CTTE, Chairperson of NEAMTWS, current and previous co-chairs of WG4 (Public Awareness, Preparedness and Mitigation), co-chair of WG1 on Hazard Assessment and Modeling and members of the IOC Secretariat. The Exercise Team will be responsible for the planning, preparation, conduct and evaluation of NEAMWave12 and will be coordinated by the co-chairs of TT-CTTE.

**Description of the Exercise**

NEAMWave12 will involve the simulation of the assessment of a tsunami based on an earthquake-driven scenario followed by an alert message dissemination (Phase A) and continued with the simulation of the TWFP/NTWC’s and Civil Protection agencies’ actions (Phase B), as soon as the message produced in Phase A has been received. There will be multiple scenarios in NEAMWave12, where Phase A is planned as a drill exercise with a time frame element focusing on the functional requirements of NTWCs which have declared their operational status as CTWP. These CTWPs will be responsible for message dissemination to Tsunami Watch Recipients (TWFP/NTWC) and would be responsible for a single scenario.

Phase B will be open to Member States by invitation and may include all types of exercises such as an orientation exercise, a drill, a table-top exercise or a functional exercise, within the discretion of Member States.
Exercise Date

NEAMWave12 will be conducted in the 2nd half of November 2012. The exact dates of the Exercise will be decided in September 2012 at the 9th Session of ICG/NEAMTWS.

Participation

CTWPs with a proven capability of disseminating messages using e-mail, fax and GTS are invited to participate in Phase A of NEAMWave12 involving a scenario in that part of the NEAM region of their interest. Moreover, CTWPs participating in Phase A should test their GTS at least once within one month prior to the exercise.

CTWPs interested in acting as Message Provider would inform the IOC Secretariat by 25 May 2012. Scenario Guidelines for NEAMWave12 will be then provided to these CTWP’s, upon which fully developed scenarios should be provided to IOC no later then 15 July 2012.

TWFPs, in cooperation with national Civil Protection agencies, are invited to participate in Phase B at one of the levels described above. However, TWFPs are invited and encouraged participating in Phase B at least at the level of table-top exercise. Moreover, Member States will be asked to choose one single scenario to participate in the exercise.

Each Member State TNC is encouraged to appoint its own in-country Exercise Planning Team and Exercise Planning Coordinator to develop the exercise further and tailor it to its own requirements.

TWFPs are invited to inform IOC Secretariat through their Tsunami National Contacts (TNCs) no later than 15 July 2012 on their participation, including the phases in which they would like to participate, also indicating, if applicable, the level of their participation for Phase B.

Preparatory Exercise

The Second Communication Test Exercise (NEAMTWS-CTE2) will be conducted on 22 May 2012, as announced by IOC Circular Letter No. 2431. NEAMTWS-CTE2 will address the questions related to the evaluation and issuance of the warning message by Tsunami Watch Provider, as in the previous CTEs, but will also attempt to assess the national and/or local response and warning dissemination mechanisms once emergency authorities receive a warning. It will involve all possible TWFPs using conventional message dissemination channels that have been previously subject to test between candidate TWP and NTWCs. Message dissemination using GTS will be only available between TWFPs that have this system available to
them at the operation level. Member States are especially encouraged to actively participate in NEAMTWS-CTE2, which will de facto serve the purpose of a build-up exercise for NEAMWave12.

Preparatory Meetings

NEAMWave12 Draft Manual will be introduced first at the 9th PPRD-South “prevention and preparedness” workshop for staff-level officials “Tsunami emergency preparedness in Mediterranean coastal zones” realized in partnership with the ICG/NEAMTWS during 29 May – 4 June 2012 in Stromboli, Italy, with limited participation from NEAMTWS Member States.

The draft manual will be distributed to the ICG/NEAMTWS members at the same time and a final workshop will be conducted on September 10th in the fringes of ICG/NEAMTWS-IX in September 2012 in Southampton (UK) to introduce the final version of the NEAMWave12 Manual and inform NEAMTWS Member States and their respective authorities in detail.

Evaluation of the Exercise

For Phase A, CTWP and TWFP/NTWCs actively participating in NEAMWave12 are required to submit a detailed evaluation report to the TT-CTTE within 30 days after the Exercise.

Participants of Phase B (TWFP/NTWCs and CPAs) are required to provide their individual report to the TT-CTTE within 60 days after the Exercise. Templates and guidelines for both Phase A and Phase B reports will be provided in the NEAMWave12 Manual.

Co-chairs of TT-CTTE in cooperation with the Exercise Team will be responsible for the compilation, evaluation and assessment of all the reports provided by the participants of Phase A and Phase B, and will submit a full report to the IOC Secretariat within 90 days after the Exercise.

List of Acronyms

CPA - Civil Protection Agency
CTE - Communication Test Exercise
CTWP - Candidate Tsunami Watch Provider
ECTE1 - 1st Enlarged Communication Test Exercise
ICG - Intergovernmental Coordination Group
IOC - Intergovernmental Oceanographic Commission
MS - Member States
NEAMTWS - North-eastern Atlantic, the Mediterranean and connected seas, Tsunami Early Warning and Mitigation System
NTWC - National Tsunami Warning Center
TNC - Tsunami National Contact
TT-CTTE - Task Team on Communication Test and Tsunami Exercises
TWFP - Tsunami Warning Focal Point
TWP - Tsunami Watch Provider
TWR - Tsunami Watch Recipients
Introduction
During the NEAMWave12 preparatory meeting in Paris, March 15, 2012, the role of tsunami scenarios for use in the NEAMWave12 exercise was discussed. In particular, it was agreed that a certain level of unification should be achieved for the scenario data used by CTWPs in conducting a realistic dissemination of test warning products.

This document develops a number of criteria for a useful test scenario, used for the NEAMWave12 exercise.

Definitions
A tsunami scenario used for testing the warning dissemination and mitigation measures is a set of data corresponding to a hypothetical tsunami event.

As – for the time being – only earthquake induced events are considered, a tsunami scenario is composed out of

- earthquake data
- arrival times at points of interest
- estimated wave heights at points of interest
- informational messages and material corresponding to the stages in time of a tsunami event.

Earthquake data are a moment magnitude value, and a hypocenter (i.e. location coordinates in latitude, longitude and depth). Additionally a time stamp is required, which has to be agreed upon by the members of the TT-CTTE preparing NEAMWave12.

Arrival times are given as follows: arrival of the first wave exceeding an absolute deviation of the current sea level by more than 10 cm in hours, minutes, and seconds after the rupture time (time stamp of the earth quake). Estimated wave heights are given as water level exceeding mean current sea level.

Informational messages are to be given in the usual (and officially announced) format of CTWP bulletins. Additional preparatory material should be provided prior to the test.

Criteria
A useful scenario that will be utilized by a CTWP in NEAMWave 12 for test informational message dissemination should consider the following criteria:

The scenario should be based on a computer-simulated event in order to fulfill a minimum of realism with respect to consistency of wave heights and travel times. Scenario computations should be carried out by validated tsunami simulation software,
based on discretized wave equations. Reasonable bathymetry and topography data should be used, as provided e.g. by

- General Bathymetric Chart of the Oceans (GEBCO)
- ETOPO1 Global Relief
- Global Multi-Resolution Topography Data Portal

The scenario should be based on a **credible worst-case** approach. It was discussed in the NEAMWave12 Task Team that a worst-case scenario should be chosen, in order to simulate an event of maximum extent and biggest impact. Such a credible worst-case scenario should be chosen for each sub-basin, in agreement with the tectonic knowledge.

The **scenario description** should be given to participants in the NEAMWave12 exercise by explaining the following key features:

- The basic earthquake assumed to cause the event (location and magnitude)
- A set of two plots, describing the basic characteristic of the wave dispersion:
  - An isochrone chart with arrival time iso-lines (figure 1 a.)
  - A wave energy plot with maximum wave heights for the entire domain (figure 1 b.)
- Example test information bulletin texts
- A brief time line explaining the standard operational procedures applied by the CTWP in case of a potential tsunami event

The scenario should contain a list of (preliminary) **forecast points**, announced prior to the exercise, where arrival times and wave heights are given. Forecast points should be chosen such that they correspond to a well-defined geographical location at the coast. Thus, wave heights given correspond to a water level above ground at the shore. Consequently, the arrival times correspond to arrival of the wave at the shore. While it is acknowledged that some CTWPs do not utilize modeling techniques allowing them to do computations of wave heights at the shore, reasonable measures should be taken to translate those values derived for deeper water locations into on-shore values (e.g. Green's law heuristics, etc.).

**Note:** Since no real-world data set is used, the scenario data will comprise a certain level of ambiguity. This is not a problem, as long as the scenario is somewhat consistent with common observations. In order to achieve this consistency, modeling should be applied to derive the scenario data.
Figure 1: a. An example isochrone map, showing lines of equal wave arrival times (each line represents 15 minutes travel time). b. An example wave energy plot, depicting maximum wave height over the whole time of simulation.

**List of Abbreviations**

*CTWP*  
Candidate Tsunami Watch Provider

*ETOP01*  
A 1 arc-minute global relief model of Earth’s surface that integrates land topography and ocean bathymetry

*GEBCO*  
General Bathymetric Chart of the Oceans

*NEAMWave12*  
Name of the planned Tsunami Warning and Mitigation System Exercise for the North-Eastern Atlantic, the Mediterranean and connected seas.

*TT-CTTE*  
Task Team on Communication Test and Tsunami Exercise