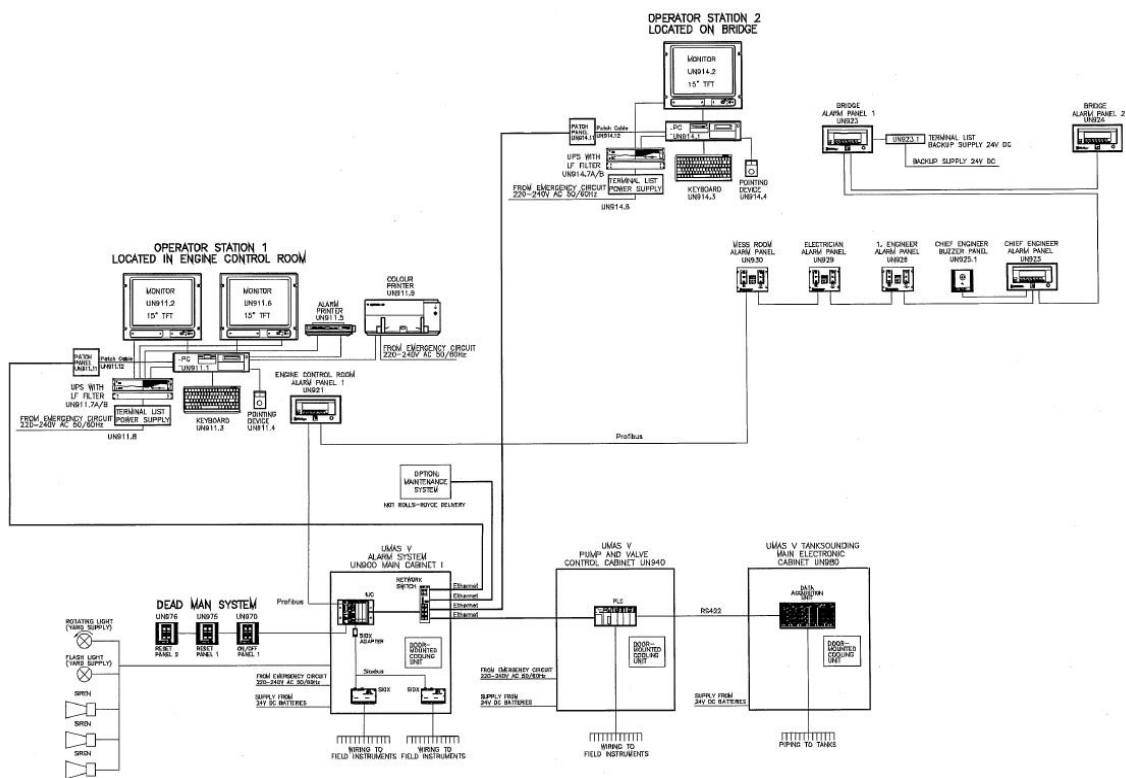




UMAS IAS Retrofit by Høglund

At Høglund Marine Solutions, we steadily receive requests to offer a retrofit solution for an UMAS IAS. The main reason for this is that spare parts for these systems are obsolete and customers are often unhappy with the price level they have been offered by the original supplier.

In order to meet these requests, we at Høglund have evaluated the details and configurations of the UMAS IAS and defined the optimal manner for us to implement a retrofit to our IACS. We have already executed several such retrofits.



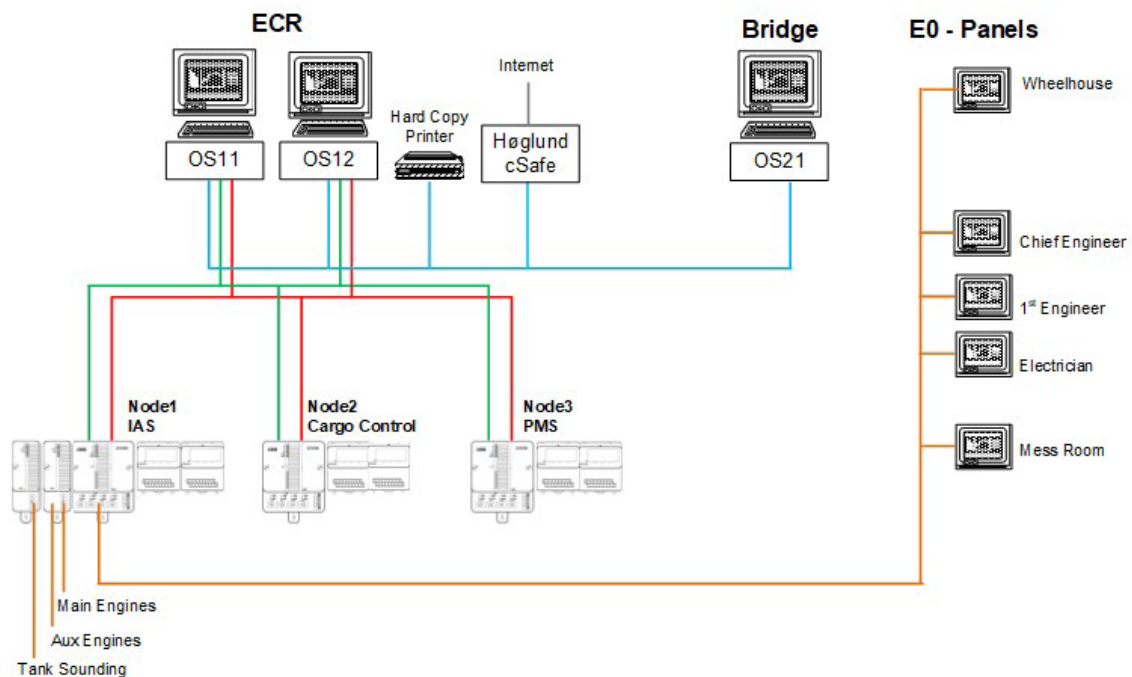
The UMAS IAS comprises of several separate systems:

- Alarm System – handles all alarms & E0 system
- Tank Tender – control of pumps, valves, etc
- Data sound – tank sounding purging cabinet
- Power Management System – often supplied as a stand-alone system



The Høglund approach

- We will install dedicated controllers for Alarm & Tank sounding system, Cargo Control and Power Management (if applicable)
- New ABB S800 IO modules will replace old UMAS hardware
- New Operator Stations with widescreen monitors (if space allows) are installed in ECR and Wheelhouse
- New purge air Data-sounding cabinet is hooked up to Høglund IACS through standard Modbus interface. The new system is self-calibrating
- Existing IO cables are re-used. Markings are updated together with new documentation



Our selling points to customers with UMAS IAS that they are having challenges with, are as follows:

- We offer an improved system, with redundancy, better functionality and lower OPEX
- We offer 5 years warranty on all HW and a lifetime warranty on our SW
- We offer 24/7 remote access for diagnostics, monitoring and upgrades
- We include Høglund Ship Performance Monitor system in our package free of charge
- We include Høglund Playback functions on all operator stations free of charge