European Maritime Safety Agency
Ref. Ares(2019)1809709 - 19/03/2019

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MAR-ICE Network
4th Evaluation Report

Fourth review and evaluation of the MAR-ICE Network covering its operation from January 2016 to December 2018

Date: March 2019

EMSA

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1. Introduction

1.1 The MAR-ICE Network was established in 2008 through a 3-Party Cooperation Agreement (as amended) between the European Chemical Industry Council (Cefic), the Centre of Documentation, Research and Experimentation on Accidental Water Pollution (Cedre) and the European Maritime Safety Agency (EMSA). It became operational in January 2009 and has since been activated by EU and EFTA/EEA countries 38 times. The MAR-ICE Network provides upon request remotely (via e-mail / phone) expert information and advice on chemical substances in the event of a maritime emergency. The service currently runs through to 16 October 2022.

1.2 The MAR-ICE activation procedures are described in the MAR-ICE Implementation Plan, which has been distributed to the relevant administrations of the EU Member States and coastal EFTA/EEA States. In addition to the response to marine spills/releases involving chemicals or hazardous and noxious substances (HNS), or the threat thereof, MAR-ICE can also be used during pollution response drills and exercises. A leaflet describing the Network's scope and the expert information service it provides is published on EMSA's website.

1.3 As agreed among the parties of the Cooperation Agreement, Cedre serves as the MAR-ICE Contact Point (single entry point) to the Network, receiving all requests for assistance and coordinating the information and advice provided. Cefic is the coordinating body of the Intervention for Chemical Emergencies (ICE) Network for land transport of chemicals incidents, while EMSA maintains, coordinates and reviews the MAR-ICE Network and the service it provides. This report provides a summary of the fourth review and evaluation of the MAR-ICE Network and the service provided in the period **from January 2016 to December 2018**, based on the fourth MAR-ICE evaluation meeting held among Cedre, Cefic and EMSA on 5 February 2019. This report, and those from the previous MAR-ICE evaluation meetings held in 2011, 2013 and 2015, are published on EMSA's website.

2. Relevant MAR-ICE developments

2.1 In the period covered by this report, the following relevant developments took place:

- The MAR-ICE Contact Form, used to activate the service, and the MAR-ICE Activation Procedure, describing the activation steps, were revised in 2016 and distributed to the EU and EFTA/EEA Member States relevant authorities through the CTG MPPR members. The changes made aimed to make the MAR-ICE Contact Form more user-friendly and incorporate feedback received from the service users.
- Noting the increasing number of requests for chemical modelling made to the Network, a 'Chemmap Activation Sheet' was developed by the MAR-ICE Contact Point, to be filled-in by the requester when requesting modelling, to ensure the minimum data required for the modelling are provided.
- The countries participating in ICE Network maintain at national level up-to-date data and links to chemical companies, manufacturers and chemical products. The MAR-ICE Contact Point will contact the corresponding national ICE Centres to access the requested information on chemical companies and products in that country.
- Within the ICE Network, regular 'MAR-ICE Tests' have been introduced, conducted between the MAR-ICE Contact Point (Cedre) and the national ICE Centres on the basis of a simple maritime chemical incident scenario, aiming to raise awareness of MAR-ICE among the chemical industry and ICE centres.
- The Cooperation Agreement establishing the MAR-ICE Network was renewed for a five year period in 2017 and the service now runs through to 16 October 2022.
- Following extensive discussions over the past years with Cefic and the ICE Network partners, the possibility for the MAR-ICE Network to also provide upon request, chemical expert advice on site of a maritime incident (i.e. at the command centre of the requesting country on-land) has now been supported by the chemical industry. The expansion of the MAR-ICE service to also provide chemical experts on-site at the requester's country, in addition to the remotely provided information and advice, is being explored among the three partners in view of implementing this new service in 2019.

3. Overview of MAR-ICE activations (2016 – 2018)

3.1 Between 1.1.2016 and 31.12.2018, the MAR-ICE Network was activated thirteen times:

- Once during a real incident, without actual release of chemicals, and
- Twelve times during marine pollution response exercises.

An overview of all the MAR-ICE activations is presented in the table below.

Real incident during which the MAR-ICE Network was activated (January 2016 - December 2018)		
Requesting entity & date of request	**Substance(s) involved**	**Request made to the MAR-ICE Network**
Irish Coast Guard, Ireland (28.02.2017)	Rhodamine WT (a product considered to be released at sea during an at-sea exercise the following day).	The Network was activated preventively. The request was for information (chemical composition and physical-chemical properties) about a red dye (Rhodamine WT) that would be released at sea the following day for plume tracking.
Exercises during which the MAR-ICE Network was activated (January 2016 - December 2018)		
EMSA, in support of an ITOPF HNS TT exercise (19.04.2016)	Scenario included the spill of Methyl Ethyl Ketone (MEK) (UN 1193)	Request for product specific information on the product UN 1193; request for hazards identification and prioritisation and on immediate emergency and response actions. Request for trajectory/numerical modelling.
MRCC Rijeka, Croatia (20.06.2016)	Scenario included a spill of Motor gasoline (UN 1203)	Request for information on the product UN 1203, especially regarding first aid measures, firefighting measures, handling and storage.
SYKE, Finland (13.09.2016)	Scenario included the grounding of a container ship in coastal waters, with containers lost at sea and with immediate release of five chemicals: - Phenol molten (UN 2312) - Styrene monomer (UN 2055) - Hydrogen Peroxide (UN 2014) - Ethylenedichloride (UN 2362) - Ammonia (UN 1005)	Request for product specific information for all five substances. Request for trajectory/numerical modelling for two products (UN 2055 and UN 1005).
SYKE, Finland (07.06.2017)	Scenario included the leak from cargo containers of three products: - UN 1133 - UN 2794 - UN 3467	Request for information for the three products about danger to humans, as well as a request to prioritise the products based on that.
MRCC Madrid, SASEMAR, Spain (14.06.2017)	Scenario included the release of IFO 380 (heavy fuel oil)	Request for information about ecological effects, physical and chemical properties and oil drift simulation of IFO 380 were requested.
Norwegian Coastal Administration, Norway (06.09.2017) [Activation during the SCOPE 2017 exercise]	Scenario included spill at sea of large quantities of Ammonia (UN 1005)	Request for information on risks and behaviour of the product UN 1005. Request for trajectory/numerical modelling of UN 1005.

Exercises during which the MAR-ICE Network was activated (January 2016 - December 2018)		
Requesting entity & date of request	**Substance(s) involved in exercise scenario**	**Request made to the MAR-ICE Network**
EMSA, during a Port of Refuge TT Exercise (12.09.2017)	Scenario included the spill of Ammonia (UN 1005) and of LPG (UN 1075) following the collision between a liquefied gas carrier and on oil tanker.	Request for product specific information on the two products UN 1005 and UN 1075, as well as for trajectory/fate numerical modelling and an initial risk assessment for the product UN 1005.
MRCC Madrid, SASEMAR, Spain (03.10.2017)	Scenario included leakage from cargo tanks of two products: - Phenol (UN 2312) - Acetone (UN 1090)	Request for information on the analysis and modelling of the behaviour of Acetone and Phenol on the sea surface and in the water column.
MRCC Madrid, SASEMAR, Spain (02.04.2018)	Scenario included the spill from a chemical tanker of: - Aniline (UN 1547) and - Phenol (UN 2312)	Request for product specific information for both products UN 1577 and UN 2312.
Maritime Search and Rescue Service, Poland, (04.04.2018) [Activation under the 2018 Balex Delta exercise]	Scenario included the spill of Chlorine Trifluoride (UN 1749) from a container at sea	Request for product specific information on the product UN 1749.
Portuguese Navy, Portugal (08.05.2018)	Scenario included the spill at sea of Butyl Acrylate (UN 2348)	Request for information on PPE, immediate response actions and hazards for responders, as well as request for modelling and risk assessment.
Préfecture Maritime de l'Atlantique, France (17.10.2018)	Scenario included lost containers at sea with seven dangerous goods and the localisation of a sunken container with the product Nonylphenol poly (4+)ethoxylate (UN 3082)	Request for product specific information, for trajectory/fate numerical modelling and for an initial risk assessment for product UN 3082.

4. Cedre's performance as the MAR-ICE Contact Point

4.1 In all cases of the MAR-ICE Network's activations, Cedre has acted very efficiently in providing initial relevant product-specific documentation (e.g. MSDSs, MAR-CIS datasheets, ERICARDS) and information within 1 hour. Depending on the request made, this is in most cases followed by the provision of additional information mostly on the substance's behaviour in the marine environment, or the substance's trajectory or risk evaluation and risk assessment. Cedre has in many cases acted proactively and made relevant proposals and suggestions and offered additional advice to the requested information. In all cases, Cedre has demonstrated professionalism and expertise in their response to the requests received. In particular the promptness, professionalism and expertise of the information provided by Cedre are much appreciated by the service's users.

4.2 In most cases Cedre provided the requested information based on its own resources. In the period covered in this report, chemical companies (manufacturers) through the ICE Network were only contacted in two occasions: during the Port of Refuge TT Exercise on 12.09.2017 and the Balex Delta exercise on 04.04.2018.

4.3 Feedback received from some countries indicates that the type of information and documentation provided by the Network could be improved to have a more operational focus, going beyond the more generic MSDS information and to include warnings, practical advice and to highlight health and safety information for the response operations. This has been noted by the three Parties.

4.4 Since the establishment of the Network, Cedre has conducted regular training of its duty engineers on the MAR-ICE procedures and the service to be provided via the Network. This internal training consists of familiarisation with the ICE database and the MAR-CIS tool, consulting various other chemical databases, using HNS modelling software (such as CHEMMAP) and keeping up-to-date with the MAR-ICE activation procedures.

4.5 Cedre has to date performed its tasks as the MAR-ICE Contact Point to provide information on chemicals involved in maritime incidents very well and always timely. In addition to the product specific information, Cedre provided additional relevant information and expert advice in almost all cases, including several modelling results.

5. Cefic's performance as coordinator of the ICE scheme

5.1 Cefic plays a crucial role in the MAR-ICE Network as it maintains and manages the ICE database, which contains the contact information of all National ICE Centres of the ICE Network in Europe and coordinates the ICE scheme. The ICE database is used by the MAR-ICE Network to contact when needed the various National ICE Centres and chemical companies / manufacturers to get more specialised product-specific information. Cefic guarantees the chemical industry's awareness of and involvement in the MAR-ICE Network and to this effect supported the introduction of the MAR-ICE tests within the ICE Network (see point 2.1 above). Furthermore, the MAR-ICE Network is a standing topic on the agenda of the annual ICE Integration Group meetings regarding the emergency response to road and rail incidents involving chemicals, incorporating the maritime element in the work of the ICE Network for land transport.

5.2 Although Cefic's role is not as visible as Cedre's contribution to the functioning of the MAR-ICE Network, Cefic clearly has a critical role in representing the chemical industry and the ICE partners and is greatly appreciated as a partner of the MAR-ICE, in particular with regard to the discussions for further development of the service. In addition, Cefic is always aware of the MAR-ICE Network's activations and coordinates and follows-up with any issues regarding the participation and contribution of the ICE centres and the ICE chemical companies in the MAR-ICE Network.

6. EMSA's role as coordinator of the MAR-ICE Network

6.1 EMSA was the initiator of the MAR-ICE Network and is responsible for monitoring, evaluating and further developing the service it provides, based on the Member States feedback and identified needs, and in support of their response to maritime emergencies involving chemicals. EMSA's role is to ensure that the service is provided efficiently and without disruptions. While not visible during the Network's initial activation procedure and during the communication exchange between the requester and the MAR-ICE Contact Point, EMSA is part of the MAR-ICE Network and is aware of all the MAR-ICE activations in real time; EMSA also receives an activation report by Cedre and feedback from the service users shortly after the termination of each activation.

6.2 EMSA also raises awareness among the Member States on the MAR-ICE Network, through the CTG MPPR and PRS-User Group, and provides training to Member States on the service's activation procedures, as well as regularly updates the chemical industry through the ICE Integration Group on the MAR-ICE activations and developments.

7. 4th Evaluation of the MAR-ICE Network

7.1 The countries that activated the MAR-ICE Network have expressed their high appreciation of the rapid and professional information service provided. In the user-feedback received, they acknowledge the importance and benefit of having rapid access to professional product and incident-specific information on chemical substances and their associated hazards and risks, as well as receiving timely expert advice when dealing with maritime chemical emergencies. Even when such information, documentation and advice may be available at national level, which is not always the case, the MAR-ICE Network provides an addition source of expertise, which together with the advice and clarifications provided, are very important to support decision-making.

7.2 During the period covered in this report, Poland and Portugal activated the service for the first time, thus familiarising their duty officers with the service's activation procedures and gaining a better understanding of the type of information, documentation and advice that can be obtained from the MAR-ICE Network. The number of

coastal EU or EFTA/EEA states that have activated the service to date is now twelve. It is EMSA's intend to enable all EU Member States to activate the MAR-ICE Network at least once.

7.3 A clear increase can be noted in the requests made for trajectory/fate numerical modelling and for risk assessments for the substances involved in the incident scenarios. For this reason, extra templates have been prepared to be filled-in by the requester when asking for chemical modelling or risk assessment, in order to ensure that the required data is collected. Chemical modelling is not widely available and when provided by the MAR-ICE Network, together with the accompanied explanations, is of real added value to the service's users.

7.4 Feedback is requested and received from the Network's users after each activation and this has been duly considered and addressed by the MAR-ICE partners during this fourth evaluation of the Network. Finland (Finnish Boarder Guard) and Spain (SASEMAR) also partly participated in the 4th MAR-ICE Network evaluation meeting, enabling a more detailed discussion of the points raised in their feedback, as listed below.

7.5 Discussions on expanding the service to also provide upon request chemical experts on-site in the requester's country progressed and the three Parties will now proceed in implementing this new service in 2019. A separate MAR-ICE Contact Form and activation procedures will be developed for the activation of the MAR-ICE 'on-site expert' service, taking into consideration the similar procedures used in the ICE scheme for chemical incidents on land.

7.6 Lessons learned and follow-up actions to be implemented from the 4th MAR-ICE evaluation include:

- The MAR-ICE Contact Form to be used for the activation of the Network will be further revised, for easier use by the requesting party.
- It is very important that the specific type of information or advice requested by the Network is clearly indicated on the MAR-ICE Contact Form or per email and is followed-up by the requester.
- Documentation provided by the Network, should be accompanied by further explanations, drawing attention to the key points and highlighting main hazards and risks or elements of concern associated with the substance(s). The advice provided via MAR-ICE could be more tailored to the specific incident scenario and include more explanations and interpretation of the documents and advice provided
- The activation procedure steps included in the MAR-ICE Contact Form should be followed by the requester and the termination of the MAR-ICE activation should be clearly stated by the requester.
- The use of the MAR-ICE Network for maritime Search and Rescue (SAR) operations and the added value of promptly receiving expert information and advice on safety issues were highlighted, noting however that SAR is not within the main scope of the MAR-ICE Network. While information on the chemicals will be given to the requester, no specialised advice can be provided on SAR operations.
- The potential use of the MAR-ICE Network to receive expert advice and information on oils and on the new low sulphur fuel oils (hybrid oils) in particular was also raised. MAR-ICE is not intended to provide expert advice and information for oil spills, even if the product may have an UN number. However, noting the Member States' interest in the new hybrid oils and in their categorisation partly as MARPOL Annex II products, EMSA will keep an eye on this issue.
- Further training of the Member States on the use of the MAR-ICE service is needed.
- There is a need to facilitate and increase the accessibility to the MAR-ICE Network documentation (Contact Form) among EU Member States' relevant administrations, beyond the CTG MPPR community.
- With regard to establishing the MAR-ICE 'on-site expert service', the three Parties will develop a separate MAR-ICE Contact Form and will revise the Cooperation Agreement accordingly. As soon as the service is established, Member States will be formally informed.

7.7 The concrete follow-up actions identified for each of the MAR-ICE partners will be implemented in the course of 2019 and the Member States will be informed in due course of any concrete developments of the MAR-ICE service. This report is published on EMSA's website http://emsa.europa.eu/.

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