



# VesselEdge

## Edge Computing Onboard of Moving Vessels

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FOR A SAFER WORLD

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CONSCIOUS OF TRANSPORT'S IMPACT

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AUSTRIAN INSTITUTE  
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TOMORROW TODAY

Vessels serve as distributed mobile sensors, hence, Machine Learning will happen in-situ (on-board) of the vessels (close to the data production). This will enable efficient data operations across the maritime data life cycle and will lead to better situational awareness, increased safety, and reduction of illegal activity.

## Targeted Stakeholders



Vessels



Mariners, Vessel Traffic officers,  
Maritime surveillance agents,  
maritime data analysts - End Users



## How will VesselEdge Use Case improve maritime vessels control?

Successful deployment of a novel smart AIS system that pre-processes the raw AIS data stream and transmits the key information (local model) back to the control room. Extend AIS coverage beyond the reach of coastal AIS antennas, targeting to extend AIS coverage on-demand by linking sensors on-board of moving vessels.

## Expected Outcomes

The use case will validate the Data Governance Platform for trustworthy data handling, Online Data Aggregator for on-board data aggregation, AI-based Data Operations Toolbox and Green & Environmental Dimensioning Workbench for efficient and green data operations, Declarative Querying for seamless querying of data irrespective of storage type, Edge Analytics Suite for advanced data analysis, Edge-driven Federated Learning for disconnected operations, and Visual Analytics to identify complex mobility patterns.



### Quote from the Use Case representative



**Andreas Reisenbauer**  
Principal System Architect, Frequentis

*"In MobiSpaces, we will be able to show the benefit of extended AIS coverage beyond the reach of coastal AIS antennas coverage; on-demand by linking sensors on-board of moving vessels to overcome limitations (bandwidth, location, time, ...), and transmits the key information back to the organization control room in order to improve situational awareness for organization active operations."*



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