

Abstract

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Future Voyage Data Recorder Based on Multi-Sensors and HumanMachine Interface for Marine Accident

Voyage data recorders (VDR) enable accident investigators to review procedures and instructions before an incident; help to identify the cause of any accident. The Future data recording should be capable of recording data audio and video during day and night. The recording should be of high integrity, digital as well as independent of ship supplies. Voyage data recorder, popular name black-box, is used for recording all kinds of navigation information. VDR is a data recording system designed for all vessels required to comply with the International Maritime Organization IMO's International Convention safety of life at sea SOLAS requirements (IMO). Data from various sensors on board the vessel is collected, digitized, compressed and then stored in an externally mounted protective storage unit. The protective storage unit is a tamper-proof unit designed to withstand the extreme shock impact, pressure and heat, which could be associated with a marine incident (fire, explosion, collision, sinking, etc). This research realizes the importance of obtaining these stored data for accident analysis. This paper considers a real case accident, by downloading and replaying the data of real black box for a sunken ship in the red sea. Eventually, video recorded data of the accident will be more helpful to the investigation.