# The Ocean Sound monitoring Sub-system

## D. Bonanno1, D. Diego-Tortosa1, L. S. Di Mauro2, A. Idrissi1,G. Riccobene1, 2, S. Sanfilippo1, S. Viola1, 2

### 1Istituto Nazionale di Fisica Nucleare, Laboratori Nazionali del Sud, Via S. Sofia 62 – 95123 Catania (Italy), 2Centro Siciliano di Fisica Nucleare e Struttura della Materia, Via S. Sofia 64 – 95123 Catania (Italy).

### sanfilippo@lns.infn.it

In the framework of ITINERIS, Laboratori Nazionali del Sud (LNS) of Istituto Nazionale di Fisica Nucleare (INFN) is leading the implementation of the Ocean Sound Subsystem (OS-SS), part of the ITalian Integrated Ocean Observing System (IT-IOOS), will establish for the first time a national-level integrated platform with standardized procedures, guidelines, and tools for collecting, analyzing, and sharing ocean sound data in accordance with best practices.

The main purpose of OS-SS is to expand the accessibility and usability of acoustic data in marine environment for multiple applications, like monitoring acoustic pollution, search for soniferous marine species, identifying surface and underwater vehicles, and studying geological events like earthquakes. This initiative will also define and disseminate a set of recommendations and best practices for collecting, analyzing, and distributing ocean sound data among all the Research Infrastructures (RIs) operating acoustic devices in Italian waters. Furthermore, the OS-SS is transversal, providing services and information from/to multiple IT-IOOS RIs to produce ocean sound data and time series from recorded raw acoustic data. To ensure data transparency, each dataset produced by ITINERIS RIs will be accompanied by a corresponding metadata set. Metadata play a key role by providing the contextual details required to interpret primary data, including information such as time, location, and collection methods. This contextualization is crucial for ensuring the reproducibility of scientific results, forming a fundamental pillar of scientific advancement.

Acoustic data from INFN – LNS subsea assets are now released in the project through an Environmental Research Division's Data Access Program (ERDDAP) server. In this contribution, an overview of the project is discussed, and an example of preliminary analysis of ambient noise monitoring will also be presented.

**Keywords: IT-IOSS, OS-SS, Passive acoustic monitoring**