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European Satellite AIS under Joint EMSA/ESA Integrated Applications Programme

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The Automatic Identification System (AIS) is a short range coastal tracking system currently used on ships. Space-based, or SAT-AIS will provide AIS data via satellite, allowing for the detection of seafaring vessels on global scale. A European-based SAT-AIS system is being developed in partnership between the European Maritime Safety Agency (EMSA) and ESA. The ARTES 21 SAT-AIS element was approved July 2010 with achieved subscription level and defines the design/investigation of a sustainable space-based system that will provide AIS data.

Currently the SafeSeaNet (SSN) operated by EMSA ensures the effective tracking of vessels and their cargoes based on the data received by coastal stations. From the coastal stations, the AIS messages are transferred via national stations to four regional AIS servers (terrestrial “nodes”) that provide the data to the EMSA SafeSeaNet server.

The provision of SAT-AIS data (via “space node”) would bring additional added value to existing maritime information services. SAT-AIS will be able to assist European entities and institutions in law enforcement, fisheries control campaigns, maritime border control operations, maritime safety and security issues including marine pollution response, search and rescue and anti-piracy.

ESA’s SAT-AIS is implemented through three ARTES programme elements, which will be discussed in detailed in the paper:

- **ARTES 5** – technology activities, currently underway as antenna miniaturization, receiver developments and performance testbed.
- **ARTES 20** – implementation and validation of the Data Processing Centre as “space node” in close cooperation with EMSA for full data integration into SafeSeaNet services.
- **ARTES 21** – covers the initial steps of the system design and implementation, also including the investigation of opportunities via a cost benefit analysis of an Operational Demonstration Mission (ODEM), system design phase B1 studies, comparative performance assessments, as well the exploration of possible Public Private Partnership (PPP) implementation scheme for the European SAT-AIS operational system

Consultation with users has taken place through workshops hosted jointly by ESA and EMSA. Feedback from users and stakeholders at these workshops has been instrumental for the user requirements validation in further development of this programme.

