



**Review and evaluation of the
MAR-ICE Service following its
first two years of operation**

2009-2010

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Contents

Executive Summary	3
1. Introduction.....	3
2. MAR-ICE activations by EU Member States and EU Candidate countries.....	3
2.1. MAR-ICE Network activations for HNS incidents:	4
“BG Dublin” incident, by Ireland, 14 January 2010	4
Activation by Sweden, 31 August 2010	4
2.2. MAR-ICE Network activations for HNS Exercises:	4
“Exercise by the MRCC Dublin”, Ireland, 20 April 2009.....	4
“COTENEX” maritime exercise by the MRCC Jobourg, France, 14 September 2009.....	5
“HNS 2010 Exercise”, France, 4-5 May 2010	5
“National oil pollution prevention drill”, Turkey, 14 October 2010	6
3. Cedre’s performance as the MAR-ICE first contact point	6
3.1. Cedre as first contact point	6
3.2. Revision of the MAR-ICE Contact Form	7
3.3. Reporting to EMSA	7
4. Cefic’s performance as a coordinator of the voluntary ICE partners.....	7
5. Evaluation of the MAR-ICE Service	7
6. Conclusions.....	8

Executive Summary

The MAR-ICE Network was created in 2008 through a 3-Party Memorandum of Understanding (MoU) 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) and became operational in January 2009. This report is an evaluation of the first 2 years of operation.

The MAR-ICE Service has been used in 2 real HNS (Hazardous and Noxious Substances) spills as well as in 4 exercises between January 2009 and the end of 2010. The Member States have expressed their high appreciation of the service on multiple occasions.

Cedre has performed its tasks to provide information on chemicals spilled at sea very well and always timely. In addition to the product specific information, Cedre provided additional operationally relevant information in almost all cases.

Both Cedre and Cefic have made a positive assessment of the Service and have expressed their willingness to continue the MAR-ICE Service.

1. Introduction

The MoU between Cefic, Cedre and EMSA was signed on 17 October 2008 and the MAR-ICE Network became operational on 1 January 2009. Cedre serves as the MAR-ICE first contact point. Tasks and procedures of the MAR-ICE service are described in the Implementation Plan.

The EU Member States were informed of the service and its activation. In addition to marine HNS spills, MAR-ICE can also be used during pollution response drills and exercises. Cedre has spent considerable time each year in training its duty officers in the MAR-ICE procedures. In parallel, the procedures related to the service have been incorporated in the EMSA Contingency Plan and the Agency's Maritime Support Services (MSS) operators are regularly trained on its activation procedures, as appropriate.

The 3-party MoU between Cefic, Cedre and EMSA as well as the Funding Agreement with Cedre have a duration of 3 years and both will expire on 16 October 2011. This report provides a review and an evaluation of the first 24 months of operation of the MAR-ICE Network and of the service provided by Cedre as the first contact point. Based on the feed-back received from Member States and the good service provided by Cedre, the continuation of the MAR-ICE Network is proposed.

2. MAR-ICE activations by EU Member States and EU Candidate countries

During the first two years the MAR-ICE Network has been activated 6 times; twice during real emergencies and 4 times during national marine pollution response exercises. A brief summary of the 6 MAR-ICE activations and the main conclusions (lessons learned) are discussed below:

2.1. MAR-ICE Network activations for HNS incidents:

“BG Dublin” incident, by Ireland, 14 January 2010

The first activation of the MAR-ICE Network following a HNS incident occurred in January 2010. The container ship “BG Dublin” had lost several containers in a force 10 storm off Ireland on 12 January. One of these contained 11 tonnes of the hazardous material *sodium bromate* (UN 1494). On 14 January, the Irish Coast Guard (MRCC Dublin) contacted MAR-ICE and requested information on this substance through the Network. The MAR-ICE Contact Form was filled out and sent to the MAR-ICE first contact point (Cedre) in accordance with the established procedure. MAR-ICE provided the requested information to the Irish Coast Guard within less than an hour. This included product specific information (Material Safety Data Sheet-MSDS) and information regarding hazards and potential impacts to the marine environment.

On 28 January 2010 the MRCC Dublin contacted MAR-ICE again requesting further information on the sunken *sodium bromate* with regard to threats to human health and safety and risks to fisheries and shell fish farms. Cedre searched the ICE database and contacted BASF Germany, who is a producer of *sodium bromate*, requesting more information regarding risk assessment. Furthermore, Cedre used the 3-dimensional fate and trajectory model CHEMMAP to predict the spreading and concentration of the spilled *sodium bromate* in order to evaluate the risks. All additional information regarding operational aspects and the CHEMMAP results were provided to the Irish Coast Guard, who was satisfied with the information received and did not make any further requests.

Activation by Sweden, 31 August 2010

The Swedish Coast Guard contacted MAR-ICE on 31 August 2010 requesting information regarding a drum of *sodium nitrite* (UN 1500) found submerged in three metre sea water. In particular, information was requested regarding protective measures for the response team and the risks for aquatic life in case of a leak. MAR-ICE replied by fax sending the chemical’s MSDS and CANUTEC (Canadian Transport Emergency Centre) information. Shortly thereafter, additional information including the chemical’s ERICard (CEFIC Emergency Response Intervention Card) was sent by fax to the Swedish Coast Guard. MAR-ICE then called the Swedish Coast Guard to check if any further information was required or if there was a need to contact the chemical’s manufacturer for advice. The Swedish Coast Guard confirmed that all the information sent was well received and that no additional information was needed, thus ending the MAR-ICE activation. No further information regarding this incident was provided. It should be noted, that in this case the MAR-ICE activation was done by mobile phone (due to the fact that the Swedish Coast Guard officer was at the incident site) and did not involve the use of the MAR-ICE Contact Form. In any case, the MAR-ICE activation was successful and provided detailed information in a timely matter.

2.2. MAR-ICE Network activations for HNS Exercises:

“Exercise by the MRCC Dublin”, Ireland, 20 April 2009

The activation of MAR-ICE for this exercise was the very first utilisation of the then newly established EMSA information service in case of chemical spills in the marine environment. EMSA had been contacted in advance by the Irish Coast Guard and was aware of the date, but did not share this with Cedre. EMSA

viewed this opportunity to test the performance of the new MAR-ICE Network in a drill rather than a real emergency positively.

On 20 April 2009, MAR-ICE received a request from the MRCC Dublin by fax using the MAR-ICE Contact Form, requesting information on two (randomly chosen) chemicals (UN 1873 and UN 3082). Two replies were sent by MAR-ICE in regard to this exercise. The first one was sent within half an hour of the request and included the information requested on the two chemicals and the manufacturers' contact details from the ICE database. The second reply was sent within an hour from the original request and provided additional information regarding the chemicals environmental hazards. It was agreed that there was no need to contact the chemical company from the ICE database, since the information received from MAR-ICE was sufficient. MRCC Dublin Operations were very pleased with the response received and the professional and timely way the request was handled by the Cedre duty officer. The Irish Coast Guard officer handling the exercise, provided EMSA and Cedre with some feedback in regard to improving some (practical) aspects of the MAR-ICE activation procedure. EMSA welcomed this feedback, which will be taken into consideration when renewing the MAR-ICE Service.

“COTENTEX” maritime exercise by the MRCC Jobourg, France, 14 September 2009

The Prefecture Maritime de Cherbourg called MAR-ICE informing them of a collision between a container ship and a ferry, which contained a truck with a damaged container that had caught fire. The container transported 2100 tonnes of *benzylidene chloride* (UN 1886) and the French maritime authorities were requesting information about impacts of the fire and of an accidental release of the chemical. From the information provided by Cedre it is not clear if this request was done within the MAR-ICE framework, since the MAR-ICE Contact Form was not used by the requesting party. However, Cedre used the MAR-ICE Network in preparing its reply to this request, providing within one hour the French authorities with a list of *benzylidene chloride* producers in Europe from the ICE database; additional information from other sources (e.g. International Chemical Safety Card, Emergency Response Guidebook, IMDG Code) was also provided. Cedre proposed to contact one of the identified producers and to activate the MAR-ICE Network. It was decided that the information provided was sufficient for the purposes of this exercise and there was no further request to contact the chemical companies identified.

“HNS 2010 Exercise”, France, 4-5 May 2010

On 4-5 May 2010, an exercise was organised by the Prefecture Maritime de l'Atlantique, based in Brest, including the loss of 42 containers overboard a container ship in the traffic lane offshore Northern Brittany. According to the scenario, 6 of the containers contained HNS and there was information that the crew might have been exposed and impacted by the content of the damaged containers still on board. The Navy Operational Centre sent an expert evaluation team on board, while a Crisis Centre was activated in the Prefecture Maritime de l'Atlantique, including an officer from Cedre. The objective of this exercise was to evaluate the expertise of the evaluation team (actually dropped by helicopter on the disabled ship), as well as the type of information that can be provided through the MAR-ICE Network. The task of the expert team was to evaluate the behaviour and the hazards presented by these containers for the responders, the wider public and the environment. One of the containers contained 80 drums of a chemical identified as *resins in*

solution (UN 1866), for which it was proven difficult to make a hazard analysis. It was then decided to use the MAR-ICE Network and through Cedre to contact a resin manufacturer in France in order to get advice on the hazards and the behaviour of such a chemical. The company identified (through the ICE Database) and contacted was not aware of the MAR-ICE Network (something which should be further addressed with Cefic), but for the purposes of the exercise provided useful information regarding the product, and in particular in regard to the chemical's contact with sea water. The response from the company was sent to the Crisis Centre within one hour after the demand. This exercise showed that the information provided through the MAR-ICE Network (advice from the chemical's manufacturer), can be extremely useful and can go far beyond the information available in a MSDS or a chemical database. The exercise was successfully concluded, emphasising the importance of the MAR-ICE Network and its potential benefit to the requesting party.

“National oil pollution prevention drill”, Turkey, 14 October 2010

Within the framework of this national exercise, the Turkish Undersecretariat for Maritime Affairs sent the Contact Form requesting detailed information on the chemical *hypochlorite solution* (UN 1791) to MAR-ICE on 14 October 2010. Cedre initially forwarded the chemical's MSDS to the Turkish authorities, followed shortly thereafter by contact information of a French production company of *hypochlorite solution*, as well as additional information regarding the substance's solubility in water. No further information was provided by Cedre and it is assumed that the information provided was sufficient. This was the first time the MAR-ICE Service has been used by an EU Candidate Country. Neither the current MoU nor the Funding Agreement include EU Candidate Countries as requesting parties for the MAR-ICE Service. The amended MoU and the new Funding Agreement shall include EU Candidate countries. Third parties can receive information from MAR-ICE through EMSA, which can request information and forward it to the requesting party.

3. Cedre's performance as the MAR-ICE first contact point

3.1. Cedre as first contact point

During the period of this review, Cedre has conducted regular training of its duty engineers on the MAR-ICE procedures. This internal training consists of familiarisation with the ICE database (on which the MAR-ICE Network is based), consulting various other chemical databases and using HNS modelling software (such as CHEMMAP) and keeping up-to-date with the MAR-ICE activation procedures. To this effect, an internal activation of the MAR-ICE was performed by Cedre in December 2009, to test its duty engineers on the service's procedures.

In accordance with the information provided by Cedre it becomes evident that more working hours than initially foreseen were dedicated by Cedre to the MAR-ICE Network during its first year of operation (2009). This was mainly due to the internal training of Cedre's duty officers.

In all cases of the MAR-ICE Service's activation, Cedre has acted very efficiently in providing the requested information in time (within 1 hour). During the first two years of the MAR-ICE service, Cedre has contacted chemical companies from the ICE database two times. In four other cases Cedre provided the requested

information based on its own resources (this includes the exercises and real cases). Furthermore, Cedre took the initiative to provide additional chemical marine pollution related information in most cases.

Cedre always provided in its reports to EMSA copies of the request received by the Member State when activating the MAR-ICE Network (e.g. a copy of the MAR-ICE Contact Form) and a brief description of the incident.

3.2. Revision of the MAR-ICE Contact Form

The MAR-ICE Contact Form has only been used a few times. Overall the use of a dedicated form has proven useful. However, comments from users to improve the form will be addressed and the form will be revised accordingly by EMSA in cooperation with Cedre and Cefic.

3.3. Reporting to EMSA

It has become evident that there is a need for EMSA to be informed during the evolution of an HNS incident as the EU Commission is often requesting current information on incidents in more or less real-time from EMSA. Therefore, the requirement for quarterly reports will be dropped. Instead shall EMSA be copied in e-mail correspondence and briefings as the incident progresses. A more detailed report should be submitted to EMSA shortly after the conclusion of the incident.

The annual reporting will continue as it contains additional information on MAR-ICE related activities conducted by Cedre in addition to the provision of spill related information (such as training, time spent operating the service, etc.).

4. Cefic's performance as a coordinator of the voluntary ICE partners

Cefic plays a crucial role in the MAR-ICE Network as it maintains the ICE Database, which has the contact information for the manufacturers of chemicals in Europe. The database is regularly updated and has user friendly search functions.

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 and is greatly appreciated as a partner of MAR-ICE.

5. Evaluation of the MAR-ICE Service

The MAR-ICE Service is highly appreciated by the Member States and considered providing a real added value. The service is free of charge to Member States administrations, rapidly available to all as a first or additional information source for chemical spills in case of emergencies. Furthermore the service does not only provide a direct link to the chemical company knowledgeable about the product (manufacturer), but also additional useful marine related information, when available. In particular, Cedre's role as the first contact point for the MAR-ICE Service has proven very beneficial as Cedre has a lot of experience and expertise relevant to chemical marine pollution response and has taken the initiative to provide this complementary information in an efficient and timely manner to the requesting party.

On several occasions to date (e.g. EMSA Stakeholders' Consultation for the Multi Annual Financing Mid-Term Report, Member States' workshop on the implementation of OPRC-HNS Protocol in the EU, CTG-MPPR and IMO meetings) the EU Member States have expressed highly positive feedback in regard to the service provided through the MAR-ICE Network and have strongly supported its continuation and further development.

In addition to the desire for continuation of MAR-ICE expressed by the Member States, both Cedre and Cefic have recently expressed their willingness to extend the MAR-ICE Service.

This is a cost-effective and well received service provided by the Agency, which provides useful information in cases of chemical spills to the marine environment (that is not always easily or publicly available) to all Member States. EMSA has initiated additional HNS projects such as the development of datasheets of chemical substances for marine pollution response, with the aim of making these available through MAR-ICE. These datasheets will add operationally important information to the already good service.

Following its first two first years of operation, certain adjustments need to be made to the service, which will be done in cooperation with Cefic and Cedre. Even though the MAR-ICE Service has been used only a few times to date, there is an increase in the number of activations per year and it is expected that the service will continue to be used in the future for both real incidents and exercises.

6. Conclusions

The MAR-ICE Network and its service of providing information in case of marine chemical emergencies to national maritime administrations has been well received by the EU and EFTA coastal Member States. Cedre has performed its tasks well.

Both Cefic and Cedre have made a positive assessment of the service and expressed their willingness to continue the MAR-ICE Service.

Based on the positive feed-back, the results of this review and the willingness of the partners Cefic and Cedre to continue the service, EMSA has taken the initiative to amend and extend the service for three years.