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Digital Twin of the Ocean - An Introduction to the ILIAD project

Bente Lilja Bye¹, Georgios Sylaios², Arne-Jørgen Berre³, Simon Van Dam⁴, and Vivian Kiouisi⁵

¹BLB, Hønefoss, Norway (bentelil@hotmail.com)

²Democritus University of Thrace, Kavala, Greece

³Sintef Digital, Oslo, Norway

⁴Agora-Partners, Jerusalem, Israel

⁵Intrasoft-International, Athens, Greece

The ILIAD Digital Twin of the Ocean, a H2020 funded project, builds on the assets resulting from two decades of investments in policies and infrastructures for the blue economy and aims at establishing an interoperable, data-intensive, and cost-effective Digital Twin of the Ocean. It capitalizes on the explosion of new data provided by many different Earth observation sources, advanced computing infrastructures (cloud computing, HPC, Internet of Things, Big Data, social networking, and more) in an inclusive, virtual/augmented, and engaging fashion to address all Earth data challenges. It will contribute towards a sustainable ocean economy as defined by the Centre for the Fourth Industrial Revolution and the Ocean, a hub for global, multistakeholder co-operation.

The ILIAD Digital Twin of the Ocean will fuse a large volume of diverse data, in a semantically rich and data agnostic approach to enable simultaneous communication with real world systems and models. Ontologies and a standard style-layered descriptor will facilitate semantic information and intuitive discovery of underlying information and knowledge to provide a seamless experience. The combination of geovisualisation, immersive visualization and virtual or augmented reality allows users to explore, synthesize, present, and analyze the underlying geospatial data in an interactive manner. To realize its potential, the ILIAD Digital Twin of the Ocean will follow the System of Systems approach, integrating the plethora of existing EU Earth Observing and Modelling Digital Infrastructures and Facilities. To promote additional applications through ILIAD Digital Twin of the Ocean, the partners will create the ILIAD Marketplace, included a market for Geosciences related applications and services. Like an app store, providers will use the ILIAD Marketplace to distribute apps, plug-ins, interfaces, raw data, citizen science data, synthesized information, and value-adding services derived from the ILIAD Digital Twin of the Ocean. It will also be an efficient way for scientists to discover and find relevant applications and services.