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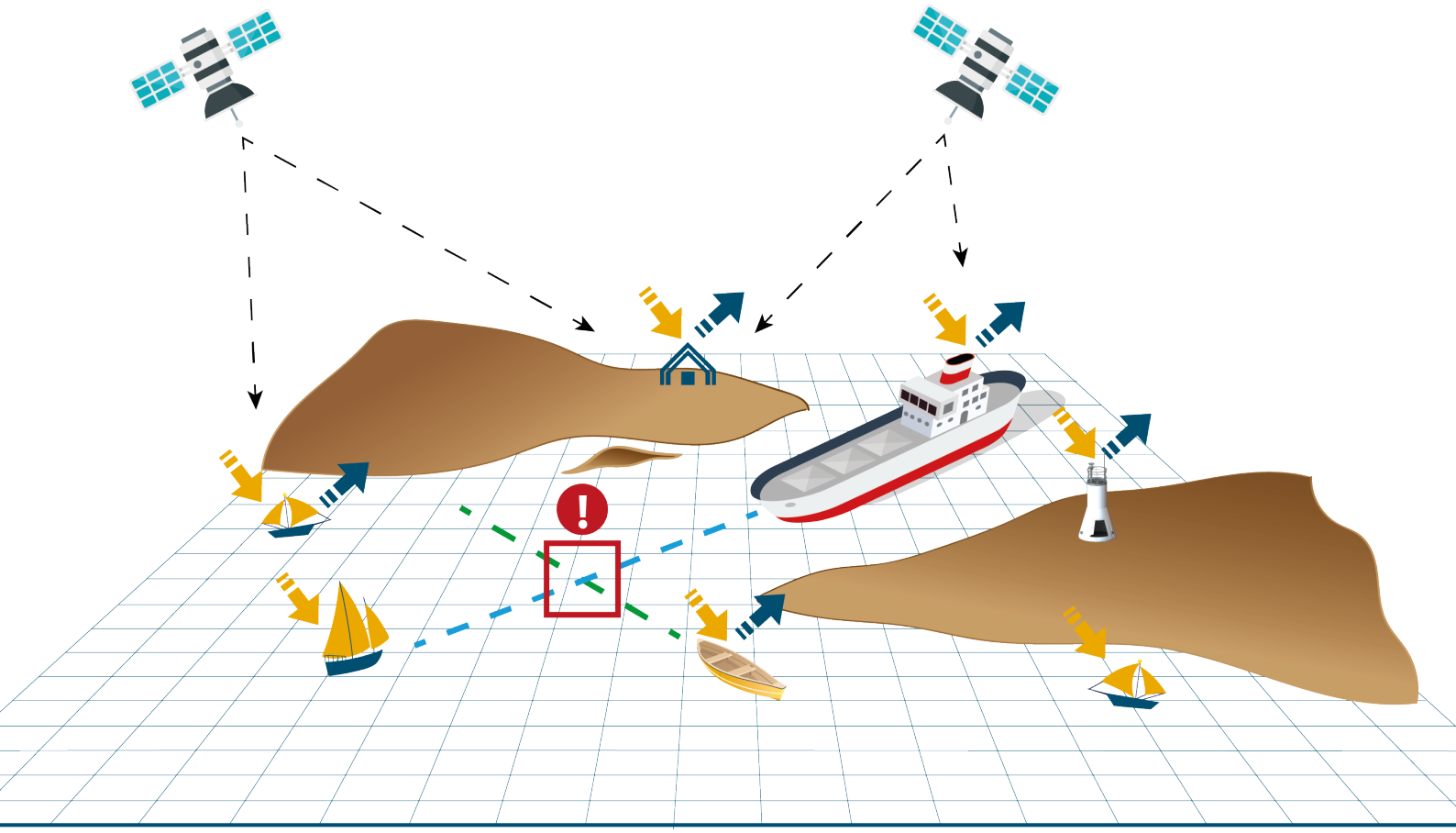
IALA Guideline G01082 gives an introduction to AIS at an overview level for shore authorities and references relevant documentation where further information can be found.

AIS is a sophisticated radio technology and operates under a technical standard developed by the IMO, therefore, it is an extensive and complex system to explain. This article series aims to give a general vision and explain the basic concepts of AIS, so to put the pupil in a position where he can explore and comprehend the information available.

WHAT IS AIS?

AIS is an automatic and autonomous communication system that operates on the **VHF band and with GPS information.**



AIS COMMUNICATION DIAGRAM

AIS was developed to provide instant reporting between ships and to shore, which contributes to the safety of navigation and facilitates traffic management by continuously exchanging information such as identity, position, time, course and speed.

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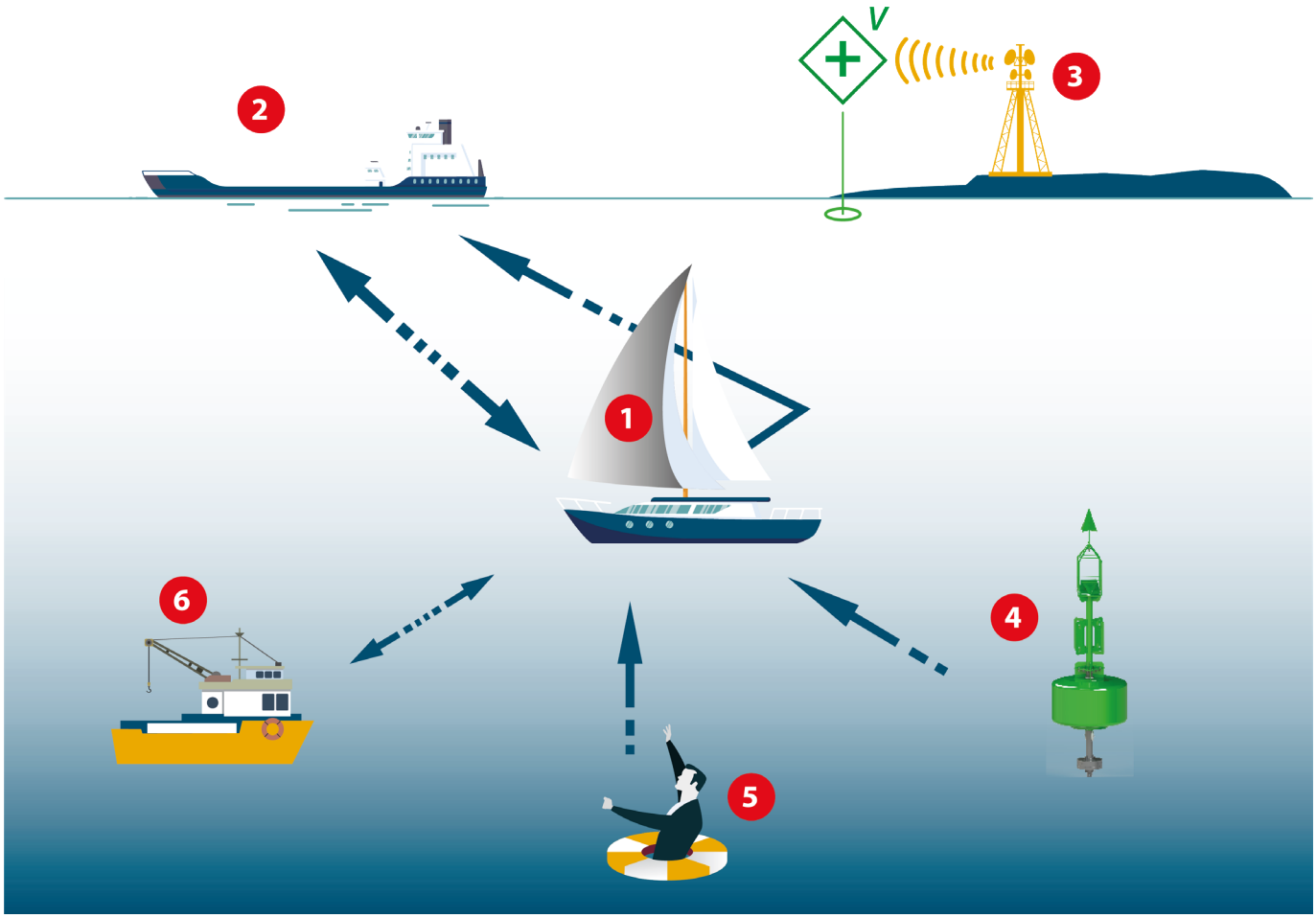
AIS messages are in exchanged as **BROADCAST or ADDRESSED communication.**

The AIS stations are identified by a unique Maritime Mobile Service Identity (MMSI) number, and include:

- Ships (mandatory for some vessels as per SOLAS and domestic regulations)
- Shore stations (including VTS stations, private fleet control stations, …)
- AtoN stations (buoys, lighthouses, leading lights…)
- Search and rescue aircraft stations
- Search and Rescue Transmitters (SART)



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Each station organics its communication through the VHF data link according to a GPS time division system, this information will be extended in the following articles.

The main functions fulfilled by the AIS system are:

- Ship-to-ship collision avoidance system.
- Complementary Aid to Navigation system.
- As a means for littoral States to obtain information about a ship and its cargo.
- VTS tool for ship to shore information and traffic management.

As in this article we are focusing on a AtoN manager perspective, we expose the advantages **of AIS applied to AIS AtoN as follows**:

- Improve service to sailors by identifying the AtoN in any weather condition.
- Complement other existing AtoN signals (visual, light, RACON ...)
- Automatically transmits the GPS position of the Navigation Aid, increasing security.
- Higher reliability due to diversification and redundancy of signals.
- Provides increased signal information.
- Adaptation to the global trend.

Implementing a AIS monitoring and telecontrol system also has the following advantages:

- Real time monitoring of the correct functioning of the AtoN.
- Location monitoring of beacons, lighthouses and even buoys out of position.
- Help with complementary electronic navigation, identification of vessels and traffic control.
- Reduce trips for maintenance and manage related operations more efficiently.
- Establish long-term maintenance.