



detect and protect

ERVO 2023

A Polar Bear Warning System

Natalia Betancourt, Strategic Product Manager HENSOLDT

Online: Bruce de Bies and Frank Kehrer

Stockholm, 13th of June 2023

Topics to share with you today

- Human-animal conflict
- Vision: support system
- Hensoldt introduction
- Technical solution
- Future system updates
- Trials (EGRIP, PBI Churchill, Denmark,)
- Polarstern expedition

Ice is melting and more polar bears lose their habitat



Image source: Discover the world



Image source: 4.bp.blogspot.com

Climate change is only going to make these negative interactions between humans and wildlife more common



Image source: Brigitte.de



Image source: WWF

Our motivation



Over **60 polar Bears** killed due to conflicts with humans in 2021*



Over **10 humans** killed or injured by polar bears from 2018-2021*



The numbers are increasing from year to year

Image source: faz.net

* PBI 2022

Our Vision

Using the knowhow in the defence industry to contribute and reduce conflict...



With high-end Technology, we secure research-operations

About us



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Norway
Oslo

Netherlands
Rotterdam

France
Toulouse, Plaisir, Massy,
La Couronne, Epreville

United Kingdom
Enfield

Spain
Madrid

Canada
Ottawa, Toronto

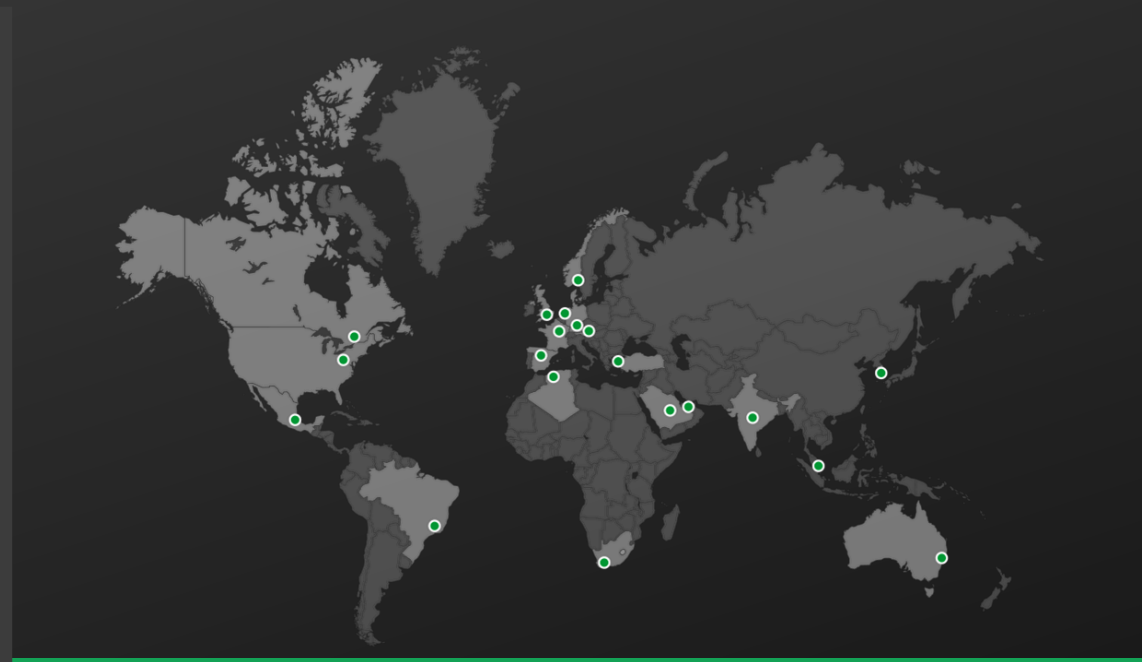
USA
Vienna, VA

Mexico
Mexico City

Algeria
Sidi Bel Abbès

Brazil
São Paulo

South Africa
Pretoria, Irene, Cape Town



Germany
Taufkirchen, Oberkochen,
Friedrichshafen, Ulm, Pforzheim,
Cologne, Berlin, Wetzlar, Koblenz,
Kiel, Wilhelmshaven

Denmark
Ballerup

Austria
Vienna

Turkey
Ankara

South Korea
Seoul

India
Bangalore

Singapore
Singapore

Australia
Canberra, Newcastle,
Adelaide, Hobart

United Arab Emirates
Abu Dhabi

Saudi Arabia
Riyadh

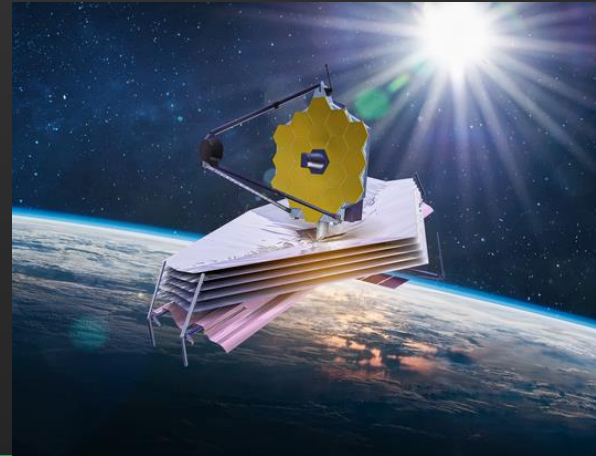
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Some of our products

German roots, a European presence and a global footprint



Use cases in wildlife protection



Protection of Abalone in South Africa

Situational Awareness to prevent the illegal harvesting of the strictly protected sea snail.

Systems deployed in Cape Town detecting promptly poachers that approach the coast line

Cape Nature, Police & Department of Forest



Situational Awareness for

polar protection

Detection of people and polar bears at a distance of ~3.4 km in harsh weather conditions -30°C

1 system deployed in the framework of the East Greenland Ice-core Project

PBI Churchill

University of Copenhagen and PBI



Protection of Rhinos in

South Africa

Early warning and Surveillance to protect rhinos from poachers in high risk areas

13 fixed systems deployed on site generating information 24/7 for rangers

„Buffalo Dream Ranch“

The product

Rapid deployable system in remote areas



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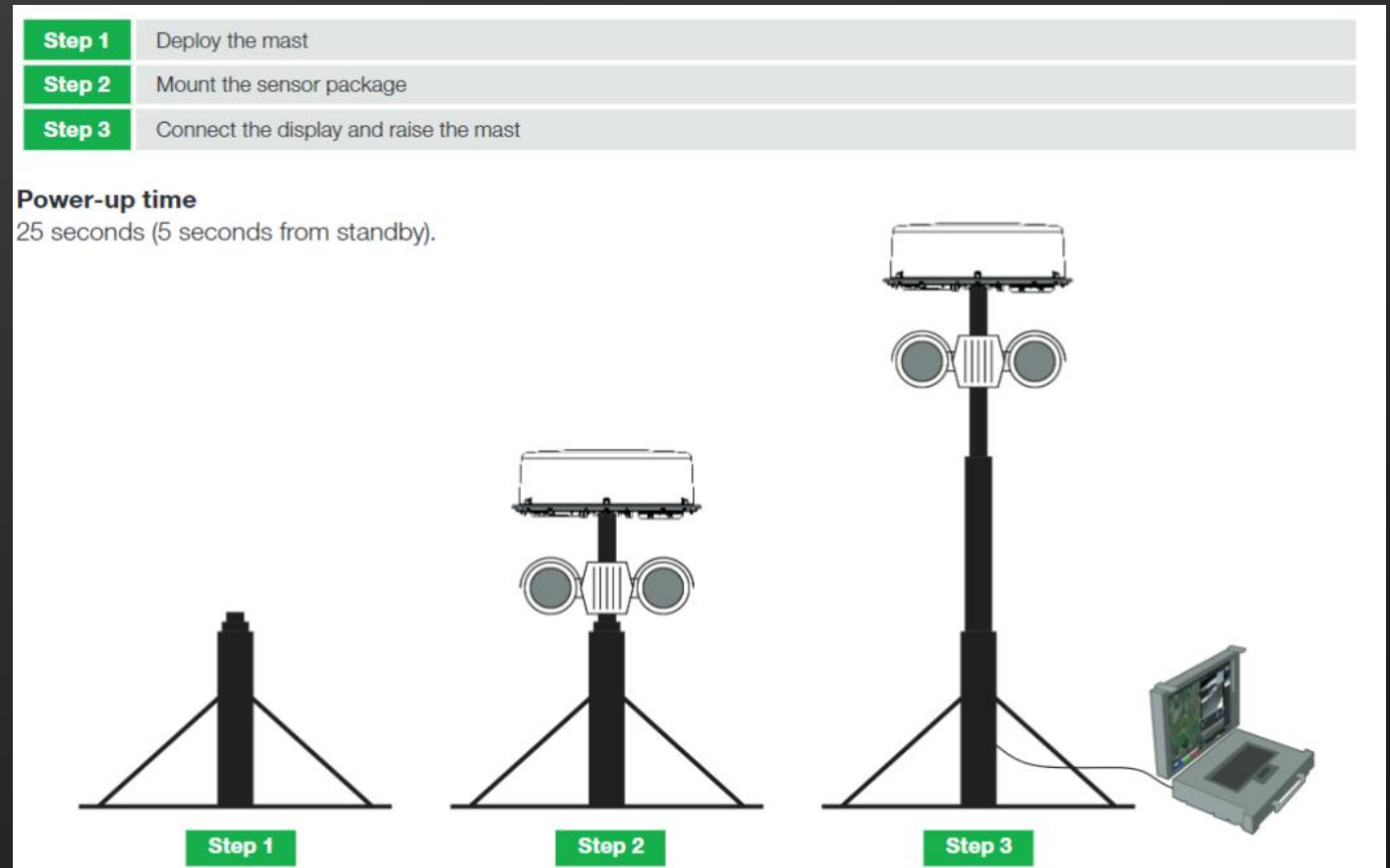


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Easy to use, reliable under harsh environments

- ⇒ 360° perimeter protection 24/7 on the research camp
- ⇒ Operational at -30°C
- ⇒ Few visual reference points, whiteout and difficult navigation
- ⇒ Alarm zones and recording functionality
- ⇒ Movement within a circle of 2.2km does not generate an alarm. Movement outside does up to 3.5km away from dome



Software with radar tracks and live video

- ⇒ If someone gets lost the last known position can be quickly identified
- ⇒ Walking person detection at 3.4 km and Airplane at 16 km
- ⇒ Not affected by snow and high winds
- ⇒ Main USP: capability of detecting small or low moving targets in severe weather conditions at longer ranges than similar approaches to radar design



EGRIP - East Greenland Ice Core Project

Implementation of radar technology to increase camp safety

24/7 situational awareness of the camp and the perimeter

operational in temperatures as low as minus 30°C

Cooperation with Niels Bohr Institute at University of Copenhagen



PBI cooperation

AI enhancement, annotations and database extension



Polar Bears & the Changing Arctic

What We Do

Education Center

News & Media

Act Now

Without you, there is no them.

Help protect one of the world's biggest, most-vulnerable species and their habitat.

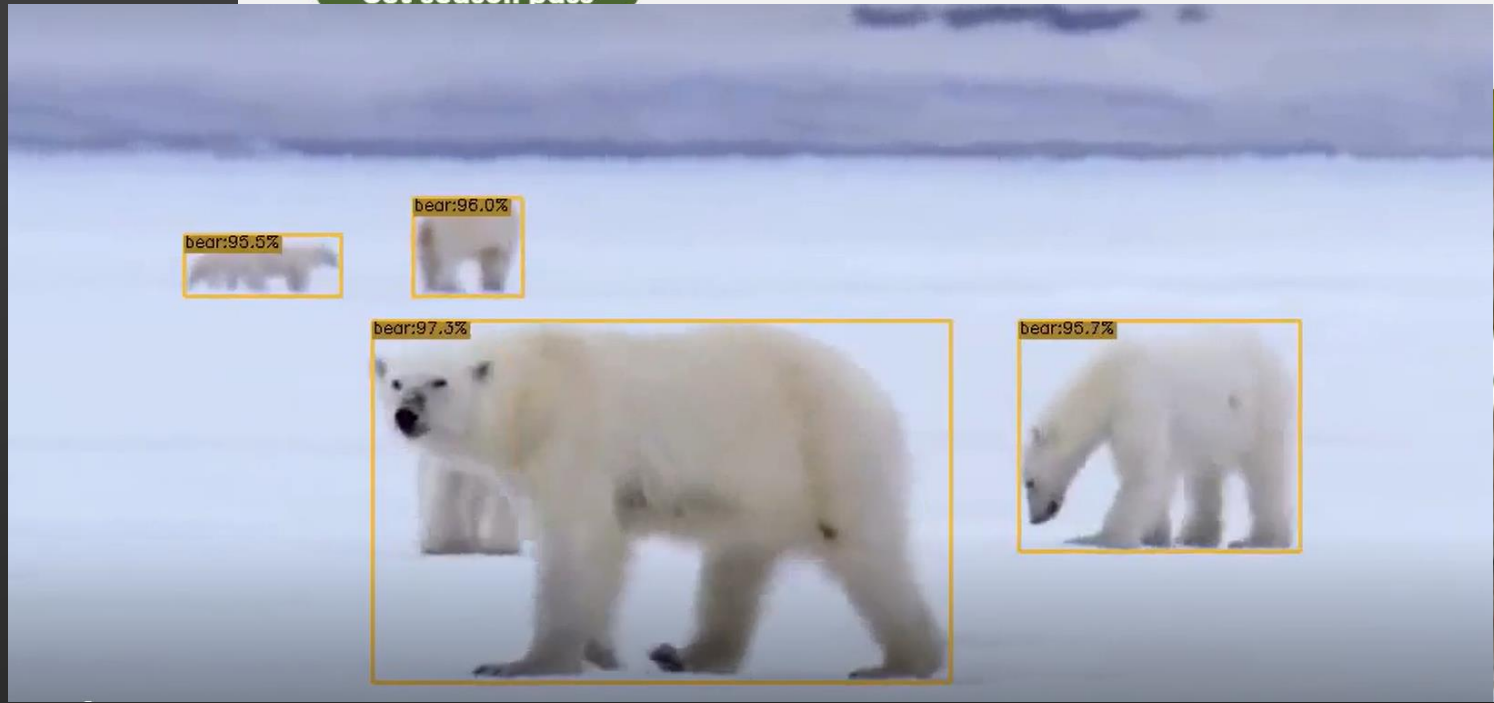
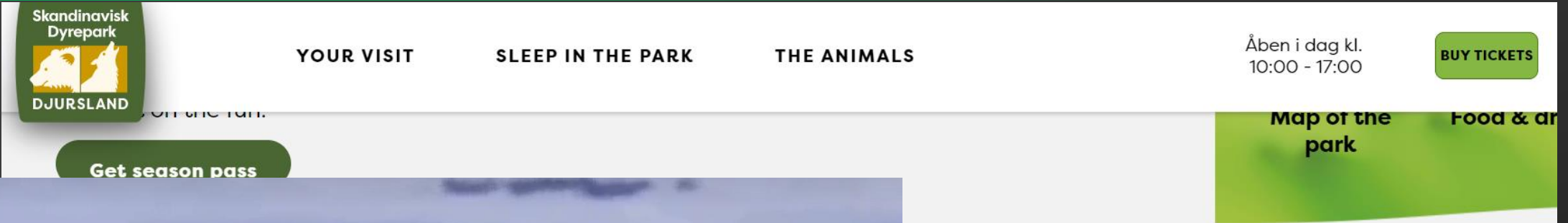
[Learn About the Bears](#)



[Dive in deeper](#)

Denmark image collection for AI development

AI enhancement, annotations and database extension



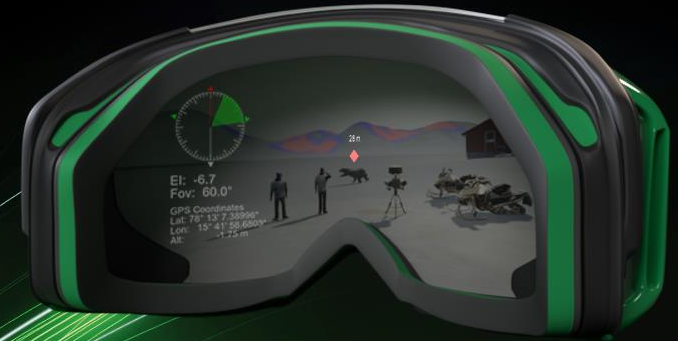
Virtual reality technology

Enhanced user experience and protection to other endangered species



[2023 04 14 SAMARitan MVP - YouTube](#)

SAMARitan®
saves lives.

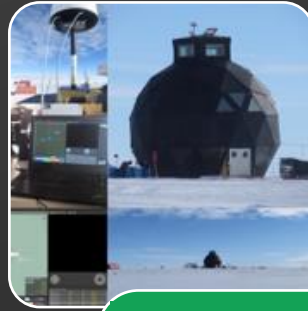


Our path and way ahead



Spexer360

- 360° surveillance
- 24/7 situational awareness
- Export Regulation
- Logistics



EGRIP Greenland

- Installation on a ice sheet
- Securing a camp of scientists
- Test phase under extreme poor weather conditions for 2 years



Evaluation Manitoba Churchill

- Cooperation with PBI
- Data analysis and research
- Onshore operation



Polarstern - Arctic Expedition

Adding value to researchers and crew by providing polar bear situational awareness

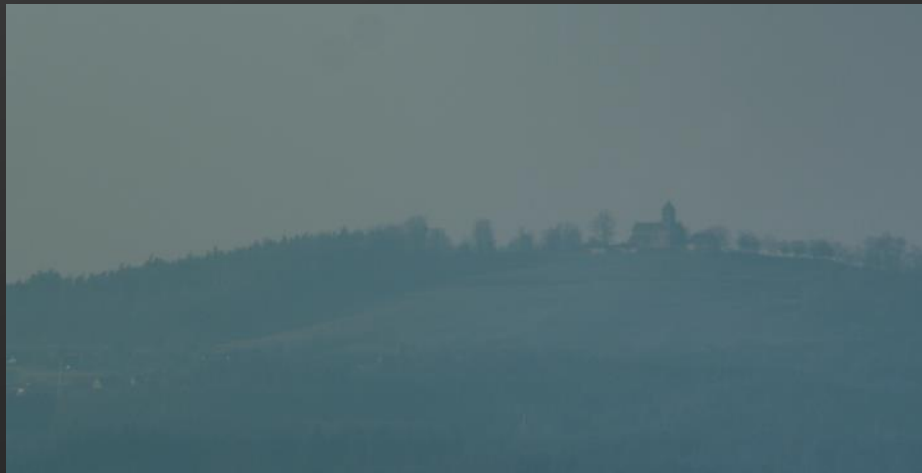
SWIR

Z:NightOwl ZM / Z:NightOwl ZM-ER – SWIR capability

Enhanced Vision on long range and reduced visibility



VIS 1920

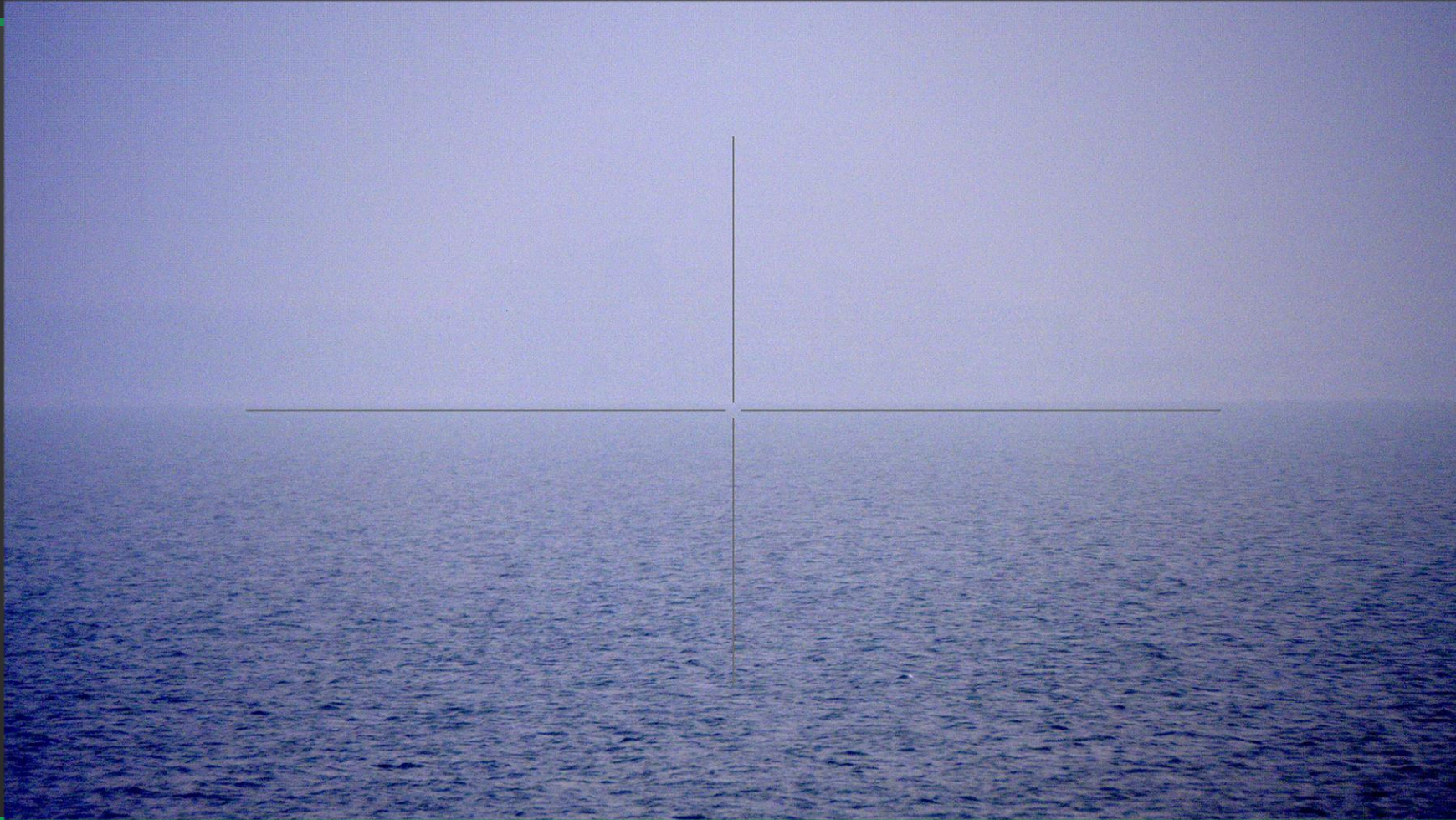


SWIR 640



Visual Observation Capability

SWIR



Z:NightOwl ZM / Z:NightOwl ZM-ER – SWIR capability

Enhanced Vision on long range and reduced visibility



Z:NightOwl ZM / Z:NightOwl ZM-ER – SWIR capability

Enhanced Vision on long range and reduced visibility



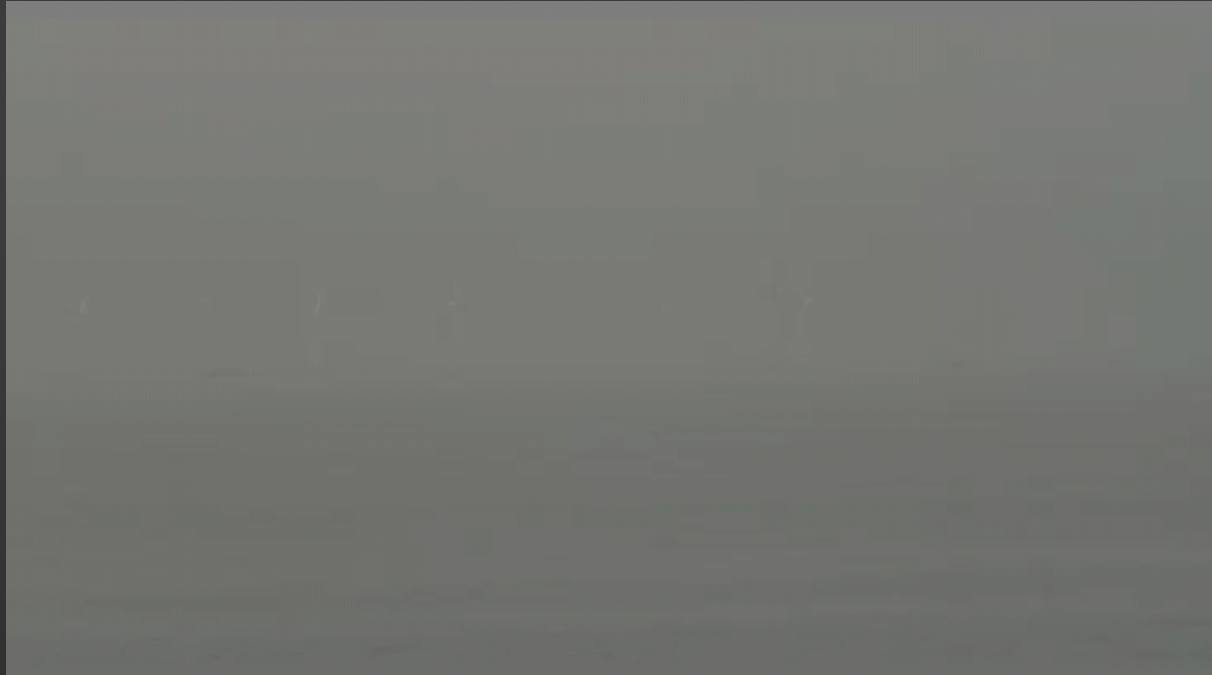
Z:NightOwl ZM / Z:NightOwl ZM-ER – SWIR capability

Enhanced Vision on long range and reduced visibility



Z:NightOwl ZM / Z:NightOwl ZM-ER – SWIR capability

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Thank you for your attention!