

## **Tsunami Service Provider Messages for the Maritime Community**

Submitted by IOC Secretariat

### **SUMMARY**

Executive Summary: This document provides details of an initial proposal for the format, content, and dissemination of messages with tsunami guidance specifically for ships on the high seas from the Tsunami Service Providers (TSPs) of the four Tsunami Warning Systems operated by the Intergovernmental Oceanographic Commission (IOC) of UNESCO.

Action to be taken: 2

Related documents: S-53 – *Joint IMO/IHO/WMO Manual on Maritime Safety Information*

1. See attached document.
2. The Sub-Committee is invited to:
  - a. **note** the information provided;
  - b. **provide** comments and input to the IOC; and
  - c. **take** any other action as appropriate.

## **Intergovernmental Oceanographic Commission of UNESCO**

### **Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG)**

#### **Tsunami Service Provider Messages for the Maritime Community A Proposal to the World-Wide Navigational Warning Service Sub-Committee (WWNWS-SC)**

The following is an initial proposal for the format, content, and dissemination of messages with tsunami guidance specifically for ships on the high seas from the Tsunami Service Providers (TSPs) of the four Tsunami Warning Systems operated by the Intergovernmental Oceanographic Commission (IOC) of UNESCO. This proposal was generated in response to discussions between representatives of the International Hydrographic Organization (IHO) and the IOC to improve the accuracy and consistency of messages issued by the NAVAREA coordinators for tsunami events.

1. Messages would be created and disseminated only for potential and confirmed tsunami occurrences when forecast amplitudes at any coast within a TSP's service area exceed pre-defined threat threshold (typically 0.3 meters), the minimum coastal amplitude considered to be a hazard.
2. Messages would be disseminated by each TSP by email to all NAVAREA coordinators within that TSP's service area. (Note that multiple TSPs cover some NAVAREAs and each TSP covers multiple NAVAREAs. In case of multiple TSPs covering same NAVAREAs, a prior agreement need to be reached beforehand as to which TSP will be the primary source of information to the NAVAREA coordinators, which would be the backup, or, if all TSPs should provide information simultaneously).
3. The initial TSP maritime message would be issued to NAVAREA coordinators when the TSP issues its initial coastal forecast for the Member States within its IOC System. This is usually within 30 minutes of the earthquake that generated the tsunami. Note that a TSP may issue a qualitative advisory product to Member States preceding the initial coastal forecast products.
4. An additional TSP maritime message would be issued only if the forecast significantly changes.
5. One message would be issued indicating the final handling of the event by the TSP, usually when the threat has passed everywhere in the service area. However, the hazard may continue along some coasts and that status must be determined by local authorities.
6. NAVAREA coordinators would have the responsibility for turning TSP messages into maritime safety messages issued via SafetyNet to ships at sea.

#### ***Message Format and Content***

The format and content of the proposed TSP messages generally follows the guidance given in the Manual on Maritime Safety Information – IHO Publication 53 (January 2016 Edition) in order that the conversion by NAVAREA coordinators to a maritime safety message be as simple as possible.

Message Element	Element Description	TSP Content	Issues
1	NAVAREA name	NAVAREA having coasts with tsunami forecast amplitude exceeding the pre-defined threat threshold (typically 0.3 meter)	Can one message apply to more than one NAVAREA?
2	General Area	Name of the general area forecast to be affected by the tsunami	Need to identify or create a standard area naming scheme for ocean areas.
3	Locality	Not Used	
4	Chart Number	Not Used	
5	Key Subject	A likely or confirmed tsunami, with key information about the source - usually an earthquake.	
6	Geographical Region	Names of countries in NAVAREA with coasts forecast to have hazardous tsunami waves.	Need standard list of key harbors and their names.
7	Amplifying Remarks	Tsunami impact on ships in shallow waters. Consult local authorities of destination.	
8	Cancellation Details	Indicate if final message and that continuing hazard possible. Must be evaluated locally.	

### ***Example Proposed TSP Maritime Messages***

Example 1 – A TSP initial message for a tsunami affecting 3 NAVAREAs

NAVAREA XI  
NORTHEAST PACIFIC COASTS  
A TSUNAMI HAS BEEN GENERATED BY A MAGNITUDE 8.4 EARTHQUAKE THAT OCCURRED IN THE RYUKYU ISLANDS ON MARCH 9 2018 AT 1452UTC.  
HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS OF JAPAN, THE PHILIPPINES, AND INDONESIA.  
TSUNAMI WAVES ARE NOT A HAZARD TO SHIPS IN DEEP WATER BUT CAN CAUSE STRONG CURRENTS AND RAPID SEA LEVEL CHANGES IN SHALLOW WATER, AS WELL AS INUNDATION OF THE COAST. SHIPS APPROACHING THE COAST SHOULD CONSULT LOCAL AUTHORITIES REGARDING LOCAL CONDITIONS AND ADVICES.

NAVAREA XIII  
NORTHEAST PACIFIC COASTS  
A TSUNAMI HAS BEEN GENERATED BY A MAGNITUDE 8.4 EARTHQUAKE THAT OCCURRED IN THE RYUKYU ISLANDS ON MARCH 9 2018 AT 1452UTC.  
HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS OF RUSSIA.

TSUNAMI WAVES ARE NOT A HAZARD TO SHIPS IN DEEP WATER BUT CAN CAUSE STRONG CURRENTS AND RAPID SEA LEVEL CHANGES IN SHALLOW WATER, AS WELL AS INUNDATION OF THE COAST. SHIPS APPROACHING THE COAST SHOULD CONSULT LOCAL AUTHORITIES REGARDING LOCAL CONDITIONS AND ADVICES.

NAVAREA X

NORTHEAST PACIFIC COASTS

A TSUNAMI HAS BEEN GENERATED BY A MAGNITUDE 8.4 EARTHQUAKE THAT OCCURRED IN THE RYUKYU ISLANDS ON MARCH 9 2018 AT 1452UTC.

HAZARDOUS TSUNAMI WAVES ARE FORECAST FOR SOME COASTS OF PAPUA NEW GUINEA AND THE SOLOMON ISLANDS.

TSUNAMI WAVES ARE NOT A HAZARD TO SHIPS IN DEEP WATER BUT CAN CAUSE STRONG CURRENTS AND RAPID SEA LEVEL CHANGES IN SHALLOW WATER, AS WELL AS INUNDATION OF THE COAST. SHIPS APPROACHING THE COAST SHOULD CONSULT LOCAL AUTHORITIES REGARDING LOCAL CONDITIONS AND ADVICES.

Example 2 – A TSP final message for a tsunami affecting 3 NAVAREAs

NAVAREA XI, NAVAREA XIII, NAVAREA X

NORTHEAST PACIFIC COASTS

THE THREAT HAS NOW LARGELY PASSED FOR THE TSUNAMI GENERATED BY A MAGNITUDE 8.4 EARTHQUAKE THAT OCCURRED IN THE RYUKYU ISLANDS ON MARCH 9 2018 AT 1452UTC.

HOWEVER, SHIPS APPROACHING THE COAST SHOULD STILL CONSULT LOCAL AUTHORITIES REGARDING LOCAL CONDITIONS AND ADVICES.

