Update on work plans and activities of the Task Team on Documentation

TT co-chairs: Stefano Lorito (INGV), Nikos Kalligeris (NOA)

Introduction

TT-Doc actions summary from last SC

- The TT-Doc co-chairs collected the available information on the existing IOUG.
- A new IOUG structure (table of contents) was drafted between the co-chairs.
- The TT-Doc co-chairs arranged a meeting with the past TT-Doc and present TT-OP co-chairs to discuss the proposed restructuring of the IOUG and received their feedback.

Progress since last SC

- An inter-TSP meeting held in Paris on September 27th, 2022, hosted by CENALT and jointly organized with the TT-OP, in which a long list of open issues identified by the TT-OP were discussed and resolved.
- Two online inter-TSP meetings were organized to discuss SOPs for issuing END and CANCELLATION messages; feedback was collected and recommendations were made.
- The TT-Doc presented in the NEAMTWS Experts Meeting in Napoli in November 2022 the proposed structure of the new OUG and the results of the discussion on several specific points made jointly with the TT-OP in the above meetings.

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2.1.2 IOC Tsunami Co-ordination Unit (TSU)
2.1.3 Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS)

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4.7.2 Message Type (MT) and Affected Area (AA)
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4.7.4 Earthquake Parameters (EP)
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4.7.6 Evaluation Statement (ES)
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4.7.8 Message Schedule (MS)
4.7.9 Table of Message Content

4.10 SAMPLE TSUNAMI MESSAGES

ANNEX I: ICG/NEAMTWS ORGANIZATIONAL STRUCTURE AND GOVER

ANNEX II: TWFP AND TNC FORMS

ANNEX III: SUBMITTED TSUNAMI FORECAST POINTS

ANNEX IV: LIST OF ACRONYMS

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Background text on NEAMTWS which can be moved to annexes

Main part of the document which can be structured more efficiently

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Proposed structure of updated OUG

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INTRODUCTION

- Purpose of the IOUG
- Organization of the IOUG
- Tsunami Warning System Components and Procedures

Earthquake Observations and Analysis

- Seismic network
- Geodetic network
- Data acquisition
- Data transmission
- Real-time data processing
- Earthquake parameters determination

Sea level Observations and Analysis

- Tide gauge network
- Other types of sensors (cabled, open sea, etc.)
- Data acquisition
- Data transmission
- Real-time data processing
- Sea level parameters determination

Tsunami Forecasting

- Principles of Tsunami Forecasting and Decision Matrix
- Basins, competence zones and Forecast Points
- Roles and responsibilities of TSPs and NTWCs
- ETA forecasting
- Tsunami height forecasting
- Potential for data assimilation
- Alert Levels determination

Tsunami Alert Messages

- Message sequence and message types
- Message formats (plain text, CAP, etc.)
- Message dissemination means and infrastructure

Interoperability among TSPs/NTWCs
Daily Procedures
Routine Tests
Contingency Planning

Proposed structure of updated OUG

Straight to the point

INTRODUCTION
- Purpose of the Users Guide
- Organization of the Users Guide
- Tsunami Warning System Components and Procedures

Topics which have not been discussed in current manual, with the exception of the earthquake and sea-level parameters determination.

Earthquake Observations and Analysis
- Seismic network
- Geodetic network
- Data acquisition
- Data transmission
- Real-time data processing
- Earthquake parameters determination

Sea level Observations and Analysis
- Tide gauge network
- Other types of sensors (cabled, open sea, etc.)
- Data acquisition
- Data transmission
- Real-time data processing
- Sea level parameters determination

The main part of the manual organized more efficiently, also reflecting new ideas currently discussed.

Tsunami Forecasting
- Principles of Tsunami Forecasting and Decision Matrix
- Basins, competence zones and Forecast Points
- Roles and responsibilities of TSPs and NTWCs
- ETA forecasting
- Tsunami height forecasting
- Potential for data assimilation
- Alert Levels determination

Tsunami Alert Messages
- Message sequence and message types
- Message formats (plain text, CAP, etc.)
- Message dissemination means and infrastructure

Proposed Annexes of updated OUG

ANNEX I
TECHNICAL PROCEDURES

- Sample Alert Messages
- Communication Tests and Exercises
- Checklists (Daily and Periodic)
- Failures and exceptions (communication to subscribers)
- KPIs monitoring
    - Acquisition
    - Connectivity
    - Communication
    - Performance
    - Robustness and redundancy
- Recommendations for Documentation of Procedures - Internal SOPs
- Transmission of Forecast Points
- Transmission of Sensor Lists (Seismic, GNSS, Sea Level)
- Transmission of Bathymetry data

ANNEX II
ICG/NEAMTWS ORGANIZATIONAL STRUCTURE AND GOVERNANCE

- COORDINATION, FACILITATION AND CAPACITY STRENGTHENING ENTITIES OF THE NEAMTWS
    - Intergovernmental Oceanographic Commission of UNESCO (IOC) 5
    - IOC Tsunami Co-ordination Unit (TSU)
    - Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS)
    - NEAMTIC

STRUCTURAL ELEMENTS OF THE NEAMTWS (Functions and Responsibilities)

- Tsunami National Contact (TNC)
- Tsunami Warning Focal Point (TWFP)
- Tsunami Service Providers (TSPs)
- National Tsunami Warning Centres (NTWCs)

ANNEX III
LEGAL FRAMEWORK

- International agreements and mandate
- Responsibility, Accountability and Liability
- Limitations and disclaimers
- Non-seismic sources

ANNEX IV
ADMINISTRATIVE PROCEDURES

- TSP Accreditation (with updates)
- TWFP and TNC FORMS
- Subscription to TSP Services

Discussion on open issues identified by TT-OP

List of open issues discussed during inter-TSP meeting held in Paris

- Sea level readings: reporting arrival time, wave amplitudes and period in TG observations
- Sea level readings - minimum amplitude for issuing ONGOING messages
- Sea level readings - instrumental observations that exceed DM-based alert level of INITIAL message
- Reporting of non-instrumental observations
- Forecast points vs Coastal segments
- Countries not providing list of FPs
- Threat levels (adopting or not) and more in general Interoperability with other ICG TSPs
- Local vs. Distant event (diff. Procedures?)
- Bulletins: Public vs. Authority-oriented
- Non-seismic tsunami monitoring
- Magnitudes: standardize and/or specify (Mw, Mwp, Mwpd, Mww?)
- Format, content and structure of NEAMTWS messages (possibly picked from a common DB)
- Supplemental Initial Message (e.g. magnitude update)
- Reporting TSP out of service status and errors
- Enhanced products (maps, etc.)
- Definition of a common CAP-TSU format to issue tsunami messages
- NEAMWAVE23 exercise

TSP SOPs for END and CANCELLATION messages

CANCELLATION

SOP commonalities

- Minimum recording time in nearest TG(s). At least 1 hr at nearest TG
- No prior communication with national CPA

SOP differences

- Minimum time from origin time
- Number of TGs considered - either only the nearest, or up to the three nearest
- Fixed minimum recording time at nearest TG(s), or variable depending on EQ magnitude
- If no other TSP has detected and reported anomalous sea level variations
- Expert evaluation

END

SOP commonalities

- Using all available TG recordings and using the station background level as criterion to issue END message.

SOP differences

- Waiting for TG recordings to “tend to go back” or “go to” normal level.
- Communicating or not with national CPA of the country in which each TSP is operating

Proposed contributions for drafting the updated OUG

Editors TT-DOC/OP/Secretariat/Chair - Alessio, Denis, Fernando, Maria Ana, Nikos, Stefano

Contributors for main document:

- Introduction: Maria Ana, Nikos, Stefano
- Seismic + Sea level sections: WG 2-3 - Anna, Didem
- Forecasting: WG 1 - Audrey, Marinos, Mauricio
- Messages: TT-OP - Alessio, Fernando

Possible contributors for annexes:

- I: Delegate of the 5 TSPs - Alessandro, Didem, Fernando, Helen, Marinos
- II: Secretariat + Chair + TT-TR - Denis, Elena, Ignacio, Maria Ana
- III: Secretariat + WG4 - Cecilia, Denis
- IV: Secretariat + TT-DOC + Chair - Denis, Maria Ana, Nikos, Stefano

\+ Any other volunteers?

TT-Doc progress summary and next steps

- Presented the structure for the new Operational User Guide (OUG)
- Reviewed point by point the conclusions about open issues discussed in the Paris Inter-TSP meeting
- Defined a roadmap towards the implementation of the points into the new OUG until the next ICG:
  - Prioritize the critical issues to be still addressed towards the inclusion either as a prescription or as a recommendation/good practice in the new OUG
  - Identify leading authors for each chapter
  - Present the outcomes in an (online) meeting with:
    - the TSPs and NTWCs (and to the TNCs where TSP/NTWC doesn't exist)
    - TT-doc/OP and leading OUG authors
  - Start drafting and present the status to the next ICG