

SECURE AIS

Secure Information Exchange

The AIS broadcasting standard is excellent for information exchanged between commercial ships at sea and between ships and shore stations. This open information sharing is however not always suitable for users like Navy, Coast Guard, Police etc., who may have a need to exchange non-public information between their own units and still be able to receive the open AIS information.

Saab TransponderTech has developed the Secure AIS solution which satisfies these requirements. The Secure AIS functionality can be offered for all AIS products in Saab's portfolio, including shipborne/airborne transponders, base stations, AIS network and presentation systems. Upgrade options are available for existing, qualified users of Saab's AIS products and systems.

Secure Link

The user defines one or several VHF radio channels, here called Secure Link, for exchange of encrypted messages between participating units within the organisation. The Secure Link operates on a dedicated VHF frequency, tunable by the AIS transponder and under control of the user. This means that the secure operation does not affect the communication on standard AIS channels. The Secure AIS option is an integrated part of all Saab's AIS products, thus enabling secure communication between control centers, ships, aircraft, etc.

Crypto solution

Saab's Secure AIS products are supplied with a built-in crypto function with unique crypto keys for each organisation. The crypto method is optimised for the TDMA protocol used in AIS.



Qualified users

The Secure AIS products are only licensed to qualified customers e.g. government organisations.

Secure Keys

The crypto is the highest grade commercial crypto solution which ensures high integrity.

It is possible to define the time of validity and channel used for each generated key. Several keys can be issued simultaneously and be input in advance. Saab offers an advanced key generating tool to ensure that high quality encryption keys are created.

It should be noted that the customer will be in full control of the issuing and handling of the crypto keys.


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Secure mobile products

The secure functionality is available for the following mobile products;

- R4S, Secure shipborne AIS system
- R4AS, Secure airborne AIS transponder

It is also possible to combined the Secure systems with other options, e.g. Warship AIS (WAIS) functionality for R4S

Secure infrastructure products

The following AIS infrastructure products from Saab optionally supports secure functionality;

- R40S, Secure AIS base station
- AIS network solution
- Coast Watch AIS Presentation systems

Operational modes for mobile products

1. Normal AIS mode

The mobile perform all the functions of a normal AIS Class A or Airborne AIS transponder. Outgoing messages are broadcast in the open format on both standard AIS frequencies. The Secure Link is not used.

2. Silent mode

This is the default start-up mode for the R4S or R4AS. The unit will not broadcast any messages and it will not respond to any interrogation message from other units. The units will receive standard AIS messages and encrypted messages and decrypt these.

3. Tactical mode

Receive and process standard AIS messages on AIS channels as well as encrypted messages on the Secure Link. The mobile units will automatically transmit position reports on the Secure Link. Encrypted user generated messages can also be transmitted on the Secure Link.

4. Hybrid mode

The Secure Link is active and the unit receives both open AIS messages and messages on the Secure Link. The mobile transponder will transmit standard AIS messages on the AIS frequencies and also encrypted user generated messages on the Secure Link. It is possible to manually configure the system to also enable automatic transmissions on the Secure Link, if desired.

Saab Secure AIS benefits

- Encrypted mobile to mobile position reports and text messages are handled without external equipment
- The Secure concept allows defined groups of mobile Secure users to have a full situational overview of Secure AIS equipped vessel/aircraft as well as standard AIS equipped vessels while remaining unseen to standard AIS users
- The Saab Secure AIS concept is fully supported in the shore based infrastructure products enabling full situational overview of Secure AIS equipped vessels/aircraft as well as standard AIS equipped vessels

- Saab's unique secure solutions is based upon the advanced transceiver design used in our AIS transponder products, enabling the third embedded receiver to be reconfigured in real-time for secure operation while maintaining full performance on the standard AIS channels
- The secure solution provides full capacity on the secure channel without any unsolicited use of the standard AIS channels

Membership Organizations



Specifications subject to change without notice

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