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Working together to strengthen HNS preparedness and response in Europe: The MAR-ICE Network example

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This abstract describes how a collaborative government-industry scheme was set-up at EU level to strengthen chemical spill preparedness and response in Europe, demonstrates the value-adding service provided based on the experiences gathered so far, and explores how the MAR-ICE Network could be further developed to jointly address emerging challenges.

Background

Maritime incidents involving chemicals or hazardous and noxious substances (HNS) can be very complex considering the need to rapidly develop an informed assessment of the cargo associated hazards and risks, and to define initial monitoring or response actions. The safety uncertainties and response challenges linked to the type, location, and volume of HNS on-board add to that complexity. Emergency incident management requires rapid access to both accurate information related to the incident itself (e.g., the situation on-board, cargo, weather conditions) and to expert knowledge regarding the HNS substances involved.

Key questions to answer in the initial stages of responding to an HNS maritime incident include:

- What are the potential hazards of the substance, intrinsic or from its interaction/reaction with the environment or other cargo on board?
- What is the substance's behaviour once released in the marine environment? How will it evolve?
- What specific safety and environmental precautions do I need to take to approach the incident area?
- How can I best control the situation? Which monitoring or response options are possible?

Service provided

The MAR-ICE Network was established in 2008 on the initiative of EMSA[1], in close collaboration with Cedre[2] and Cefic[3], through a tri-partite cooperation agreement, precisely to support EU countries in answering such type of questions during the initial vital risk assessment of chemical incidents at sea.

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[1] European Maritime Safety Agency (EMSA): An Agency of the European Union with key competences in the fields of maritime safety, maritime security, prevention of pollution caused by ships and response to pollution caused by ships and oil and gas installations. Within its fields of competence, EMSA provides EU Member States and the European Commission with technical, operational and scientific assistance and, upon request, supports Member States with additional means and in a cost-efficient way with their marine pollution response actions.

[2] Centre for Documentation, Research and Experimentation on accidental water pollution (Cedre): A French organisation associated with a public service mission, providing an around the clock advisory service and providing those in charge of spill response with information on pollutants, their behaviour, related risks and best response options and techniques. Cedre is also the national ICE Centre for France, under the ICE Network.

[3] European Chemical Industry Council (Cefic): Representing the chemical industry in Europe and coordinating the ICE (Intervention in Chemical transport Emergencies) emergency response voluntary network of the chemical industry with significant experience in information, expertise and equipment transfer across Europe in case of chemical spills on land.

It is based on Cefic's ICE (Intervention in a Chemical transport Emergency) voluntary scheme, established under the chemical industry's 'Responsible Care' initiative. ICE establishes clear lines of communication and provides, via a network of national ICE Centres, effective support from the chemical industry to the national emergency services during chemical distribution or transport incidents on land (rail and road).

Acknowledging each other's expertise, the three MAR-ICE partners came together and extended this framework of support to also cover maritime transport incidents. The service aims to help authorities reach an informed decision on how best to respond to the situation posed by the specific chemical cargo involved, while prioritising the safety of the responders and the wider population, as well as protecting the environment.

Of particular importance is the direct contact with the appropriate expert(s) to advise response authorities (who may be non-chemists) and help them analyse and evaluate the substance-related information received and its application for the specific maritime incident. In some cases, hundreds of different substances, sometimes incompatible substances, could be on board and therefore could potentially be involved in the incident. Expert support to go through all the relevant information and prioritise risks and actions, is fundamental for the success of the response operations and was considered a priority among EMSA's actions to support HNS spill preparedness and response in Europe.

By bringing together into one service the chemical industry's knowledge, long experience and established emergency communication procedures of Cefic and the ICE Network, with the maritime incident and marine pollution response expertise of Cedre and EMSA, the MAR-ICE service supports authorities remotely and on-site at the emergency command centre, with product specific information and advice, by providing:

- ✓ 24/7 access to substance-related information, documentation and advice, on the substance's characteristics, hazards and safety measures, as well as an expert to talk to; this initial information is provided within 1 hour from the request, on the basis of an easy to fill-in MAR-ICE activation form.
- ✓ Single entry point to the Network, via the MAR-ICE Contact Point (provided by Cedre, the national ICE Centre for France with experience in the ICE procedures). Cedre receives, filters and provides the initial response to all the requests, and when needed or requested, it contacts the chemical industry via the ICE Network for further product-specific assistance.
- ✓ Direct access to product-specific experts from the chemical industry, remotely via email and/or phone (MAR-ICE Level-1) or on-site at the requesting country's command centre (MAR-ICE Level-2); such on-site expertise can be particularly relevant during long-lasting or particularly complex incidents.
- ✓ Risk assessment of the cargo, drift and weathering modelling of chemical substances, advice on storage, transportation, and response options.

MAR-ICE essentially provides in a controlled way an 'open door' for all EU countries to access the chemical industry and marine response expertise when dealing with maritime emergencies involving chemicals and strives to ultimately improve overall HNS preparedness in Europe.

Experience gained

Since 2009, when the service became operational for relevant maritime administrations in the EU, it has been activated over 55 times for real incidents and exercises by 15 countries.

Real cases activations included cargo specific questions on chemical characterisation, impacts, drift modelling, response options, risk assessment for responders and the environment, including incidents with both containerships and chemical tankers.

The regular MAR-ICE activations for exercises, involving different chemical substances, incident scenarios and locations, aim to train national operational personnel in the service's activation procedures and gain a better understanding of the service's outputs. The MAR-ICE Network is well incorporated in the national incident response procedures for chemicals spills at sea, as an important source of specialised chemical information and advice.

Within the ICE Network, regular tests between the MAR-ICE Contact Point (Cedre) and the national ICE Centres and chemical companies are conducted, always with maritime scenarios, aiming to raise awareness among the chemical industry on the challenges and specific questions relevant to the maritime transportation of chemicals, which differ from land-based scenarios.

What next?

This industry-government collaboration under the MAR-ICE Network is well established and all three parties continue their commitment and efforts to the service and to raise awareness on the service among the EU Member States and within the chemical industry. EMSA continuously monitors the service, interacts with its users, and updates the Network's activation procedures, based on the user feedback received. Keeping a close eye on the evolution in the use of alternative fuel types and the new ultra large containerships, the MAR-ICE Network will evolve in the future accordingly to the needs posed by such emerging challenges.

Its added value of providing response authorities free of charge with quick access to and an established communication path with the right type of expertise needed in the initial stages of chemical spill response at sea is acknowledged and well received by the relevant response authorities.

The best way to identify future MAR-ICE developments, is for this service to be frequently used, to adjust it and develop it based on user feedback and emerging challenges, in order to guarantee that it remains fit for purpose.

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