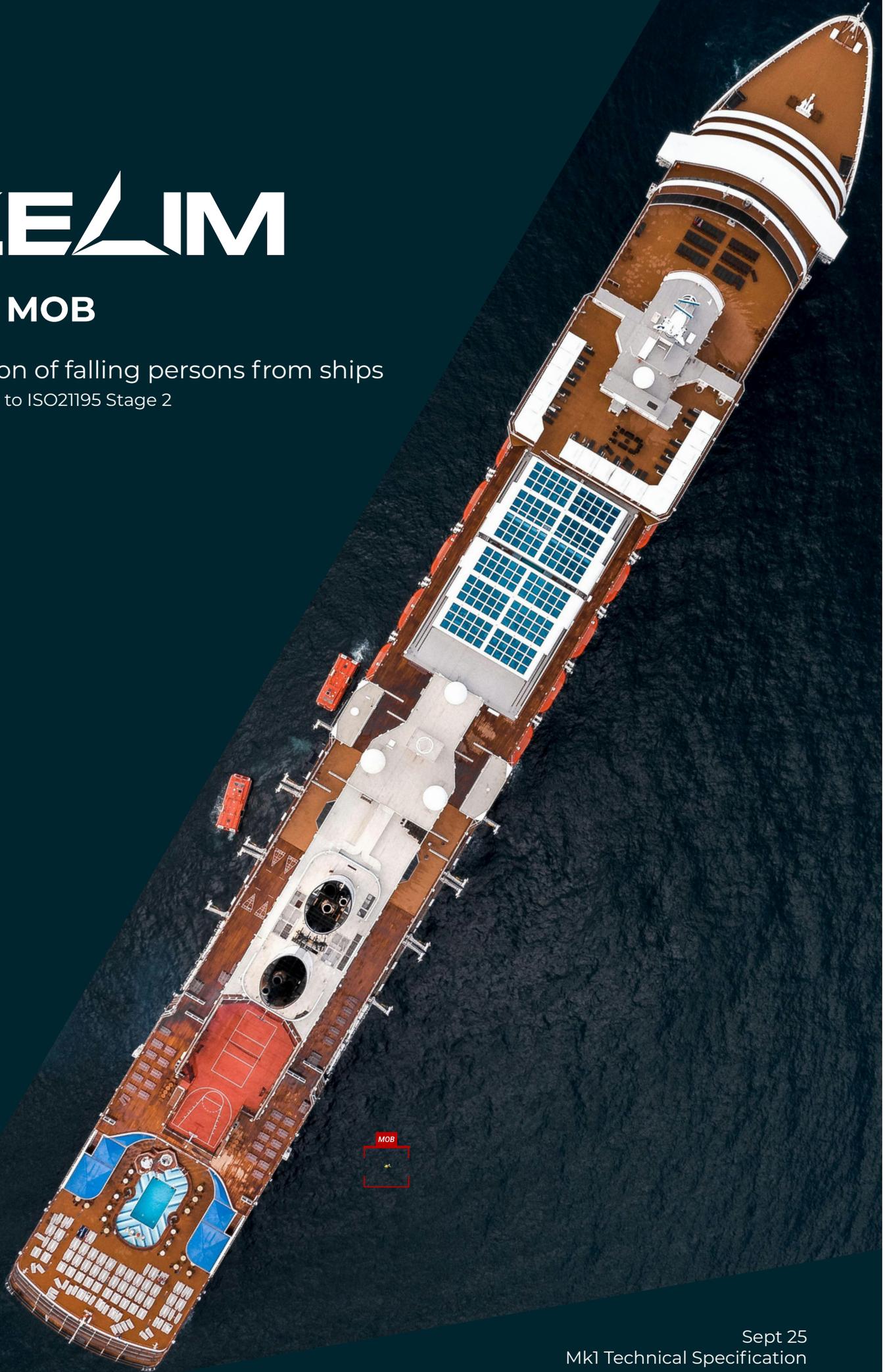


# ZELIM

## ZOE MOB

Detection of falling persons from ships  
Compliant to ISO21195 Stage 2



Sept 25  
Mk1 Technical Specification

## Product description

ZOE MOB is a camera-based system for up-to 360° detection of MOB events around the periphery of large ships. ZOE MOB can be scaled to accommodate different shapes and sizes of vessels using variable camera numbers to provide effective coverage around the vessel. MOB events trigger visual and audible alerts on the bridge of the vessel via a bespoke interface and offer full replicability of the event trigger.

## Product features

- > Combined EOIR networked cameras to be installed around the periphery of the vessels.
- > Centralized processor to run real-time AI models for MOB detection. Models run concurrently on EO and IR streams from all cameras to offer detections through fog and at night.
- > Audible and visual alerts on the bridge or safety centre.
- > Utilises NMEA sentences for GNSS logging of MOB events.
- > Utilises AIS information from the host vessel to ensure operation whilst underway.
- > All data is recorded for audit and review.
- > Standalone or integrated on the ship's network.
- > Compliant to ISO21195 MOB standard (stage 2).

## Cameras

A single housing encompasses both a CMOS EO sensor at 30fps and a microbolometer LWIR sensor (640 x 512 px) at 30fps. Both sensors serve h264-encoded frames on the local network to a centralized processor. Variable focal lengths to suit maximal coverage.



Mass	Width	Depth	Length
4.0kg	329mm	159mm	81mm

## Characteristics

- > Dual LWIR + RGB camera
- > LWIR (7.5µm to 13µm) 640 x 512 pixels
- > PoE networking

## Detection performance

AI model detection expected performance

	FoV	Adult (min)	Adult (max)	Baby (min)	Baby (max)
9.1mm thermal (tilt 18°)	<b>45.7° x 37.3°</b>	<b>11m</b>	<b>52m</b>	<b>11m</b>	<b>20m</b>
RGB (no zoom) (tilt 18°)	<b>54° x 30°</b>	<b>13m</b>	<b>84m</b>	<b>13m</b>	<b>33m</b>
RGB (2x zoom) (tilt 7°)	<b>27° x 15°</b>	<b>34m</b>	<b>171m</b>	<b>34m</b>	<b>66m</b>
25mm thermal (tilt 7°)	<b>17.4° x 14°</b>	<b>36m</b>	<b>150m</b>	<b>36m</b>	<b>58m</b>

Table 1: ZOE MOB Falling Person Detection Ranges. Detection range assumes an adult of 1.8m and a baby of 0.7m in height, falling vertically from a distance of at least 9 metres. These detections are assumed to occur under ideal conditions

## Processor

NVIDIA GPU-enabled AI-inference server.

Mass	Width	Depth	Height	Rack units
Up to 36.1kg	483mm	772mm	86mm	2U

## Storage array

Data storage server. Up to 30days full resolution data storage (compliant to ISO21995).

Mass	Width	Depth	Height	Rack units
Up to 32kg	483mm	618mm	88mm	2U

## User terminal

Fully dimmable touchscreen with integrated speakers for audible MOB alerts (compliant to ISO21995).

Mass	Width	Depth	Length
7.6kg	590mm	49mm	366mm

## Other peripherals

- > Remote connectivity via Starlink or an LTE solution to allow remote support and model/software upgrades.
- > Integration with GNSS/AIS via NMEA. can be installed standalone or integrated with the vessel's own hardware.
- > Networking backbone to support camera array connectivity to inference server and PoE if appropriate (to be assessed on a case-by-case basis).

## Vessel sizes

Larger vessels require more camera coverage. The below table approximates the number of cameras needed on different vessel sizes. These numbers are a guide and will vary depending on the exact vessel

	Up to 100m	Up to 200m	Up to 300m
Approx no. of cameras	16	20	24

## Example MOB UI

UI showing 16 MOB feeds

