



# USING AI FOR AUTOMATIC MOB DETECTION TO ENHANCE RIG SAFETY

A VALARIS & ZELIM PROJECT CASE STUDY

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# INTRODUCTION TO ZELIM

## BEYOND HUMAN CERTAINTY

- Automated alerting
  - Safety of navigation
  - Tracking threats to life
- 
- **Our Purpose:** To save lives and protect operations in the oceans, coastlines and waterways around the world, with technology that goes beyond human limitations.
  - HQ, Edinburgh Scotland



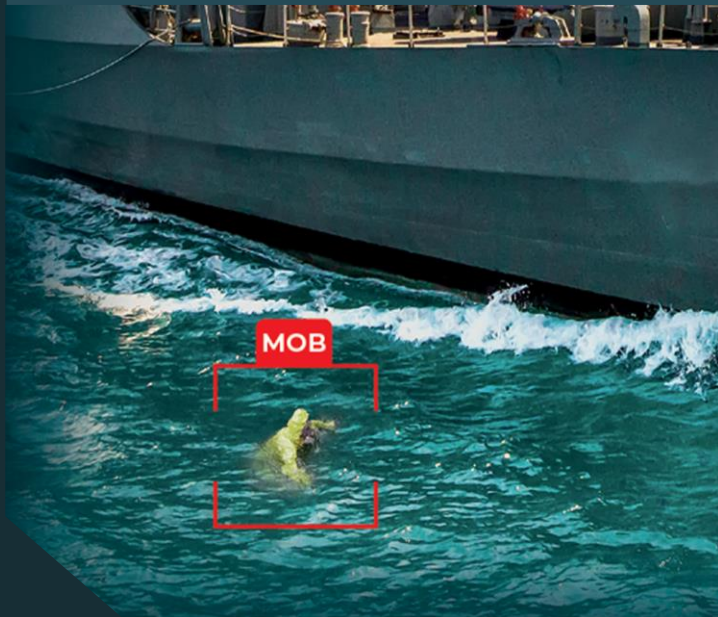


# ZOE INTELLIGENT DETECTION

BEYOND HUMAN SIGHT

## MOB

Automatic detection, tracking  
and alerting



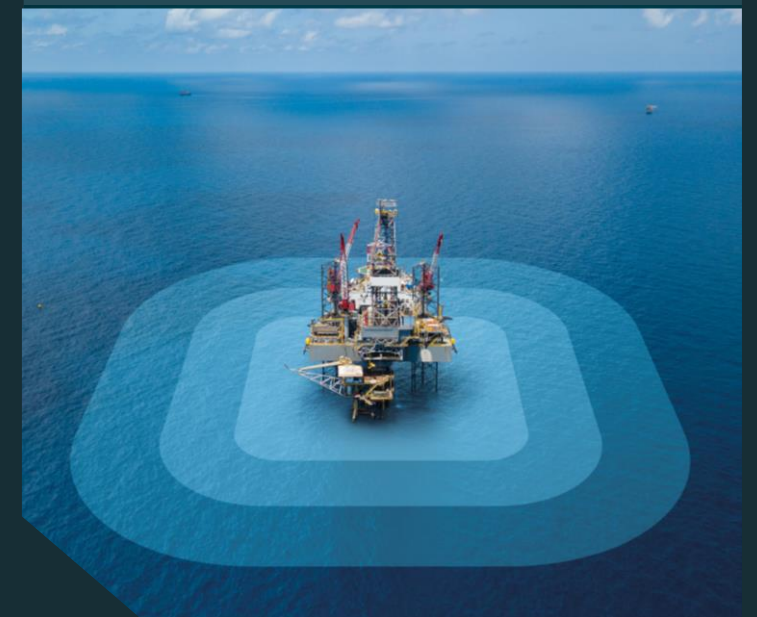
## Lookout

Safe navigation



## Lookout+

Security threat detection



The logo for ZELIM is rendered in a bold, white, sans-serif typeface. The letter 'Z' is composed of three thick, parallel strokes. The 'E' follows in a similar bold style. The 'L' is a single, thick vertical stroke with a horizontal base. The 'I' is a thick vertical stroke, and the 'M' is formed by two thick vertical strokes connected at the top by a horizontal bar. The entire logo is centered horizontally against a background of dark, choppy water.

**ZELIM**

FIND  RECOVER  PROTECT



# ZOE MOB

## AI-POWERED DETECTION, ALERTING & TRACKING OF MAN-OVERBOARD EVENTS

**When every second counts, ZOE MOB gives crews the vital “where and when”**

- Proven with Valaris 99.9% uptime.
- Real-time automated detection and alerting of crew members that fall overboard.
- Precise tracking & geo-location information
- Detection rate of 96.8%, surpassing conventional standards.
- Persistent performance, day or night, good weather or bad weather



**ISO21195 Approved  
MOB Detection**



**AI models built on  
proprietary dataset of  
7.5m labelled rescue  
images**



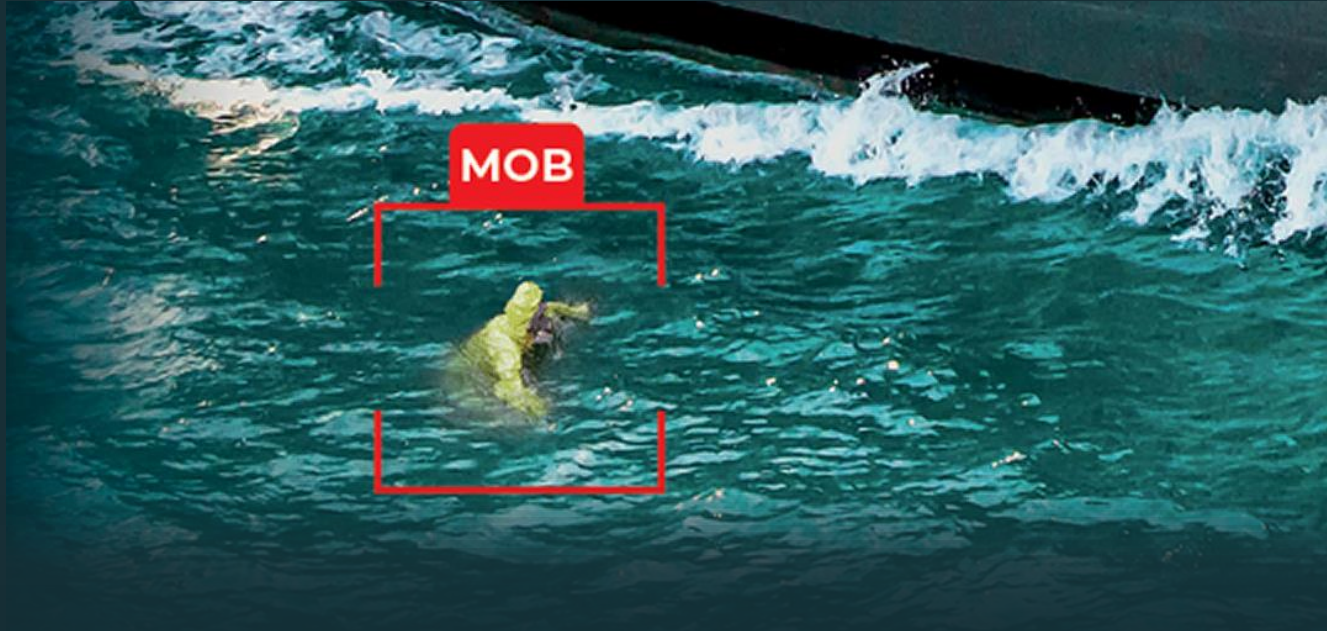
**Delivers detection  
and tracking in the  
harshest offshore  
environments**







**British Safety  
Council's 2025  
Health and Safety  
Transformation Award**

# BENEFITS OVER TRADITIONAL DETECTION METHODS









Extreme weather, poor visibility, and human fatigue mean even the best crews can miss a person in distress. Zelim's technology changes the odds.

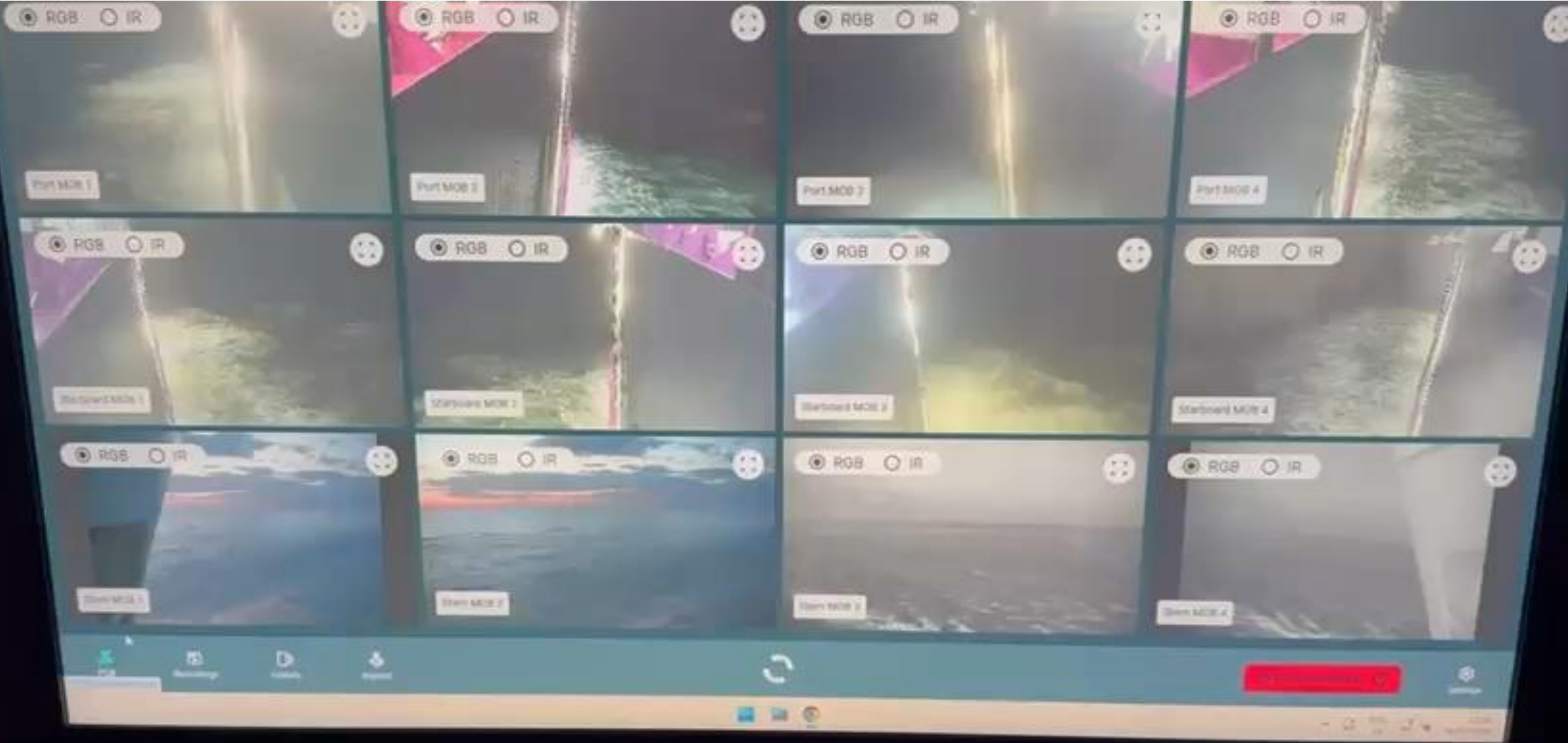


## Key maritime detection and surveillance challenges

	Vessel crews still heavily rely on the human eye, either on screen or by <b>scanning the sea surface</b> .
	<b>Extreme weather and sea spray</b> drastically reduce visibility, making it easy to miss hazards or people in the water
	<b>Radar/AIS systems miss low-signature objects</b> , such as unmanned surface vessels (USVs), RIBs or persons in water
	80% of deaths in the water occur in the <b>first 30 minutes</b> .

## ZOE: Overcoming key challenges & providing significant benefits

	<b>Automatic detection, tracking and alerting</b> of persons in the water.		Not affected by <b>distraction fatigue, or workload</b> .
	Human searcher proven to be less than 20% effective. ZOE achieves <b>&gt;95% detection accuracy</b> .		<b>Reduces crew workload</b> and improves decision-making in high-pressure environments.
	Instantaneous detection <b>saves valuable time</b> during search and rescue.		<b>Detections are logged</b> with time and location stamps and <b>stored indefinitely</b> .
	<b>Performs in bad weather</b> , including through fog, sea spray, and darkness.		Defined event <b>action plan</b> for users in emergencies.





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# Person overboard

In-water detection





# ISO 21195: MAN OVERBOARD DETECTION

ISO21195:2020 requires that man overboard detection systems should have a minimum 95% detection probability and generate no more than one false alarm per day on average.

Stage 1: Documentation and design test

COMPLETED

Stage 2: Controlled environment testing

COMPLETED

98.3% detections from 118 test drops  
(ISO minimum: 95%)

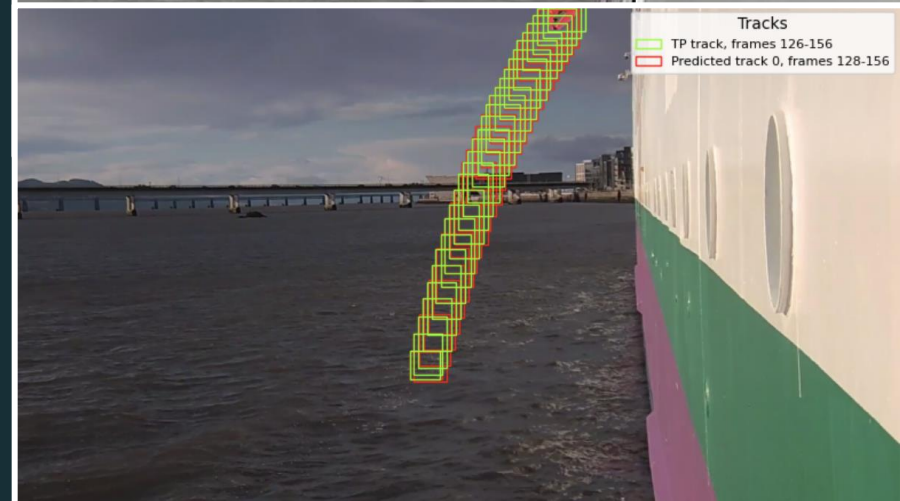
Stage 2: Product demonstration

COMPLETED

Stage 3: Live environment testing

IN PROGRESS

ISO21195 Type Approval



Tracks  
TP track, frames 126-156  
Predicted track 0, frames 128-156



# ZOE LOOKOUT+

## 360-DEGREE PERIMETER SECURITY THREAT DETECTION

- Full perimeter security with automatic detection, classification, tracking and alerting in real-time of potential security threats within 500m zone.
- Monitors static and dynamic hazards on the water surface, from horizon to vessel periphery.
- Detected objects of interest are annotated on the video stream and alerted to the operator should they present a hazard to the asset.
- All indications, alerts & actions taken by users, are logged as events and available for review with supporting imagery.



**360° perimeter  
security threat  
detection**



**Integrates with  
existing systems**



**Performs reliably in  
the harshest offshore  
environments**



**Safeguards  
high-value  
assets & personnel**



Bow

Stern

Port

F.Port

Bow

F.Starboard

Starboard

Day

Low visibility



Forward

360°

Zoom in

Zoom out





PARTNERSHIPS  
WITH LEADING  
INSURERS



Gallagher

Insurance | Risk Management | Consulting

MARINE INSURANCE

# ZELIM ARE CHANGING THE GAME

Real-time detection.  
Smarter rescues.  
Safer seas.

In association with

**ZELIM**

**ZELIM**



THANK YOU



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