



ICG/NEAMTWS

Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and connected seas

Natural Sciences Social & Human Sciences Culture Communication & Information

Intergovernmental Oceanographic Commission
Tsunami Programme

Home > North-eastern Atlantic and Mediterranean English Français Español Русский Search.....

North-eastern Atlantic and Mediterranean Home

The Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and connected seas (**ICG/NEAMTWS**) was formed in response to the tragic tsunami on 26 December 2004, in which over 250,000 lives were lost around the Indian Ocean region. The Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) received a mandate from the international community to coordinate the establishment of the System during the course of several international and regional meetings, including the World Conference on Disaster Reduction (Kobe, Japan, 18 – 22 January 2005), and the Phuket Ministerial Meeting on Regional Cooperation on Tsunami Early Warning Arrangements (Phuket, Thailand, 28 and 29 January 2005). The IOC Assembly, during its twenty-third Session (21-30 June 2005), formally established the ICG/NEAMTWS through Resolution IOC-XXIII-14. The guidelines for the NEAMTWS activities are compiled in the NEAMTWS Implementation Plan

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

Working Groups and Task Teams

The Intergovernmental Coordination Group meets regularly to establish and implement working plans in the NEAM region. To address specific technical issues (terms of reference) it has formed four working groups and four task teams:

The ICG/NEAMTWS was established in June 2005 during the 23th IOC General Assembly.

Member States



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39 Member States
8 Observer Member States

Organisation of NEAMTWS



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Chair

Ahmet YALCINER (Middle East Technical University, Turkey) 2014-2015, 2016-2017

Vice chairs

Anna von GYLDENFELDT (Federal Maritime and Hydrographic Agency, Germany) 2016-2017

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

UNESCO/IOC Officers

Thorkild **AARUP**, Denis **CHANG SENG**

Steering Group

Working Groups

Working Group 1
Hazard Assessment
and Modelling

Working Group 2
Seismic and Geophysical
Measurements

Working Group 3
Sea Level Data
Collection and
Exchange

Working Group 4
Public Awareness,
Preparedness and
Mitigation

Task Teams

Task Team on NEAMWave17

Task Team on Operations

Basic Structural Elements of the TWS in the NEAM Region



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TNC - Tsunami National Contact

TWFP - Tsunami Warning Focal Point

NTWC - National Tsunami Warning Centre

TSP-Tsunami Service Provider

Basic Structural Elements of the TWS in the NEAM Region



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TNC - Tsunami National Contact

The person designated by an ICG Member State government to represent his/her country in the coordination of international tsunami warning and mitigation activities.

TWFP - Tsunami Warning Focal Point

A 24 x 7 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 Operation Procedures. The TWFP may or not be the NTWC.

TSP - Tsunami Service Provider

Collection, record, processing and analysis of earthquake data for the rapid initial assessment.

Computing the arrival time of the tsunami in the forecasting points.

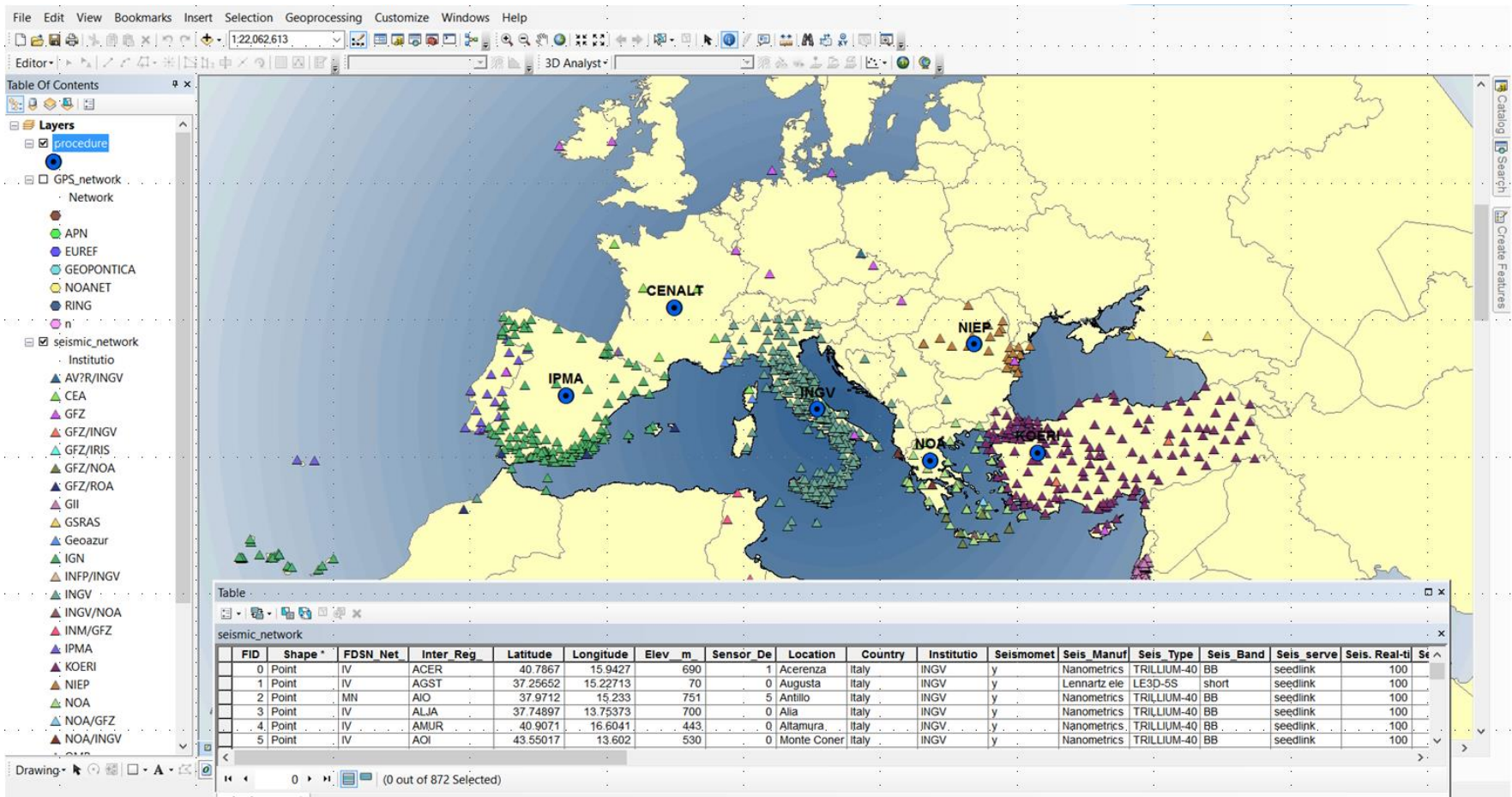
Collection, record, processing and analysis of sea level data for confirming and monitoring the tsunami or for cancelling elements of the alert system.

Dissemination to the Member States focal points (and national warning centres) of the messages, included the tsunami travel time, the amplitude and period of tsunami measured, and cancellation messages.

Seismic Network



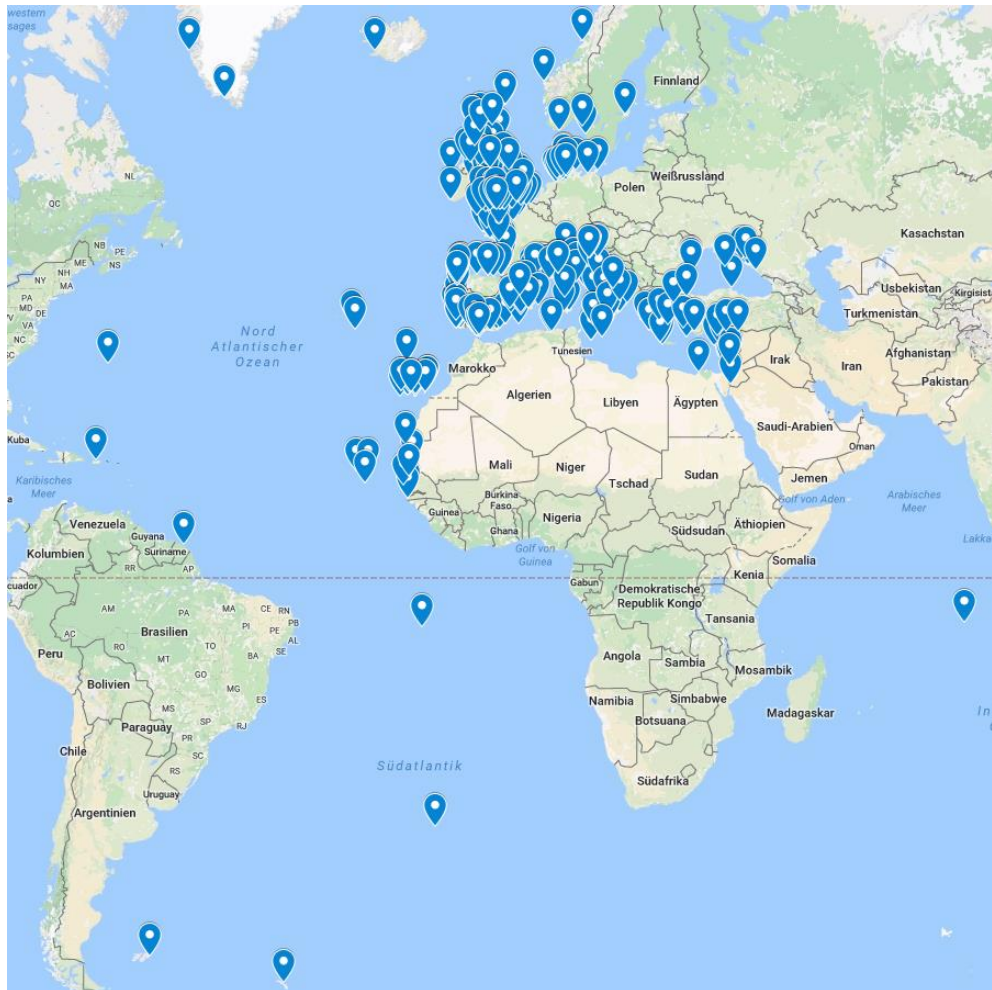
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Sea Level Stations in NEAM-Inventory



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Plus:

In 2015/2016, 20 new radar gauges financed by the JRC (Joint Research Centre of EU).

14 are installed, 3 shipped but not yet installed, For the rest appropriate place still have to be found. Five more stations are planned for 2017.

Sea Level Stations - Mediterranean




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NRT Sea Level Stations



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SEA LEVEL STATION MONITORING FACILITY

Intro **Map** Station lists Station details Services Disclaimer & policy

Sealevel stations
Status at 2016-10-13 13:53 GMT

Disclaimer Type **Active stations**



Legend:

- Station is offline, or data is outdated
- Station is online
- Station is not available at this site

Offline = No data received since 3 times the transmit interval.
The status is checked every 5 minutes.
The quality of the transmitted data is not checked.

- To obtain more details about a station - move mouse over station and click.
- To zoom in - hold down the Shift-key while holding down the mouse button and drawing a rectangle or use the Scroll mouse button, or use the control buttons in upper left part of map.
- To pan - drag the map, or use the control buttons in upper left part of map.
- Or use the KML file.

Lat: 22.72 Lon:12

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Accreditation of TSPs



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After becoming operational the so called Regional Centres expressed the wish for a more formal recognition.

The basic accreditation procedure and criteria were established by ICG/NEAMTWS in 2012 and updated in 2015. Following the formal application to be accredited, two accreditation teams reviewed the procedures of the four Candidate Tsunami Service Providers during June–September 2016.

Two accreditation teams were formed:
AT-1 evaluated CTSPs in Italy and France
AT-2 evaluated CTSPs in Greece and Turkey



INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
COMMISSION Océanographique Intergouvernementale
COMISIÓN OCEANOGRÁFICA INTERGUBERNAMENTAL
МЕЖПРАВИТЕЛЬСТВЕННАЯ ОКЕАНОГРАФИЧЕСКАЯ КОМИССИЯ
اللجنة الدولية الحكومية لعلوم المحيطات
政府间海洋学委员会

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IOC Circular Letter No 2615
(Available in English only)

IOC/DCS/ei
21 January 2016

To : ICG/NEAMTWS Tsunami Warning Focal Points (TWFP)
and Tsunami National Contacts (TNC)
ICG/NEAMTWS Chair and Vice-Chairs
ICG/NEAMTWS Steering Committee

cc. : Official National Coordinating Body for liaison with the IOC Member States
Permanent Delegates/Observer Missions to UNESCO of IOC Member States
Observers to NEAMTWS

Subject: Nomination of experts for the NEAMTWS Candidate Tsunami Service Providers (CTSPs) Accreditation

Accreditation of TSPs



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The evaluation was conducted according to a developed Accreditation Procedure, describing requirements and functions.

At the last session (ICG/NEAMTWS-XIII), the Group approved of the accreditation of the four Candidate Tsunami Service Providers of
CENTre d'Alerte aux Tsunamis (France),
Istituto Nazionale di Geofisica e Vulcanologia - Centro Allerta Terremoti (Italy),
National Observatory of Athens (Greece) and
Kandilli Observatory and Earthquake Research Institute (Turkey).

They henceforth can be referred to as **Tsunami Service Providers**

Tsunami Exercise in Israel, April 04, 2016



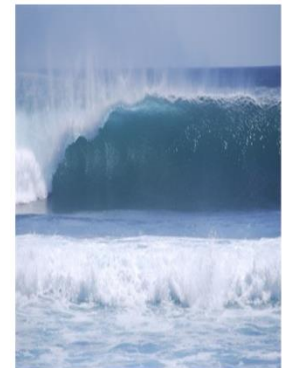
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Israel prepares for tsunamis

Rescue teams simulated a tsunami wave hitting the beaches of Ashdod and Ashkelon as part of a national exercise.

By Shoshana Meiri

First Publish: 4/4/2016, 11:53 AM



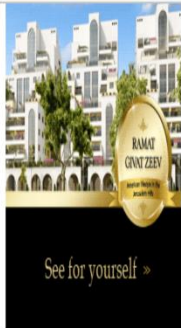
Tsunami (Illustration) (iStock)

Emergency personnel participated Monday morning in Israel's first tsunami wave simulation to raise public awareness and practice appropriate and effective responses in the event that a tsunami hits Israel's Mediterranean coastline.

Dubbed "Nachshol Kachol" (Blue Tidal Wave), the exercise included evacuating citizens from the beaches of Ashdod and Ashkelon to safe gathering points in accordance with the [tsunami warning signs](#).

The exercise was conducted by the National Emergency Defense Ministry and Israeli police, in cooperation with the Home Front Command, local authorities and emergency agencies.

The Mediterranean Sea is a vulnerable region for tsunamis. Around 25% of all recorded tsunamis in human history took place in the Mediterranean.



Most Popular



Jordan arrests suspect in Palestinian camp attack



On Shavuot, who will get the first fruits?



Main > News > Inside Israel

Watch: Israel prepares for tsunami

The last major tsunami in the Mediterranean Sea was over 800 years ago, but that doesn't mean Israelis shouldn't be prepared for one.

By Yoni Kempinski

First Publish: 4/6/2016, 4:13 AM



Arutz Sheva was on hand as emergency personnel participated on Monday [in a drill](#) simulating a tsunami wave, meant to raise public awareness and practice appropriate and effective responses in the event that a tsunami hits Israel's Mediterranean coastline.

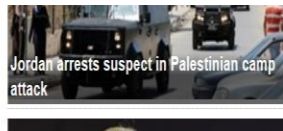
Dubbed "Nachshol Kachol" (Blue Tidal Wave), the exercise included evacuating citizens from the beaches of Ashdod and Ashkelon to safe gathering points in accordance with the tsunami warning signs.



Tsunami warning signs (Diana Hananshvil, Defense Ministry)

The Defense Ministry's National Emergency Management Authority (NEMA) on Wednesday morning unveiled new signs to be placed along Israeli beaches, warning the public against the danger of tsunamis.

"Tsunami Hazard Zone" read the yellow signs, which feature the symbol of a large incoming rolling wave.



Jordan arrests suspect in Palestinian camp attack



Most Popular



J Street calls for 'balanced position' on Israel



Jordan arrests suspect in Palestinian camp attack

More Exercises and Awareness measures



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Evacuation exercise in Greece (Heraklion, Crete) April 2016:

Participants were equipped with GPS in order to track down the routes they have actually taken despite the evacuation route signs.

Italy, October 2016: „Talking to neighbours“

A large number of volunteers having received a special training conducted by the Civil Protection Agency, will speak in public places to „normal people in their own language“ to spread knowledge about tsunamis.

NEAMTWS in Practice



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Frequency of events:

Von: Gesendet: Samstag, 15. Jun 2013 18:30
An:
Betreff: TSUNAMI MESSAGE NUMBER 001

Information bulletins approximately once a month.

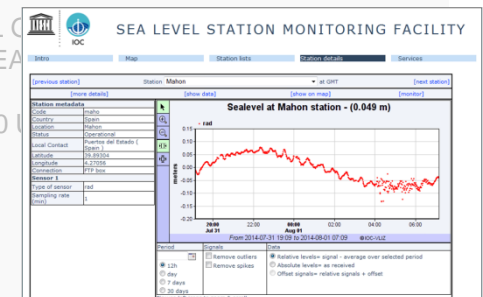
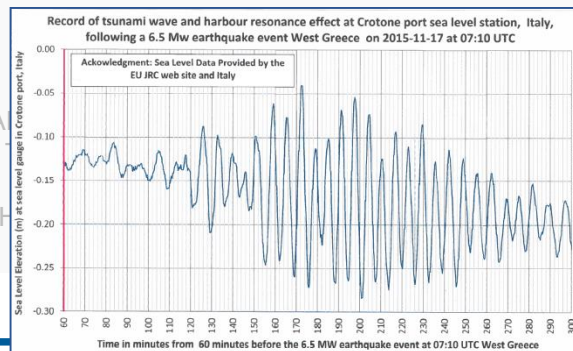
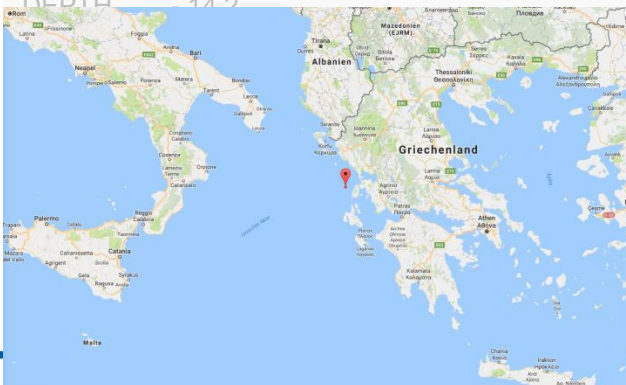
TSUNAMI MESSAGE NUMBER 001
NEAM NOA HL-NTWC CANDIDATE TSUNAMI WATCH PROVIDER ISSUED AT 1637Z 15 JUN 2013

... TSUNAMI INFORMATION ...
THIS MESSAGE IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL
THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA
TAKEN IN RESPONSE.
AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS ORIGIN TIME - 1610
COORDINATES - 33.80 NORTH 25.21 EAST
DEPTH - 14.2

Watch or advisory approximately quarterly or biannually.

One recorded tsunami (17.11.2015)

THIS MESSAGE IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL
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COORDINATES - 33.80 NORTH 25.21 EAST
DEPTH - 14.2



The data presented under this service has not undergone any quality control and data is provided as received. IOC, VLIZ and data providers accept no liability for any errors and/or delays in data or for interpretations, transactions, or any other use carried out on the basis thereof.

Some Challenges



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- Awareness and capacity building
- Cooperation with International organizations (EC, DG-ECHO)
- Cooperation with National Organizations (Civil Protection Authorities)
- Closer cooperation among TSPs for high level interoperability
- Accreditation of CTSPs
- Multi hazard Approach
- Education and Training
- World Tsunami Awareness Day (5th of November)
- NEAMWAVE 17
- Extend warning scope to ships (NAVTEX) and harbors

... TSUNAMI WATCH ...
THIS ALERT APPLIES TO GREECE

... TSUNAMI ADVISORY ...
THIS ALERT APPLIES TO ITALY

... TSUNAMI INFORMATION ...
THIS ALERT APPLIES TO BELGIUM ... EGYPT ... FRANCE ... GERMANY ... GREECE ...
ISRAEL ... ITALY ... LEBANON ... PORTUGAL ... SPAIN ... SWEDEN ... TURKEY ...
IOC (INTERGOVERNATIONAL OCEANOGRAPHIC COMMISSION) ... EC (EUROPEAN COMMISSION)



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THIS MESSAGE IS ISSUED AS ADVICE TO GOVERNMENT AGENCIES. ONLY NATIONAL AND LOCAL GOVERNMENT AGENCIES HAVE THE AUTHORITY TO MAKE DECISIONS REGARDING THE OFFICIAL STATE OF ALERT IN THEIR AREA AND ANY ACTIONS TO BE TAKEN IN RESPONSE.

AN EARTHQUAKE HAS OCCURRED WITH THESE PRELIMINARY PARAMETERS
ORIGIN TIME - 0710 UTC TUE NOV 17 2015
COORDINATES - 38.65 NORTH 20.53 EAST
DEPTH - 5.0 KM
LOCATION - 16 KM W FROM LEVKAS
MAGNITUDE - 6.0 ML

EVALUATION OF TSUNAMI WATCH

IT IS NOT KNOWN THAT A TSUNAMI WAS GENERATED. THIS MESSAGE IS BASED ONLY ON THE EARTHQUAKE EVALUATION. AN EARTHQUAKE OF THIS SIZE HAS THE POTENTIAL TO GENERATE A TSUNAMI THAT CAN STRIKE COASTLINES WITH A WAVE HEIGHT GREATER THAN 0.5M AND/OR CAUSE A TSUNAMI RUN-UP GREATER THAN 1M. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL MONITOR SEA LEVEL DATA FROM GAUGES NEAR THE EARTHQUAKE TO DETERMINE IF A TSUNAMI WAS GENERATED AND ESTIMATE THE SEVERITY OF THE THREAT. A TSUNAMI IS A SERIES OF WAVES AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMI WAVE HEIGHTS CANNOT BE PREDICTED AND CAN VARY SIGNIFICANTLY ALONG A COAST DUE TO LOCAL EFFECTS. THE TIME FROM ONE TSUNAMI WAVE TO THE NEXT CAN BE FIVE MINUTES TO AN HOUR, AND THE THREAT CAN CONTINUE FOR MANY HOURS AS MULTIPLE WAVES ARRIVE.

EVALUATION OF TSUNAMI ADVISORY

IT IS NOT KNOWN THAT A TSUNAMI WAS GENERATED. THIS WATCH IS BASED ONLY ON THE EARTHQUAKE EVALUATION. AN EARTHQUAKE OF THIS SIZE HAS THE POTENTIAL TO GENERATE A TSUNAMI THAT CAN STRIKE COASTLINES WITH A WAVE HEIGHT LESS THAN 0.5M AND/OR CAUSE A TSUNAMI RUN-UP LESS THAN 1M. AUTHORITIES SHOULD TAKE APPROPRIATE ACTION IN RESPONSE TO THIS POSSIBILITY. THIS CENTER WILL MONITOR SEA LEVEL DATA FROM GAUGES NEAR THE EARTHQUAKE TO DETERMINE IF A TSUNAMI WAS GENERATED AND ESTIMATE THE SEVERITY OF THE THREAT. A TSUNAMI IS A SERIES OF WAVES AND THE FIRST WAVE MAY NOT BE THE LARGEST. TSUNAMI WAVE HEIGHTS CANNOT BE PREDICTED AND CAN VARY SIGNIFICANTLY ALONG A COAST DUE TO LOCAL EFFECTS. THE TIME FROM ONE TSUNAMI WAVE TO THE NEXT CAN BE FIVE MINUTES TO AN HOUR, AND THE THREAT CAN CONTINUE FOR MANY HOURS AS MULTIPLE WAVES ARRIVE.

ESTIMATED INITIAL TSUNAMI WAVE ARRIVAL TIMES AT FORECAST POINTS WITHIN THE WATCH/ADVISORY AREA GIVEN BELOW. ACTUAL ARRIVAL TIMES MAY DIFFER AND THE INITIAL WAVE MAY NOT BE THE LARGEST. A TSUNAMI IS A SERIES OF WAVES AND THE TIME BETWEEN SUCCESSIVE WAVES CAN BE FIVE MINUTES TO ONE HOUR.

LOCATION FP COORDINATES ARRIVAL TIME ALERT LEVEL

GREECE-CEPHALONNIA_ARGOSTO 38.19N 20.49E 0723Z 17 NOV WATCH
GREECE-IGOUMENITSA 39.51N 20.22E 0754Z 17 NOV WATCH

GREECE-KERKIRA_PELEKAS 39.59N 19.81E 0730Z 17 NOV ADVISORY
GREECE-KATAKOLO 37.64N 21.32E 0736Z 17 NOV ADVISORY
GREECE-KIPARISSIA 37.26N 21.66E 0739Z 17 NOV ADVISORY
GREECE-ZAKINTHOS 37.78N 20.91E 0740Z 17 NOV ADVISORY
GREECE-GITHEION 36.77N 22.57E 0758Z 17 NOV ADVISORY
GREECE-KITHERA_KAPSALI 36.14N 23.00E 0759Z 17 NOV ADVISORY
GREECE-MONEMVASIA 36.68N 23.04E 0810Z 17 NOV ADVISORY
GREECE-PATRA 38.25N 21.73E 0815Z 17 NOV ADVISORY
GREECE-ANDROS 37.84N 24.94E 0907Z 17 NOV ADVISORY
GREECE-EVIA_KIMI 38.62N 24.13E 0928Z 17 NOV ADVISORY
GREECE-SKIATHOS 39.16N 23.49E 0946Z 17 NOV ADVISORY
GREECE-VOLOS 39.35N 22.95E 1017Z 17 NOV ADVISORY
GREECE-KATERINI 40.26N 22.60E 1046Z 17 NOV ADVISORY
ITALY-CROTONE 39.08N 17.13E 0749Z 17 NOV ADVISORY
ITALY-CATANZARO 38.83N 16.63E 0751Z 17 NOV ADVISORY
ITALY-SIDERNO 38.27N 16.30E 0753Z 17 NOV ADVISORY
ITALY-OTRANTO 40.15N 18.50E 0757Z 17 NOV ADVISORY
ITALY-POLICORO LIDO 40.19N 16.72E 0802Z 17 NOV ADVISORY
ITALY-GALLIPOLI 40.05N 17.97E 0803Z 17 NOV ADVISORY
ITALY-LAGHI DI SIBARI 39.73N 16.52E 0803Z 17 NOV ADVISORY
ITALY-TARANTO 40.48N 17.22E 0812Z 17 NOV ADVISORY
ITALY-BRINDISI 40.66N 18.00E 0818Z 17 NOV ADVISORY
ITALY-VIBO MARINA 38.72N 16.13E 0837Z 17 NOV ADVISORY

SUPPLEMENT MESSAGES WILL BE ISSUED AS SOON AS NEW DATA AND EVALUATION ALLOWS.
THE TSUNAMI ALERT WILL REMAIN IN EFFECT UNTIL AN END OF ALERT IS BROADCAST.