

# **Abstract**

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## **SCADA UPGRADING FOR SHIP INTERNAL SYSTEM MONITORING**

This paper introduces the development and upgrading of ship internal system monitoring is based on SCADA technology. The upgraded system covers seven subsystems on the ship, including main propulsion engines, auxiliary generator engines, tanks, controlled pitch propeller, steering gear, bow thrust, and other auxiliary equipment. Each subsystem has its own sensors and actuators, and is also provided with its own Graphical User Interface (GUI) screen including all information, measurements and alarms according to the predefined operating conditions. The developed SCADA system also provides the user with alarm saving and archiving for data logging and reporting facilities. The internal ship subsystems have been briefly illustrated, the old automated system has been discussed and the upgraded system has been implemented using ADAMS interfacing modules and LabVIEW software programming packages. Communication protocols to provide four SCADA networking levels have been discussed and merits of the final upgraded system have been highlighted.