

Norwegian Ocean Observation Network

NOON's vision is to strengthen Norway's position among the leading nations in marine science by establishing a new research infrastructure that brings Norway to the international forefront in using cable based ocean observatory technology for marine science and management.

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Seven of Norway's leading scientific institutions, comprising the network NOON, have joined forces with the aim of establishing a world class research observatory. To be able to meet the challenges for frontier research there is a need for new infrastructure permitting:

- multidisciplinary
- real-time monitoring
- simultaneously observations of many parameters
- interactive access to the sea floor
- long time monitoring

This cable based ocean observatory (COO) enables monitoring of the marine life and its environment, including processes and interaction between geosphere, biosphere, hydrosphere and cryosphere.

Scientific topics

- studies of Atlantic Water flow towards the Arctic for transport of heat, salt and biological material, ocean CO₂ uptake and acidification, bottom boundary sediment transport processes, and transects from shelf across shelf break to deep sea
- understand and quantify the source-to-sink (S2S) dynamics of solids and solutes to obtain knowledge about subsurface biogeochemical processes and fluid flow to understand the exchange of climate gases between the subsurface environment and the ocean and the atmosphere



Scientific topics

- monitor the ecosystems dynamics (incl. study the dimensions, distributions and interconnections of ecosystems), the behaviour of fish and zooplankton, and the changes in benthic fauna due to changing environmental conditions
- autonomous monitoring of potential CO₂ storage sites be developed in an array to determine natural background level and potential CO₂ leakage
- development of reliable ocean seismometer stations and tsunami warning systems in upper continental slope gas hydrate fields

A suggested pre-project shall prepare for the establishing of a deep ocean cable-based observatory as an integrated part of ESONET. This is obtained by accomplish a dedicated three-step development to efficiently and gradually build experience:

1. Establish a cable based fjord observatory (CFO) in 2010 as a test and training site, and a platform for research topics, partly based on re-use of existing infrastructure.
2. Establish a cable based pilot observatory at the gas field Snøhvit (2011) together with StatoilHydro.
3. Establish a large deep ocean cable-based observatory (2014)

