

ABSTRACT

A cargo transfer monitoring system at least comprises at least one vessel motion sensor, one pair of wireless modems, a central data processing unit with decision-making module, a rugged display panel as the operator station, and communication coupling. The cargo transfer operation will be carried out by a crane operator sitting in the crane cabin on the primary vessel. The transfer will take place either from target vessel to primary vessel or from primary vessel to target vessel. The sensor(s) collect the real-time motion of vessels, which is carried over to the central computer through data cable or wireless radio link. The decision-making module predicts the motion of the vessels for a subsequent time period. Based on the predicted value, the decision-making module projects the expected or predicted impact force on the payload if the operation is started at the particular time. If the predicted impact force on the payload is below a predetermined threshold, the system recommends the crane operator to resume the landing operation. The system can predict the motion and hence the rope tension for lifting operations and make similar recommendation to resume the lifting operation if the predicted rope tension falls below a predefined threshold.

(Figure 1)