Maritime Use Case – Template

## Scenario

After being informed of the loss of the AIS contact with a particular fishing vessel one hour ago (at time 0), the Watch Officer (WO) now (at time t) needs to recover the track and locate the vessel. The locations of two unidentified tracks, called Vessel A and Vessel B, are provided as the only two possible locations for the missing vessel.

## Problem to solve / Question

The Watch Officer has to match the known features of the missing vessel, as reported by its last AIS contact, with the ones of the two unidentified tracks, as reported by the on-site sources. Hence, its name, MMSI, IMO, type, length, width, etc are known with a very high confidence to the Watch Officer.

The question is thus:

*Which one of Vessel A and Vessel B corresponds to the missing vessel?*

## Sources of information

|  |  |  |
| --- | --- | --- |
| Source | Expertise | Range |
| Radar + ATR | Position, Heading, Speed | Vessel A, Vessel B |
| Radar + Operator A | Size | Vessel A, Vessel B |
| SAR image + ATR | Heading, Size | Vessel A, Vessel B |
| SAR image + Operator B | Heading, Size | Vessel A, Vessel B |
| Camera + Operator C | Position, Heading, Speed, Size, Type | Vessel A |
| Cargo Captain | Position, Heading, Speed, Size, Type | Vessel B |

## Basic modelisation

Observation variables: X = {A,B} X {Position, Heading, Speed, Size, Type} (10 variables)

Decision variable: H={A,B}

Fusion: Bel(H|X)

Atomic Case Study - Template

## Use case

Maritime use case #1

## Type of ACS

Singular assessment

X Comparative assessment

## Solution #1

Basic modelisation + Bayes’ rule

## Question of interest

Which combination rule provides better results?

## Evaluation subjects

Bayes’ rule & Dempster’s rule

## Evaluation criteria (from the URREF ontology)

Reasoning criteria

Output criteria