**Upgrades to the Italian Marine Research Observatory in the Arctic Region**

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The Institute of Polar Sciences (ISP) of the Italian National Research Council (CNR) actively contributes to the overall goals of the Global Ocean Observing System Italy by participating in the Svalbard Integrated Observing System (SIOS) through the national marine infrastructure in the Arctic region. This infrastructure consists of four moorings positioned at various coastal and offshore (Co-managed by ISP-CNR and OGS) sites, enabling the observations and analysis of both short- and long-term oceanographic processes essential for monitoring and understanding the Arctic environment and its change over time. In the framework of the Italian PNRR project ITINERIS, the Italian Marine Observatory in the Arctic region has significantly upgraded the number of Essential Ocean and Climate variables observed. A new coastal facility in the Kongsfjord jointly managed by ISP-CNR and INM-CNR was installed and real-time data transmission capabilities from the Arctic were developed, together with a data management workflow fully compliant with FAIR (Findable, Accessible, Interoperable, and Reusable) principles. The expansion of Essential Ocean and Climate Variables now emphasizes new biogeochemical and biological parameters. Additionally, the new coastal facility features an innovative automated seawater sampler designed for biodiversity assessment through metagenomic analysis. These upgrades are intended to serve the international scientific community by providing future access and supporting the primary objective of advancing knowledge about the current and future state of the Arctic ecosystem, a key component of the global climate system.