



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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(Available in English only)

IOC/VR/TA/BA/AB/ab
19 October 2015

- To :** ICG/CARIBE-EWS Tsunami National Contacts (TNC) and Tsunami Warning Focal Points (TWFP) for: Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Curacao, Dominica, France, Grenada, Guyana, Haiti, Jamaica, St Kitts and Nevis, Saint Lucia, Sint Maarten, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, United Kingdom
- cc. :** Official National Coordinating Bodies for liaison with the IOC, Permanent Delegates/ Observer Missions to UNESCO, and National Commissions for UNESCO for: Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Curacao, Dominica, France, Grenada, Guyana, Haiti, Jamaica, St Kitts and Nevis, Saint Lucia, Sint Maarten, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, United Kingdom
UNESCO Offices in Cartagena, Guatemala, Kingston, Mexico, La Habana and San Jose
Caribbean Tsunami Warning Program (CTWP)
Permanent Observers to ICG/CARIBE-EWS
ICG/CARIBE-EWS Officers

Subject : Regional Training Workshop on Pacific Tsunami Warning Center (PTWC) Enhanced Tsunami Products for ICG/CARIBE EWS, Bridgetown, Barbados, 7–10 December 2015

Eleven percent of the world's fatal tsunamis over history have occurred in the Caribbean and its adjacent seas, including the Atlantic, with almost 100 tsunamis having impacted 23 countries of the region. Member States of the Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS) are preparing to face the dangers of tsunamis from distant, regional and local sources. Many Caribbean Member countries depend primarily on the Pacific Tsunami Warning Center (PTWC) for the advice to their Tsunami Warning Focal Points and National Tsunami Warning Centres. With the ongoing implementation of the PTWC new enhanced tsunami products, it is of utmost importance to train Member States to continue receive and accurately interpret messages in order to respond to a tsunami in a timely and responsible manner to save lives.

In this context, we invite ICG/CARIBE-EWS Member States to nominate up to two (2) candidates to participate in the Regional Training Workshop on PTWC Enhanced Tsunami Products for ICG/CARIBE-EWS, Bridgetown, Barbados, 7–10 December 2015.

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Significant scientific and technological advances have been made to better forecast tsunami impacts in real time and to present forecast information graphically since the establishment of the current PTWC products for the CARIBE-EWS. Based on these advances and IOC TOWS Working Group recommendations for more globally consistent and useful Tsunami Service Provider products, the ICG/CARIBE-EWS has approved the dissemination of the PTWC Enhanced Tsunami Products to Member States. In the proposed PTWC implementation schedule the plan is to begin issuance of the enhanced products in parallel with current products to the CARIBE-EWS on 26 October 2015 with full transition to the new products on 1st March 2016. These new products put more responsibility on the national and local authorities for developing and issuing the corresponding warning products.

The workshop will be conducted in English through lecture-discussion, multimedia presentations and simulations with the aim to train participants in the interpretation and implementation of the new suite of enhanced operational tsunami forecast products. It is recommended that at least one (1) candidate be from the National Tsunami Warning Centre or the Tsunami Warning Focal Point agency (NTWC, TWFP) and one from the National Disaster Management Office (NDMO) or another tsunami emergency response (TER) agency. To maximise the benefits of the training, it is further recommended that candidates who participated in the previous Standard Operation Procedures (SOPs) trainings (2013–2014) be nominated. The provisional agenda is enclosed for reference.

The workshop is being organised by the Caribbean Tsunami Information Centre (CTIC), the Intergovernmental Oceanographic Commission of UNESCO (UNESCO/IOC), the International Tsunami Information Center (ITIC), the Pacific Tsunami Warning Center (PTWC), The US NWS Caribbean Tsunami Warning Program (CTWP) and the Coastal Zone Management Unit (CZMU), Barbados in collaboration with the University Corporation for Atmospheric Research Scientists (UCAR) Joint Office of Science Support, NOAA, NWS, U.S.A. Financial support is being provided by the UNESCO/IOC and the United States Agency for International Development/Office of Foreign Disaster Assistance (USAID/OFDA).

Limited funding is available to support participants from ICG/CARIBE-EWS Member States and self-funding is encouraged to secure participation. Selected candidates receiving support from the organisers will be provided with a round trip air ticket through the most economical route, lodging and meals. The selection criteria of the candidates who receive funding are: (i) members of the country's NTWC or TWFP agencies; and (ii) responsible for and involved in tsunami warning and emergency response operations. Available funding for qualified and suitable candidates will be allocated based on the chronological submission of applications.

Nominations should be endorsed by and submitted through the country's Tsunami National Contact (TNC). Please forward the attached form duly completed by each nominee and a CV, by email to Alison Brome (a.brome@unesco.org) CTIC Director (a.i.), Christa von Hillebrandt-Andrade (christa.vonh@noaa.gov) CTWP Manager, and Bernardo Aliaga (b.aliaga@unesco.org), Technical Secretary, ICG/CARIBE-EWS **by 27 October 2015**. Selected candidates will be notified by 30 October 2015.

We look forward to receiving your submissions.

[signed]

Vladimir Ryabinin
Executive Secretary

Enclosures: Agenda & Application Form



PROVISINARY AGENDA (7–10 December 2015)

Session	Topic
	DAY 1 - Overview
1	ICG/CARIBE EWS-X Outcomes, specifically for the CARIBE-EWS Enhanced Products
2	Responding Rapidly and Effectively: Tsunami Warning and Emergency Response Requirements and Timeline-driven SOPs
3	Key Stakeholders: Tsunami Warning Center SOPs – What do Tsunami Warning Centres (TWCs) provide to Tsunami Emergency Response (TER) agencies? Challenges in Detection and Tsunami Threat Assessment
4	Key Stakeholders: Tsunami Emergency Response SOPs: What do TER agencies provide to the Public? Challenges in Alerting, Evacuation, and Safe-to-Return (All-Clear)
5	Pacific Tsunami Warning Center (PTWC) SOPs
6	Country SOPs
	DAY 2 – TWC Operations
1	TWC Operations: Seismic monitoring in the Caribbean
2	TWC Operations: Real-time Earthquake Detection and Fast Source Characterization - Sparse networks, Magnitudes, W-Phase Centroid Moment Tensors – Techniques, Limitations, Challenges
3	TWC Operations: Sea Level Monitoring in the Caribbean
4	TWC Operations: Sea Level Monitoring – Instruments, Limitations, Challenges
5	Demonstration: Decision Support Tools of Monitoring, Detection, Assessment – Earthquakes: Real-time Earthquake Display (CISN), USGS web site (CMT, ShakeMap, PAGER)
6	Demonstration: Decision Support Tools of Monitoring, Detection, Assessment – Tsunamis: TideTool with Tsunami Travel Times, IOC Sea Level Station Monitoring Facility web site)
7	TWC Operations: Travel Time Forecasting – Techniques, Limitations, Uncertainty, Sensitivity Studies
8	TWC Operations: Wave Amplitude Forecasting – Techniques, Limitations, Uncertainty, Sensitivity Studies, Sensitivity Studies
	DAY 3 – CARIBE-EWS PTWC Enhanced Products
1	CARIBE EWS PTWC Enhanced Products Overview – What, Why, SOPs (Criteria, Formats)
2	PTWC Enhanced Products – Staging
3	PTWC Enhanced Products – Explanation of Each Product: Text, Forecast Polygon Map, Graphical Deep-Ocean Energy, Coastal Forecast, Forecast Tables, KMZ file
4	TWC and TER Guidance on how to use PTWC New Enhanced Products for National Warnings and Evacuation – Land and Marine Threats and Public Safety: Flow Charts, Criteria Tables, Timeline-driven SOPs, Message Templates
5	Activity: Improving Response – What Happens When? Distant and Local Scenarios
6	Tsunami Hazard Scenarios for the Caribbean – Understanding PTWC Enhanced Products
7	Tsunami Table Top Exercises – Decision-making using PTWC Enhanced Products
	DAY 4 – Tsunami Exercises
1	Tsunami Table Top Exercises – Decision-making using PTWC Enhanced Products
2	Summary Discussion: Country Readiness for PTWC New Enhanced Products

**UNESCO/IOC – NOAA International Tsunami Information Center
ITIC TRAINING PROGRAMME (ITP) – INTERNATIONAL**

Hosted by the Caribbean Tsunami Information Center (CTIC) and the Coastal Zone Management Unit (CZMU), Barbados in collaboration with the University Corporation for Atmospheric Research Scientists (UCAR) Joint Office of Science Support, NOAA, NWS, U.S.A

Facilitated by Intergovernmental Oceanographic Commission of UNESCO (UNESCO/IOC), UNESCO/IOC – NOAA International Tsunami Information Center (ITIC), NOAA Pacific Tsunami Warning Center (PTWC) and the NOAA Caribbean Tsunami Warning Program (CTWP)

**PTWC Enhanced Products Regional Training Workshop
7–10 December 2015, Bridgetown, Barbados**

APPLICATION FORM

Please type or write in BLOCK letters in English

Please return by 27 October 2015 to:

E-mail: copy a.brome@unesco.org, christa.vonh@noaa.gov, and b.aliaga@unesco.org

PERSONAL INFORMATION

NAME	
TITLE	
SEX	
NATIONALITY	
HOME ADDRESS	
TELEPHONE NUMBER	
FAX NUMBER	
EMAIL ADDRESS	

PROFESSIONAL BACKGROUND

OFFICE/ ORGANIZATION	
POSITION (Permanent, Temporary, Contractor)	
ADDRESS	
TELEPHONE NUMBER	
FAX NUMBER	
EMAIL ADDRESS	

EDUCATIONAL BACKGROUND

LEVEL	SCHOOL	DEGREE	YEAR GRADUATED
COLLEGE			
MASTER			
DOCTORAL			
POST DOCTORAL			

TSUNAMI-RELATED TRAININGS ATTENDED

TITLE OR SUBJECT	CONDUCTED BY	DATES

OTHER RELATED TSUNAMI-RELATED JOB EXPERIENCE

OFFICE / ORGANIZATION JOB DESCRIPTION	POSITION	DATES

TRAVEL INFORMATION

NAME ON PASSPORT		
PASSPORT COUNTRY		
PASSPORT NUMBER	To be requested upon acceptance	
BIRTHDAY (DD-MM-YYYY)	To be requested upon acceptance	
DATE OF ISSUE		
PLACE OF ISSUE		
EXPIRY DATE		
COUNTRY OF BIRTH		
COUNTRY OF CITIZENSHIP		

NAME OF NEAREST INTERNATIONAL AIRPORT		
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OTHER

ENGLISH LANGUAGE PROFICIENCY	
DO YOU REQUIRE TRAVEL FUNDING	Full Funding Partial Funding, Amount USD _____. Self-funded

Statement of Interest:

Why are you interested in attending this Training?

After the Training, where and how will the experience gained in the Training will be used?

Please also submit separately your Curriculum Vitae (CV).

PRINTED NAME OR SIGNATURE

DATE:

ENDORSED BY TSUNAMI NATIONAL CONTACT:

Printed Name

Signature

Organization

DATE