



# PSCE Conference

Brokerage Event

Oxford – December 8, 2015

Proposal:

**Focused data fusion for maritime security applications**

Topic: **SEC-19-BES-2016: Data fusion for maritime security applications**

Innovation action, € 8million, single-stage

Name: Snježana Knezić<sup>1</sup>, Sisi Zlatanova<sup>2</sup>, Martina Baučić<sup>1</sup>

Company: <sup>1</sup>University of Split, <sup>2</sup> University of Delft – Proposal Coordinator

Contact: [snjezana.knezic@gradst.hr](mailto:snjezana.knezic@gradst.hr)

# Motivation:



Project idea:

To build new methods and tools for data fusion enhancing maritime security applications.

Data fusion will follow the innovative “Focused data fusion approach”:

1. detection of objects of interest on sea;
2. focusing to objects by multileveled searching, selecting and fusing of various data;
3. gradually enhancing data content about objects of interest (context driven);
4. structuring of data for quick search, analysis and web-visualisation.



# Expected Results

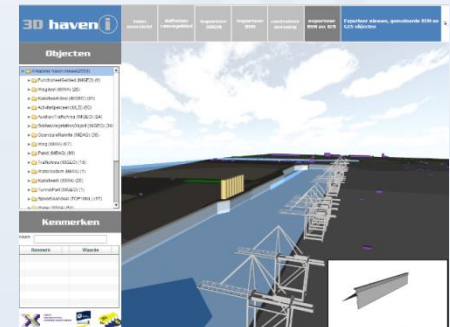
A system which will integrate data fusion for maritime security applications.

The system will:

- Dynamically create comprehensive situational awareness picture;
- Provide real-time support for search-and-rescue activities;
- Provide information exchange between agencies;
- Provide decision-making platform;
- Provide interface with exiting infrastructure.



Web-visualisation of fused data  
for the Port of Rotterdam

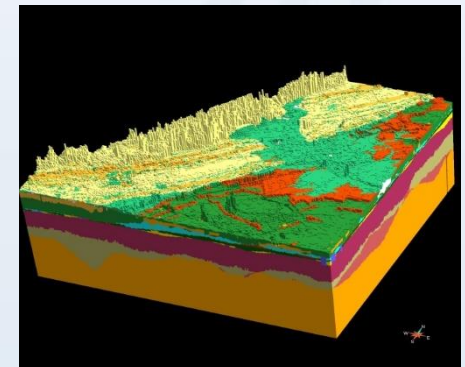
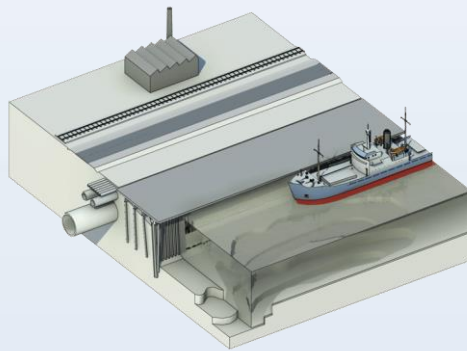
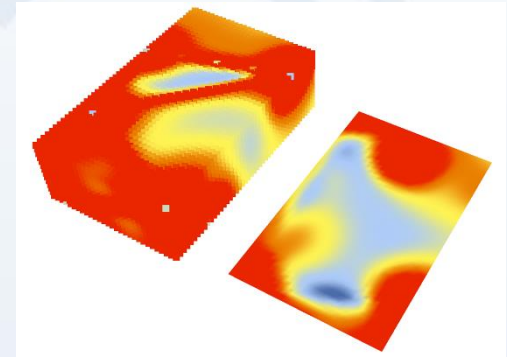
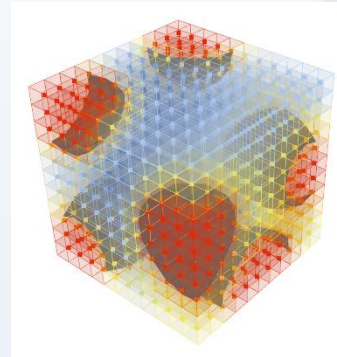




# What we have / our experience:

TU Delft has expertise in:

- storage, management and analysis of BIG data in 3D/4D
- structuring and visualisation of continues phenomena as underground and underwater formations in 3D/4D
- Semantic interoperability
- 3D/4D web-based visualisation





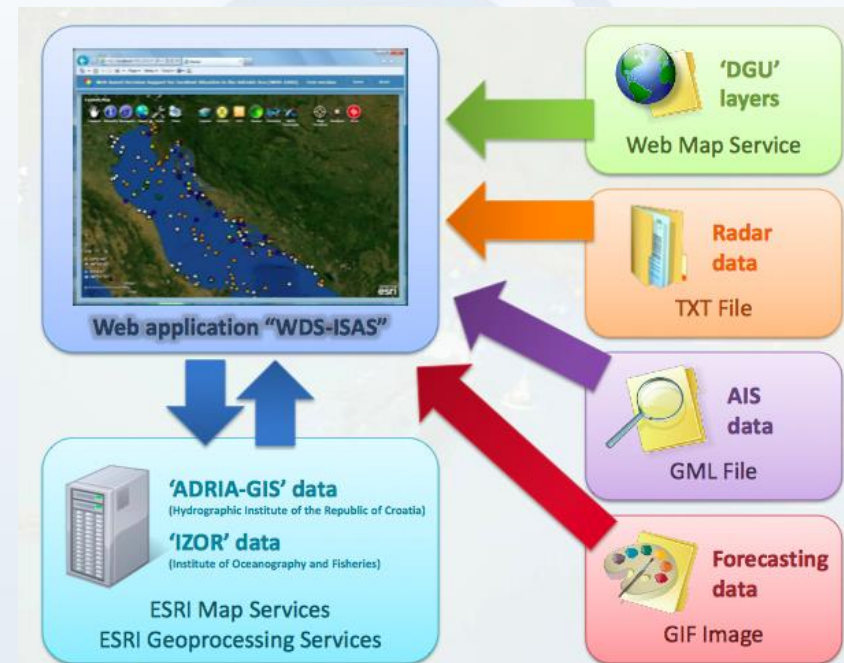
# What we have / our experience:

University of Split has a product:

Web-based Decision Support for Incident Situation in the Adriatic Sea (WDS-ISAS).

Main features are:

- <http://unistgis.maps.arcgis.com>
- Rich GIS database on Adriatic sea
- Ship positioning tool
- Multi-Criteria Analysis tool for selection of optimal place of refuge
- GeoGate tool for geo-referencing of images and videos
- Sea Forecasting data, etc.





At least **3 border guard authorities** from 3 EU Member States or Associated Countries must be beneficiaries of the grant agreement and should be directly involved in the carrying out of the tasks foreseen in the grant.

We are looking for end users either for Advisory Board or as partners:

- **Coast guards;**
- **Port authorities;**
- **Organisations being involved in projects funded by the European Defence Agency programmes;**
- **Organisations performing search-and-rescue activities.**
- **Maritime custom.**

EU funded R&D cooperative projects like:

- EUCISE 2020 (on-going)
- BlueMassMed, Digit, Cooperation, MARSUNO (finished)



Participation from at least **3 independent industry organizations** established in 3 different EU Member States or Associated countries is mandatory. They should be directly involved in the carrying out of the tasks foreseen in the grant

We are looking for partners:

ICT Industry\* and Research Organizations with references:

- **Data fusion techniques**
  - integration and homogenization of data (heterogeneous spatial, temporal and thematic components)
  - data correlation and deriving higher level of data
- **Sensors data processing**
  - pre-processing of raw data
  - identification of the actual objects or events from multiple data sources (sensors and associated heterogeneous data)
- **Creation of surveillance pictures**
  - overlapping of pictures from different sources and removing redundancy
  - including Copernicus, Galileo and EGNOS
  - real-time data processing
- **Able to develop system prototype demonstration in operational environment (TRL level 7)**