MobiSpaces

MarineTrafficTracker
MT Tracker - Edge-powered Vessel Tracking

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CONSCIOUS OF TRANSPORT'S IMPACT

MarineTraffic

In a nutshell, the aim of the MT Tracker is to enable vessel tracking on edge, which means that we will develop a solution that will be able to collect data from more than one vessel tracking sources, such as AIS, and radar data, and fuse them in a decentralised way, pushing computational workload on the edge rather than transfering all data to a centralised server. The MT Tracker will address the challenges introduced by increasing the number of devices deployed in the wild and the rapidly increasing size of input data.

In single sensor environments, the aim of a robust and accurate vessel tracker is to resolve measurement-to-object association ambiguities, especially in cluttered multi-object scenarios. The deployment of several devices turns it into a multi-sensor, multi-object tracking problem. The increased number of measurements in multisensory systems aggravates the measurement-to-object association problem which arises if multiple closely spaced objects or clutter measurements are present. In this case, the challenge is to combine the results at a regional level providing macro analytics on aggregated data from the edge devices.

Targeted Stakeholders

Vessels

Mariners, Vessel Traffic Officers, Maritime Surveillance Agents, Maritime Data Analysts, End Users

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How will MT Tracker Use Case improve maritime situational awareness?

Using the MobiSpaces platform we will be able to enrich the value of our AIS data by fusing AIS data with other sources of vessel tracking data, such as radar sources, and benefit from edge computing by reducing the server-side workload, and increasing performance.

Expected Outcomes

1. A robust and accurate vessel tracker that performs resolve measurement-to-object association, especially in cluttered multi-object scenarios.
2. Novel techniques for multi-sensor (AIS, RF) multi-object tracking in order to enrich information coming from different sources (e.g., vessels that cannot be tracked via AIS).
3. In-situ data processing at a regional level providing macro analytics on aggregated data from the edge devices to the cloud servers, reducing costly data transferred to the cloud.

Quote from the Use Case representative

Konstantina Bereta
Research Coordinator, MarineTraffic

In MobiSpaces we will be able to enrich our AIS data by combining our AIS datasets with data coming from other sources, such as RF data, and benefit from edge computing, reducing data transfer to the cloud.

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