The spatial data infrastructure for the European Seas Observatory Network (ESONET)

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ESONET is a Multidisciplinary European Network of Excellence (NoE) in which scientists and engineers from 50 partners and 14 countries cooperate in building the infrastructure for a lasting integration of research and development in deep sea observatories in Europe. This NoE aims to develop strong links between regional nodes of a European network of sub sea observatories and to promote multidiciplinarity and transnationality within each node.

Essential for these goals is the provision of an effective data and knowledge infrastructure for both, management and archiving of observatory data as well as knowledge and data sharing among network participants. The ESONET data infrastructure roughly consists of four major components: data policies a common agreement on the data management procedures and prerequisites, data acquisition technologies serve to collect data directly from ESONET observatories, data archives care for long term data management of collected ESONET data and data integration and portal tools which ensure harmonisation of collected data and allow access to the data in a common way.

Most critical for ESONET was the development of a spatial data infrastructure (SDI) by using standardised protocols to directly access observatory data in its spatial and temporal context. The ESONET SDI provides means to either access data in quasi real time or harvest locally stored data in order to transfer it to a long term data archive. ESONET SDI largely builds upon the OGC Sensor Web Enablement (SWE) suite of standards. Among those, the Sensor Observation Service (SOS), the Observations & Measurements (O&M), Sensor Markup Language (SensorML) are especially important for the integration of observatory data as well as for the contribution of ESONET data to GEOSS.