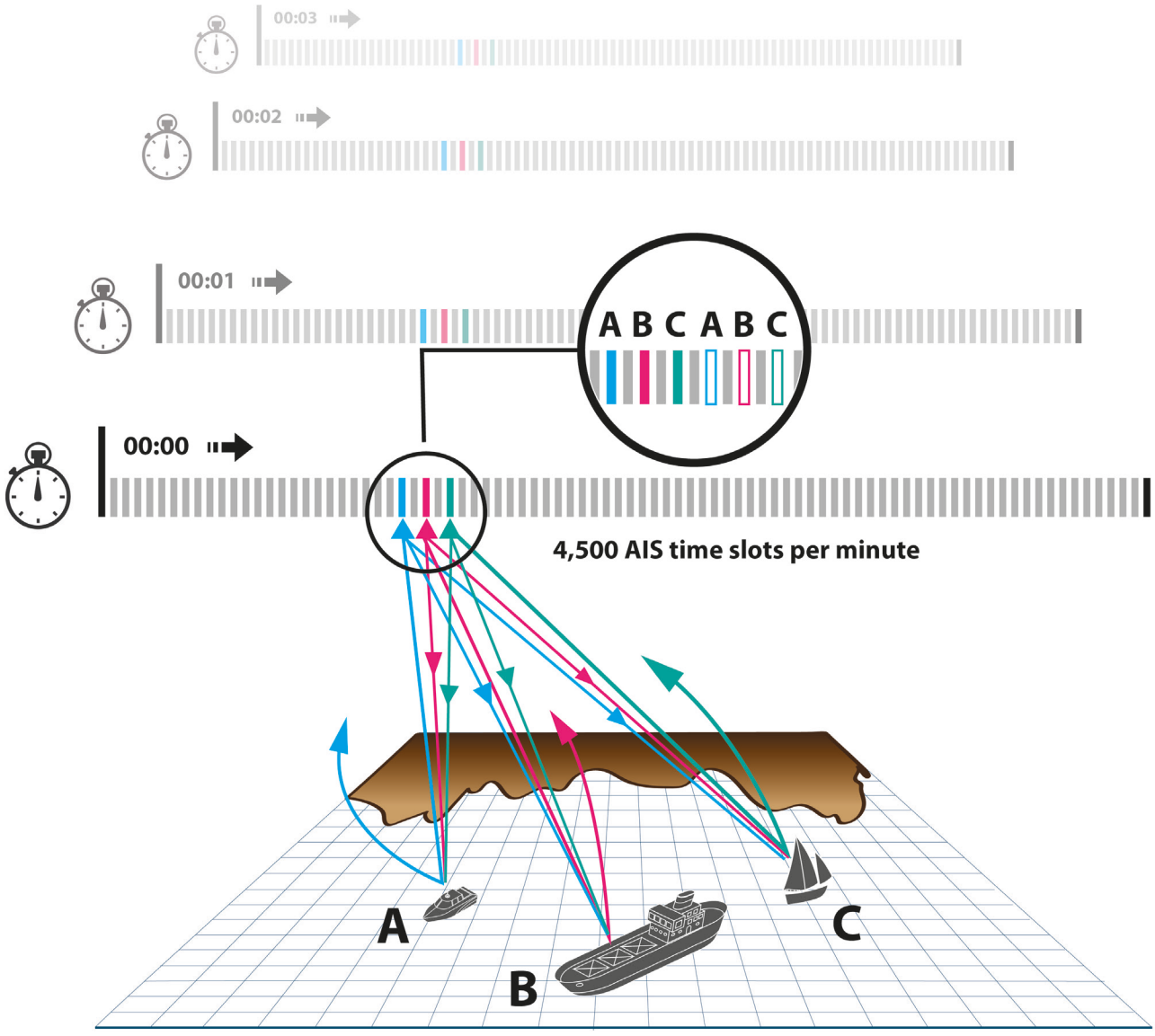
# IALA GUIDELINE G01082

AIS stations communicate using a time-division multiple access (TDMA) communications scheme. Which means that the data link (VDL, Vhf Data Link) used is divided into a number of equal time slots which hold a set amount of data and are synchronised using GPS time.

## AIS VDL TIME MANAGEMENT



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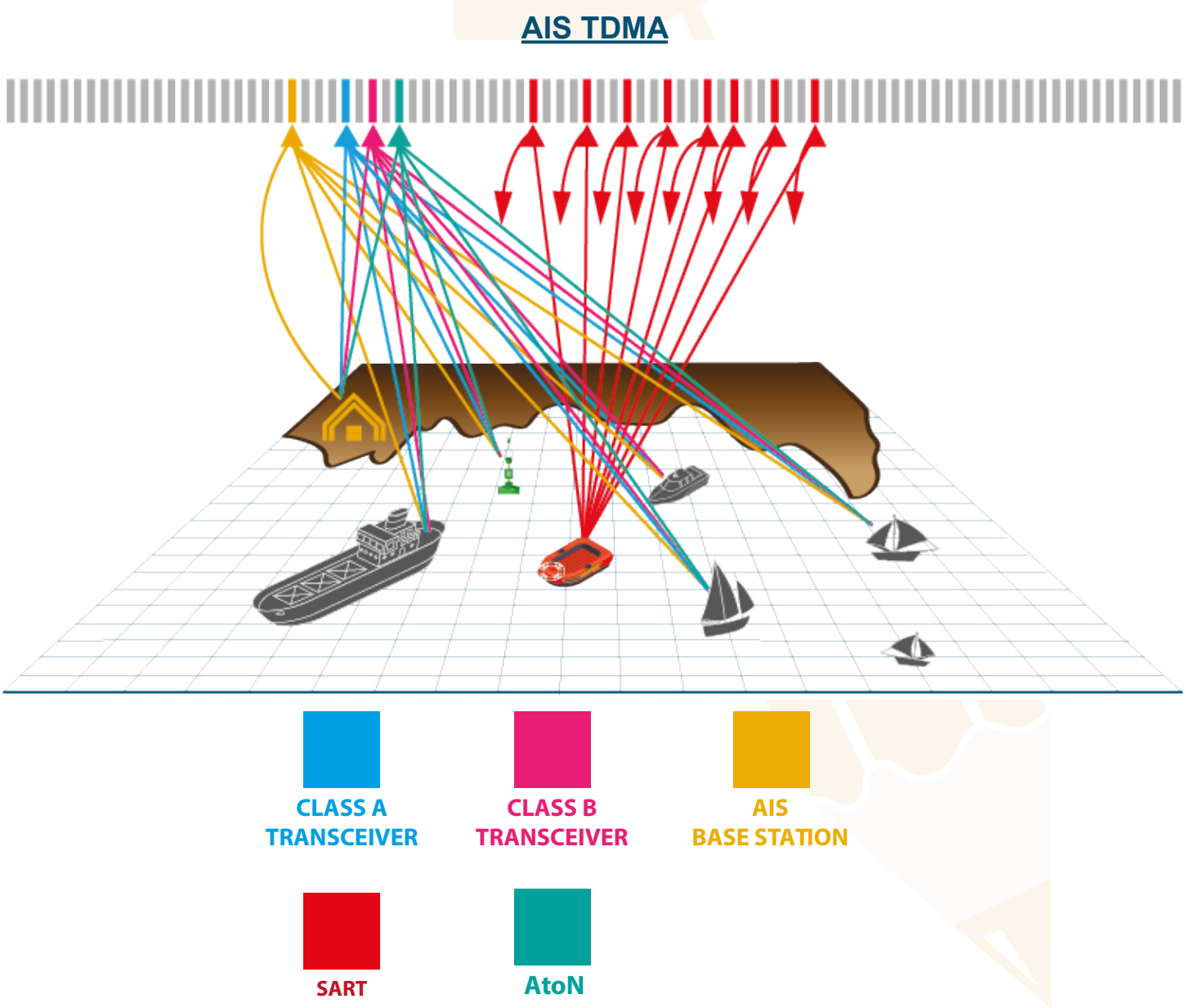
The VHF Datalink time division is organized in 2250 slots per minute, in two different channels, resulting in a total of 4500 AIS time slots per minute. AIS messages usually occupy one slot, but can cover up to 5 consecutive slots.

Each of the stations works usually accessing to slots through a different method, as showed in the following image:



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The objective of the different methods is to avoid “collision” between messages (two AIS stations transmiting in the same slot), that results in a total information loss.

**Self-Organised (SOTDMA)** is the basic access method for mobile stations, stations plan their transmission based on slot use information collected and preannounce when they are going to transmit.

**Random Access (RATDMA)** is only used for unscheduled transmissions and not recommended in high AIS traffic areas.

**Fixed Access (FATDMA) AIS** stations that have a requirement to transmit data at predetermined intervals, and involves the reservation of particular slots for their exclusive use.

**Carrier Sense (CSTDMA),** known as “polite behaviour”, the station listens to the beginning of the slot and only transmit on unused slots.

As can be deduced from the exposed until now, what makes AIS network unique is the ability to ‘self‐organize’ and the fact that each AIS station has its own coverage area that moves with it. This is possible because the network is continuously self‐organizing around the user, thus reducing the likelihood of undelivered AIS messages. Even in the worst case, since most AIS base stations typically have a high antenna position, large coverage area, a saturation in AIS data link may result in messages not being decoded from more distant AIS units in an area where there are a very large number of AIS stations operating.