MACARONIGHT
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TRIDENT

Technology based impact assessment tool foR sustaInable, transparent Deep sEa miNing exploraTion and exploitation

FUNDING BODY	Horizon Europe
GRANT AGREEMENT NUMBER (IF ANY)	101091959
WEBSITE	https://deepseatrident.eu/
SOCIAL MEDIA	Twitter Instagram Facebook Linkedin Youtube

SHORT DESCRIPTION OF THE PROJECT

TRIDENT aims to contribute to a sustainable exploitation of seabed mineral resources, by developing a reliable, transparent and cost-effective system for prediction and continuous environmental impact monitoring of exploration and exploitation activities in the deep sea. This system will develop and integrate technology and novel solutions to operate autonomously in remote areas under extreme conditions, and provide real-time data to permitting and supervising authorities. The effective monitoring and inspection system to be developed will comply with international and national legal frameworks.

TRIDENT will identify all relevant physical, chemical, geological and biological parameters to be measured at the sea surface, mid-water and seabed. The project will also identify gaps in existing data sets and develop solutions to address them. These are essential steps to develop statistically robust environmental baselines, establish reliable indicators of good environmental status and define thresholds for significant impact, enabling the standardization of tools and methods. The project consortium will subsequently develop and test an integrated system of static and mobile observatory platforms equipped with the latest automatic sensors and samplers to measure environmental parameters on mining and reference areas at representative spatial and temporal scales. To support quick actions for preventing serious harm to the environment, the system will implement high-capacity data handling pipelines able to collect, transmit, process and display monitoring data in near real time. Finally, we will provide technological and systemic solutions for forecasting potential environmental impacts of using the developed monitoring and mitigation methods.

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