



Expert international  
en pollutions accidentelles des eaux

# HNS Accidents : challenges, preparedness and response

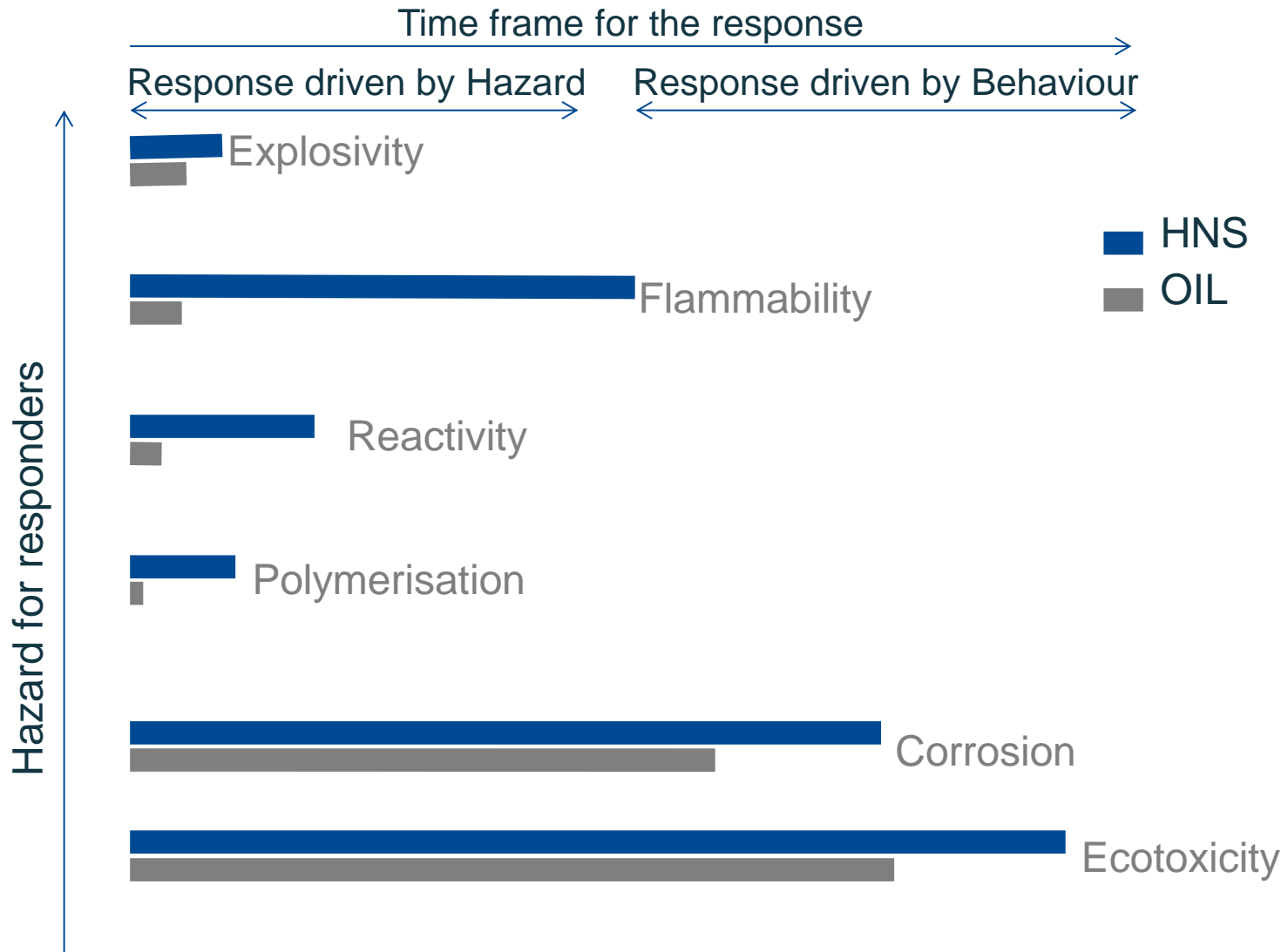


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## HNS incidents : a complex challenge

- High variation of the substances, compared with oil ;
- Variation even higher when the incident involves a cocktail of HNS ;
- No « one size fits all » solution, depending on the HNS, response strategies, equipment, and communication shall vary ;
- Necessity to identify a wider range of partners and expertise ;
- Need for a strong and standing connexion with the industry.

# Comparison between oil and HNS response



How first response actions driven initially by hazards and later by behaviour change over time

## Preparedness and response :

- ✓ Organisation
- ✓ Equipment
- ✓ Training
- ✓ Assistance

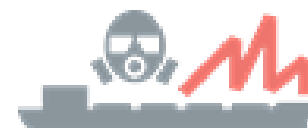


## MAR-ICE service – level 1



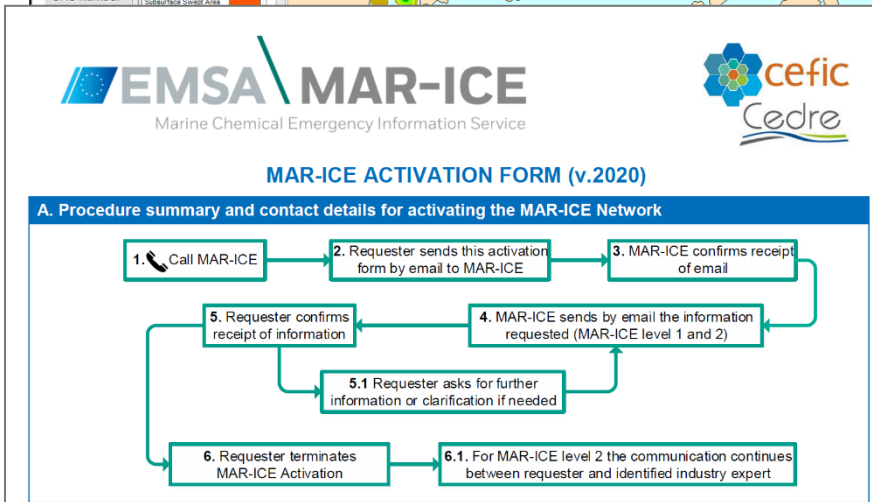
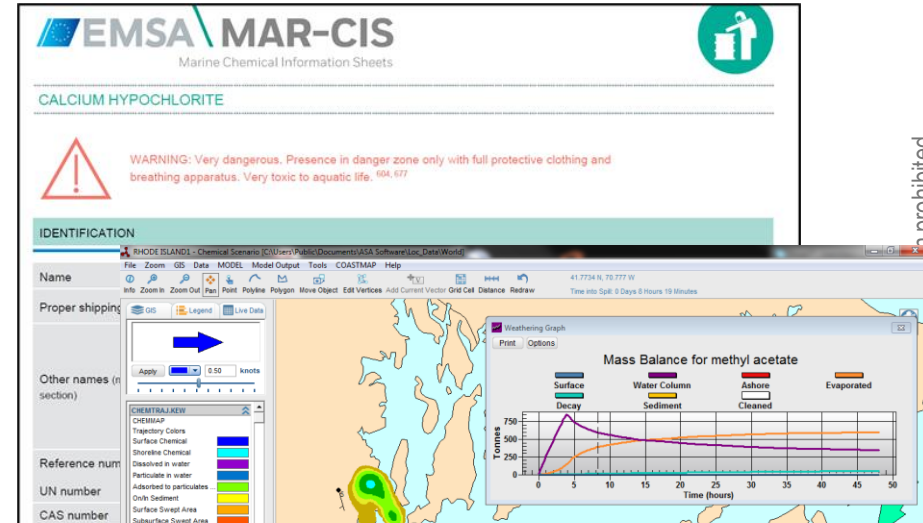
24/7 expert information service for  
marine chemical emergencies – level 1

- Access to **chemical expert(s)** specialised in marine pollution response
- Product specific **information & advice** 1h
- Input from **chemical industry**
- On a case-by-case basis:
  - # **Risk assessment** (responders & environment);
  - # **3D drift & weathering modelling** results;
  - # **Advice on response** methods and options



\* Service is available to public administrations of EU/EFTA countries

- Cargo specific questions
- Hazards, PPE, ...
- Drift modelling
- Response options
- Risk assessment (for responders & environment)
- Used in real incidents and exercises by 15 countries
- MAR-ICE tests w. chemical industry
- Well incorporated in national incident response procedures for chemicals spills at sea



- **Development of scientific knowledge :**
  - ✓ Risk analyses
  - ✓ HNS dedicated tools, protocols, procedures and products
  - ✓ Data on fate and behaviour on each substance
  - ✓ Data on marine resources at risk, environment, human activities



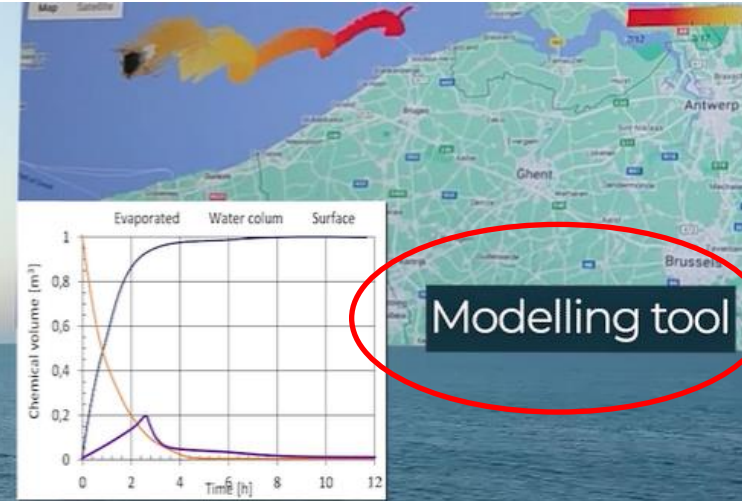


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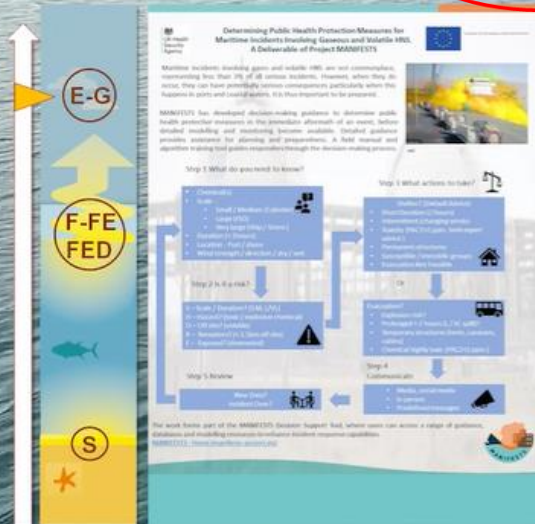


Ecotoxicity	
Description	
CAS number	67-56-1
UN number	1230
Chemical formula	CH <sub>2</sub> O
Predicted No Effect Concentration (PNEC)	
	2080 [µg/l] on the short term
Hazards	
IDLH	25000 [ppm]

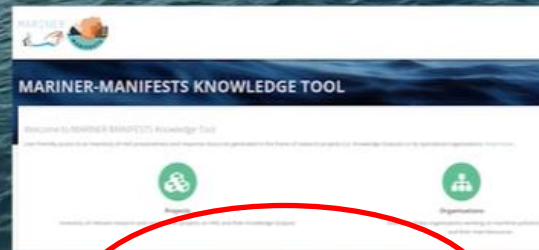
Chemical database - HNS-MS



Modelling tool



Guidance for HNS responders

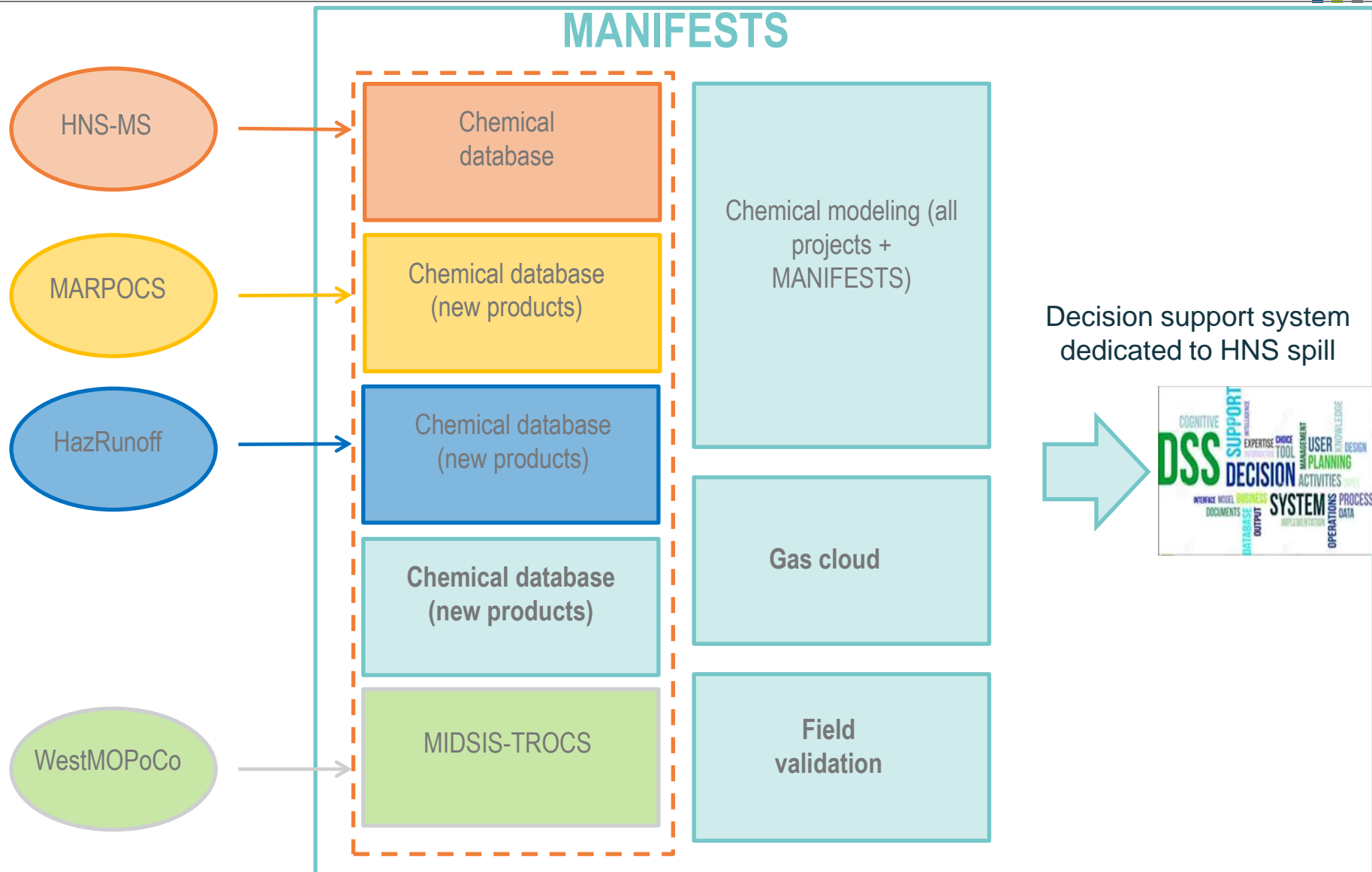


Mariner-Manifests knowledge tool



Explosive model

# Capitalization of the results of previous EU-funded HNS projects



## 1. Behaviour



## 4. Impact

- At the water surface
- In the water column



### Definition of Decision Support System

- Modelling
- Database
- Guidelines...

## 3. Modelling



## 2. Detection

Funded by

- International (EU...) 
  National (ANR, Citeph...) 
  Cedre's budget and Services



# Sea trials: HNS behaviour and testing of sensors to validate modelling



2021

**IPOMAC**

Release of  
6 HNS

2022



Co-funded by the European Union

**MANIFESTS**

Release of  
9 HNS  
& Vegetable oil

<https://manifests-project.eu/>

2023

New energies

Release of  
Methanol,  
HNS &  
Vegetable oil

2024

**Ammonia**

Release of  
Ammonia  
NH<sub>3</sub>

2025

To be  
determined



Main topics

- **Behaviour / fate**
- **Detection and compatibility** of response equipment





International experts  
in spill preparedness and response



**GESAMP**

Joint Group of Experts on the  
Scientific Aspects of Marine  
Environmental Protection

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# Our Work

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## EHS Working Group: Environmental Hazards of Harmful Substances



*Studying the behaviour of chemicals in the sea, identifying floaters at CEDRE (France)*

Lead Agency: [International Maritime Organization](#)

### WG 1: Evaluation of harmful Substances

[SESSIONS' REPORTS](#)

### LATEST NEWS

New report from Working Group 38  
available

**Merci**

