

GHOSTOR TP 4 seismic monitoring - recent and planned activities -

F. Schmid, A. Schwenk, A. Abbas, K.U.M.

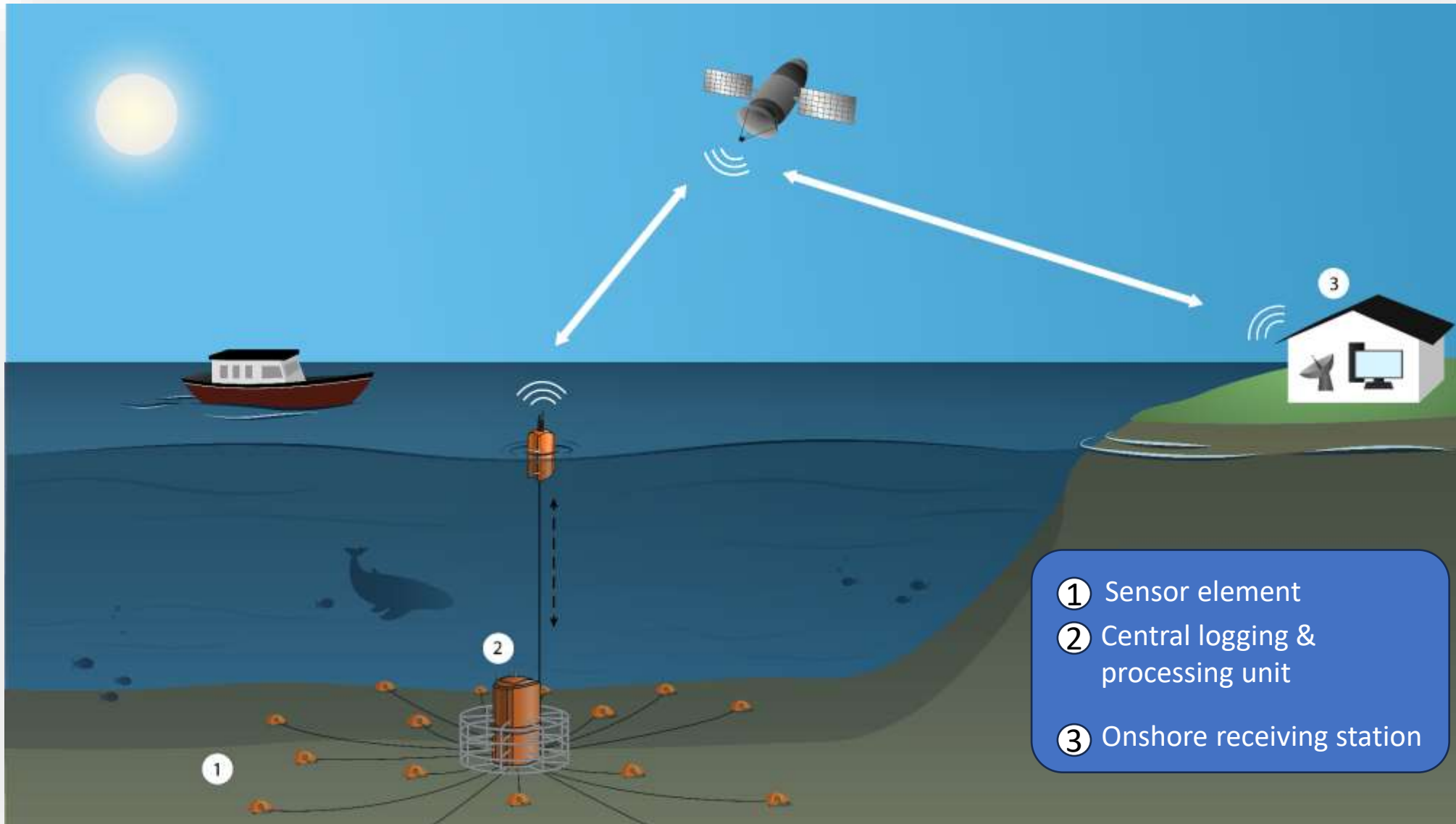
M. Klischies, M. Veloso, A. Myagotin, F. Hennemann North.io (TrueOcean)



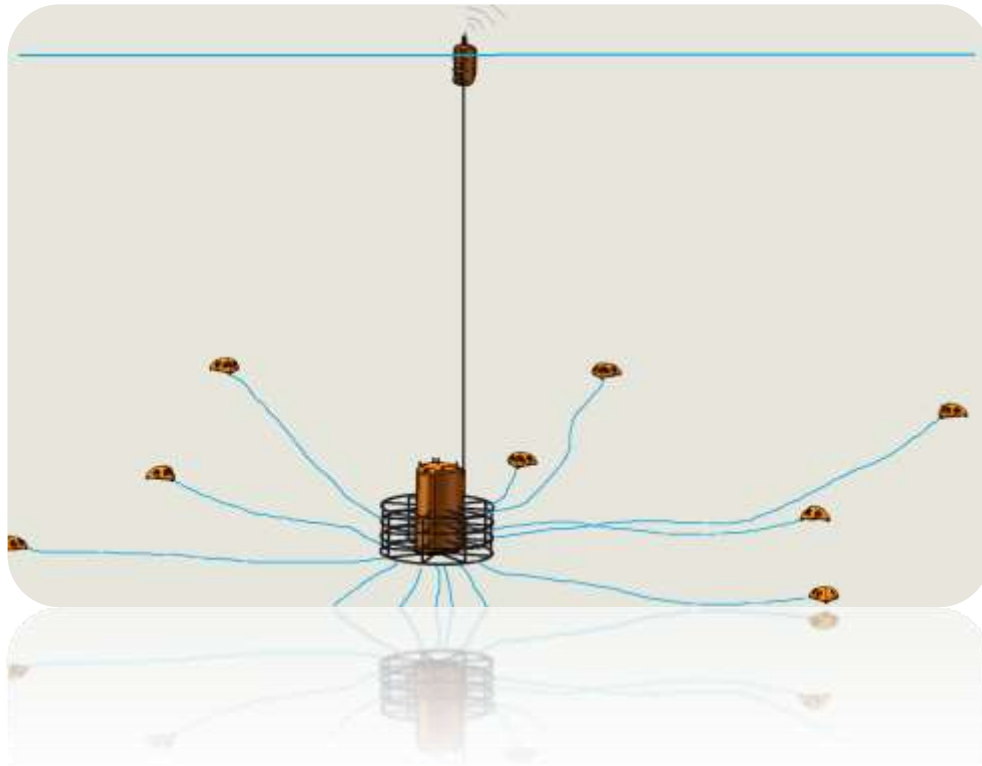
SPONSORED BY THE



Draft concept of the monitoring system hardware

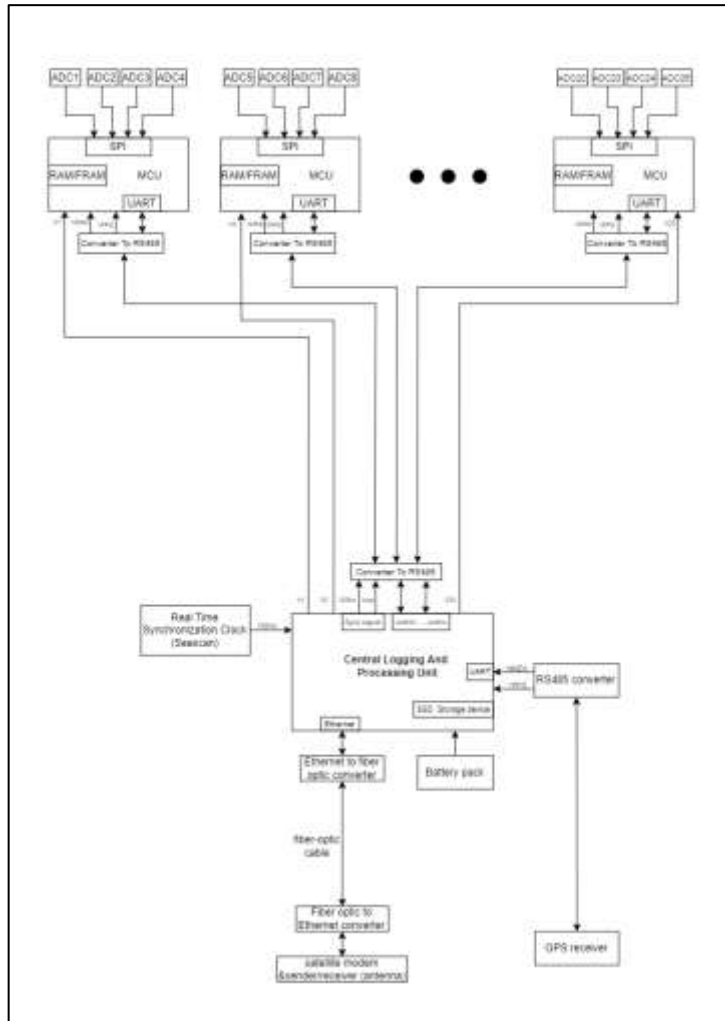


Draft concept of data transmission








- **Central logging and processing unit will record and pre-process the digital data streams of individual sensor nodes**
- **Battery pack and satellite communication („messenger“) unit can be winched to the surface for data transfer and replacement of batteries**
- **Schedule of surfacing may be remotely adjusted**

Conceptualization of the central logging & processing unit – „the brain“

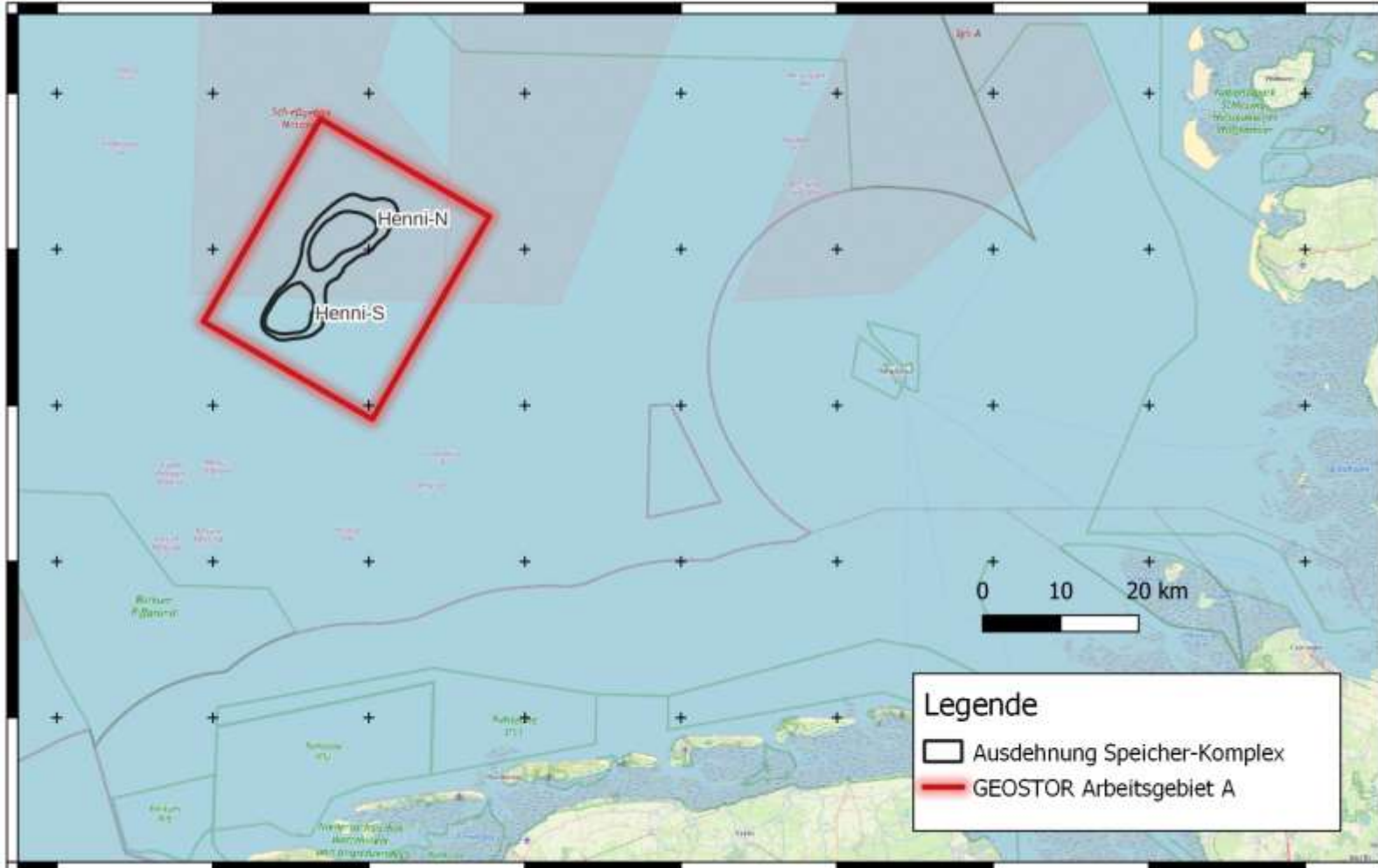


Example schematics of the electronics

Duties include:

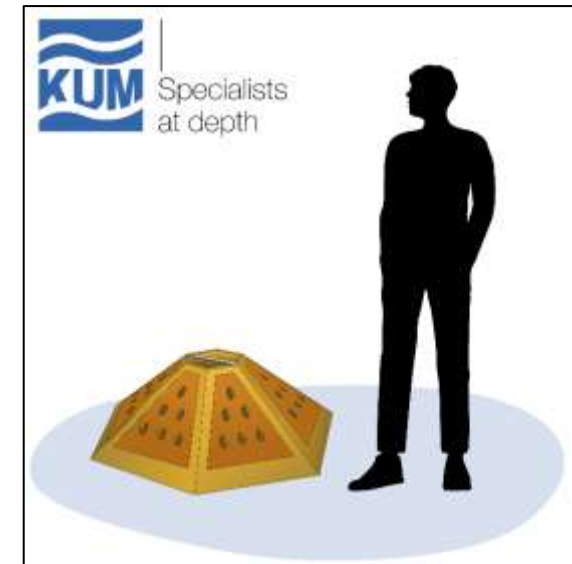
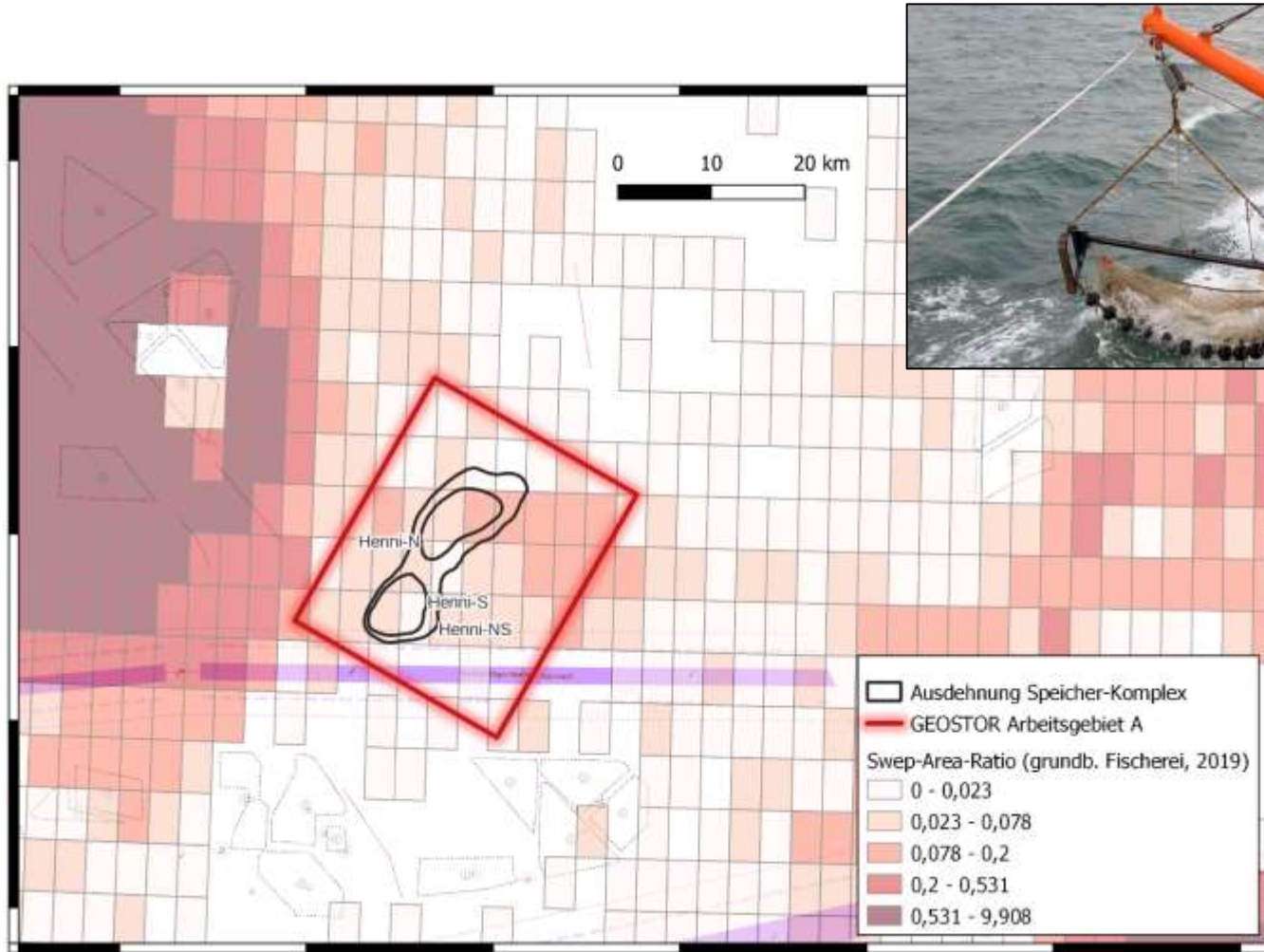
-  Data aggregation
-  Processing
-  Data storage
-  Control unit/interface
-  Satellite communication

K.U.M. Activities planned for GEOSTOR-2 (2024-2027)



1. **Contribute to baseline survey by deploying a network of sensor nodes**
2. **Develop an innovative sensor nodes and manufacture seven prototypes for field-testing in the North Sea**

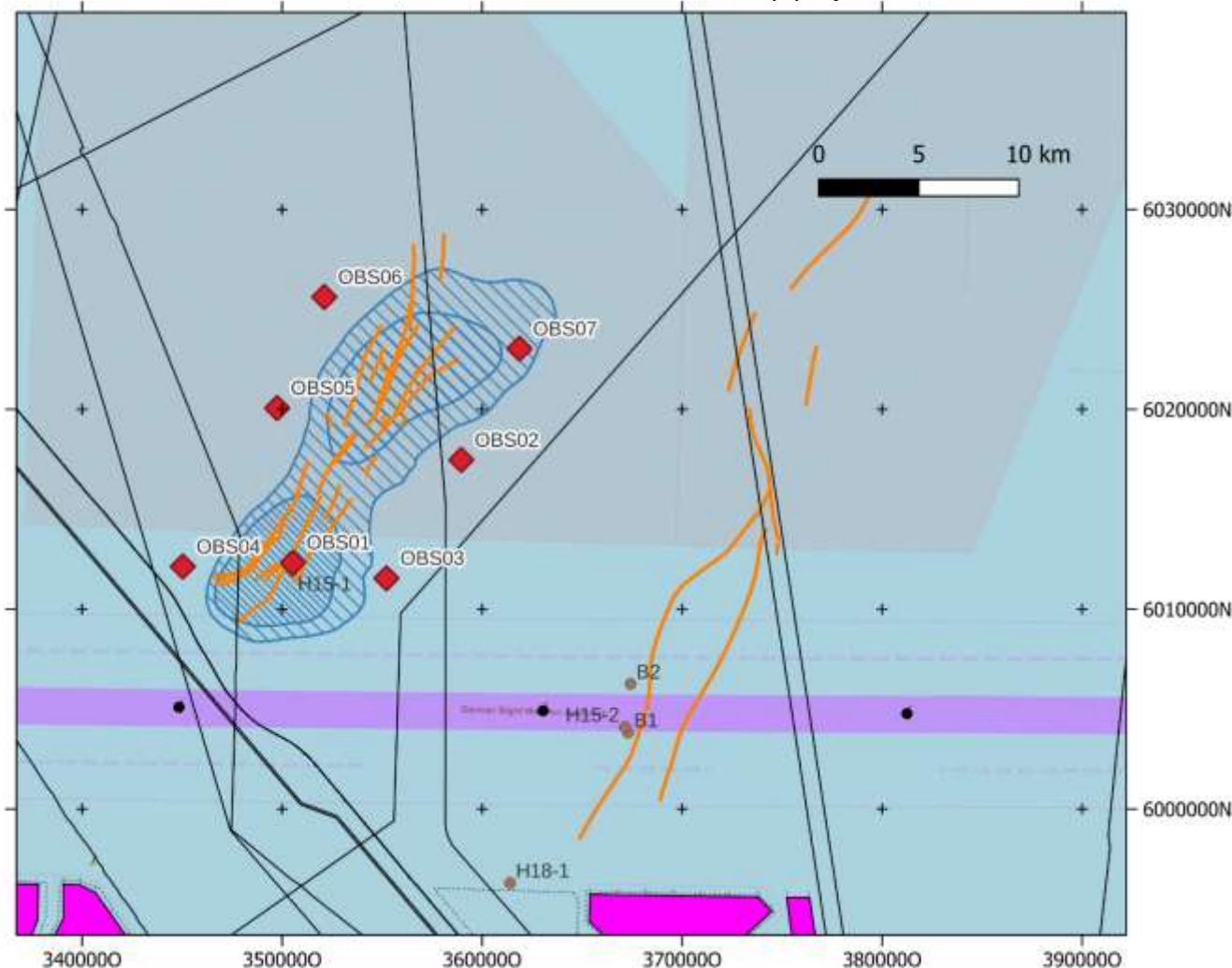
Challenge: bottom trawling fisheries



Design concept of sensor node

Proposed deployment of 7 innovative seismic nodes for baseline seismicity

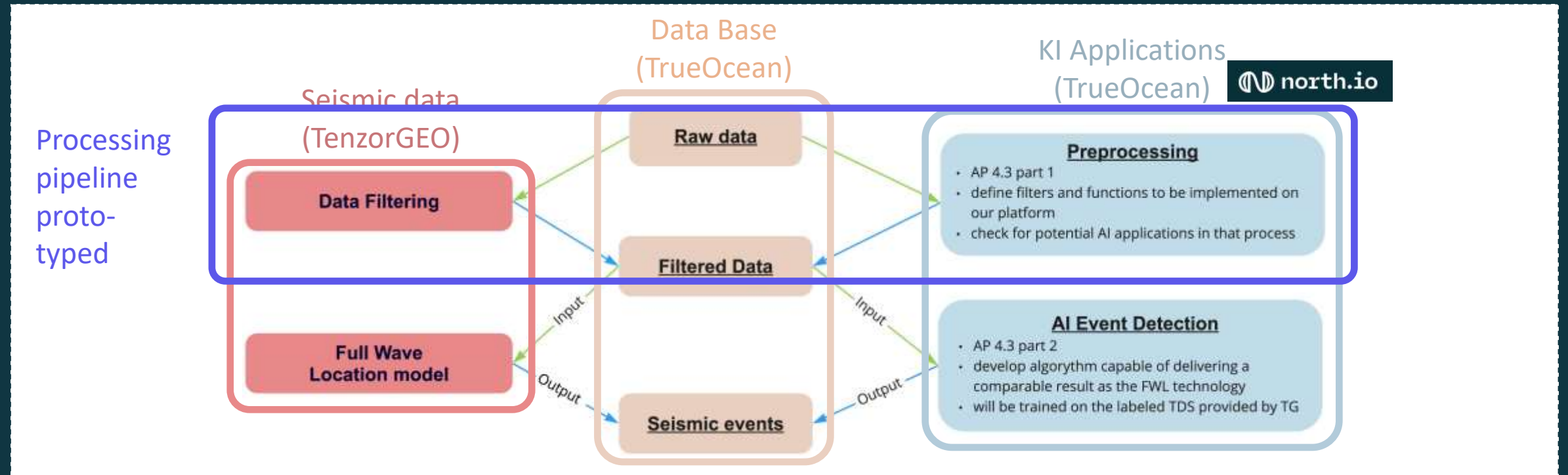
map projection: UTM zone: 32 N

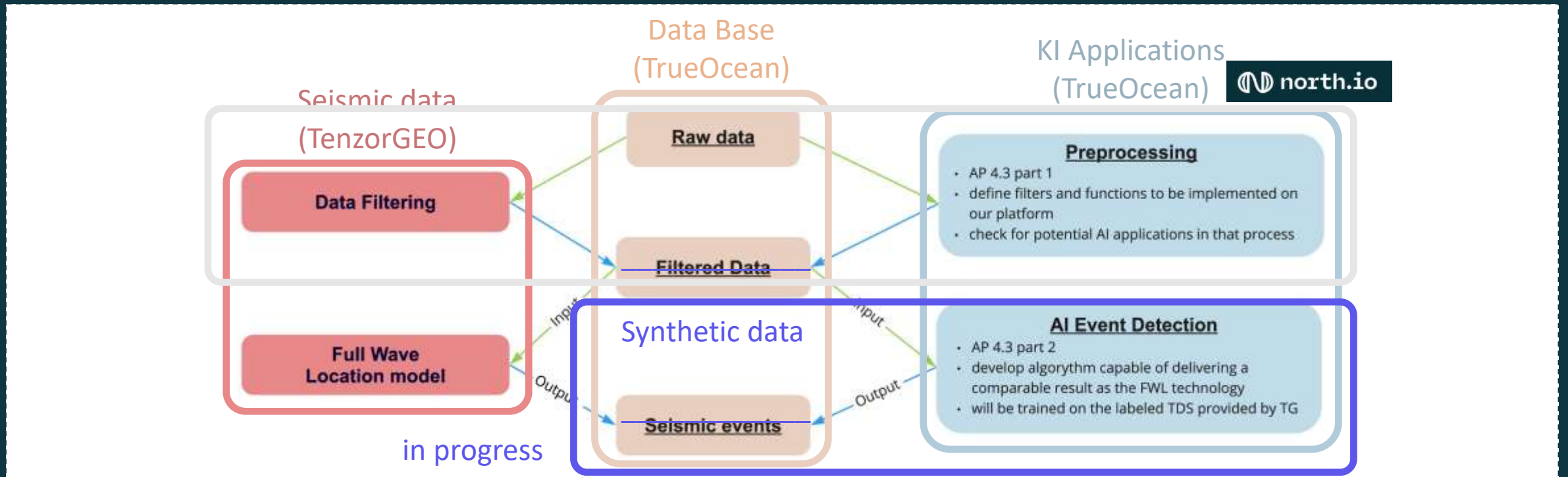


- **Deployment period ~6 months**
- **Locations are subject to permitting by BSH & Bundeswehr**
- **Data processing and analysis in collaboration with CAU seismology group**



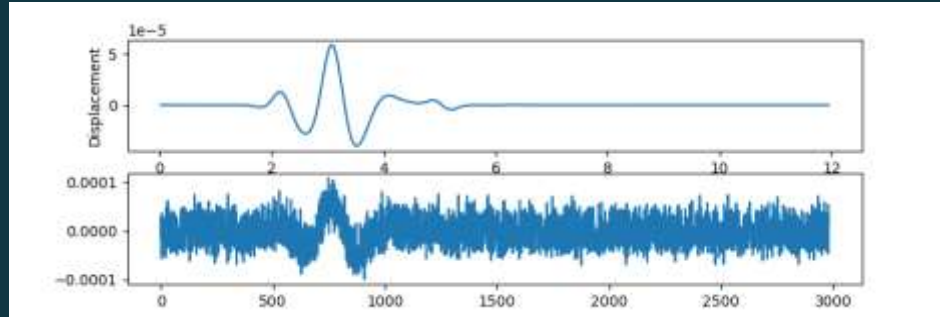
Design concept of sensor node



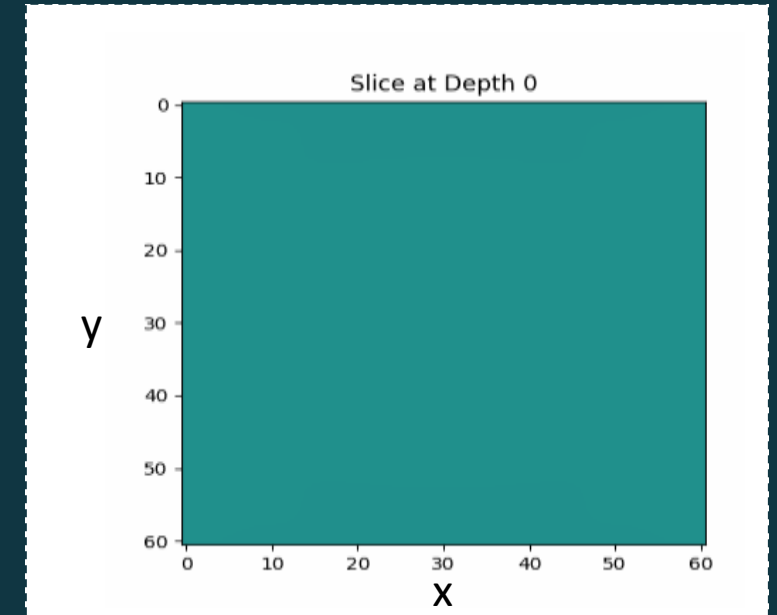
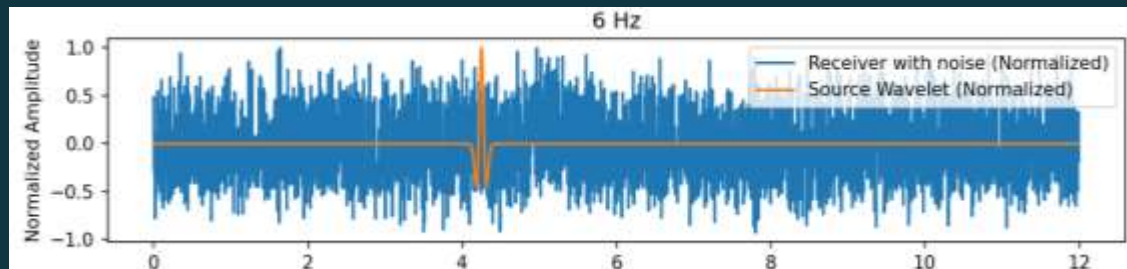


Synthetische Daten zum trainieren der KI

- Umgebungsparameter bekannt
- Große Datenvolumina
- Noise:

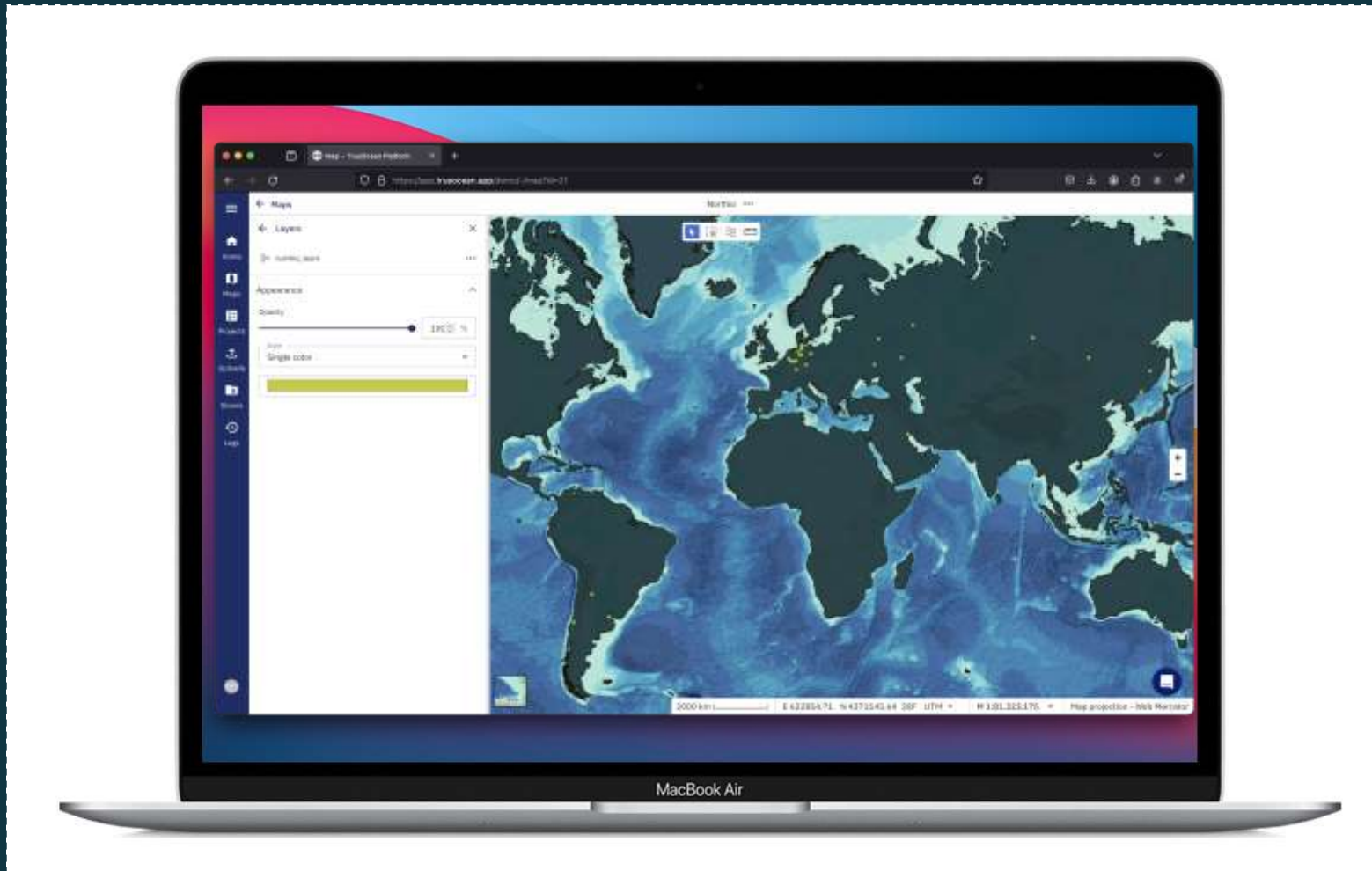


- Events lokalisiert:



1. FDwave3D tool
2. CAU model (Hendrawan Diandaru Bayu Aji, Frank Wuttke)

→ KI Training



- Web-basiertes Datenmanagement
- Cloud-Technologie für digitale Kollaboration