

**FURUNO**

**FURUNO  
SYSTEM SOLUTION**

**INAMARINE 2018  
JIEXPO KEMAYORAN, JAKARTA**

**PT FURUNO ELECTRIC INDONESIA**

# OUTLINE

- ◆ INTRODUCTION
- ◆ FURUNO BUSINESS CORE
- ◆ COASTAL MONITORING SYSTEM
- ◆ OIL RADAR

## Outline of FURUNO

Since commercializing the world's first fish finder in 1948, FURUNO has supplied many types of products for the marine electronics market. By using its exclusive knowledge of ultrasonic and electronics technologies, FURUNO has developed a great variety of products that have been world firsts and Japan firsts.

**Especially, FURUNO produces several tens of thousands of marine radars a year and holds a share of over 40% of marine radar in the world.**

As of Feb 29, 2016



<b>Company Name</b>	FURUNO ELECTRIC CO., LTD.
<b>Headquarters</b>	Nishinomiya City, Hyogo, Japan
<b>Incorporated</b>	May 23, 1951
<b>Business</b>	Manufacturing and sale of maritime and industrial electronic products
<b>Paid-in Capital</b>	¥7,534 million
<b>Number of Employees (Consolidated)</b>	2,905
<b>Net sales</b>	¥89,720 million
<b>President</b>	Yukio Furuno

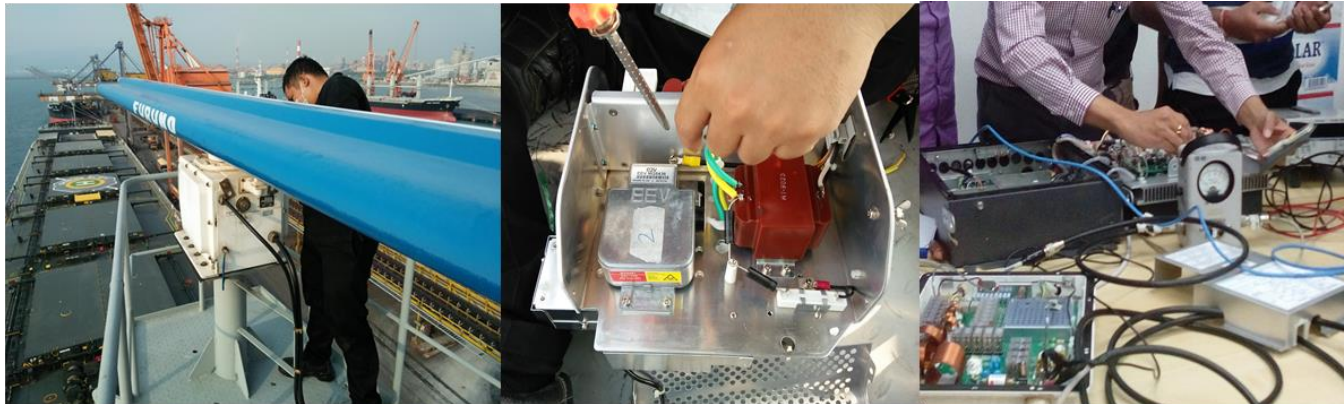
# PT FURUNO ELECTRIC INDONESIA

- Commence Operation since January 2017
- Subsidiary of FURUNO SINGAPORE PTE LTD and FURUNO ELECTRIC CO., LTD
- Provide reliable and high-quality marine navigation and communication products, as well as fishery, industrial, medical and system solution products
- To strengthen and improve after sales service in Indonesia



## PT FURUNO ELECTRIC INDONESIA

Address: Cowell Tower, 8<sup>th</sup> Floor  
Jl. Senen Raya No.135  
Central Jakarta 10410  
DKI Jakarta



## After Sales Service Activities of FID:

- Installation
- Reparation
- Software Update
- Short training onboard for operator
- ECDIS Training
- Helping Warranty Claim Process
- Assist the service process in overseas



**FURUNO WARRANTY CLAIM FORM** WCF No. \_\_\_\_\_

Ship:  MS  MV Flag: \_\_\_\_\_

Equipment: Model \_\_\_\_\_ Serial No. \_\_\_\_\_

Voltage \_\_\_\_\_ Date of Installation \_\_\_\_\_

Registration Card No. \_\_\_\_\_

Symptoms: \_\_\_\_\_

Engineer's report: \_\_\_\_\_

Parts used for repair: \_\_\_\_\_ Code No. \_\_\_\_\_

P.C. Board Exchanged:

Type:  White Program No.  Green

Type:  White Program No.  Green

Type:  White Program No.  Green

Note: Please specify both white and green type nos. printed on both side of P.C. board, if service nos. is different each other.

Parts Deposition:

Parts were used from Agent's stock. Please send replacement parts.

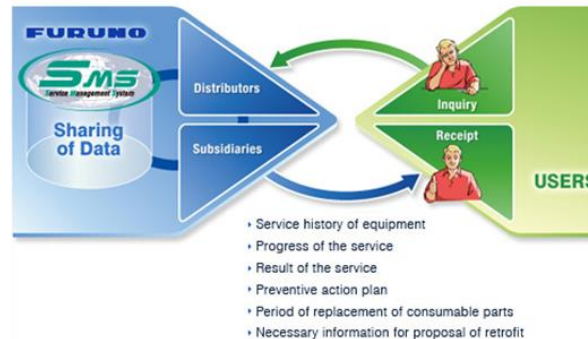
Agent's Order No. \_\_\_\_\_ Engineer's Signature \_\_\_\_\_

Replacement parts already received from Furuno.

Invoice No. \_\_\_\_\_ Date \_\_\_\_\_

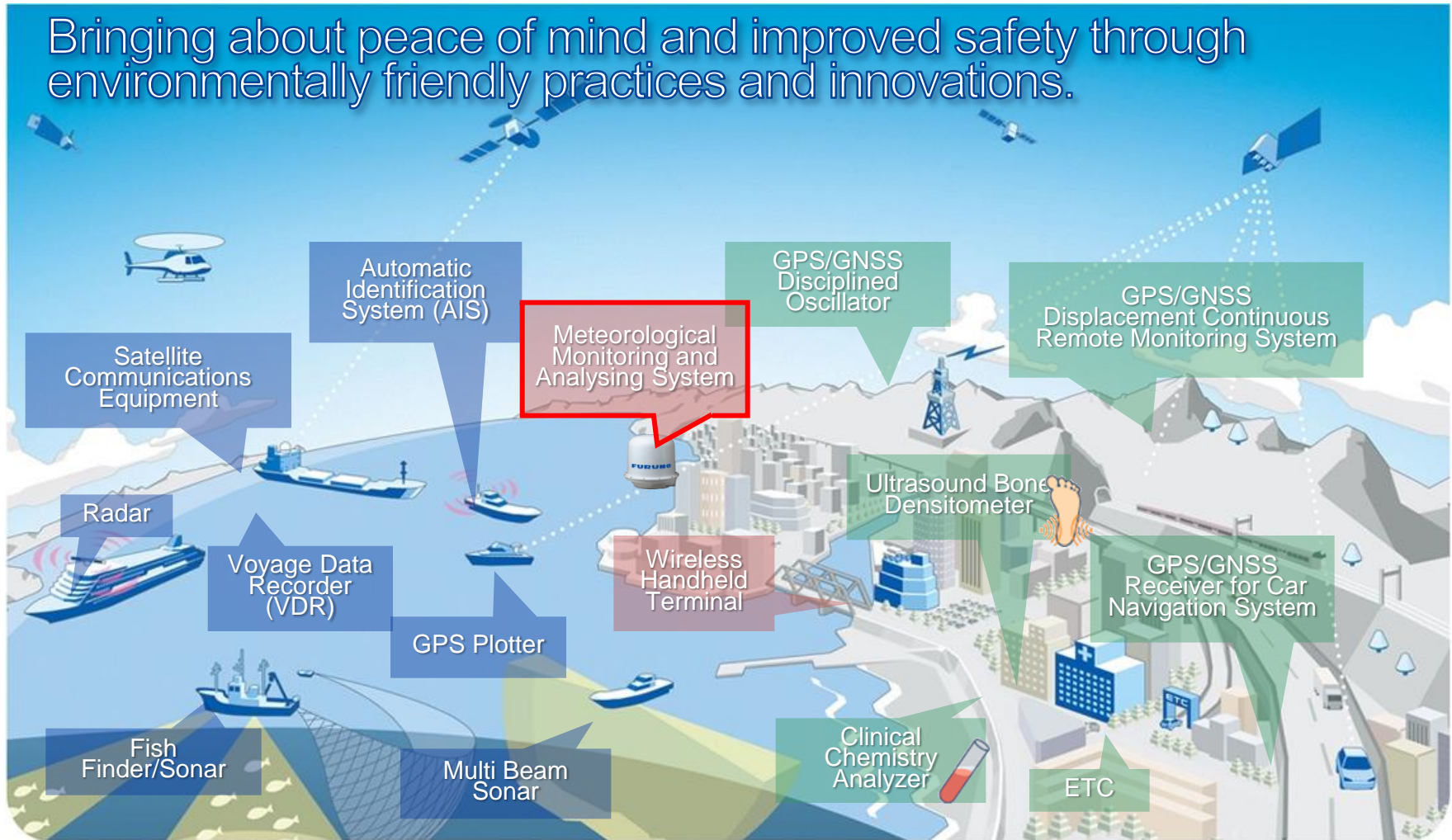
Please attach provided "DEFECTIVE PARTS REPORT" to defective parts returned to Furuno Japan as well.

**FURUNO ELECTRIC CO., LTD.** 9-52, Ashihara-cho, Nakamunya, 962-8580, Japan. Phone: +81-798-63-1075, Fax: +81-798-63-1077



## FURUNO's Business Fields

Bringing about peace of mind and improved safety through environmentally friendly practices and innovations.



# Applications of Surveillance Radar For Coastal Monitoring System



FURUNO is capable of designing effective Coastal Monitoring Systems by combining various systems including surveillance Radar, Coastal Radio Stations, AIS and Surveillance Cameras together with a variety of alert information

# FURUNO





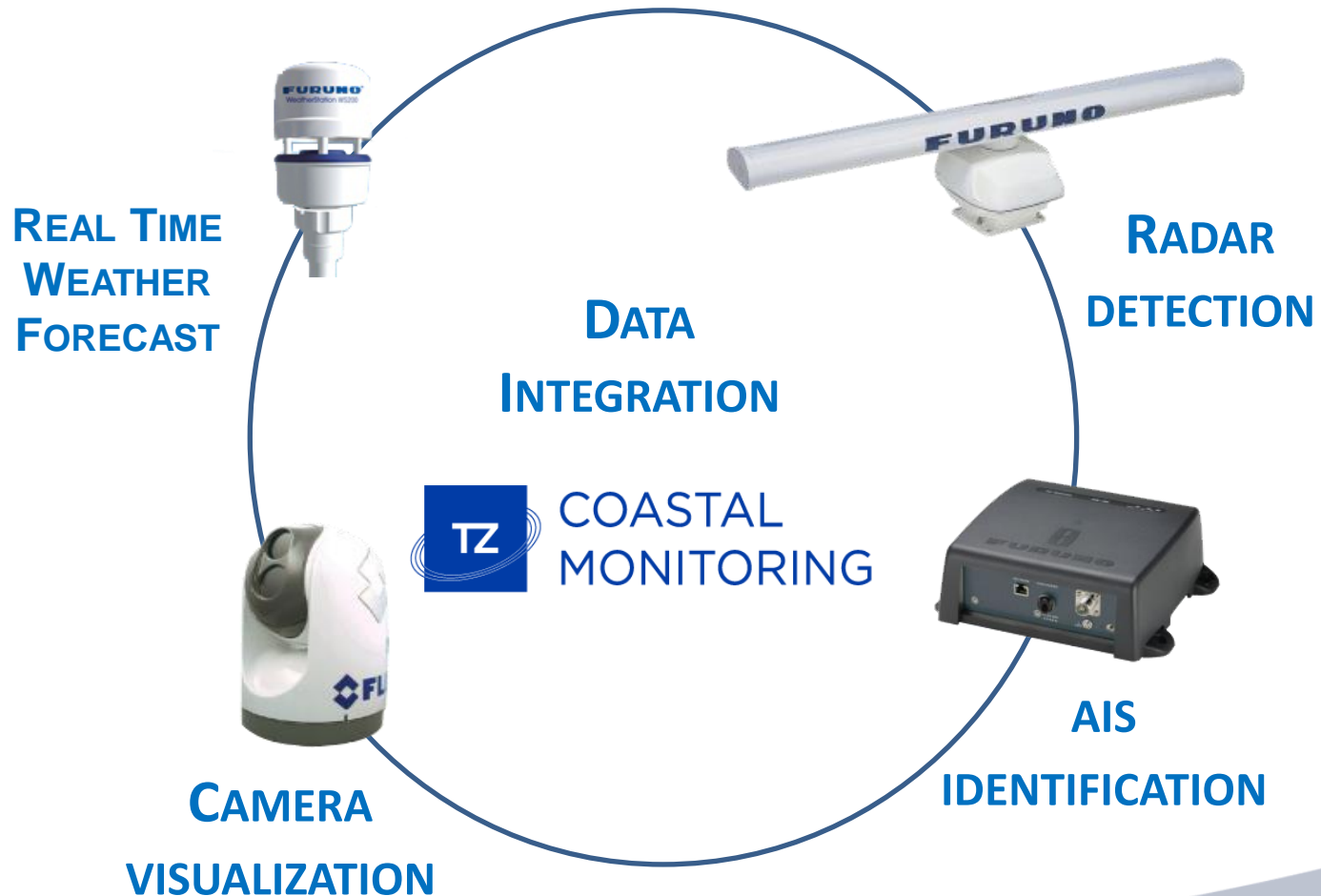
## THE FIRST TRUE TURNKEY SOLUTION FOR MARITIME SURVEILLANCE

- ✓ Provide **situational awareness** and keep track of vessel movements in a **limited geographical area**
- ✓ Integrate all of the information into a **single operator working environment**
- ✓ **Easy to use** with a modern & advance user interface
- ✓ **Easy to install** and maintain
- ✓ Record & Replay features
- ✓ **Cost effective:** Using commercial off-the-shelf hardware equipment
- ✓ **Free and unlimited access** to TimeZero weather server.



# FURUNO

## TIMEZERO COASTAL MONITORING

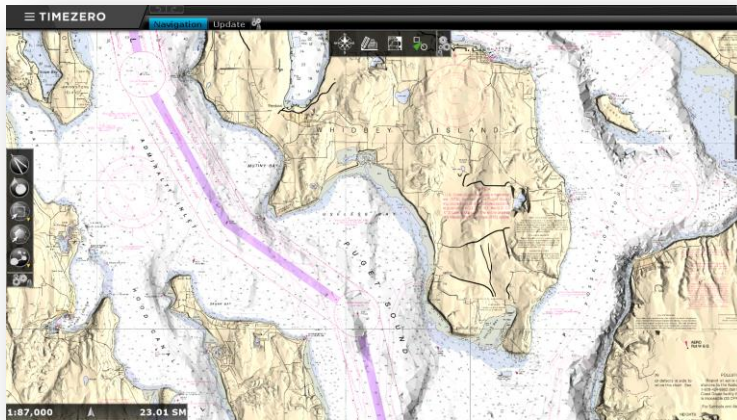


# FURUNO



## TIMEZERO Chart Engine

- ✓ *Extremely fast and smooth*
- ✓ *Seamless zoom at any range (no limited range preset)*
- ✓ *Raster, Vector, ENC's, Satellite Pictures*
- ✓ *Combine Nautical Chart with Satellite Pictures (PhotoFusion)*
- ✓ *Possibility to produce customized HR Satellite Pictures*
- ✓ *Advanced Layering Technology*



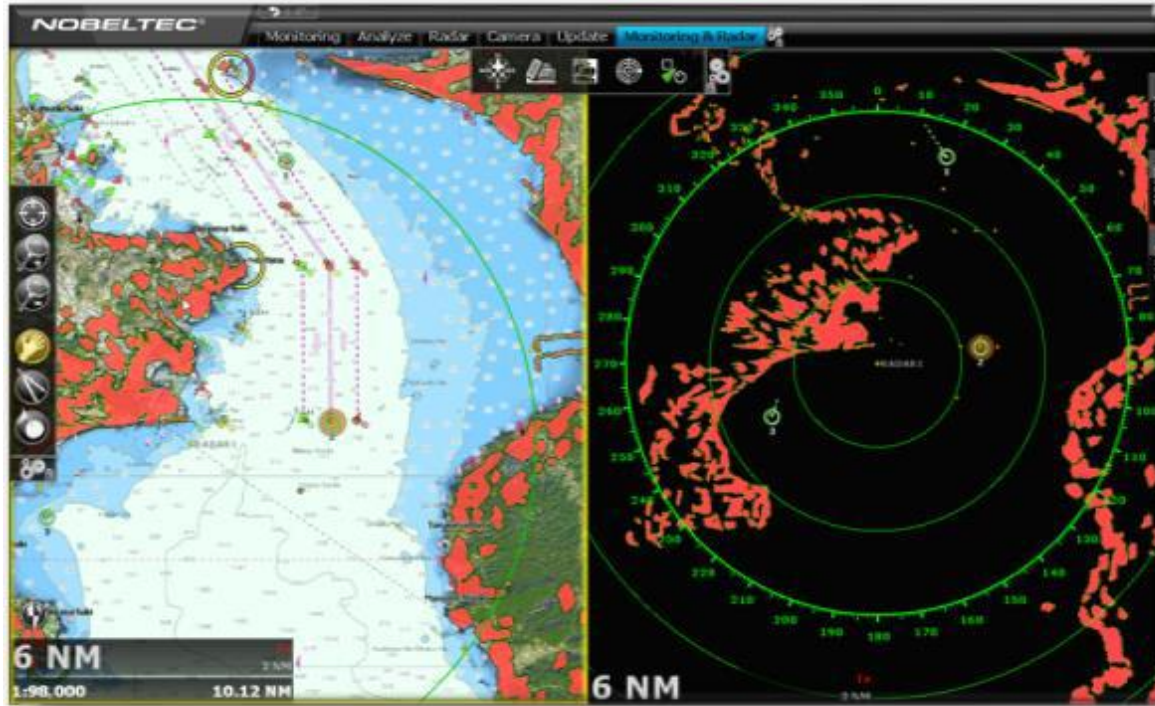
# Surveillance system



## Installation example photos



# Radar Viewer



**Target Information**

Label  
2

Position  
N 35°00.376'  
E 139°42.810'

COG/SOG  
243.1 °M/22.9 kn

CPA/TCPA  
--- NM/---

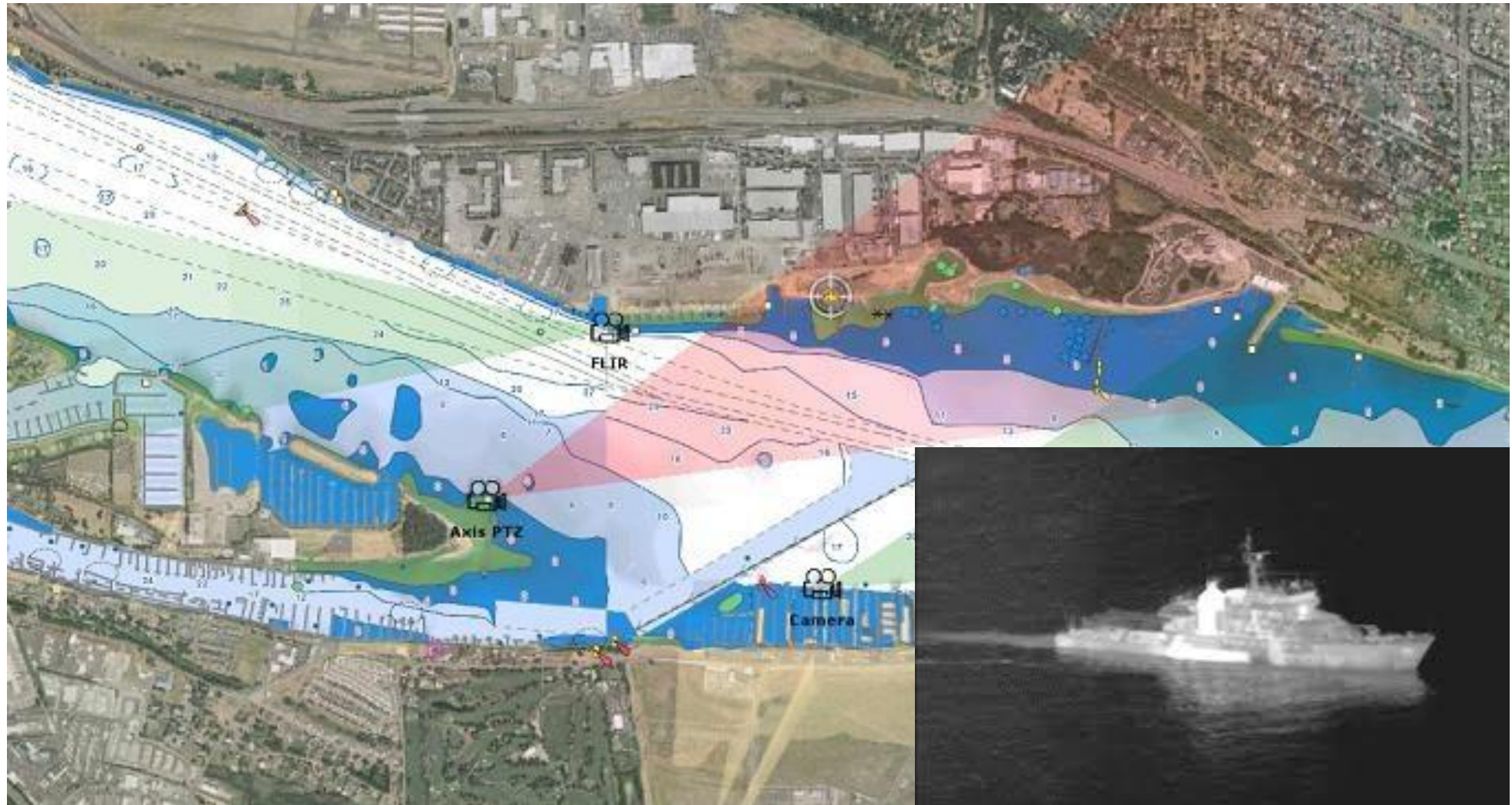
Range/Bearing  
60.04 NM/353.2 °M

ARPA List	Sort by RNG	
02	243.1 °M	22.9 kn
01	249.1 °M	18.4 kn
06	97.0 °M	0.7 kn

# AIS target

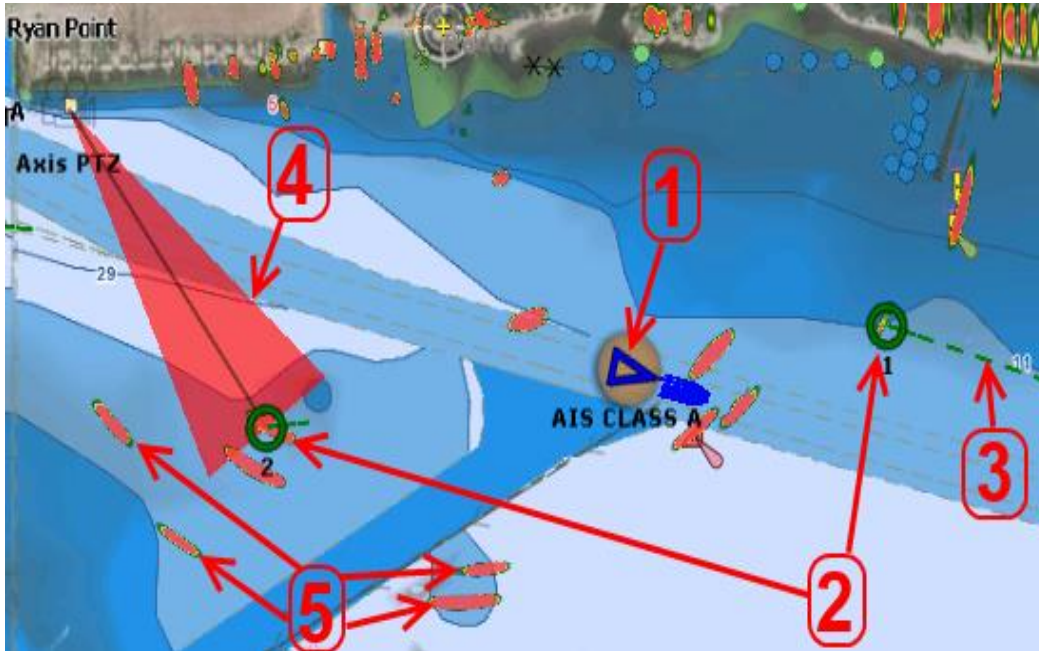


# Camera viewer





# Actual Screen



1. AIS target

2. ARPA target

\* Automatic Radar Plotting Aid

3. Direction and speed vector

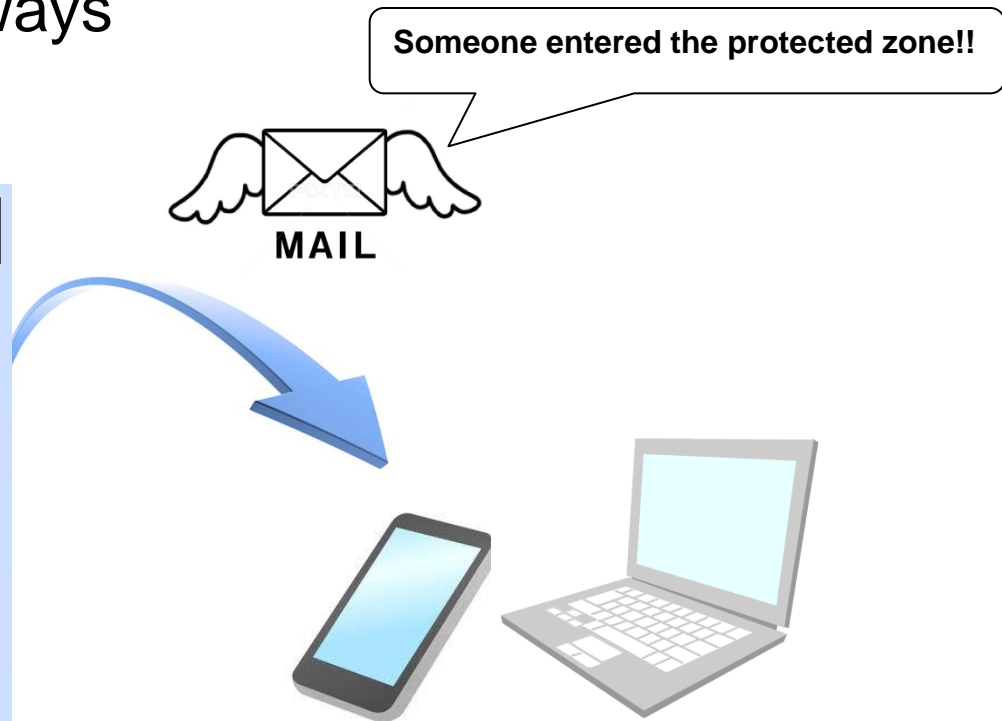
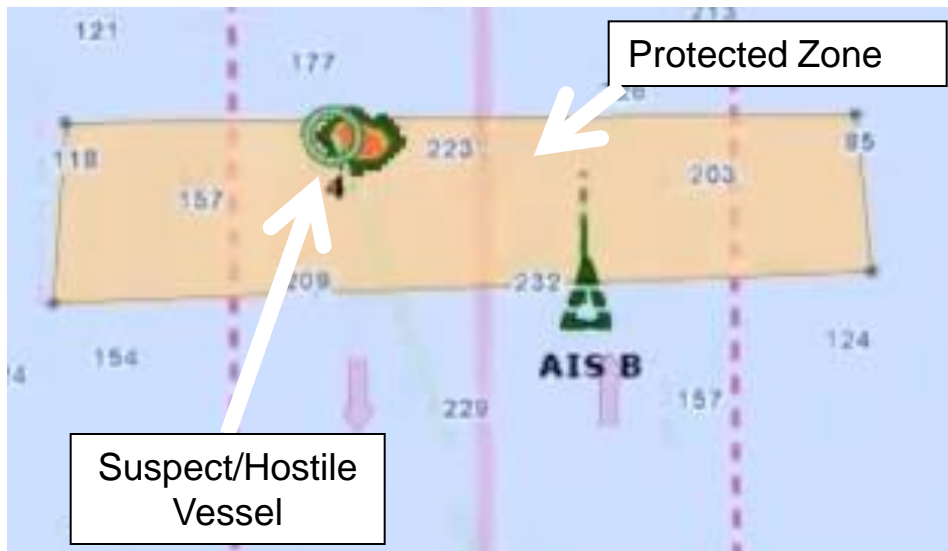
4. Camera field of view

5. Radar echoes

# Zone Monitoring with Alarm Notification

- ◆ Zone monitoring using area and circles
- ◆ Target Classification (Hostile/Suspect/Friend/Neutral/Unknown)
- ◆ Keep watching targets that enter, exit, stop or restart in area(s)
- ◆ Alarm Notifications by various ways

<Example: Notification by Email>



# APPLICATION



OIL & GAS



Marina & Small Ports



Marine National Park



Fish Cages

..... and more....

# FURUNO OIL SPILL DETECTION OIL RADAR FOIL200

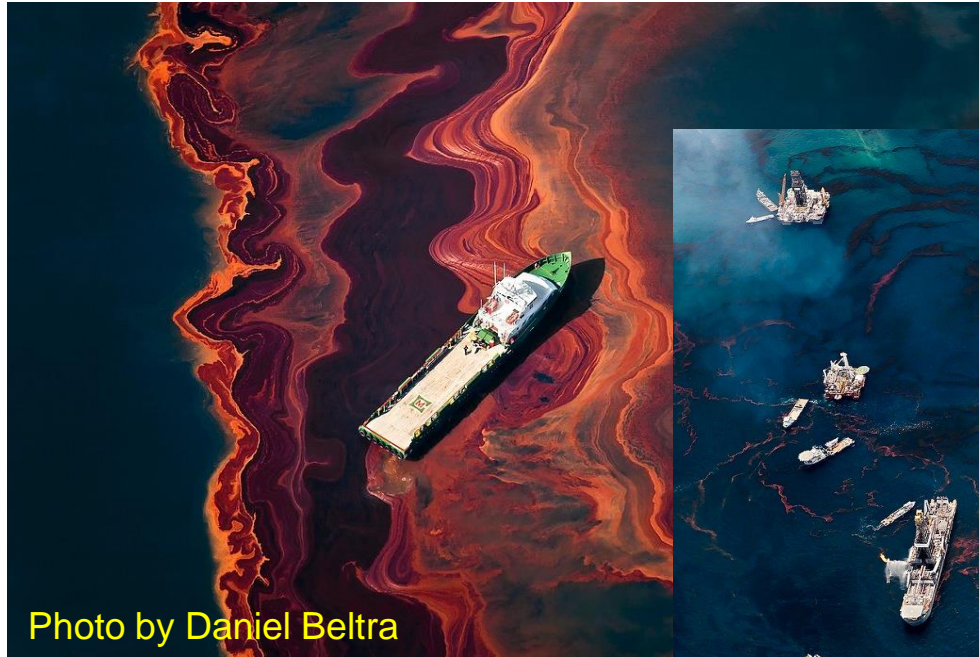


Photo by Daniel Beltra



Photo by Daniel Beltra

Oil Spills

- kill wildlife
- kill mankind
- destroy habitat
- contaminate critical resources in food chain
- wreak havoc on the economies of coastal communities by closure of fisheries; driving away tourists, or shutting down navigation routes

It takes years to completely cleanup..!

# Irreversible damage haunts Balikpapan Bay

Gemma Holliani Cahya and N. Adri

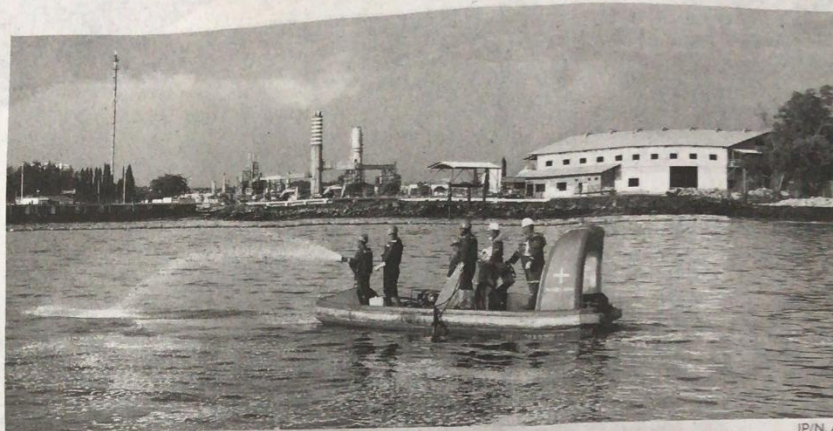
THE JAKARTA POST/JAKARTA/BALIKPAPAN

Balikpapan Bay in East Kalimantan has long been known for its rich biodiversity, with tropical forests, mangrove forest, coral reefs and sea grass serving as the habitats for various creatures living around the 16,000-hectare area of the bay.

Around 50 rivers flow into Balikpapan Bay, adding richness to the bay, which is also home to various marine creatures and the protected proboscis monkey, known locally as *bekantan*. The bay has been facing environmental threats from growing industries in the province, and now it is facing what could be its biggest ecological threat yet – the oil spill disaster on March 31, which has been dubbed the largest environmental tragedy in Indonesia for the past 10 years.

Despite claims from local authorities that 90 percent of the oil slick had been cleared as of the weekend, the bay faces long-term side effects from the crude oil, which leaked from a pipeline belonging to state-owned oil and gas firm Pertamina, which operates a refinery in the city. More than a week after the tragedy and a string of joint clean-up operations, environmental damage is inevitable, as it is almost impossible to recover all of the spilled oil polluting the sea, Ahmad Ashov, toxin-free water campaign manager at environmental group Greenpeace, has warned.

"In many oil spill cases, even in the most ideal conditions, from the total amount of spilled oil, they almost never recover more than 20 percent," Ashov told *The Jakarta Post* on Monday. "Once it happens, the impact is



**Cleaning up the mess :** Officials from state-owned oil and gas company Pertamina spray dispersant fluid to clear an oil spill in Balikpapan Bay, East Kalimantan, last week. The oil reportedly leaked from a broken pipe belonging to Pertamina.

Experts warn environmental damage in Balikpapan beyond repair

Investigation into cause, responsible parties still ongoing

irreversible."

Head of the Functional Chemistry Research Center at the Indonesian Institute of Sciences (LIPI), Agus Haryono, echoed the sentiment saying that the only oil that could be recovered was the oil on the surface of the sea. "But the heavy oil, which is already at the bottom of the sea, cannot be cleaned," he said.

To clean up the oil, authorities in cooperation with Pertamina deployed oil spill containment booms, which are used to collect oil on water for recovery, as well as dispersants, chemicals sprayed on a surface oil spill to break down

the oil into smaller droplets that more readily mix with the water.

Still, Ashov emphasized that there was a stark difference between recovering the oil and spreading it out. He also raised concerns over the use of dispersants, which only made oil more soluble in water and therefore dangerous as it could be easily absorbed by any creature and easily spread everywhere.

Ashov referred to a research study carried out by Georgia Institute of Technology and Universidad Autonoma de Aguascalientes on the 2010 Deepwater Horizon oil spill. That spill was cleaned up using dispersants, which apparently worsened the problem as it made the oil 52 times more toxic.

However, the Environment and Forestry Ministry's director of pollution control and coastal and marine damage, Dida Migfar said the dispersant was only used

in emergencies, such as when the oil spill caught fire on March 31.

The latest satellite image from the National Institute of Aeronautics and Space (LAPAN) showed that the oil spill had impacted a larger area because the oil was spread out by waves and currents.

The government had kicked off the investigation into the spill that killed at least five fishermen. Local police have so far questioned 22 witnesses in an attempt to uncover the parties responsible and the cause of the broken pipe. The incident not only claimed lives, but thousands of Balikpapan residents have reported symptoms of nausea and suffocation from the pungent smell of oil, hundreds of local fishermen also complained about their inedible catch from the bay in addition to the death of one rawaddy dolphin and thousands of cultivated crabs.

Marine oil spills caused by:

- illegal discharge,
- transfer mishaps and grounding or collision leading to loss of fuel and/or cargo,
- pipeline leakage,
- etc.

How to detect the oil spills?

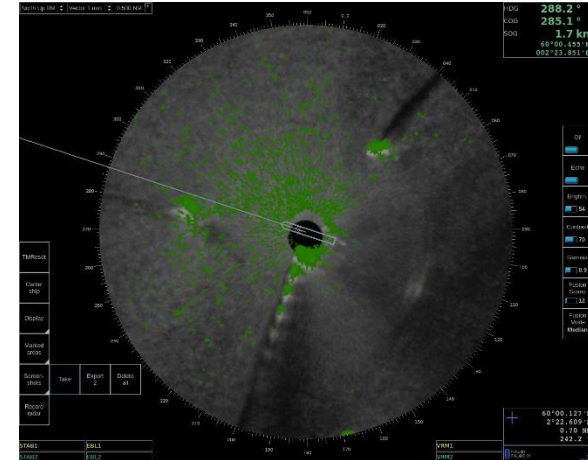


## **FURUNO developed an “Oil Spill Detection (OSD) System”**

- Developed by FURUNO Finland
- The integrated system by utilizing:
  - ✓ FURUNO radar system (e.g. FAR-2xx7)
  - ✓ FURUNO Finland FSS-400 surveillance station
  - ✓ FURUNO Finland oil radar FOIL-200
  - ✓ Thermal Camera
    - Stabilized cooled thermal camera (e.g. Controp QUAD-2 or DSP-1)
    - Uncooled thermal camera (FLIR M-series)
    - FURUNO Finland Oy Dual Camera for fixed installations

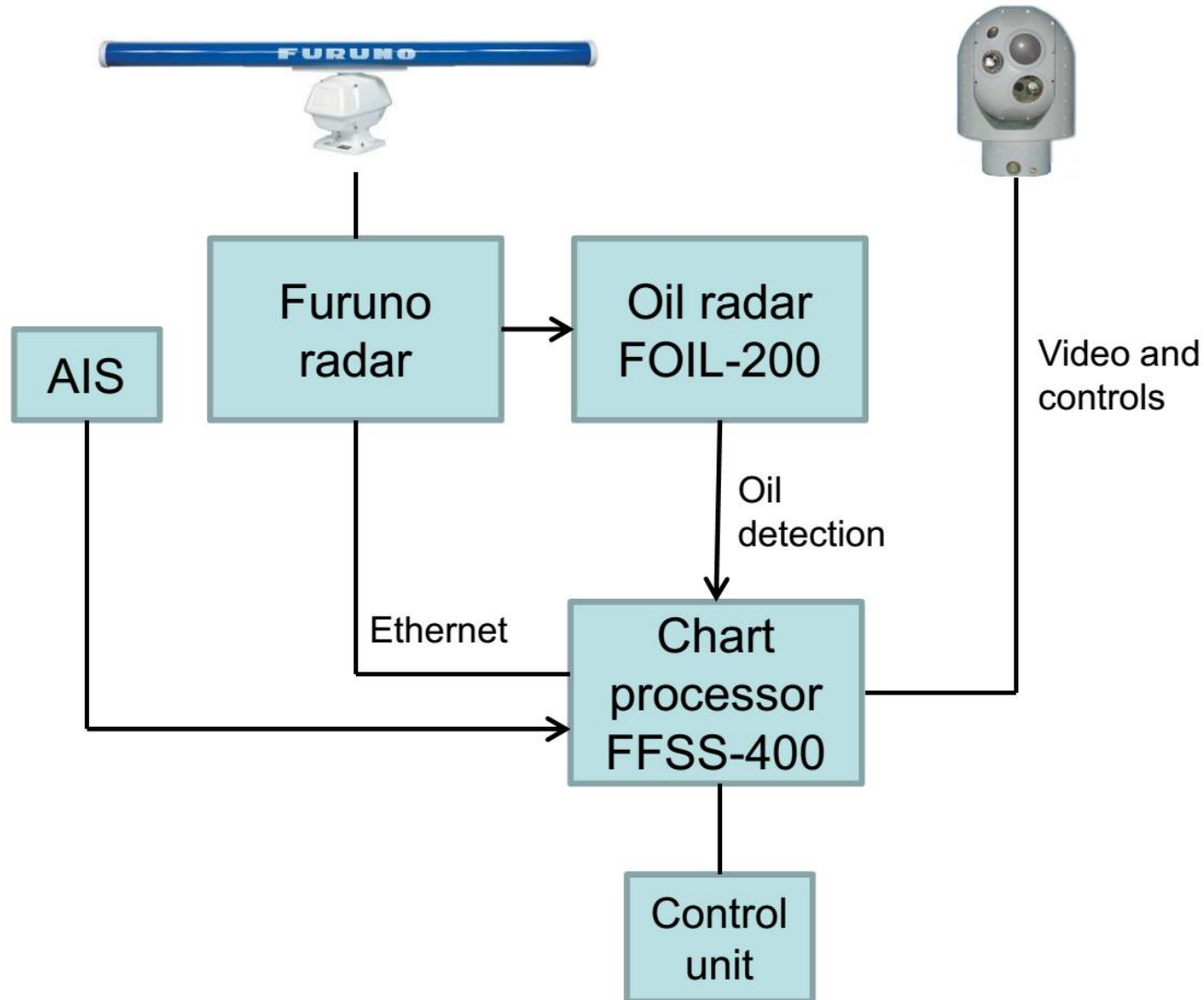
## FOIL-200 FEATURES:

- Unique oil spill visualization
- Manual and Automatic detection of oil spills
- Advanced algorithms, forms a highly detailed picture
- Detect oil up to 2 nautical miles away
- Utilizing signal from an existing X-band radar
- Independent easy-to-use stand alone installation
- Very cost effective compared to existing systems on the mark

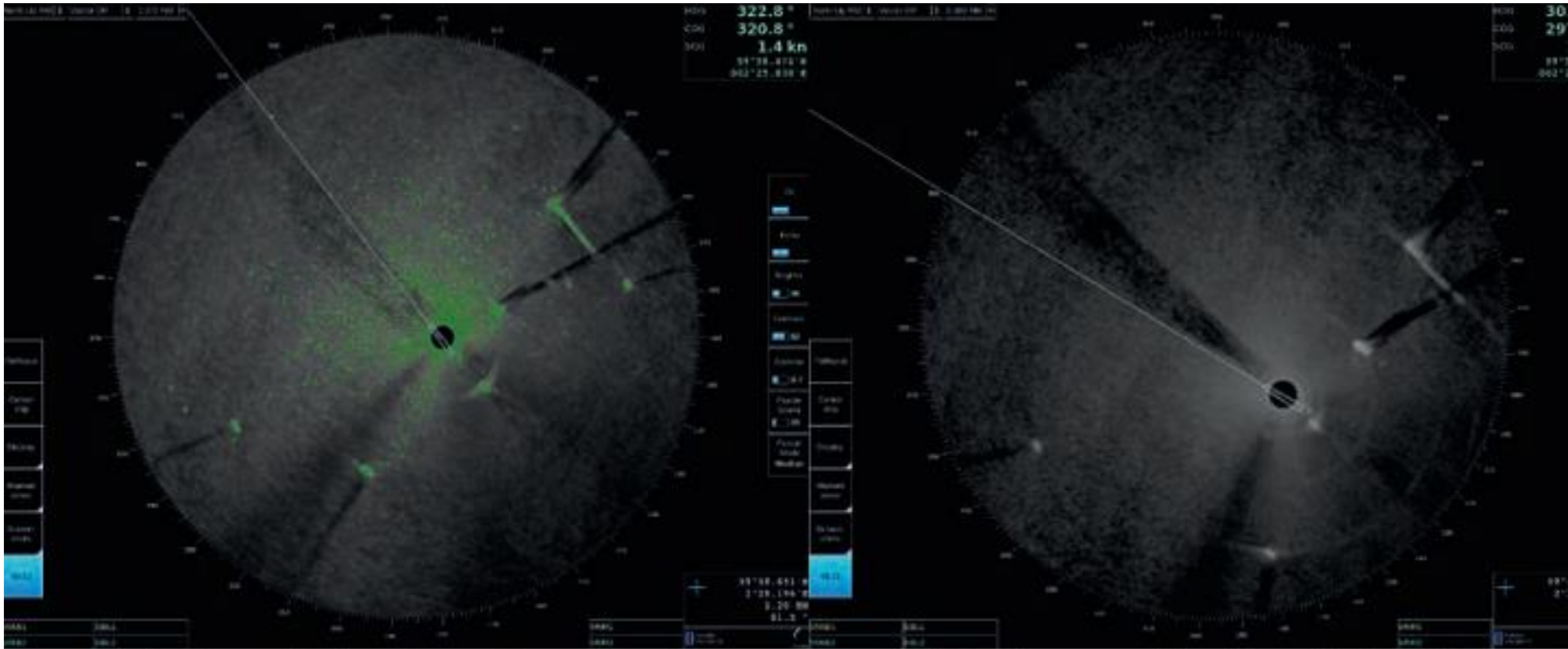




# Furuno Oil Spill Detection System onboard



## Detect and Mark the Spills



Navigation + oil radar picture. Green echoes from navigation radar, the rest is oil radar picture.

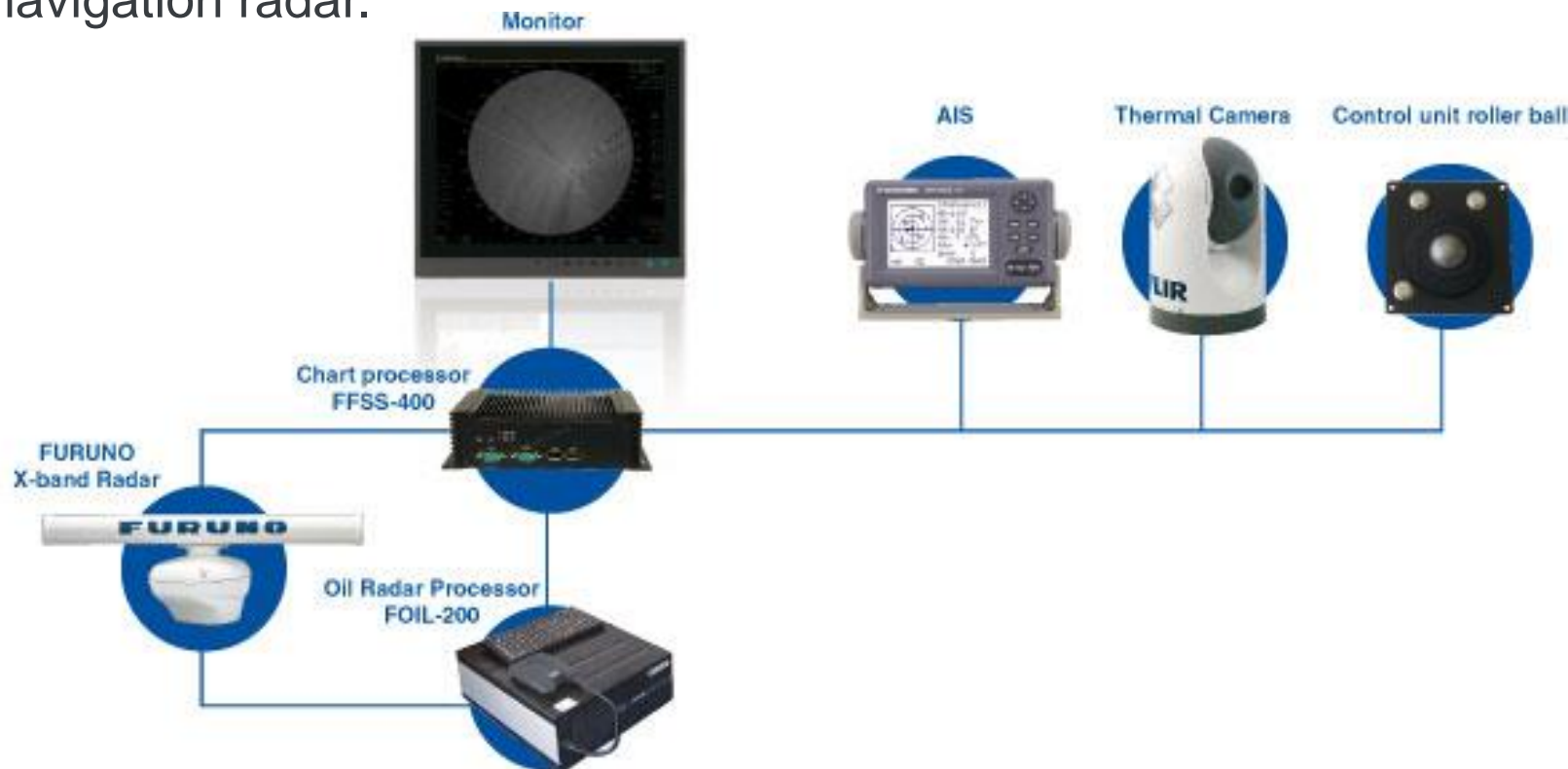
Bright echoes are other ships with black shadow areas behind them. Dark area shown on the right side of the heading line is oil spill.

## OIL Radar for Offshore and onshore installation

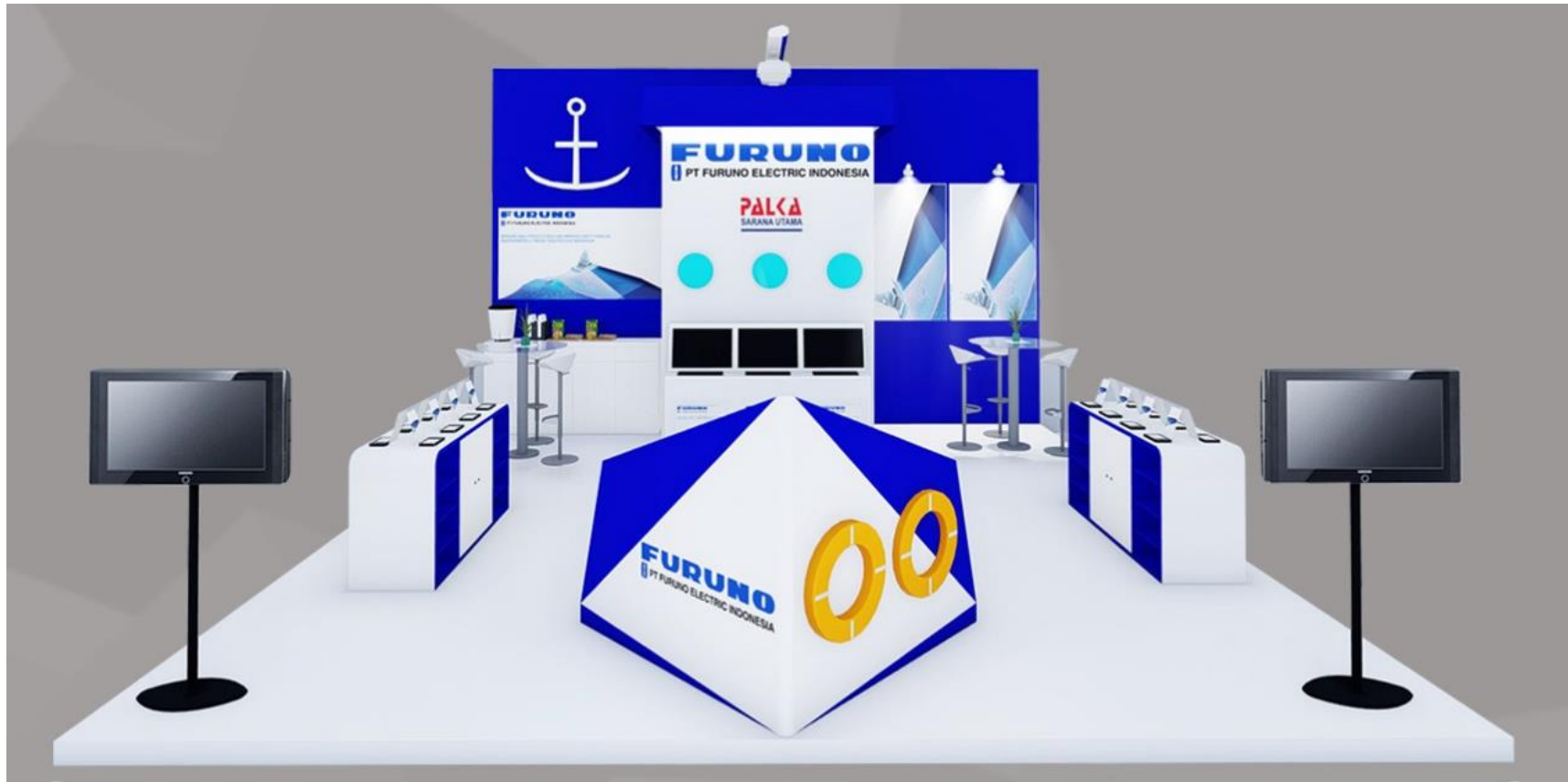
The FOIL-200 oil spill detection radar can be used in offshore and onshore with an existing X- band navigation radar.

### Process and analyze the raw radar video

The FOIL-200 oil spill detection processor is connected to a standard FURUNO FAR-2xx7 X-band navigation radar.



# THANK YOU FOR YOUR ATTENTION



Please visit FURUNO BOOTH for further information