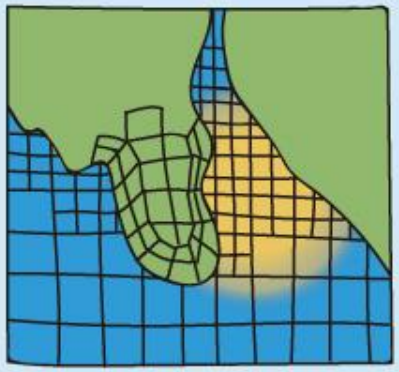

HAZRUNOFF

PROJECT

Training course

MARINER PROJECT

Enhancing HNS preparedness
through training and exercising

[CETMAR on behalf of MARINER partners]

Funded by
European Union
Civil Protection
and Humanitarian Aid

MARINER: Enhancing HNS preparedness through training and exercising

MARINER

Objective:

Improve regional cooperation in preparedness and response to HNS spills by:

- Compiling HNS R&D outcomes and key resources and making them accessible to planners and responders
- Upgrading and/or improving tools to support decision making and response;
- Improving training and exercise capabilities;
- Increasing awareness and encouraging information exchange.

Co-financing Programme: Call 2015 for prevention and preparedness projects in the field of civil protection and marine pollution. DG-ECHO.
Policy area of activity: Preparedness.

Start date: 1st January 2016

End date: 31st January 2018

European Commission contribution: 748.910 EUR (75 %)
Total budget: 998.547 EUR

http://mariner-project.eu/

HAZRUNOFF PROJECT

Funded by European Union Civil Protection and Humanitarian Aid

Partners & Advisory Board

1. Centro Tecnológico del Mar – Fundación CETMAR Link ***Coordinator***
2. INTECMAR - Instituto Tecnolóxico para o Control do Medio Mariño de Galicia Link
3. Universidade de Vigo Link
    - ❖ Salvamento Marítimo – SASEMAR
    - ❖ Ministry of Agriculture and Fisheries, Food and Environment
    - ❖ Galician Coastguards

4. Action Modulers Link (Currently Bentley Link)
5. CIIMAR: Interdisciplinary Centre of Marine and Environmental Research Link
    - ❖ Maritime Authority Directorate General. Marine Pollution Response Directorate

6. Public Health England Link
    - ❖ Maritime & Coastguard Agency

7 partners from 4 countries advised by key governmental agencies

7. Cedre - Centre of Documentation, Research and Experimentation on Accidental Water Pollution Link
    - ❖ Ministry of the Ecological and Inclusive Transition

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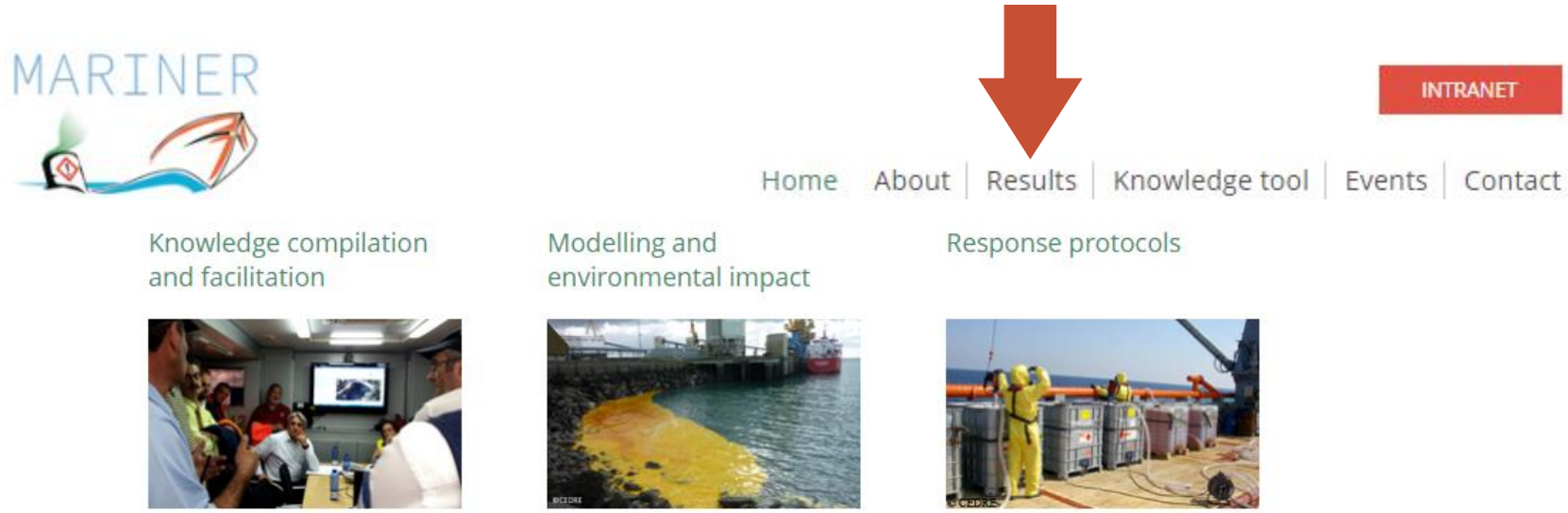
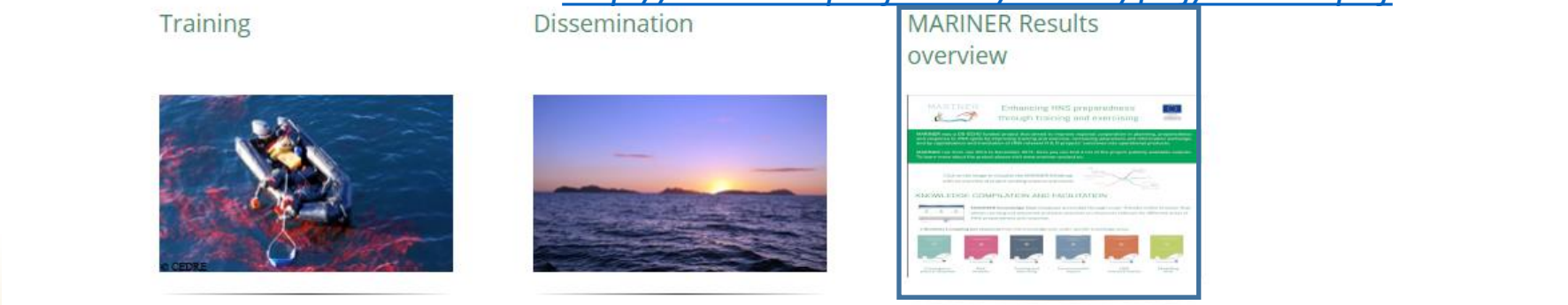
Working streams & outcomes

Website Results: http://mariner-project.eu/results/category/



MARINER main outcomes are summarized in the project website:

http://mariner-project.eu/assets/pdf/results.pdf



HAZRUNOFF PROJECT

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Working streams & outcomes

MARINER

Enhancing HNS preparedness through training and exercising

Funded by European Union Civil Protection and Humanitarian Aid

MARINER was a DG-ECHO funded project that aimed to improve regional cooperation in planning, preparedness and response to HNS spills by improving training and exercise, increasing awareness and information exchange, and by capitalization and translation of HNS relevant R & D projects' outcomes into operational products.

MARINER run from January 2016 to January 2018. Here you can find a list of the project publicly available outputs. To learn more about the project please visit www.mariner-project.eu

Click on the image to visualise the MARINER Mindmap with an overview of project working streams and results

KNOWLEDGE COMPILATION AND FACILITATION

MARINER Knowledge Tool: Database accessible through a user-friendly online browser that allows carrying out advanced and basic searches on resources relevant for different areas of HNS preparedness and response.

e-Booklets Compiling key resources from the knowledge tool, under specific knowledge areas.

Contingency plans & response | Risk Analysis | Training and exercising | Environmental impact | HNS characterisation | Modelling tools

MODELLING AND ENVIRONMENTAL IMPACT

MARINER modelling Platform

Software (3D HNS spill model) and interface (Common Operating Picture - COP) for predicting the fate, behaviour and environmental / public health risks from a chemical spill in the Atlantic area.

OGC GML schema for HNS Spills

OGC Making location count. www.opengeospatial.org

To assure the interoperability among different agencies when they share information about HNS spill events, a Geography Markup Language GML schema was proposed.

Standard symbols and styles for mapping

This report presents the state-of-the art in the use of different symbols for hazard and warning situations.

Modelling of HNS hazards to the environment

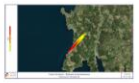
Toxicological parameters selected

Modelling HNS hazards for predicting effects on the marine amphipods population

Guidelines and protocols for environmental impact assessment

Compilation of chemical, biological and ecological information to produce guidelines for HNS environmental impact assessment.

Comparing MARINER system with other systems



Analysis of the performance of the 3D-HNS MOHID model with other models currently in use.

RESPONSE PROTOCOLS

Protocols for responding to HNS spills at sea

This guide for responders includes adapted protocols to deal with HNS spills in the marine environment: pre-planning considerations, communication and operational procedures, and technical considerations.

Video: dealing with HNS spills at sea

TRAINING

Training package on HNS spill management

Exercise Web Tool for bespoke desk-top maritime HNS exercises

Training package on HNS modelling and environmental impact

E-learning: International Health Regulations and HNS maritime incidents

DISSEMINATION

MARINER Layman's report

1st MARINER Project Workshop

2nd MARINER Project Workshop

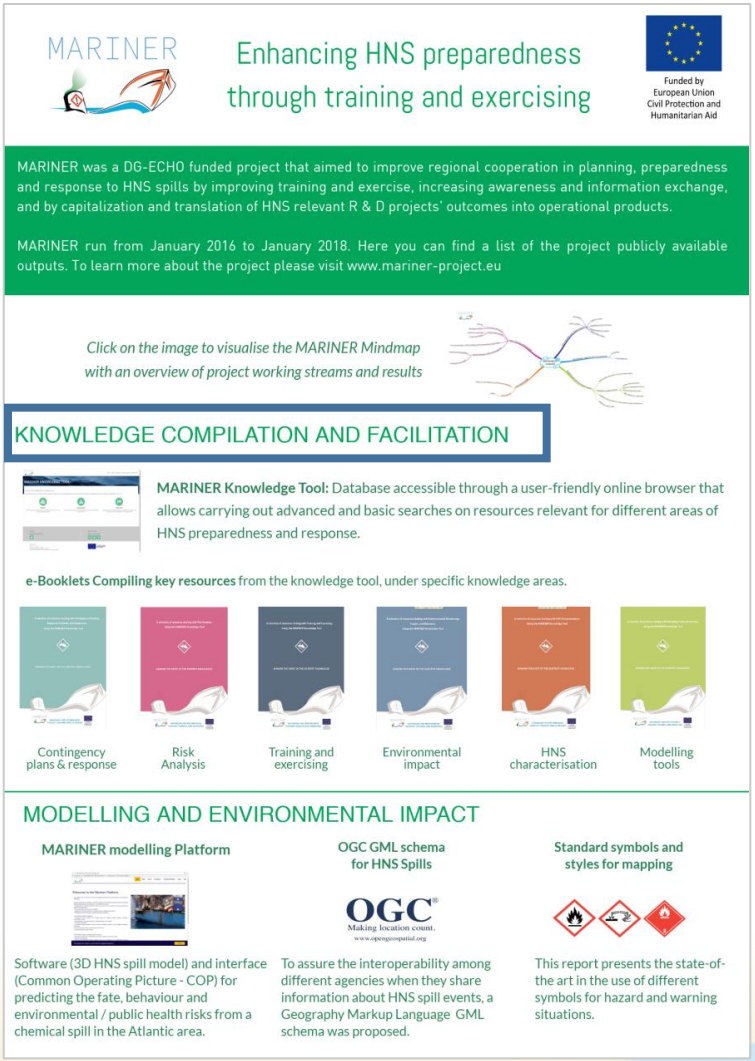
Final Project Confererence

MARINER Introductory video

Awareness raising video

Working streams & Outcomes

- **HNS knowledge compilation & facilitation**



"Identification and compilation of existing HNS preparedness and response knowledge generated"

The MARINER Knowledge Tool.

Online repository on marine research and technical resources focused on the preparedness and response to HNS (Hazardous and Noxious Substances) spills.

Resources extracted from :

-EU and national research and cooperation projects addressing maritime pollution and chemical spills.

-Key organizations on the fields of maritime pollution and health and environmental protection.

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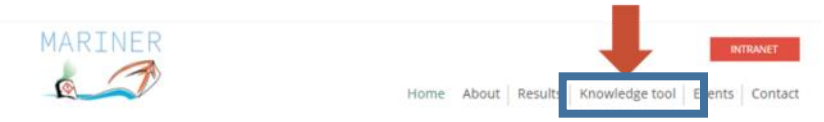
Working streams & Outcomes

- **HNS knowledge compilation & facilitation**

www.mariner-project.eu



http://knowledgetool.mariner-project.eu/

Electronic booklets clustering relevant resources from the tool by areas of knowledge

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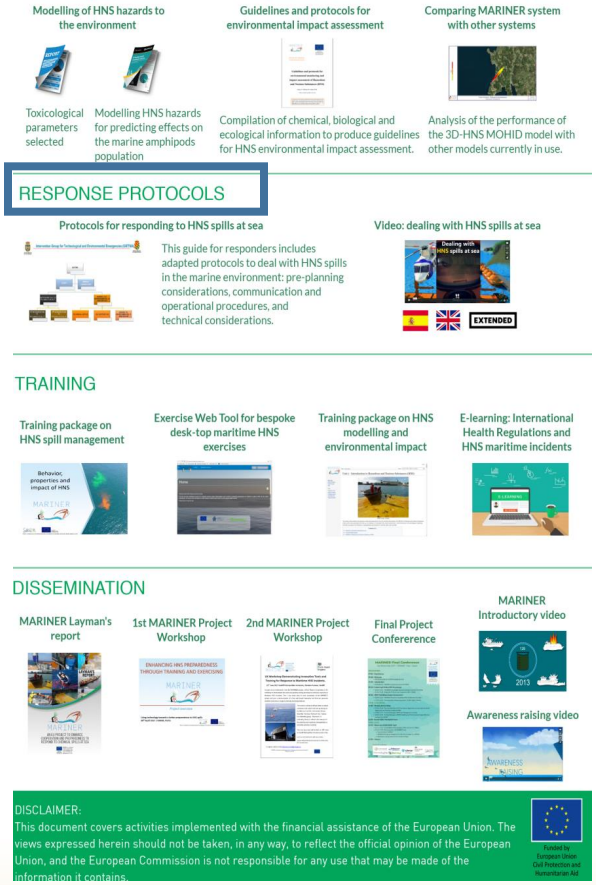
Working streams & Outcomes

MARINER

- **RESPONSE PROTOCOL**

"Identification of expertise from chemical industry, civil protection and fire's crews and their response protocols and equipment to be adapted for marine events".



-Guide for Responders.

-Protocols to deal with HNS spills in the marine environment.

-Analyses land services operations and protocols for pre-planning considerations, communication and operational procedures and technical considerations.

-Evaluates protocols covering different behaviours of HNS (evaporators, floaters, sinkers, and dissolvers) and recommendations to deal with HNS spills at sea.

intecmar INSTITUTO TECNOLOXICO PARA O CONTROL DO MEDIO MARIÑO DE GALICIA

Cedre

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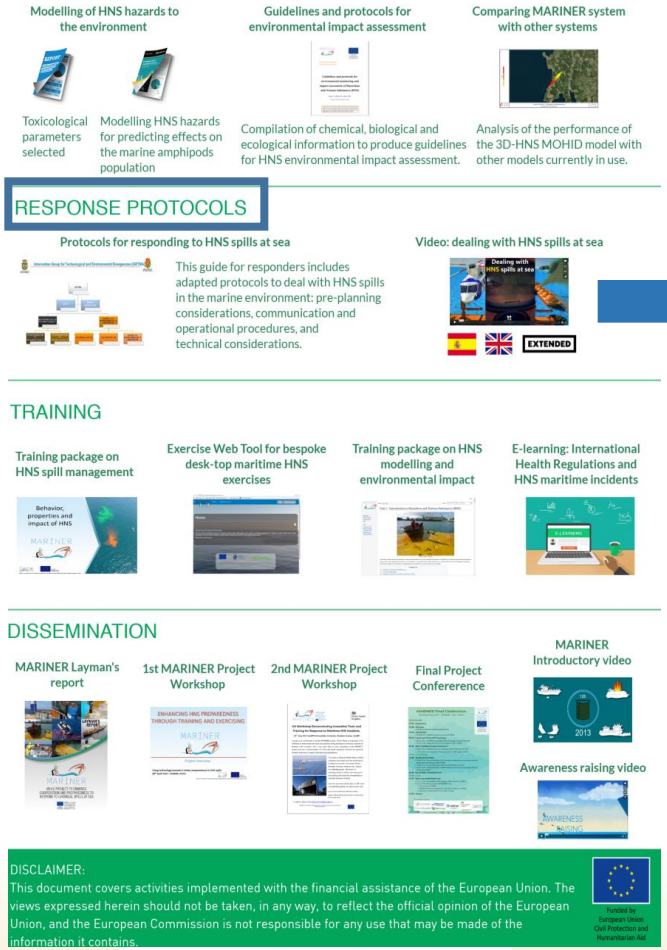
Working streams & Outcomes

- **RESPONSE PROTOCOL**



-Video on training

The MARINER project made a great effort to implement sea response protocols for HNS spills as is shown in this video:

https://vimeo.com/257102781

Universidade Vigo

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Working streams & Outcomes

- **TRAINING**

Training package on HNS spill management

Exercise Web Tool for bespoke desk-top maritime HNS exercises

Training package on HNS modelling and environmental impact

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Working streams & Outcomes

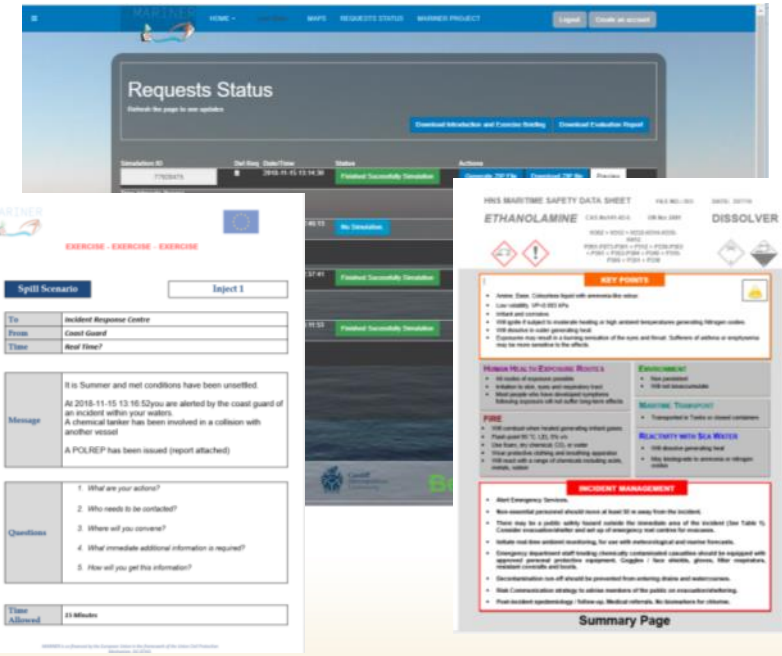
- **TRAINING**

MARINER Exercise Tool on HNS incidents

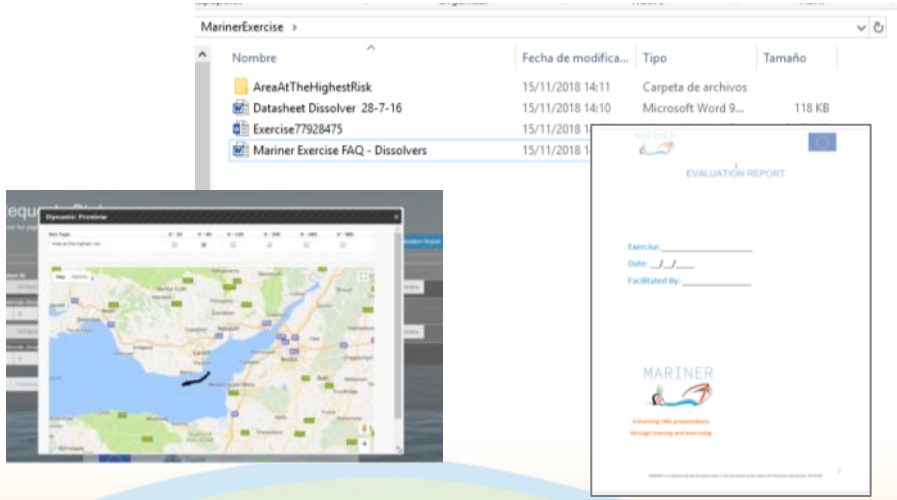
-The tool combines: HNS information, modelling interface and a library of exercise materials providing scenarios

-Users can select HNS type, scale, location and conditions and populate the database with regional data

-It generates desktop exercises simulating maritime HNS incidents adapted to local conditions



ZIP File: word documents for the exercise including scenario setting, injects and supporting materials, and modelling animations



Public Health England

Protecting and improving the nation's health

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Working streams & Outcomes

- **TRAINING**

Training Package on HNS spill management 14 presentations + 4 infographs

Modules
1 - General aspects on HNS
2 - Prevention & preparedness
3 - Response
4 - Post-crisis actions

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Working streams & Outcomes

- **TRAINING**

Training package on HNS modelling and impact assessment

Main page | Discussion

Main Page

Welcome to the "Training Package on HNS Modelling and Environmental Impact" from MARINER project.

The material was organized by CIIMAR (Helena Oliveira, Joana Soares, Miguel Santos) and Bentley Systems.

The material is separated in the following sections:

Unit 1 - Introduction to Hazardous and Noxious Substances (HNS)

Unit 2 - Environmental Impacts

Unit 3 - Environmental Monitoring

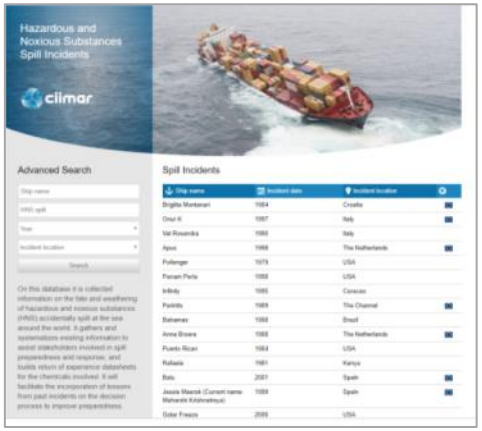
Unit 4 - Advanced Tools for Preparedness & Response:

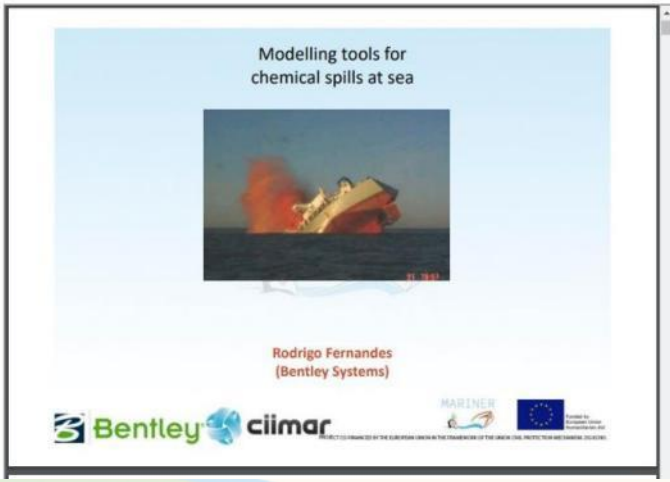
Unit 4.1 - Situational Awareness & Common Operating Picture

Unit 4.2 - Integration of online databases in preparedness & response

Unit 4.3 - Modelling Fate & Behaviour of HNS Spills

Unit 4.4 - Coastal Vulnerability Mapping: r





ciimar Centro Interdisciplinar de Investigação Marinha e Ambiental

Bentley

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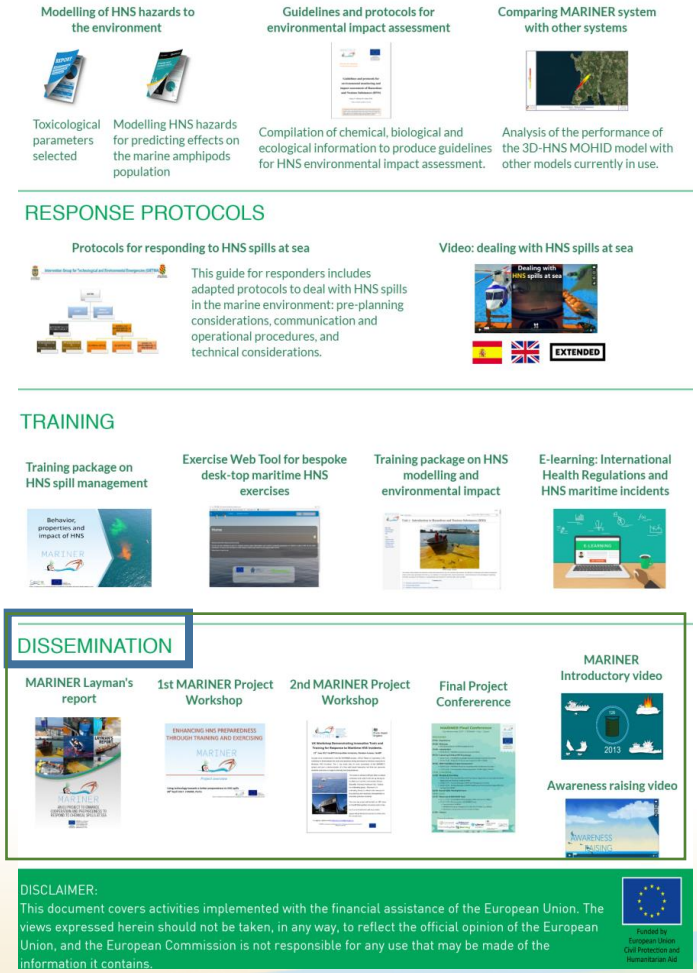
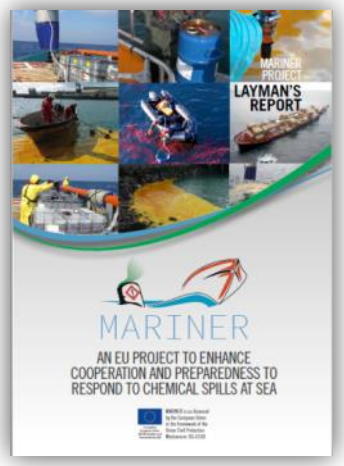
Working streams & Outcomes

- **DISSEMINATION**

Training package on HNS modelling and impact assessment



LAYMAN report



MARINER events

MARINER Videos

Awareness Raising

https://vimeo.com/224075676

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Universidade Vigo

Bentley
Advancing Infrastructure

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