

**Installation of the Electronic Reporting System (ERS)  
and Electronic Monitoring System (EM) into the Thai Fleets registered with  
the DOF to operate in oversea**

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**Abstract**

Thailand started to enforce its Electronic Reporting System (ERS) and Electronic Monitoring System (EM) for Thai oversea fishing vessels and Thai oversea carrier vessels on 9 August 2017. For Thai oversea fishing vessels, there are reports of fishing information in the fishing logbook via ERS every day from they operated for the whole trip until the vessel is back to port. In addition, the vessels shall send information of fishing activity every time includes the time to start and end operates fishing gear which shall recorded in fishing logbook. Moreover, ERS its used to review the consistency with the data recorded in the fishing logbook. In addition, Thai oversea fishing vessels and carrier vessels shall request for transshipment and transshipment declaration via ERS.

Electronic monitoring system (EM) is a mechanism to audit fishing and transshipment activities at sea in near real-time manner. EM is comprised of electronic sensors, CCTV system, and broadband satellite communication. The sensors will automatically give the information about fishing and transshipment activities. Once a sensor is triggered, an electronic message as well as the corresponding snapshot photo extracted from CCTV will promptly be sent to the Fisheries Monitoring Center (FMC) to notify of such activated activity. In addition, CCTV system will continuously be operated for the whole trip. When the vessel is back to port, its video storage device is to be intensively inspected by FMC staff for activities on that vessel.

## **Introduction**

Under the power of the Royal Ordinance on Fisheries B.E.2558, Director General of the Department of Fisheries herewith notifies the oversea fishing vessels and carrier vessel to fishing and transshipment outside the Thai waters shall have the Electronic Reporting System (ERS) and Electronic Monitoring System (EM)

The Electronic Reporting System (ERS) is an information and communication technology for reporting information on fisheries in an electronic form so that FMC officers can receive information directly from fishing vessels in the seas regarding transshipment activities at sea and fishing logbook reporting for each cycle required by the Department of Fisheries, as well as seaman transfers to inspect behaviors of those activities.

The Electronic Monitoring System (EM) is a system using information technology and satellite communications for getting information on the use of fishing gears and transshipments at sea from electronic sensor equipment on fishing vessels which has direct connections with the gears used in fishing and transshipments. Information on the use of these gears will be confirmed by information regarding vessels direction from the vessel monitoring system (VMS) as well as information from the closed circuit televisions system (CCTV) captured in snapshots photo and transmitted through a satellite communication in real time. This can be monitored and examined after such video recordings. The Radio Frequency Identification (RFID) technology and electronic signals from capstans and cranes on fishing vessels will be the sensor equipment identifying the start and end of fishing and transshipment activities.

### **The function of the electronic reporting system.**

The information technology system installed on their fishing and carriers vessels. This is to support electronic transmission of information reported through electronic hardware equipment such as desktop computers, laptop computers, or tablets which can be used for inputting information in a format which is user-friendly. Then, such information will be transmitted via the VMS equipment already installed in the vessel to the Department of Fisheries.

1. The information technology shall be able to receive information input on fishing vessels and carrier vessels such as request for authorization of transshipment, transshipment declaration and fishing logbook.

2. When fishing vessels and carrier vessels finish their activities each time, they shall send information to the Department of Fisheries include

2.1 The oversea fishing vessels shall submit fishing logbooks via ERS to the Department of Fisheries for each cycle required.

2.2 The fishing and carrier vessel shall submit transshipment declaration after finish of transshipment activity within 24 hours to DOF via ERS.

**The function of the electronic monitoring system.**

When the electronic sensor equipment receives signals which indicate the start and end of using capstans and cranes, the RFID equipment drifting from or returning to the vessel (in case of the fishing vessel) and opening of the hatch of a fish hold on the vessel, which has a direct relationship to fishing activities and transshipment at sea, the following operation shall occur automatically.

1. The electronic sensor system for each type will send electronic triggers to the information system on electronic hardware equipment such as desktop computers, laptop computers, or tablets installed on fishing and carrier vessels and may automatically send the triggers to the CCTV system at the same time in order to identify the start and end of using capstans, the RFID equipment drifting from and returning to the vessel and opening for the hatch of a fish hold on the vessel. And send information to the FMC via the VMS equipment installed on the vessel.

2. The video recorded by the CCTV system being continuously recorded at all time from the time of the vessel leaving until return (as notified to the Port In - Port Out Controlling Center); being recorded in a folder for video information in an external storage which can be detached in order to be delivered. The recording shall be divided into different files, each of which lasts around 2 hours. On every frame of video recordings, there shall be a clear indication of footage, that is, date and time, location (latitude and longitude), direction, and speed which are indicated in real time in video recording at all time.

3. When the CCTV system receives electronic triggers or from the information system, the CCTV system shall capture snapshot photo frames at a particular time directly from the video being recorded and send them to the FMC via the satellite communications without having taken snapshots separately from the video recording.

4. When the FMC required to send snapshot photos (polling) via the VMS equipment on the vessel, the information system will send electronic triggers to the CCTV system for capture snapshot photos at a particular time directly from the video being recorded and send them to the FMC via the satellite communications without having taken snapshots separately from the video recording.

### **Using electronic reporting system for data collection**

Electronic Reporting System (ERS) is an electronic report to facilitate staffs control vessel activities. Records of fishing logbook, transshipment application form, transshipment declaration are parts of the information that shall be report through ERS. Fisherman must submit fishing logbook information including fishing effort, species and amount of catch. When they start to operate fishing, the system will record the time start and end of each set by sensor which is installed on fishing gear. These information will be used to calculate fishing effort and also used for cross-checking.

In addition, the species and quantity of catch must be consistent with the request of transshipment and transshipment declaration. When the vessels ask for landing aquatic animals, the inspector at port will check whether the species and quantity of catch correspond to the report and record of fishing logbook.

Currently, Thailand has no fishing vessel operate in IOTC Competent area. In the future, if Thai fishing fleet will fish for tuna or tuna liked species in the area. For the most effectiveness, apart from vessel activities control, the ERS will be used for scientific data collection including fishing effort, species and quantity of catch, and also for verify observer's report.

### **Problems and obstacles of ERS, EM**

1. Problems with the electronic reporting systems, due to the master of vessel who is the user very older and has never been used with electronic equipment, causing problems in filling and reporting data.

2. The video storage device throughout the trip of each vessel has a large capacity. If the vessels go out to fishing or transshipment more, it will not make enough video storage space