

Infrastructure (short name)	Coastal Observation System for Northern and Arctic Seas (COSYNA)	
Installation (short name)	FerryBox (COSYNA_1 FB)	
Location	North Sea	
Routes	<p>TorDania: Cuxhaven <-> Immingham</p> <p>LysBris: Cuxhaven -> Chatham -> Bilbao -> Immingham -> Moss -> Halden -> Cuxhaven</p> <p>FunnyGirl: Summer: Buesum <-> Helgoland; Winter: Cuxhaven <-> Helgoland</p>	
Legal name of organization	Helmholtz-Zentrum Geesthacht, Institute of Coastal Research	
Location of organization	Geesthacht, Germany	
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Web site address	http://www.cosyna.de and http://www.ferrybox.de	

Description
<p>COSYNA (Coastal Observation System for Northern and Arctic Seas) is an operational coastal monitoring, forecasting and information system for the North Sea. It is being developed by institutes of the German Marine Research Consortium (KDM) and collaborating institutions and is operated by the HZG Research Centre. The infrastructure represents an investment of 9 M €. It is build up in two phases over 6 years:</p> <p>COSYNA_1 (FB) is based on 3 FerryBox lines. The FerryBoxes are equipped with hydrographical sensors to measure temperature, salinity, oxygen, chlorophyll-a fluorescence, turbidity, pH and nutrients (partly). The three FerryBoxes are installed on three ships on different routes. The TorDania is an Ro/Ro-Ship and cruises from Cuxhaven (Germany) to Immingham in England towards and back in three days.</p> <p>The cargo ship Lysbris cruises in a circle from Cuxhaven (DE) - Chatham (GB) – Bilbao (ES)- Immingham (GB) – Moss (NL) – Halden (NL) and back to Cuxhaven in about 14 days. The</p>

passenger ferry Funnygirl cruises seasonal on different routes dependent on season. In summer it departs from Buesum (DE) and in winter from Cuxhaven (DE). The destination is always the island Helgoland. The ship drives toward and back on a daily basis..

Service offered

HZG will give access to three ferryboxes. The access will consist in hosting visitors for experiments onboard the ships and also for installation of users' equipment on FerryBoxes.

The support team consists of technicians and scientists who prepare the instrumentation and service the instrumented ferry.

Instruments/Sensors

The following instrumentation is already onboard the ferry and will be available to the JERICO users

TorDania

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
ETSG 2 - M, Falmouth Scientific	Temperature	5 m water depth	10 sec.	2 times in 3 days
ETSF2-M, Falmouth Scientific	Conductivity	5 m water depth	10 sec.	2 times in 3 days
ETSF2-M, Falmouth Scientific	Salinity	5 m water depth	10 sec.	2 times in 3 days
TurbiMaxW CUS 31, Endress+Hauser	Turbidity	5 m water depth	10 sec.	2 times in 3 days
SCUFA-II, Turner Designs	Turbidity	5 m water depth	10 sec.	2 times in 3 days
SCUFA-II Turner Designs	Chlorophyll-a fluorescence	5 m water depth	10 sec.	2 times in 3 days
Algae-Online-Analyser, bbe moldaenke	Chlorophyll-a fluorescence	5 m water depth	10 sec.	2 times in 3 days
Oxygen optode 4330, Aandera	diss. oxygen	5 m water depth	10 sec.	2 times in 3 days
CPS11, Endress + Hauser	pH	5 m water depth	10 sec.	2 times in 3 days
EGA140 SMEK, Sensortechnik Meinsberg	pH	5 m water depth	10 sec.	2 times in 3 days
µMac 1000, Systea	Ammonium, Nitrate, Phosphate, Silicate	5 m water depth	10 sec.	2 times in 3 days

Lysbris

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
ETSG 2 - M, Falmouth Scientific	Temperature	5 m water depth	20 sec.	Every 2days
ETSF2-M, Falmouth Scientific	Salinity	5 m water depth	20 sec.	Every 2days
ETSF2-M, Falmouth Scientific	Conductivity	5 m water depth	20 sec.	Every 2days
TurbiMaxW CUS 31, Endress+Hauser	Turbidity	5 m water depth	20 sec.	Every 2days
SCUFA, Turner Designs	Turbidity	5 m water depth	20 sec.	Every 2days
SCUFA, Turner Designs	Chlorophyll-a fluorescence	5 m water depth	20 sec.	Every 2days
Algae-Online-Analyser, bbe moldaenke	Chlorophyll-a fluorescencel	5 m water depth	20 sec.	Every 2days

Algae-Online-Analyser, bbe moldaenke	Yellow substance	5 m water depth	20 sec.	Every 2days
Oxygen optode 4330, Aandera	diss. oxygen	5 m water depth	20 sec.	Every 2days
CPS11, Endress + Hauser	pH	5 m water depth	20 sec.	Every 2days
EGA140 SMEK, Sensortechnik Meinsberg	pH	5 m water depth	20 sec.	Every 2days
µMac 1000, Systea	Ammonium, Nitrate, Phosphate, Silicate	5 m water depth	20 sec.	Every 2days

Funny Girl

Instrument	Measured Parameter(s)	Elevation/Depth	Sampling frequency	Transmission frequency
ETSG 2 - M, Falmouth Scientific	Temperature	5 m water depth	60 sec.	2 per day
ETSF2-M, Falmouth Scientific	Conductivity	5 m water depth	60 sec.	2 per day
ETSF2-M, Falmouth Scientific	Salinity	5 m water depth	60 sec.	2 per day
SCUFA, Turner Designs	Turbidity	5 m water depth	60 sec.	2 per day
SCUFA, Turner Designs	Chlorophyll-a fluorescence	5 m water depth	60 sec.	2 per day
Cyclops-7_U, Turner Designs	CDOM	5 m water depth	60 sec.	2 per day
Oxygen optode 4330, Aandera	Oxygen	5 m water depth	60 sec.	2 per day
EGA140 SMEK, Sensortechnik Meinsberg	pH	5 m water depth	60 sec.	2 per day
EGA140 SMEK, Sensortechnik Meinsberg	pH	5 m water depth	60 sec.	2 per day

Additional services/data

Other activities within the observatory COSYNA are linked to the pile and glider activities.

Special owner rules

none