4 Functional Description

The UAIS system consists of the following components:

- DEBEG 3400 UAIS Transponder
- GPS antenna 1330FB
- VHF antenna CXL 2-1
- optional Display and Control Unit DEBEG 3401

The functionality is described in Section 4.1 by means of the block diagram (Figure 4-3).

4.1 Block Diagram

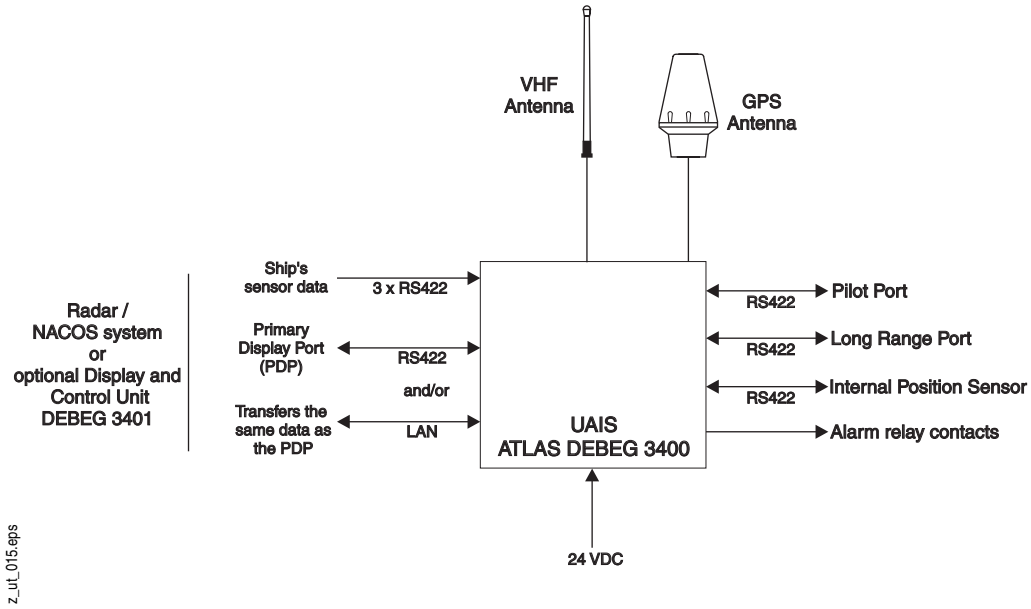

Fig. 4-1 Block diagram of the UAIS System

The UAIS Transponder contains a VHF radio, a GPS receiver and a Mainboard with the interfaces. The UAIS has three inputs for the essential ship's sensor data such as position, speed and heading. These data are supplied by means of the navigation system such, as a RADARPILOT ATLAS 1000. The UAIS communicates with the navigation system via the primary display port and/or the Ethernet LAN. In this way the UAIS is supplied with additional data such as the ship's data, administration data and configuration data.

The ship's data, the ship's sensor data and the position data (from external or internal GPS receiver) are transmitted via VHF.

In the opposite direction, the corresponding data of other ships equipped with AIS systems are received by means of the VHF receiver. These data are processed and sent to the navigation system via the primary display port or the Ethernet LAN.

The functions of the pilot port correspond to the functions of the primary display port, but the pilot port must be made accessible for pilots on the ship's bridge. It must not be used for other purposes.

The DSC Receiver receives messages from external stations such as VTS. By means of the DSC messages, specific settings such as a change of the VHF channels can be controlled.

The VHF transmitter/receiver has a limited range. By means of the connection of a long range communication system (such as a satellite communication system) to the long range port, this limitation can be eliminated. In this way, the UAIS can be called to send the ship's data. The requested data are sent via the long range port and the long range communication system to the questioner. The operator can decide whether a long range request is answered or not. For further information, see the operating instructions of the Display and Control Unit or the navigation system.