

MAN OVERBOARD DETECTION

VIDEO-BASED FALL DETECTION

Man Overboard events continue to be a common occurrence in the cruise industry and other related markets. The problem is compounded by the fact that when these events occur the timely availability of important data is missing. Accurate confirmation of the event including, time of occurrence, location on the ship and location in the sea is critical, but is often unavailable for hours following an occurrence, if at all. Fortunately, proactive detection systems, such as the Man Overboard Detection System from PureTech Systems®, can accurately detect man overboard events and provide immediate, actionable data to response personnel.

ACCURATE VIDEO DETECTION

The system utilizes commercially available infrared imagers combined with geospatial video analytics from PureTech Systems®, which not only provide instant visual proof of an event, but also achieves detection rates above industry benchmarks in various ranges of sea states and weather conditions. Detection coverage encompasses the length of ship, including all passenger floor levels and is accurate for both cold and warm water cruise routes.

FIELD TESTED FOR LOW FALSE ALARMS

Almost as important as detection accuracy, false alarms from weather conditions and cruise operations, can minimize the effectiveness of detection systems. The Man Overboard Detection System has undergone real-world testing on board superliner-class cruise ships using industry-developed guidelines along established cold water and warm water cruise routes. The system is affordable and testing demonstrated positive results including minimal false alarms, and very high detection rates.

SITUATIONALLY AWARE USER INTERFACE

Use of geospatial data within the detection algorithms allows for a user interface that is easy to understand and simple to use. In situations, such as man overboard events, providing a high level of situational awareness aids first responders in gaining a full understanding of the event as quickly as possible. This is achieved through geolocation of the alarm location, instant access to detection images, looping videos of the event, as well as audio notification. The system includes a full alarm database and video playback capability.

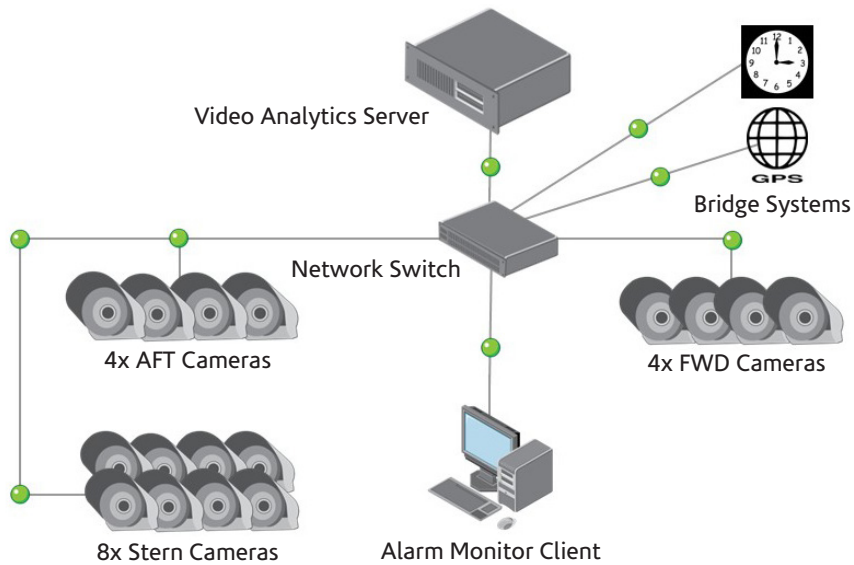


BENEFITS

- Patented Automatic Detection of Man Overboard Events
- Detection Rates Above Industry Benchmarks Over Wide Variations in Sea State and Weather Conditions
- Very Low False Alarm Rate
- Instant Video Validation of Event for Immediate Action
- Reporting of Event Latitude and Longitude (i.e. Location in the Sea)
- Fall Origin Guidance (i.e. Location on the Ship)
- Alarm and Video Retention and Review
- Situational Presentation of Incident Data to Decision Makers
- In-Service Installation



SYSTEM ARCHITECTURE DIAGRAM



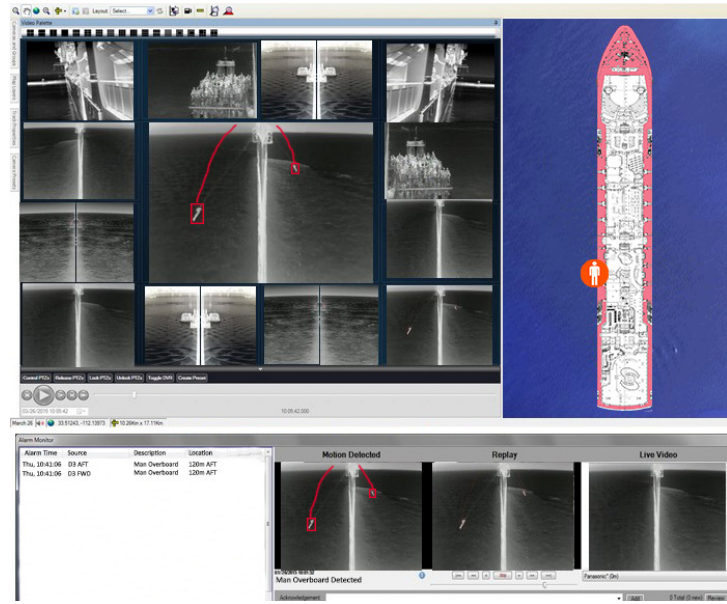
SYSTEM COMPONENTS

- Overlapping Thermal Cameras
- 16 Cameras For Superliner Coverage (*typical*)
- Rack Mounted Server
- Man Overboard Detection Software
- Alarm Notification and Video Review Software
- Video Encoding (H.264 Video)

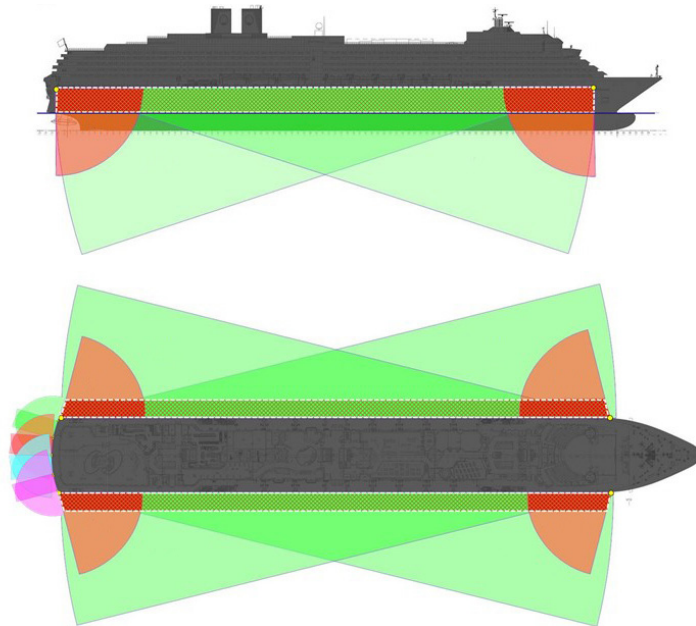
FEATURE HIGHLIGHTS

- Advanced Video Analytics Filter Out Background Motion (Clouds, Water, Birds)
- Automatic Generation of Alarm with Instantaneous Looping Video
- Location of Overboard Event Computed Along Ship's Length
- Video Recording and Playback
- Multiple Means of Alarm Notifications (Client Software, Email, Audible Alarm)
- Applicable to All Ship Classes
- No Floor Height Limit.
- 9m Side Detection Range (including angle of list)
- Drone Integration Capability – Automatic Search and Rescue Dispatch with Live Video

USER INTERFACE



CAMERA COVERAGE



VIDEO BASED DETECTION

