MEDITERRANEAN ACTION PLAN (MAP)
REGIONAL MARINE POLLUTION EMERGENCY RESPONSE CENTRE FOR THE MEDITERRANEAN SEA (REMPEC)

Sixteenth Meeting of the Focal Points of the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)

Sliema, Malta, 13-15 May 2025

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Agenda Item 5: Implementation of the Mediterranean Strategy (2022-2031)

Underwater radiated noise from ships: presentation of the outcome of the NAVISON Project

REMPEC
Malta, 2025

Note by EMSA

Within the Mediterranean Strategy for the Prevention, Preparedness, and Response to Marine Pollution from Ships (2022-2031), Common Strategic Objective (CSO) 7 calls the Contracting Parties to ”Identify and understand collectively emerging issues related to pollution from ships in the Mediterranean and define required actions to address issues identified”. More particularly paragraph 6.34 states: “With a view to meeting this objective, the Contracting Parties to the Barcelona Convention agree to share results of research and development studies and to address emerging issues related to pollution from ships in the Mediterranean within the framework of the Mediterranean Strategy”

This document provides information about the results from the NAVISON Project, a Project aiming at quantifying underwater radiated noise in the Seas around Europe, led by the European Maritime Safety Agency.

Background

1 Underwater Radiated Noise (URN) from ships is recognised as a stress factor for marine life, particularly for all species who use sound for communication, navigation, feeding and reproduction.

2 The Marine Strategy Framework Directive (MSFD) is the primary EU legislation addressing URN, requiring Member States to develop strategies to achieve Good Environmental Status (GES). This includes setting targets for URN linked to marine species' health impacts.

3 Efforts are ongoing to develop EU recommendations for addressing non-GES conditions or declining trends. These focus on implementing mitigation measures and setting targets to expand tolerable habitat areas for sound-sensitive species.

4 At the global level, the International Maritime Organization (IMO) has revised Guidelines for Reducing URN from Shipping, with an Experience Building Phase now underway to assess their effectiveness.

5 In 2021, the European Maritime Safety Agency (EMSA) published the SOUNDS report, an inventory of URN policy, research, and impacts across Europe. EMSA has since launched initiatives to support the EC and Member States in monitoring URN from vessels.

6 EMSA has now implemented the Navis Sonus (NAVISON) project, which predicts URN from vessels in European seas. The project includes hindcast (2016–2023) and forecast (2030, 2040, and 2050) soundscape maps, integrating vessel traffic data, environmental data, source level models, and propagation loss models.

7 Using a single methodology, NAVISON maps underwater noise levels in all European seas for the first time, providing a comprehensive, pan-European overview, and allowing quantitative like-for-like comparisons of shipping contributions to ambient sound between regions, vessel categories, years, and forecast scenarios.

NAVISON

8 The NAVISON soundscape maps are available for the following regions, ship categories and frequencies:

- **Regions:** Europe, Baltic Sea, Black Sea, Mediterranean Sea, North-East Atlantic Ocean and North Sea.
- **Ship categories:** All, Cargo vessels and Bulk Carriers (CAR), Container vessels (CON), Cruise and Passengers vessels (PAS), Roll-on-Roll-off cargo and passenger vessels (RRO), and Tankers and Gas Carriers (TGC).
- **Frequencies:** 63Hz, 125Hz.

9 Highest Sound Pressure Levels (SPLs) in Europe are observed in the English Channel, Strait of Gibraltar, Adriatic Sea, Dardanelles, and parts of the Baltic Sea, with annual SPL averages of 120–130 dB (2016–2023).

10 Lowest SPLs are recorded in the northwest North-East Atlantic (Denmark Strait, Irminger Sea), the southern Mediterranean, and east of the Black Sea, though limited AIS coverage may contribute to some low values.

11 Tanker and gas Carriers (TGC) vessels dominate Europe-wide sound energy density at 63 Hz, followed by cargo and bulk carrier (CAR) vessels. At 125Hz and at regional level, the dominant noise sources vary.

12 NAVISON includes a foresight component providing soundscape maps for 2030, 2040, 2050 across all EU regions and ship types. These are modelled for four scenarios at 63 Hz, integrating AIS ship tracks (2022 baseline) with six technical and operational URN and greenhouse gas (GHG) reduction measures.

13 Foresight analysis indicates that the implementation of these URN and greenhouse gas (GHG) mitigation measures may lead to a substantial reduction in URN for all ship types and in all regions by 2050. In specific cases, this reduction could be as much as 70% compared to a business-as-usual scenario.

Next steps

14 NAVISON provides data-driven foundation to support evidence-based policymaking, sustainable shipping operations, and effective regulatory frameworks for reducing URN at both EU and at regional level.

15 The NAVISON report is available for download at: https://emsa.europa.eu/navison

16 NAVISON soundscape maps are available to Member State national administrations on request from EMSA.

Actions requested by the Meeting

17 **The Meeting is invited to**:

.1 **take note** of the information provided in the present document; and

.2 **comment** as deemed appropriate.

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