



EMSA's further development of maritime surveillance capabilities

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Further developments

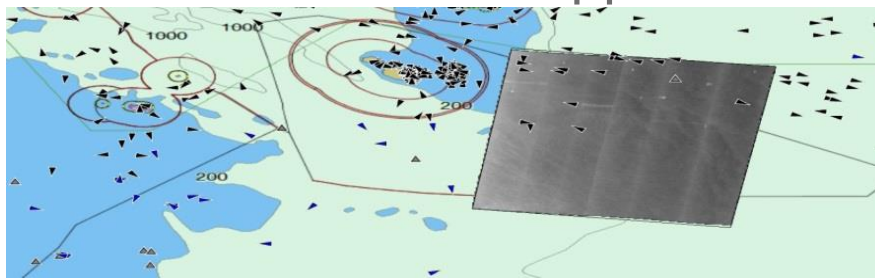


Input

- ✓ New data: RPAS or civil drones
- ✓ New data: testing satellite-video
- ✓ New data: Earth observation: TerraSar-X and PAZ
- ✓ Extra data: continued global feed of Satellite-AIS data
- ✓ Extra data: Expansion of very high resolution optical satellites

Output

- ✓ System upgrade: anomaly behaviour
- ✓ System upgrade: met-ocean data
- ✓ System upgrade: Validation of SAT-AIS data
- ✓ System upgrade: IMDatE mobile applications



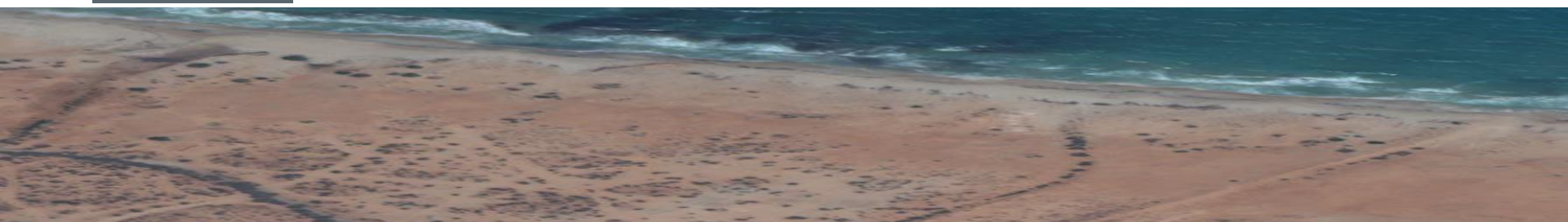
Exploration phase objective

- Better understand the potential of Remotely Piloted Aircraft Systems (RPAS) as an additional data source for the maritime picture:

Projects and activities

- **ESA project RAPSODY:** maritime surveillance applications
- **ESA project STEAM:** exploring emission monitoring (sulphur contents from ship fuels)
- **Technical cooperation with the Portuguese Air Force:** small scale tests of data transmission, usage of data formats, data integration

Dedicated workshop will be organised at EMSA on 28 October to present all ongoing maritime related RPAS activities



- Analysis of detailed (maritime surveillance) user needs and development of concept(s) of operations (CONOPS) for RPAS systems,
- Deployment of a RPAS equipped with tailored on-board sensors and on-board sensor algorithms to improve operational performance,
- Exploit satellite communications capability for RPAS in Beyond line of Sight (BLOS) operation,
- Demonstrations foreseen:
 - Portugal/Spain (Atlantic/entrance of Mediterranean Sea);
 - the Netherlands (North Sea);
 - Malta (Mediterranean Sea);
 - United Kingdom (Irish Sea).



Access to (new) satellite data

- Agreement with ESA reached to extend the global Satellite-AIS data feed (end date moved from November 2015 to 31 August 2016)
- Testing will start with satellite-video data (6 month period)
- New contracts soon in place to use Earth Observation data from TerraSar-X and PAZ
- Access to ground stations outside EU and on-board recording

ESA-EMSA SAT-AIS INITIATIVE

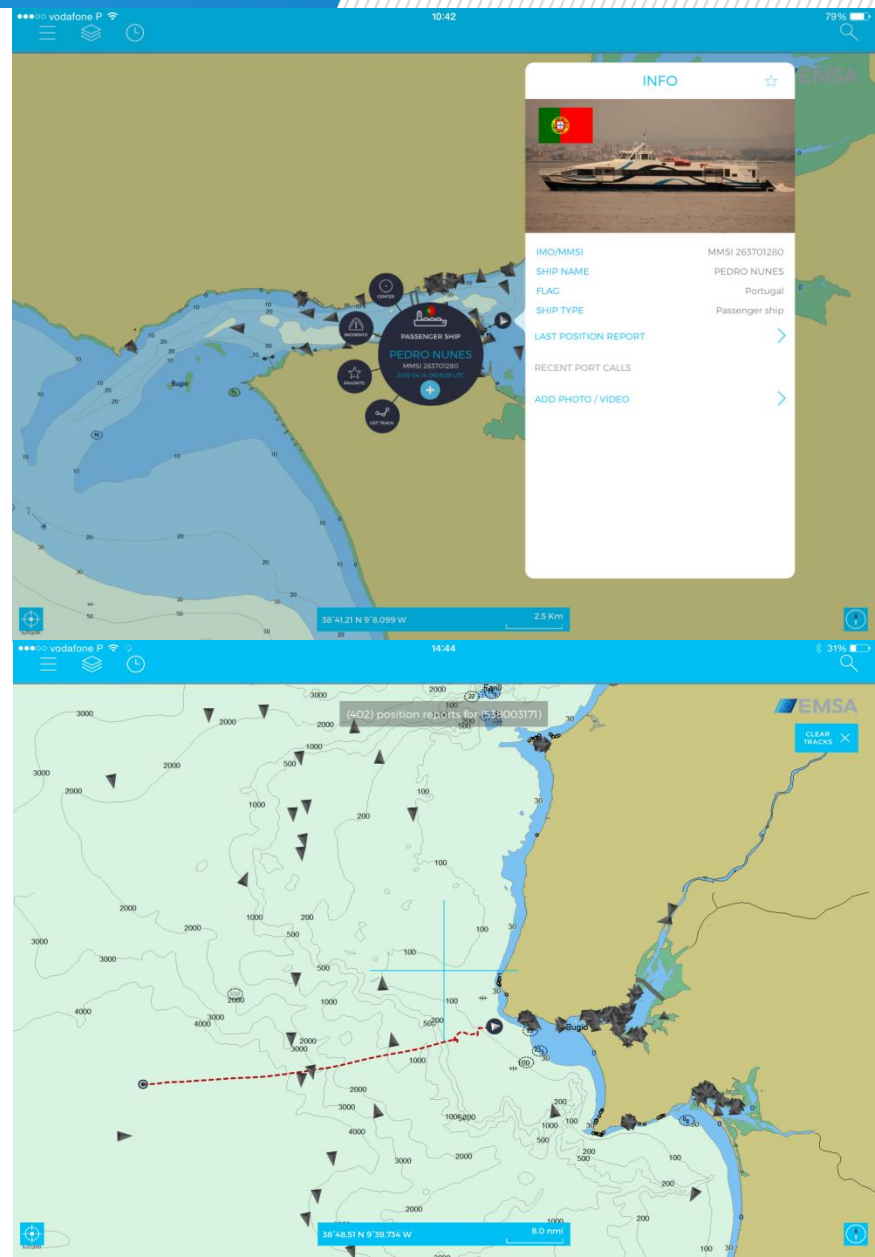


Maritime picture on sight as an app

Testing mobile app with operational users (2015)

- Dutch Coast Guard
- Malta Fisheries Control
- MAOC-N (Maritime Analysis and Operations Centre – Narcotics)

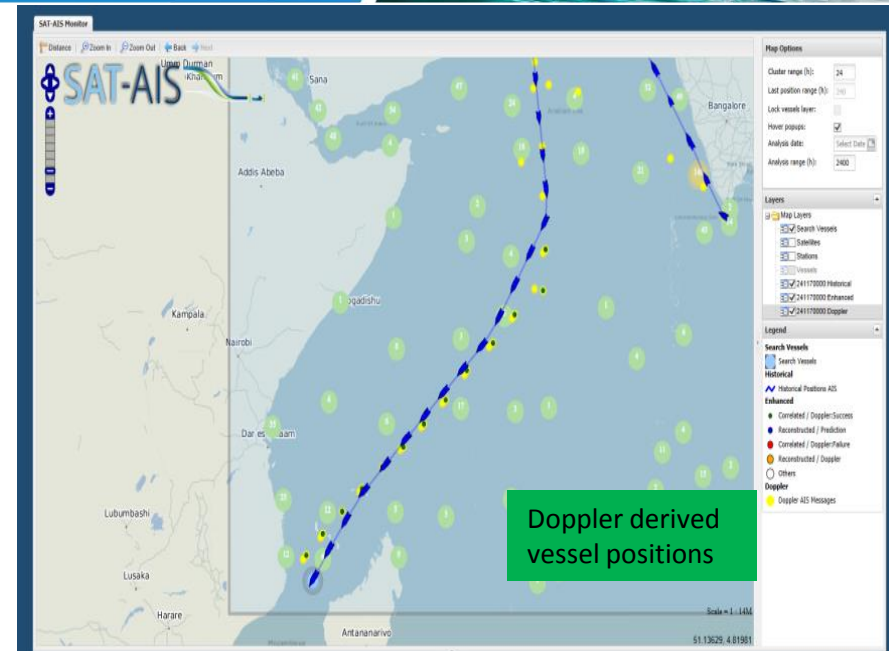
If successful, roll-out to all EU Member States



System capacity upgrade

Upgrading the “maritime picture”

- Improve the integration of systems and data fusion (new system architecture 2015-2016)
- New Data Processing capability (EMSA-ESA): validating Sat-AIS data (doppler)
- Improving automated vessel anomaly behaviour detection
- Met-ocean data as info layer in IMDatE



Conclusions (EMSA's 5 year Strategy)



- ✓ **To increase the effectiveness and efficiency of EMSA's integrated maritime information services to its full potential**
- ✓ **To explore, at reasonable cost, in a sustainable and viable way, new capabilities offered by technology in the field of maritime surveillance**





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European Maritime Safety Agency