European Maritime Safety Agency

MAR-ICE NETWORK 5TH EVALUATION REPORT

FIFTH REVIEW AND EVALUATION OF THE MAR-ICE NETWORK COVERING ITS OPERATION FROM JANUARY 2019 TO DECEMBER 2023

FEBRUARY 2024

EMSA

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1. Introduction

1.1 In implementing the EMSA Action Plan for Hazardous and Noxious Substances (HNS Action Plan) adopted by the EMSA Administrative Board in June 2007, the MAR-ICE Network for marine pollution chemical emergencies was established on 17 October 2008 through a 3-party Cooperation Agreement (as amended) signed by the European Chemical Industry Council (Cefic), the Centre de Documentation de Recherche et d'expérimentations sur les pollutions accidentelles des eaux (Cedre) and the European Maritime Safety Agency (EMSA). The Network currently runs through to 16 December 2027.

1.2 The MAR-ICE Network provides upon request, 24/7, EU Member States and coastal EFTA states, with expert information, documentation, and advice on chemical substances, supporting their decision-making process when responding to maritime incidents involving the release of chemicals or the threat thereof. This expert information and advice can be provided to the requester remotely, via telephone or e-mail (MAR-ICE level 1), and on-site at the requesting country's command centre (MAR-ICE level 2), via a company of the chemical industry holding relevant know-how, who may send its experts to the requesting country. A MAR-ICE leaflet describing the Network's scope and the expert information service it provides is published on EMSA's website.

1.3 The MAR-ICE service is operational since 2009 and has been activated by EU and EFTA/EEA countries 70 times to date, both for real incidents and exercises. As agreed among the three parties, Cedre serves as the MAR-ICE Contact Point (single entry point) to the Network, receiving all the requests for assistance and coordinating the information and expert advice provided. Cefic is the coordinating body of the Intervention for Chemical Emergencies (ICE) scheme[1] for land-based chemical transport incidents and supports the Network with the chemical industry's expertise, while EMSA established the Network and maintains, coordinates and reviews the MAR-ICE Network and the service it provides.

1.4 The three parties hold regular meetings to review and evaluate the service's implementation. This report provides a summary of the fifth review of the MAR-ICE Network and the service provided in the period **from January 2019 to December 2023**, based on the 5th MAR-ICE evaluation meeting held on 12 December 2023.

2. MAR-ICE Network developments (2019 – 2023)

2.1 In the period covered by this report, the following MAR-ICE service main developments took place:

- The MAR-ICE Network was expanded in 2020 to also provide upon request, chemical substance-related expert advice *on-site* (i.e., at the command centre of the requesting country on-land). This on-site activation at the requesting country's command centre (MAR-ICE level 2), involves a company of the chemical industry holding relevant know-how, who may send its experts to the requesting country to support onsite with substance specific expertise. The activation of the MAR-ICE level-2 support is available by using the same Activation Form and is evaluated each time on a case-by-case basis.
- The MAR-ICE Activation Form, used to activate the service, and the MAR-ICE Activation procedures have been revised in 2020 to address this expansion to the level-2 support, and to address other necessary updates needed, including suggestions received from the service users' feedback, always aiming to facilitate a rapid and user-friendly service activation.
- Regular 'MAR-ICE Tests' have been introduced under the ICE scheme. These are conducted between the MAR-ICE Contact Point (Cedre) and the national ICE Centres or individual chemical companies or manufacturers, on the basis of *maritime* chemical incident scenarios, aiming to further raise awareness of the MAR-ICE service among the chemical industry. Both EMSA and Cedre attend the annual

[1] ICE (Intervention in Chemical transport Emergencies) is a co-operative emergency response programme, set up by the European chemical industry, seeking to create a framework for providing assistance in an effective way (for more information visit: https://www.ice-chem.org/)

meetings of the ICE Integration Group, organised by Cefic and update the chemical industry on the MAR-ICE service activations.

- A dedicated MAR-ICE webinar was held jointly by EMSA, Cefic and Cedre on 16 September 2021, as one of the modules of an EMSA online workshop on chemical spill response. The MAR-ICE webinar addressed the scope and outputs of the service, looked into case-studies and feedback from the service users and from the ICE scheme, and brought together Member States relevant authorities and the chemical industry, aiming to raise awareness on the service (Webinar: https://www.ice-chem.org/) .
- National "MAR-ICE familiarisation sessions" were introduced by EMSA in 2020, providing Member States the opportunity to request these short online information sessions for a wider national or local audience, to better understand how to activate the service and what type of support can be provided. During the online sessions relevant case-studies are presented and any doubts or questions are discussed at national level. These sessions are provided jointly by EMSA and the MAR-ICE Contact Point, and five countries have already held such MAR-ICE familiarisation sessions.
- The Cooperation Agreement establishing the MAR-ICE Network was amended and extended for another five-year period in 2022 and the service now runs through to 16 December 2027.

3. Overview of MAR-ICE activations (2019 – 2023)

3.1 Between 1.1.2019 and 31.12.2023, the MAR-ICE Network was activated 30 times:

- Eight times during real incidents, and
- 22 times during marine pollution response exercises.

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

Real incidents during which the MAR-ICE Network was activated (January 2019 - December 2023)		
Norway (July 2019)	Seaweed mixed with a chemical product was found on a beach. A request was made for more information on the chemical product.	Level-1 activation. The relevant documentation and information were provided by the Network.
Finland (July 2020)	There was a suspected discharge in port of tall oil. A request was made for more information on the product properties and hazards.	Level-1 activation. The relevant documentation and information were provided by the Network.
Bulgaria (August 2020)	Pollution was spotted on the coast involving a chemical product. A request was made for more information on the product hazards to the marine environment and for modelling.	Level-1 activation. The relevant documentation, information and modelling outputs were provided by the Network.
Croatia (April 2021)	There was a possible leak from an old wreck. A request was made for information on the product.	Level-1 activation. The relevant documentation and information were provided by the Network.
Bulgaria (October 2021)	There was a vessel grounding with possible release of cargo. Request was made for more information on the product.	Level-1 activation. The relevant documentation and information were provided by the Network.
France (February 2022)	A request was made regarding lost containers at sea, for more information on the products involved and for modelling.	Level-1 activation. The relevant documentation, information and modelling outputs were provided by the Network.

Finland (November 2022)	Information was requested about an unknown substance found by divers at the sea bottom, which self-ignited when brought on the boat.	Level-1 activation. The relevant documentation and information were provided by the Network.
EMSA (June 2023)	Following a request by the European Commission (ERCC), information was requested preventively on two products involved in an ongoing incident.	Level-1 activation. The relevant documentation and information were provided by the Network.
Exercises during which the MAR-ICE Network was activated (January 2019 - December 2023)		
France (26/06/2019)	Exercise scenario involved the loss of containers with the substances: UN3082, UN1219, UN1133.	Level-1 activation. Request asked for product specific information for the three substances, as well as trajectory and fate information regarding the substance UN3082. Relevant documentation and modelling outputs were provided by the Network.
EMSA (under the 2019 Places of Refuge Exercise "Atlantic Container") (23-24/07/2019)	Exercise scenario was quite complex and involved a containership, with fire on a container located amidship. In total there were 46 different hazmat cargo (UN numbers) on board.	Level-1 activation. Request asked for product specific information and risk assessment for the hazmat cargo on board. Relevant documentation and a short risk assessment were provided by the Network.
Latvia (NAMEJS) (14/09/2020)	Exercise scenario involved the loss of leaking containers at sea with the following substances: UN1005, UN1093, UN1806.	Level-1 activation. Request asked for product specific information as well as modelling information for the three substances involved in the scenario. Relevant documentation and modelling outputs were provided by the Network.
Finland (during national MAR-ICE Information Session provided to Finnish experts) (09/12/2020)	Exercise scenario involved the collision of a crude oil tanker and a chemical tanker, resulting in the leaking of the substance UN 2364 from the chemical tanker.	Level-1 activation. Request asked for product specific information regarding UN2364 and activation was done mainly to test the activation procedures. Relevant documentation and modelling outputs were provided by the Network.
Finland (BALEX Alpha 2021) (09/03/2021)	Exercise scenario involved the collision between a chemical tanker and an oil tanker, with the potential for a possible leak of 5 UN products: Isopropanol (UN 1219), Phenol (UN 2312), Xylenes (UN 1307), Ethylene dichloride (UN 1184), Butanols (UN 1120).	Level-1 & Level-2 activation. Request asked for product specific information for the 5 products involved in the scenario and for contacts of product-specific experts from the chemical industry. Relevant documentation and a short risk assessment were provided by the Network and the relevant chemical industry were contacted.
Spain (18/05/2021)	Exercise scenario involved a fire on board a ship carrying Thiodiglycol.	Level-1 activation. Request asked for product specific information. Relevant documentation and a short risk assessment were provided by the Network.
Finland (BALEX Delta 2021) (23/08/2021)	Exercise scenario involved the collision between a chemical tanker and an oil tanker, with the potential for a possible leak of 5 products (UN 1219), (UN 2312), (UN 1307), (UN 1184) and (UN 1120), and later the leakage of the product Xylenes (UN 1307).	Level-1 & Level-2 activation. Request asked for product specific information and for contacts of product-specific experts from the chemical industry. Relevant documentation and modelling outputs were provided by the Network and a video-call simulating the level-2 onsite activation was held with the relevant chemical industry, who provided detailed product-specific information.
Lithuania (27/09/2021)	Exercise scenario involved a fire on board a ship laden with Ammonium Nitrate (UN 2067) in harbour.	Level-1 activation. Request asked for product specific information on UN 2067.

		Relevant documentation and information were provided by the Network.
Spain (15/11/2021)	Exercise scenario involved the spill of Methanol (UN1230) at a port terminal.	Level-1 activation. Request asked for product specific information on UN 1230. Relevant documentation and information were provided by the Network.
Spain (POLEX 2021) (18/11/2021)	Exercise scenario involved the spill of Ammonia (UN 1005) from an LPG vessel.	Level-1 & Level-2 activation. Request asked for product specific information regarding UN 1005 and for a product expert from the chemical industry (MAR-ICE level 2). Relevant documentation and modelling outputs were provided by the Network, including detailed expert information from the chemical industry.
Portugal (Atlantic POLEX 2022) (05/05/2022)	Exercise scenario involved an explosion on a container vessel, with a container at sea with Ethylene (UN 1964)	Level-1 activation. Request asked for product specific information regarding UN 1964. Relevant documentation and a short risk assessment were provided by the Network.
EMSA (Port of Refuge TTX) (07/07/2022)	Exercise scenario was quite complex and involved a collision between a Ro-Ro and another vessel, resulting in fire on the Ro-Ro. Several dangerous goods (UN numbers) were on-board the Ro-Ro.	Level-1 activation. Request asked for product specific information and risk assessment. Relevant documentation and a risk assessment table were provided by the Network.
Germany (BALEX Bravo 2022) (15/08/2022)	Exercise scenario involved a collision involving a container vessel with several substances transported on board and spilled at sea and on-board following the collision. Several products (UN numbers) were involved	Level-1 activation. Request asked for product specific information. Relevant documentation and information were provided by the Network.
Malta (07/09/2022)	Exercise scenario involved a tanker and a container ship. The product involved was Ethylbenzene (UN 1175)	Level-1 activation. Request asked for product specific information and information on the trajectory and fate of the substance's dispersion. Relevant documentation, information and modelling outputs were provided by the Network.
Italy (RAMOGEPOL 2022) (05/10/2022)	Exercise scenario involved an explosion on board an oil/chemical tanker with the spill of sodium hydroxide (UN1823)	Level-1 activation. Request asked for product specific information and information on the trajectory and fate of the substance's dispersion. Relevant documentation, information and modelling outputs were provided by the Network.
Slovenia (11/10/2022)	Exercise scenario involved a vessel collision with the spill of Methanol (UN1230)	Level-1 activation. Request asked for product specific information, information on the trajectory and fate of the substance's dispersion, as well as a brief risk assessment of the product spilled at sea, mainly regarding response options and required PPE. Relevant documentation, information and modelling outputs were provided by the Network.
Malta (PACE 2022) (14/11/2022)	Exercise scenario involved a catamaran with lithium-ion batteries (UN 3480) on board, which was on fire in the harbour.	Level-1 activation. Request asked for product specific information and for modelling. Relevant documentation and information were provided by the Network.

Spain (20/01/2023)	Exercise scenario involved the leakage of Ammonia (UN 1005) and Phenol (UN 2312) from a tanker in a port location.	Level-1 activation. Request asked for product specific information. Relevant documentation and information were provided by the Network.
Portugal (EU-MODEX) (22/02/2023)	Exercise scenario involved a container vessel that had a collision and grounding, a fire on board and the loss of containers. Several products were involved in the scenario: UN2880, UN1307, UN3265, UN3264, UN 1760, UN3082 and UN1263.	Level-1 activation. Request asked for product specific information, modelling and risk assessment. Relevant documentation, information, risk assessment table and modelling outputs were provided by the Network.
Spain (16/06/2023)	Exercise scenario involved a collision and the breakage of an oil tank of the vessel, as well as the spill of vinyl acetate (UN1301) and fertilizers ammonium nitrate (UN 2067) at sea.	Level-1 activation. Request asked for specific information, modelling and risk assessment. Advice on possible interactions between polymerised vinyl acetate and an oil spill of low sulphur gas oil was also requested. Relevant documentation, information and modelling outputs were provided by the Network.
Latvia (Balex 2023) (30/08/2023)	Exercise scenario involved fire on board a container carrier, with potential release of acetone cyanohydrin (UN1541). Several products were involved in the scenario: UN1541, UN3269, UN1950, UN1263, UN2801.	Level-1 & Level-2 activation. Request asked for product specific information, modelling and risk assessment, as well as on-site expert advice (MAR-ICE level-2) for UN1541. Relevant documentation, information, risk assessment and modelling outputs were provided by the Network. Contact was made with the chemical industry regarding an expert for UN 1541, however no manufacturer was identified within the exercise timeline.
Spain (19/10/2023)	Exercise scenario involved the spill of Acrylonitrile (UN 1093) from a chemical tanker in berth.	Level-1 activation. Request asked for product specific information, modelling and risk assessment. Relevant documentation, and a basic risk assessment were provided by the Network.

4. MAR-ICE Network fifth review and evaluation

4.1 Cedre's role as the MAR-ICE Contact Point (single entry point)

4.1.1 In all cases of the MAR-ICE Network's activations, Cedre acted very efficiently in providing initial relevant product-specific documentation (e.g., MAR-CIS datasheets, Safety Data Sheets, EriCards, Chemical guides, extracts from relevant documents, IMO Codes and applications, …) and information within 1 hour. In the very few cases where this 1-hour timeline was not followed, it was mainly due to the complexity of the request, where additional clarifications were required after receiving the activation form, or the large number of substances involved, or due to delays from the non-following of the activation procedure by the requester. The initial information provided was in most cases followed by the provision of additional information and advice, mostly on the substance's behaviour in the marine environment, the substance's fate and trajectory (modelling outputs), or a short risk evaluation and risk assessment for the marine environment and the responders.

4.1.2 The promptness, professionalism and expertise of the replies provided by Cedre are much appreciated by the service's users, as indicated in the user-feedback received following the service's activations. The users 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 and documentation may

be available at national level, which is not always the case, the MAR-ICE Network provides an additional source of expertise, which together with the advice and clarifications provided, are very important to support national decision-making during emergencies involving chemical substances. The importance of the Network providing a short operational summary, drawing attention to the key points and highlighting main hazards and risks or elements of concern associated with the substance(s) involved, has also been highlighted by the service users, noting that sometimes the documentation provided may require further analysis and explanations.

4.1.3 Cedre also conducts the MAR-ICE tests with the chemical industry under the ICE Network and contributes to the national MAR-ICE familiarisation sessions with Member States, aiming to raise awareness of the service within the chemical industry and national administrations respectively.

4.2 Cefic's role as the ICE scheme coordinator

4.2.1 Cefic plays a crucial role in the MAR-ICE Network as it coordinates the ICE scheme of the chemical industry, which supports the MAR-ICE level-1 and provides the MAR-ICE level-2 service. Cefic guarantees the chemical industry's awareness of and involvement in the MAR-ICE Network The (centralised and national) ICE product databases maintained under Cefic and the ICE scheme are used by the MAR-ICE Contact Point to contact the various National ICE Centres and chemical companies / manufacturers to get more specialised product-specific information, and must be kept up-to-date, to facilitate the rapid and smooth service delivery.

4.2.2 Cefic has a critical role in representing the chemical industry and the ICE partners and is greatly appreciated as a partner of the MAR-ICE Network. Cefic promoted the introduction of the MAR-ICE tests under the ICE Network, which are based on a maritime scenario and raise awareness of the service with the chemical industry, and the MAR-ICE Network is a standing agenda item of the annual ICE Integration Group meetings. In addition, Cefic follows the MAR-ICE Network's activations and coordinates and follows-up with any issues regarding the participation and contribution of the ICE National centres and the chemical industry to the MAR-ICE Network.

4.3 EMSA's role as MAR-ICE Network coordinator

4.3.1 EMSA was the initiator of the MAR-ICE Network and is responsible for coordinating, monitoring, evaluating and further developing the service it provides, based on the Member States feedback and identified needs, in support of their decision making and response to maritime emergencies involving chemicals. EMSA's role is to ensure that the service is provided efficiently, continuously and without disruptions. EMSA is always aware of the MAR-ICE activations in real time and after the termination of each activation, EMSA receives an activation report by Cedre and requests feedback from the service users, in order to follow up and evaluate the service provided in each case.

4.3.2 EMSA also raises awareness among the Member States on the MAR-ICE Network, through annual stakeholder meetings (i.e., the CTG MPPR and PRS-User Group meetings, regional meetings), dedicated workshops and through the recently introduced online MAR-ICE national familiarisation sessions which provide the opportunity to raise awareness of the service' scope and activation procedures to a wider national or local audience. EMSA also regularly updates the chemical industry on the MAR-ICE service activations and developments through the ICE Integration Group meetings.

4.4 Outcome of the 5th MAR-ICE evaluation meeting

4.4.1 On the basis of the 5th MAR-ICE Evaluation meeting held among the three MAR-ICE parties on 12 December 2023, the following points were addressed and will be followed-up:

- The MAR-ICE Activation Form will be reviewed and further revised, for easier use by the requesting parties, noting also the suggestions made in the user-feedback received.

- The importance of the requester following the service activation procedures was highlighted, especially noting the first activation step, which is for the requester to call the MAR-ICE Contact Point before sending-in the Activation Form per email, to avoid any unnecessary delays.
- Specifying the type of information or advice requested by the Network should be clearly indicated in the request and the requester should ask for further information or clarifications if needed, following the initial reply provided by the Network. The added value of the Network is the continuous communication and exchange that is possible between the requester and the MAR-ICE Contact Point during the activation, and this loop of information exchange should be followed-up on. Clear prioritisation of the required information is also important, especially during complex incidents or when several substances are involved.
- Feedback received from some countries indicates that the type of information and documentation provided by the Network could be further complemented with a short operational summary of the information, focusing on the key points to note regarding the specific substance and the particularities of the incident or scenario, to facilitate the understanding of the duty officer receiving the information and documentation provided by the Network. Accordingly, the replies provided by the Network should as much as possible include explanations or a short operational summary, drawing attention to the key points and highlighting main hazards, risks or elements of concern associated with the substance(s). This is particularly relevant for activations during real incidents, but also for exercises where the scenario is well developed, and the requested information and advice are clearly indicated.
- The three parties agreed to maintain the frequency of the MAR-ICE tests within the ICE scheme, i.e., the tests conducted by Cedre towards the chemical industry, based on maritime incident scenarios involving chemicals, to raise awareness of the service among the chemical industry.
- The parties will strive to involve the ICE members as much as possible in the MAR-ICE service activations during exercises with Member States, to raise awareness of the service and of the type of expert advice the chemical industry can provide.
- The importance of having up-to-date information available on the products (UN numbers) covered in each country under the ICE scheme was highlighted as crucial for the smooth service delivery and the status of the national ICE product databases will be addressed at the next ICE Integration Group meeting.
- The three parties will keep brainstorming on how best to raise awareness on the MAR-ICE Network in the future, e.g., via a 2nd dedicated MAR-ICE webinar for both Member States and chemical industry, which could address for example the Level 2 activations (both under the ICE and MAR-ICE Networks) and the preparation of relevant HNS maritime exercise/test scenarios.
- The three parties discussed the possibility to expand the MAR-ICE service (level 1) to the countries who are beneficiaries of the Instrument for Pre-accession Assistance (IPA) and European Neighbourhood Policy (ENP) projects (SAFEMED and BCSEA), implemented by EMSA. This will be further addressed among the parties in 2024.

4.4.2 The concrete follow-up actions listed above will be addressed and implemented (as appropriate) in the course of 2024 and the Member States will be informed of any further developments of the MAR-ICE service accordingly. The three parties agreed to maintain regular MAR-ICE evaluation meetings, e.g., every 2-3 years.

4.4.3 This 5th MAR-IC Network Evaluation report is published on EMSA's website http://emsa.europa.eu/.

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