

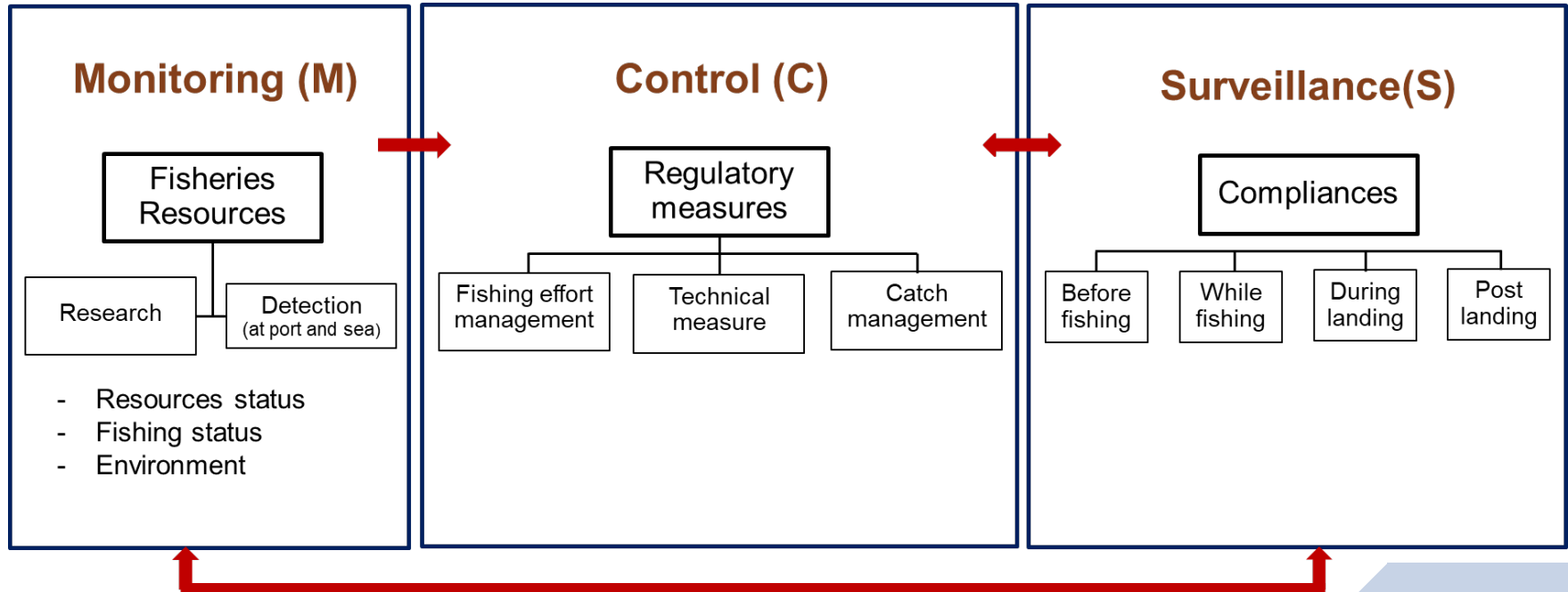


Monitoring, Controls and Surveillance (MCS) Thailand

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Department of Fisheries, Thailand

What is MCS?



1

Monitoring (M)



Monitoring

Monitoring

Fisheries resources

RESOURCE STATUS

1 Data collection

1. Four DOF research vessels
2. Field survey

2 Data Analysis

1. Catch, MSY
2. Species / Size composition & by catch
3. Reproductive biology, spawning & nursing ground
4. Abundance & distribution

FISHING STATUS

- Fishing effort
- Fishing efficiency

ENVIRONMENT

1 Water quality

- Seawater pH
- Dissolved oxygen
- Temperature
- Nutrient

Marine Research and Development Division, DOF



2

Controls (C)



Controls

Control

Regulatory measures

FISHING EFFORT MANAGEMENT

Control on fishing capacity

- Limited number of fishing day
- Limited number of fishing license
- Size/amount of fishing gear

TECHNICAL MEASURE

- Mesh size limitation
- Seasonal area closure
- Ban of destructive gears
- Fishing zone demarcation
- Marine protected areas

CATCH MANAGEMENT

Control on catch

- Total allowable catch



Controls

Fishing effort management

- **Limitation of fishing day ;**
Max 30 days per trip
- **Limitation of number of fishing vessel** (Based on MSY)
 - (1) Trawl nets
 - (2) Surrounding nets
 - (3) Lift nets or falling nets
 - (4) Gillnets or set gill nets

Technical measure

- **Mesh size limitation**
 - Trawl nets > 4cm
 - Surrounding nets >2.5 cm operate at night time
 - Anchovy Purse Seine & falling nets >0.6 cm
 - Squid falling nets >3.2 cm
 - Krill push nets >4 mm²
 - Dredges >1.2 cm
- **Seasonal area close**
- **Zoning**; 1.5-12 NM for artisanal boat
- **Marine protected area**
- **Ban of destructive gear**



3

Surveillance (S)



Operation processes

Before fishing

- Control total catch
- Control Fishing day
- Port in Port out control center (PIPO)

During fishing

- Vessel Monitoring System (VMS)
- Fisheries Monitoring Center (FMC)
- Fisheries patrol unit
- Air surveillance

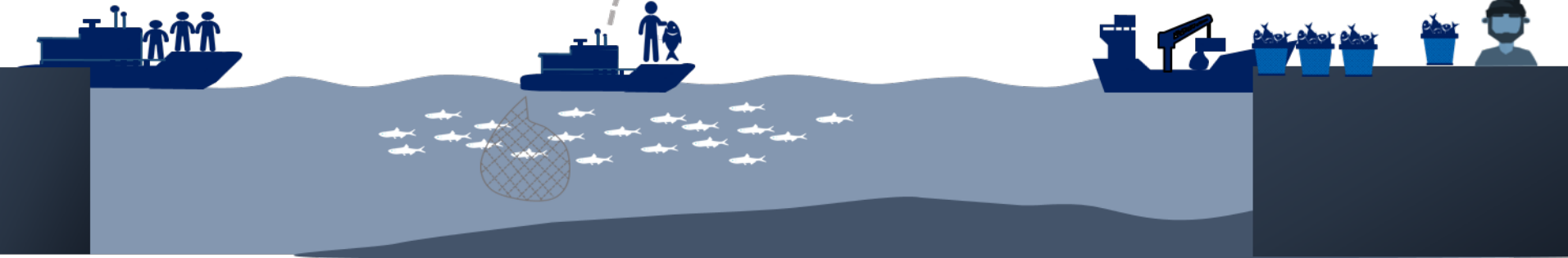


During landing

- Logbook
- Record fishing activity

Post landing

Landing declaration



Fishing and Fleets Management Division, DOF (Intelligent; FMC Center)
Fishing Quarantine and inspection Division, DOF (Inspection)



History of FMC, Thailand

Pilot project for tracking fishing Vessels

- Used Global System Mobile Communication system (GSM)
- Limitations: Not real time monitoring when vessels go beyond reception area

In 2017 : Upgraded VMS Center to Fisheries Monitoring Center (FMC)

- Upgraded VMS devices
- Upgraded relevant VMS regulations

2015

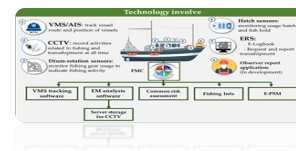
2011



2017

Established VMS Center

- Introduced Satellite technology for real time monitoring (Royal ordinance on Fisheries, 2015)
- Installed for fishing vessels and related vessels >30 GT
- VMS signal transmits every 1 hour





VMS center upgraded to FMC

VMS Center

1 6 VMS staff to perform their duties 24/7 and 3 shift rotate every 24 hrs.



2 Only one authority was working in mobilizing VMS (VMS fishing monitoring workgroup)

3 No clear SOP of the work process between the relevant agencies to deliver coordinated outcomes



4 Technology for surveillance, intelligence and sharing basic information had not previously been used in fisheries enforcement

Fisheries Monitoring Center (FMC)

1 44 VMS staff now perform their duties 24/7 with 4 shifts rotating every 24 hrs.

2 The new FMC includes 9 Groups working in combatting IUU fishing.



3 Surveillance is divided into 3 operational groups: Electronic Surveillance, Inspection at Sea and Inspection at Port. There are now clear procedures for coordinating with other related authorities

4 Applied surveillance technology (VMS, ERS/EM and AIS)

5 Exchanging and sharing data/information /cooperation with domestic and relevant foreign authorities in analysis of vessel behavior.



6 Development of cooperation / interaction with foreign authorities and international organizations in combatting IUU fishing

The Department of Fisheries has restructured and enhanced its former VMS center to the Fishery Monitoring Center (FMC) whose core mission is to monitor and to control fishing activities of Thai-flagged fishing vessels in both Thailand's and international waters. Not only has the managerial body been reorganized but also related MCS technology to deliver such capabilities has significantly been updated and improved.



Fisheries Monitoring Center (FMC)

The Fisheries and Fleet Management Division, Department of Fisheries, Thailand, is the agency for taking responsibility for the Fisheries Monitoring Center (FMC). This center, as 24/7 center, has been established in 2016 for strengthening MCS scheme in Thailand. Thai MCS activities cover at port inspection, sea inspection, air surveillance, and remote surveillance which is monitored and coordinated through FMC.

For Thai-flagged fishing vessels, FMC monitors these vessels through **the Vessel Monitoring System (VMS)** for all fishing activities. Furthermore, the Thai-flagged oversea fleet has strictly been monitored by using **Electronic Monitoring and Electronic Reporting System**.

In case of foreign-flagged fishing vessels requesting to use of port in Thailand, we apply **AIS tracking** for crosschecking information in Advance Request For Port Entry (AREP), documents, and vessel behavior before authoring entry port.





MCS Core Components (Surveillance)

1

BEFORE FISHING

Inspection at port

Port Out

1. Inspect base on Risk Assessment
 - Vessel & gear
 - Crews
 - License
 - VMS device etc.
 - **Transshipment plan/list of ports or donor vessels**

% of Inspect at port

- High Risk 100% inspect
 - Medium ≥30% inspect
 - Normal ≥10% inspect
- (Cooperation with related agencies)

Electronic Surveillance

2. Tools & Technology for cross checking

- ❖ Vessel Monitoring System (VMS)
- ❖ **ERS & EM**
 - Checking for data
 - Transmission
 - status/functioning before fishing .

2

WHILE FISHING

Electronic Surveillance

Applied surveillance technology

- ❖ VMS
- ❖ **AIS (if applicable)**
- ❖ **EM, ERS**
 - If any unusual behavior is identified through the VMS, a notification is sent to the relevant inspection units .
 - Polling picture

Inspection at sea

Inter agency coordination of surveillance & interdiction of illegal fishing

- 1) Fisheries patrol
- 2) Thai-MECC
- 3) Marine police
- 4) **Pilot project for Air Surveillance**

Scientific research

Observers on board

: 5-day report (observer)

3

DURING LANDING

Inspection at port

Port In

1. Inspect base on Risk Assessment
 - ❖ Vessel & Gear
 - ❖ Crews
 - ❖ Logbook: Check composition of catch retained on board against gear used
 - ❖ gear used
 - ❖ License
 - ❖ VMS device etc.
- (Cooperation with related agencies)

Electronic Surveillance

Tools & Technology for cross checking

1. VMS
 - : Reviewing of fishing data & VMS status during catch landing
2. ERS
 - : E-Logbook, request and report transshipment
3. EM
 - : Cross check video recorder, snapshot and polling photo

4

POST LANDING

Post Landing

Catch landing inspection

- 1) MCPD
- 2) MCTD

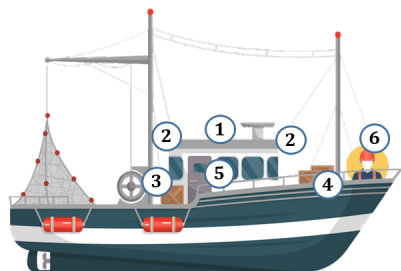
Electronic Surveillance

VMS

: Warning when the vessel has ported out without permission.
Checking for data transmission status before fishing



Fisheries Monitoring System (FMS): Key Tools



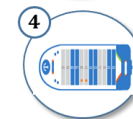
VMS/AIS: track vessel route and position of vessels



CCTV: record activities related to fishing and transshipment at all time



Drum-rotation sensors: monitor fishing gear usage to indicate fishing activity



Hatch sensors: monitoring usage hatch and fish hold

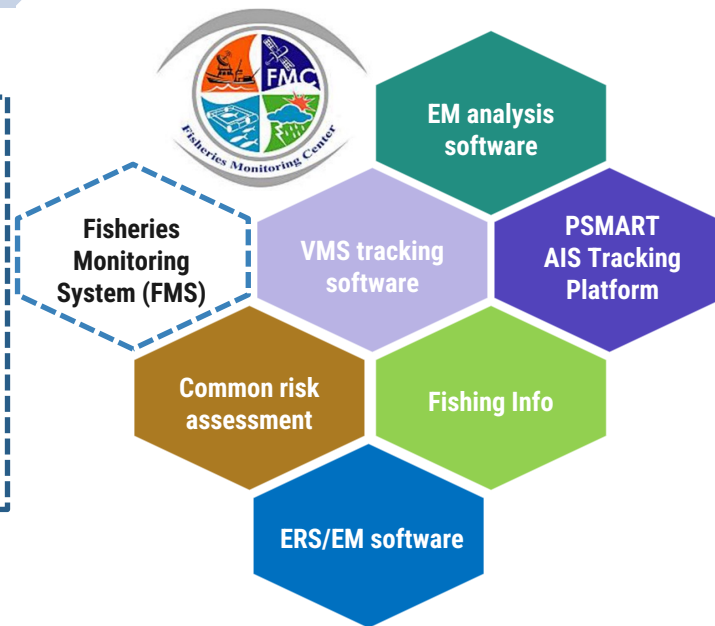
EM



ERS:
- E-Logbook
- Request and report transshipment

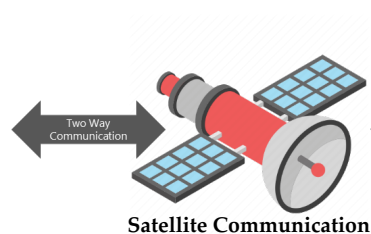
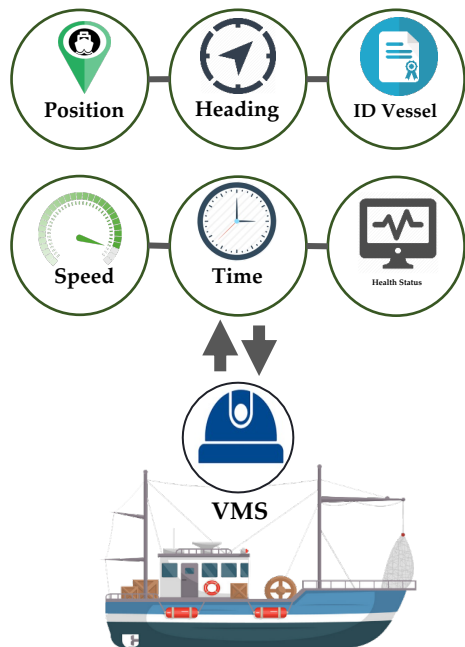


Observer report application:
(In development)



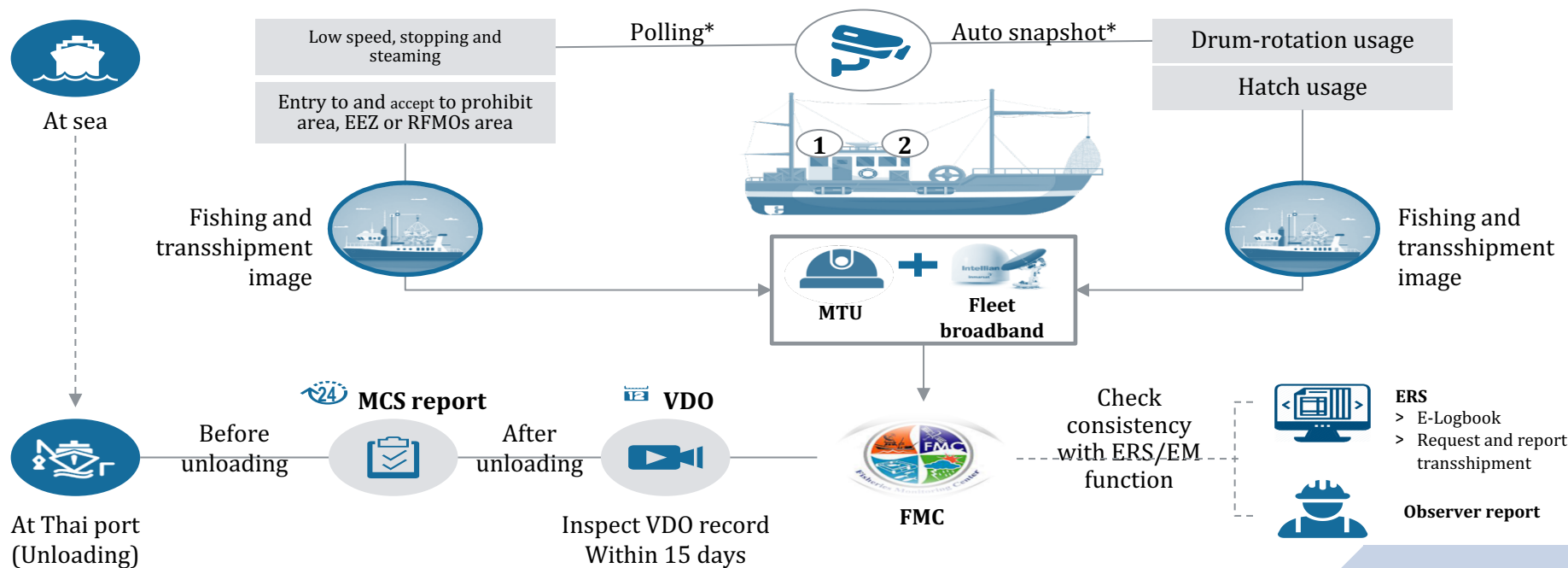


Vessel Monitoring System: VMS



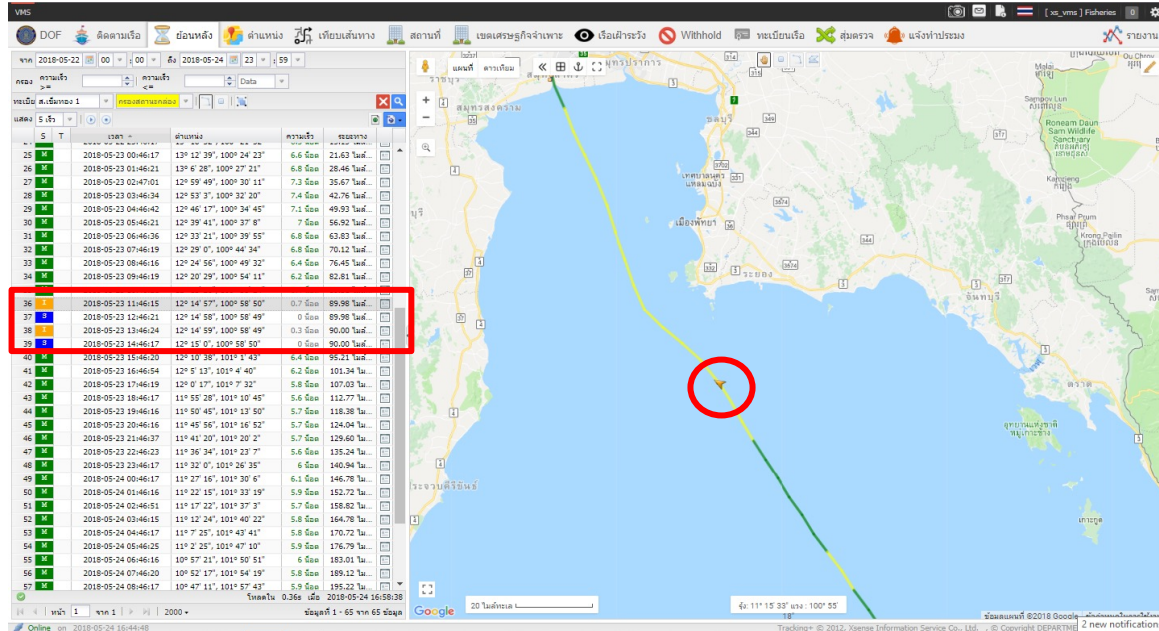


Electronic Monitoring: EM

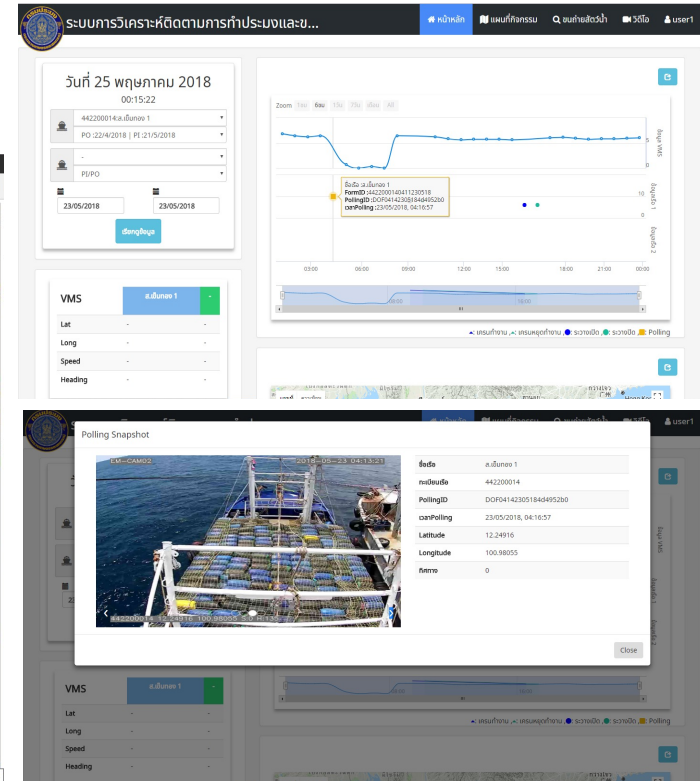




- ❖ SOR. KHEMTHONG 1 show status of VMS "I" (0 – 1 knot).
- ❖ From Polling SOR. KHEMTHONG 1 during the refueling with FOURMOST 2.



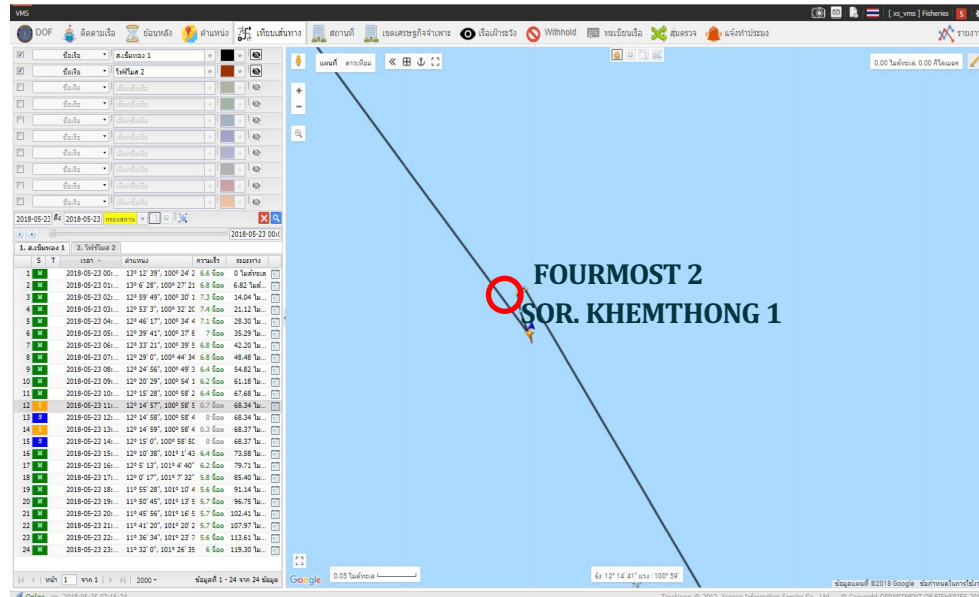
Tracking of VMS system



Polling data of ERS/EM



- ❖ SOR. KHEMTHONG 1 show status of VMS "I and S" (0 – 1 knot).
- ❖ From Polling SOR. KHEMTHONG 1 during the refueling with FOURMOST 2.



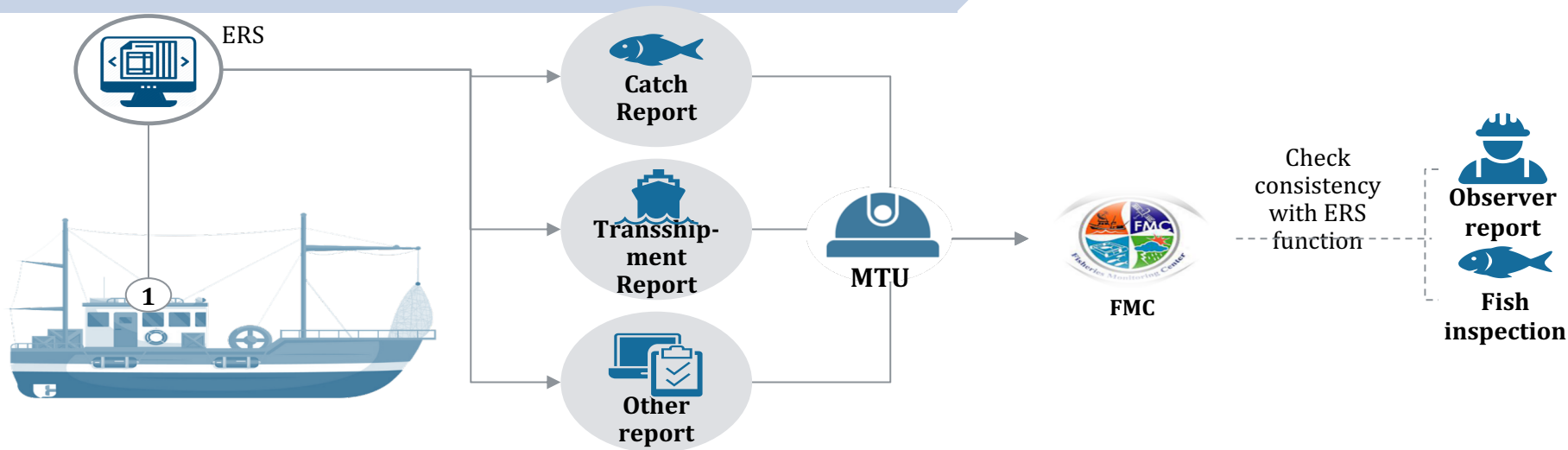
Tracking of VMS system



Polling Snapshot



Electronic Reporting System: ERS



The application of ERS compose the functions as follows:



Catch Report

> E-Logbook



Transshipment Report

- > Transshipment request
- > Transshipment declaration
- > Loading/landing request
- > Loading/landing declaration



Other report

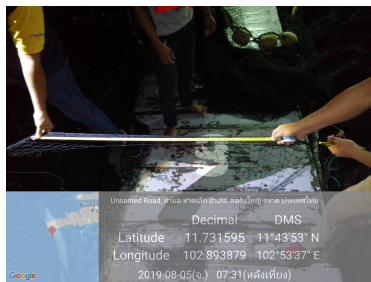
> Crew transfer request



Inspection at Port: PIPO



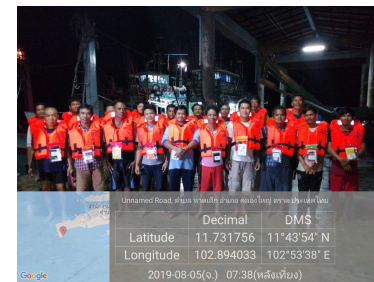
Documents check



Fishing gear



Physical vessel check



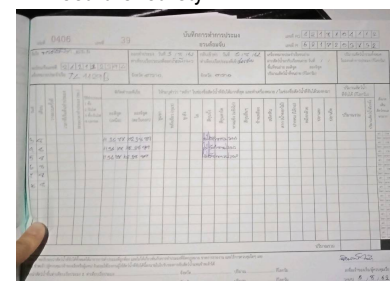
Seafarer safety



Labor checking



Landing inspection of fishing products and Logbook





Inspection at Sea: ThaiMECC & DoF Patrol



Labor and Documents checking



Fishing Gear checking

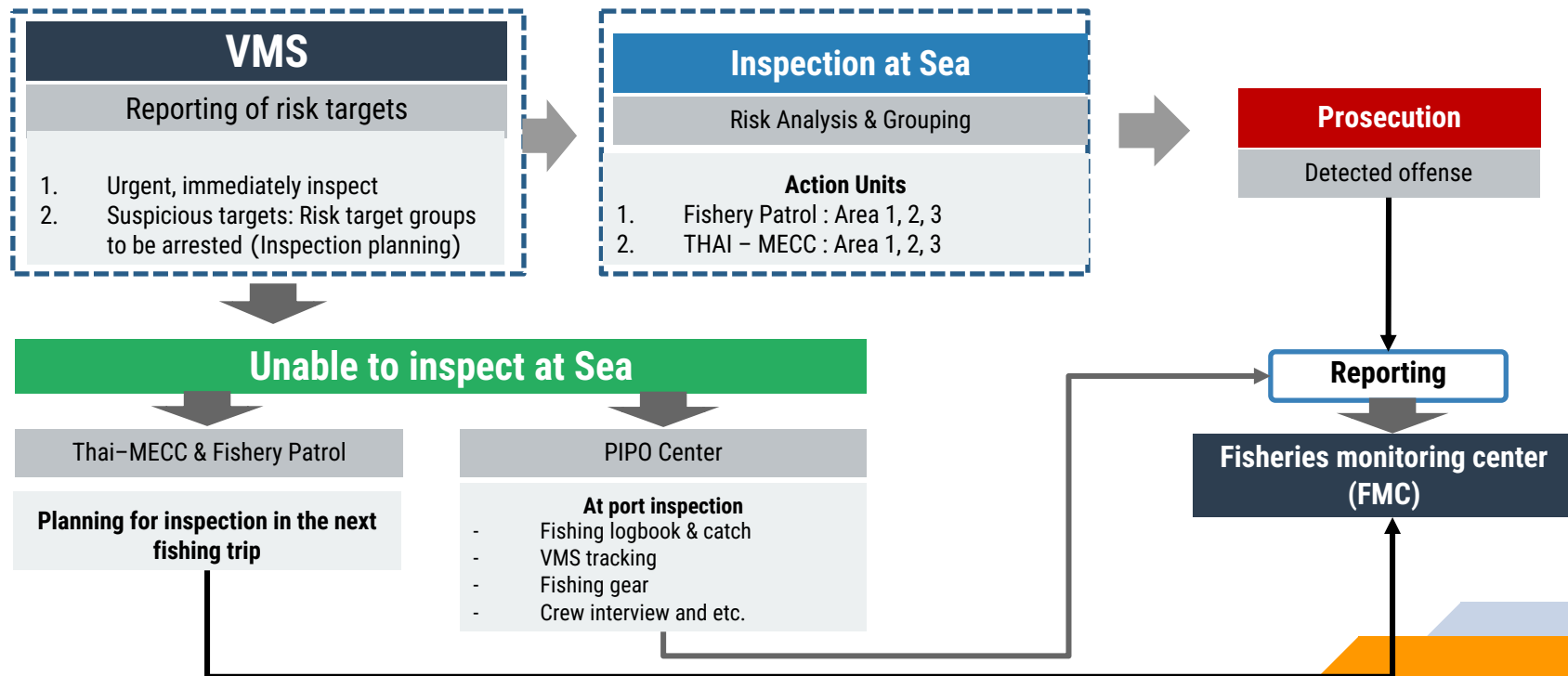


Fishing Products checking





Procedure of fishing compliance



Inspection in Port



Administrative Sanctions

- Confiscated fish and fishing gear
- Detained vessel until case is concluded
- 30 day Suspension of commercial fishing license

Status of Criminal Case

Case Concluded. Krabi Provincial Court ordered the 13 offenders to pay fine THB 100,000 (ca. EUR 2,637) each

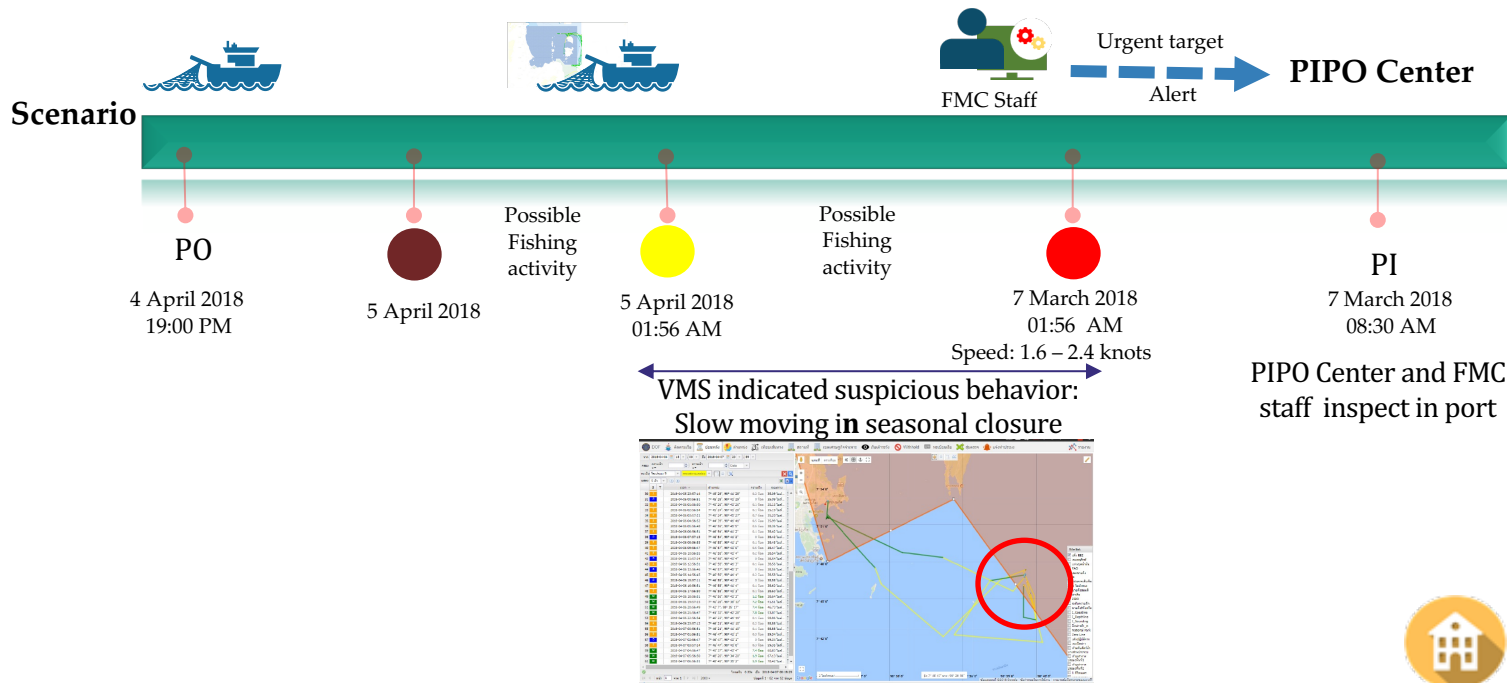
Successful Case via coordination

General Information

Size (GRT) : 37.48 GT

Fishing gear : Anchovy Purse Seine

Urgent target: Possible fishing in a seasonal closure area



Inspection at Sea



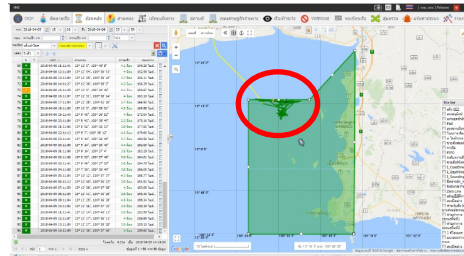
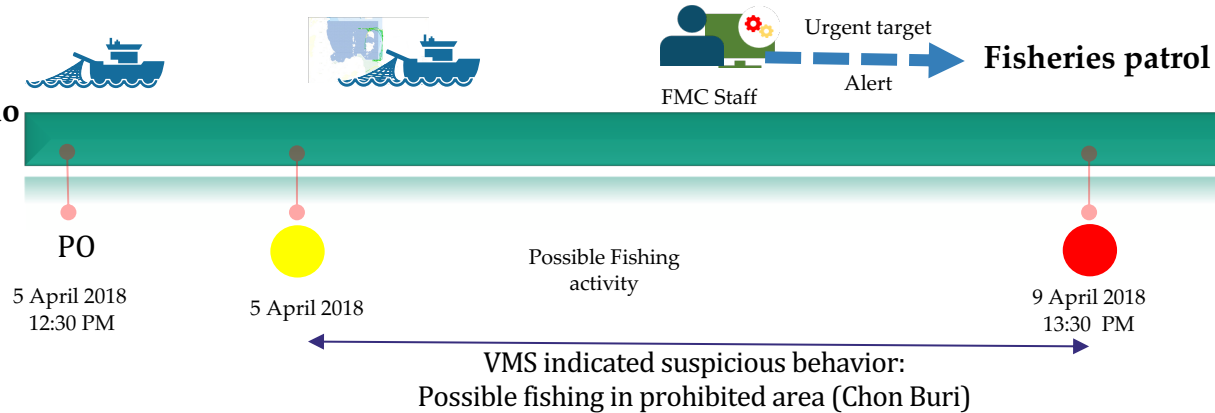
General Information

Size (GRT) : 44.34 GT

Fishing gear : Beam trawls

Urgent target: Possible fishing in prohibited area

Scenario



Administrative Sanctions

- Confiscated fish and fishing gear
- Detained vessel until case concluded
- 45 day Suspension to commercial fishing license

Status of Criminal Case

- Being tried in the criminal court (criminal case 51/61)



Air Surveillance



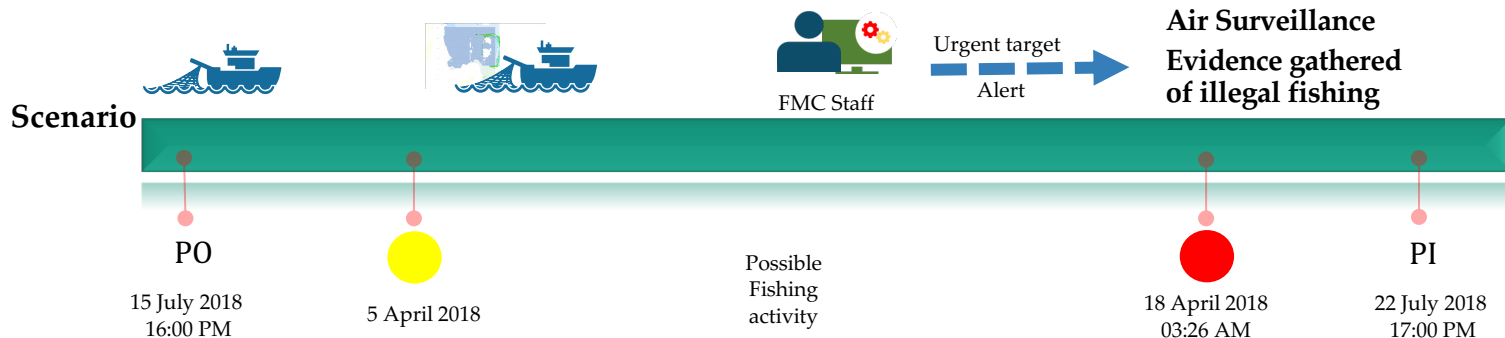
Successful Case via coordination

General Information

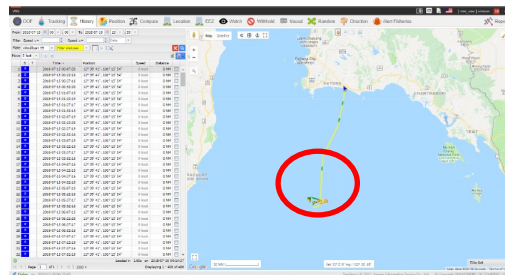
Size (GRT) : 177.65 GT

Fishing gear : Anchovy Purse Seine

Urgent target: VMS tracks indicated strong possible of Anchovy purse seine fishing at night



VMS showed there were vessel tracks recorded that were consistent with fishing being illegally conducted at night



Administrative Sanctions

- Confiscated fishing gear and fish
- Detained vessel until case concluded
- Revoked commercial fishing license

Status of Criminal Cases

Currently with Police Inquiry Officer (criminal case 2227/61)

11 35.831N 100 54.293E

NUC 1:2.0

03:11:15

RNG 3716

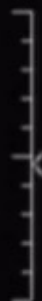
18-07-18

TAL 0

#009

AAT 2296

HTD 2296



RATE-HI

56 SLB

BLK-HOT

38 DEP

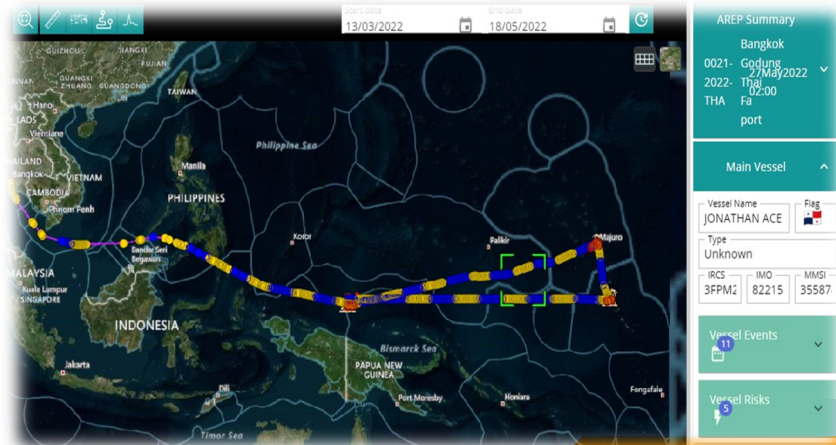
PLD FAIL

SCL 2- 4

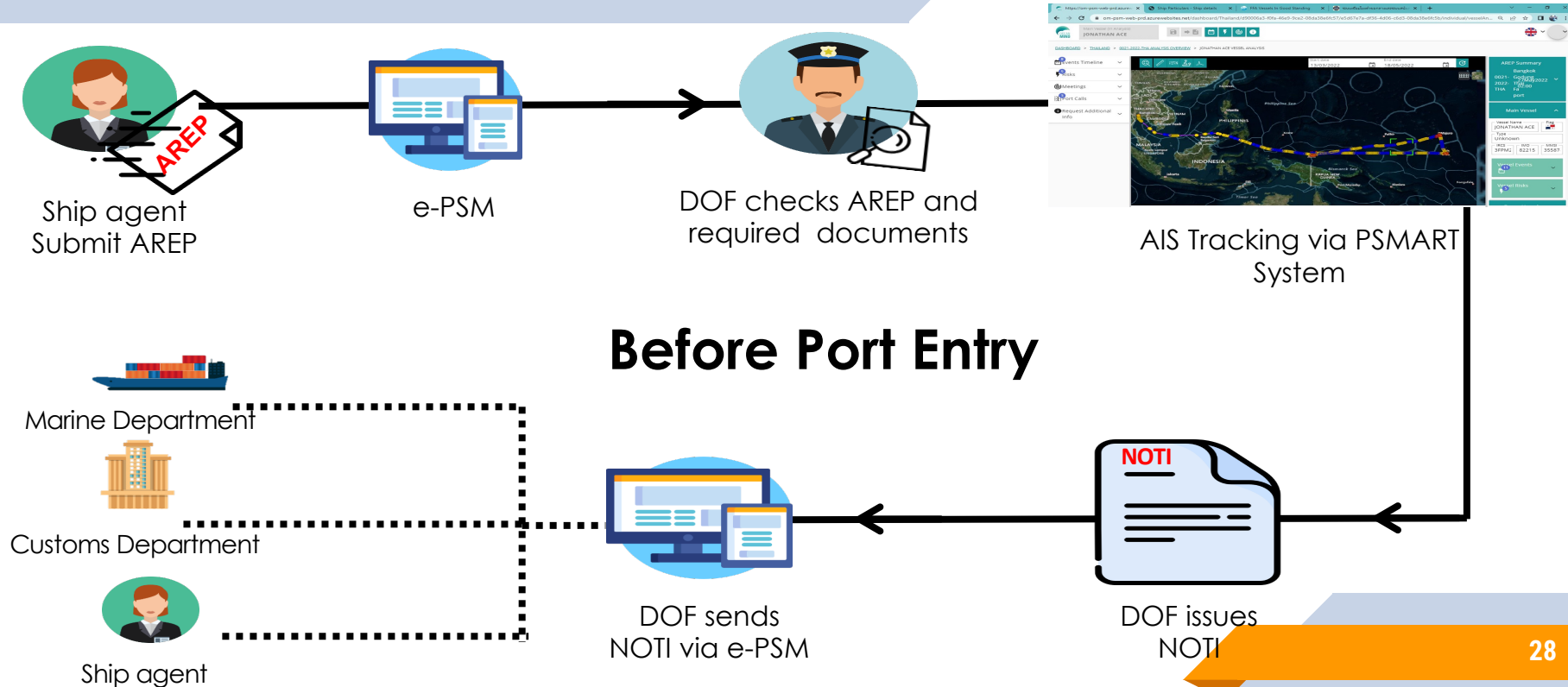


Port State Measures (PSM)

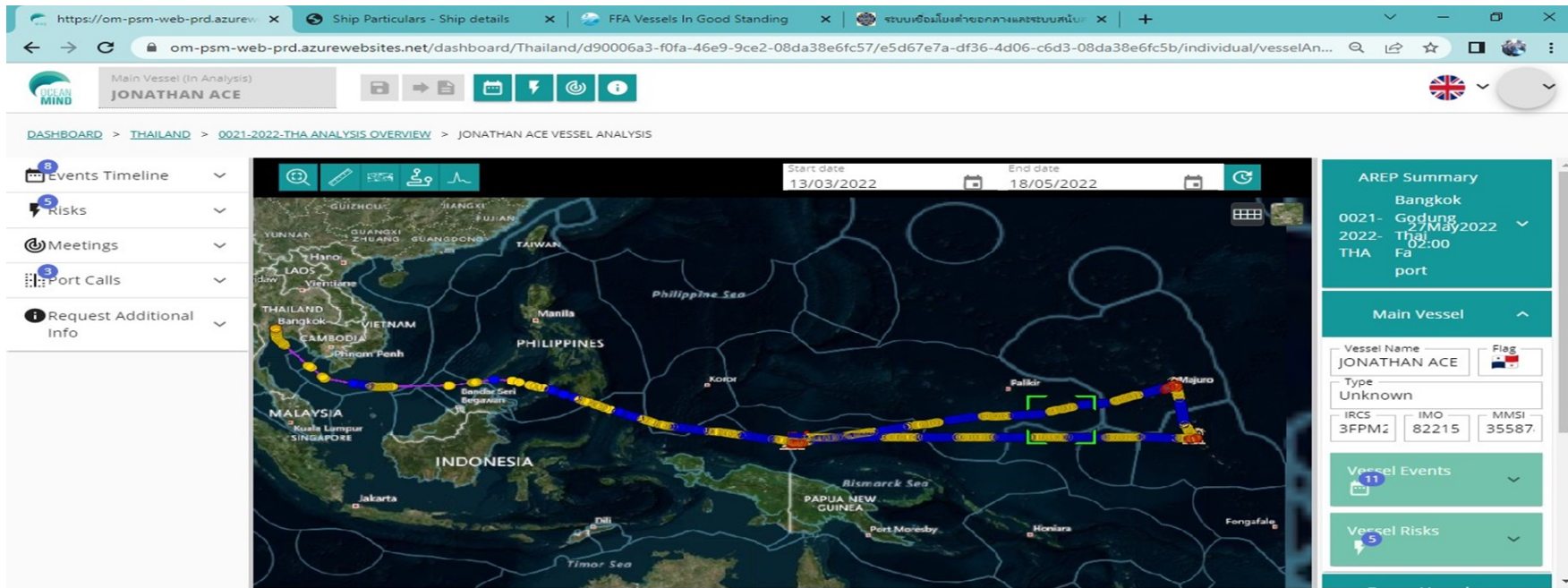
Foreign-Flagged Fishing Vessels



Port State Measures for Control Foreign-Flagged Vessels

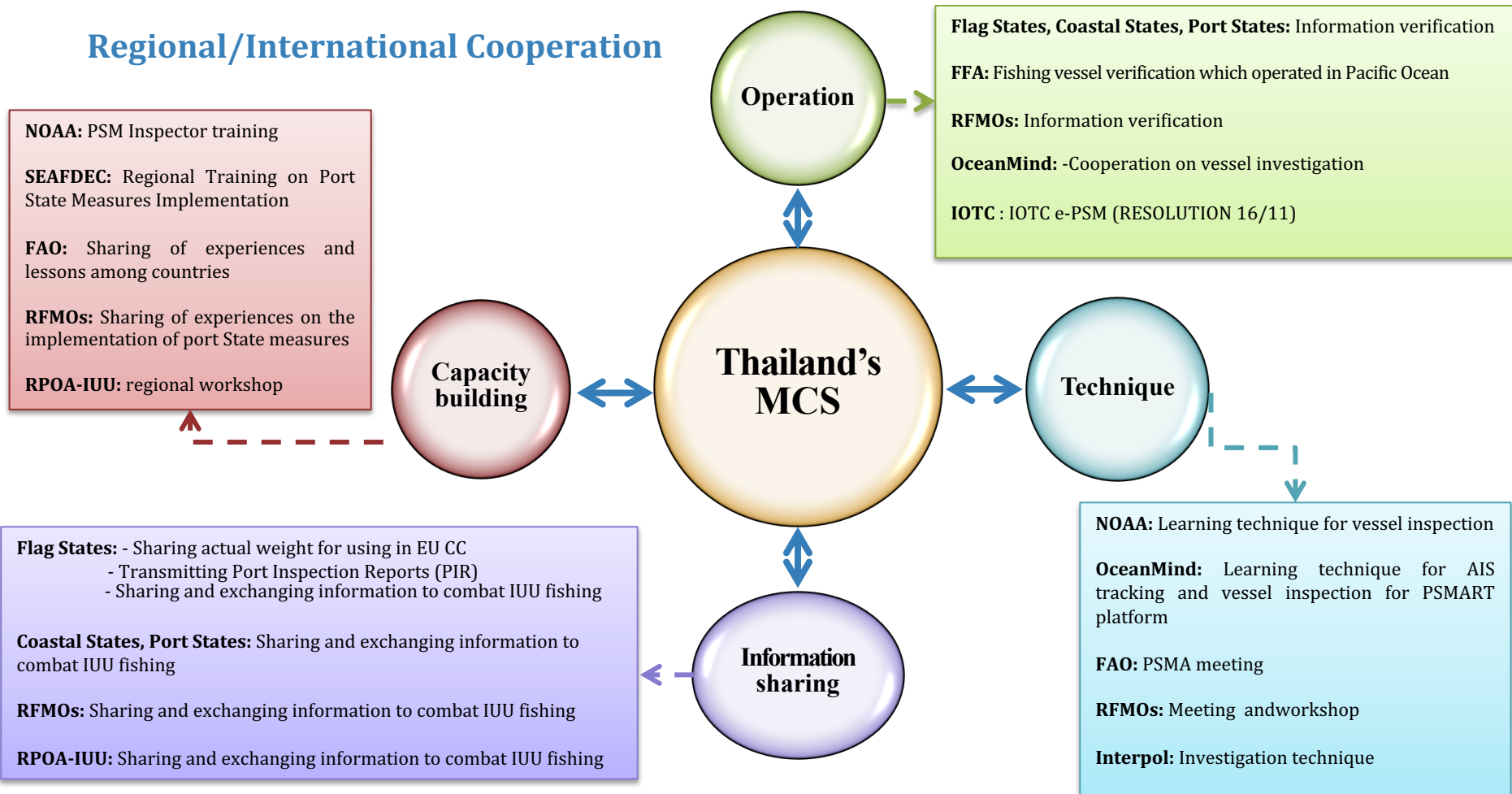


AIS Tracking System



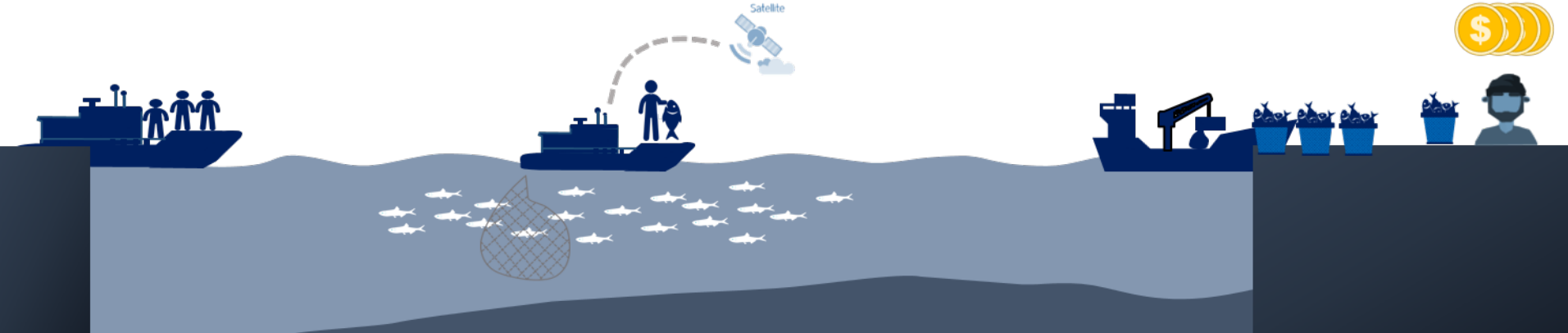
Cooperation

Regional/International Cooperation



Challenges

1. Experiences for collective data to build case file
2. Cooperation among inter-agencies and other States
3. Understanding of law/regulations and procedures in each agency (Harmonized SOP)
4. Financial for support inspection scheme (human resources) and technology





Thank you