

## **Department of Fisheries Notification**

### **Subject: Rules and Procedures for Vessel Monitoring System Installation and Maintenance in Monitoring Fishing Vessels Registered as Aquatic Animal Transshipment Vessels or Storage Vessels Operating Outside the Thai waters to Function All the Time 2017 (B.E. 2560)**

Under the power of Section 88(1) of the Royal Ordinance on Fisheries B.E. 2558, Director-General of the Department of Fisheries herewith notifies the followings:

1. Any person who will take an aquatic animal transshipment vessels or storage vessels to transship fish outside the Thai waters, shall have the vessel monitoring system installed not only according to the equipment capacity standards and functional requirements of the vessel monitoring system for fishing vessels registered as aquatic animal transshipment vessels or storage vessels as specified in the Department of Fisheries Notification dated 29 December B.E. 2558 on *Rules and Procedures for Vessel Monitoring System Installation and Maintenance for Aquatic animal transshipment vessels or storage vessels to Function All the Time B.E. 2558* and its amendments, but also according to the equipment capacity standards of and functional requirements and the installation of the vessel monitoring system for fishing vessels registered as aquatic animal transshipment vessels or storage vessels in the high seas outside the Thai waters attached to this Notification.

2. The vessel monitoring system for fishing vessels registered as aquatic animal transshipment vessels or storage vessels installed under this Notification shall be able to connect to an equipment identifying location of a vessel (VMS), in order to send an electronic reporting signal and to monitor electronically as specified in the equipment capacity standards and functional requirements and the installation of the vessel monitoring system for fishing vessels registered as aquatic animal transshipment vessels or storage vessels in the high seas outside the Thai waters attached to this Notification.

3. When the vessel monitoring system under paragraph 1 above has been installed, the owner or master of that aquatic animal transshipment vessels or storage vessels shall report such installation according to the form for Reporting on Installation of the Vessel Monitoring System attached to this Notification and submit it to the Fisheries Monitoring Center, Department of Fisheries. The aquatic animal transshipment vessels or storage vessels may be taken to the sea only after receiving a result of passing the test for completion of the system from the Fisheries Monitoring Center, Department of Fisheries.

The Fisheries Monitoring Center, Department of Fisheries shall notify the result of the test for completion of the system to the owner or master of the aquatic animal transshipment vessels or storage vessels in paragraph 1 within 7 days from the date of receipt of the report. During the system testing, the person registered for that aquatic animal transshipment vessels or storage vessels shall cooperate with and provide facilitation to officers. In case of failing such test, officers of the Fisheries Monitoring Center, Department of Fisheries shall notify such result with a recommendation for modifications.

4. The person registered for aquatic animal transshipment vessels or storage vessels or master shall maintain the vessel monitoring system, as specified in the equipment capacity standards and functional requirements and the installation of the vessel monitoring system for fishing vessels registered as aquatic animal transshipment vessels or storage vessels operating outside the Thai waters attached to this Notification, so that it is capable of functioning all the time during its transshipment activities outside the Thai waters.

5. In case the vessel monitoring system, as specified in the equipment capacity standards and functional requirements and the installation of the vessel monitoring system for fishing

vessels registered as aquatic animal transshipment vessels or storage vessels operating outside the Thai waters attached to this Notification, is not functioning, the master shall immediately notify the situation through the HF/SSB (USB) radio communication system at the main frequency of 8228.0 KHz and the supporting frequency of 6290.0 KHz or through the CB system at the main frequency of 11C and the supporting frequency of 12C; the satellite communications system; or an electronic mail which can be identified the existence of the equipment transmitting satellite signal from a specific fishing vessel or equipment to the Fisheries Monitoring Center, Department of Fisheries. The notification shall be submitted immediately after encountering such operational failure situation, and the equipment shall be repaired to return to a normal operation within 24 hours. During the reparation, any transshipment activity shall be prohibited. If the reparation is not possible, the vessel shall be brought to a port immediately and shall not be taken to transship until the reparation is complete.

6. The person already registered for aquatic animal transshipment vessels or storage vessels operating outside the Thai waters at the time of this Notification becoming effective, shall have the vessel monitoring system installed as specified in the equipment capacity standards and functional requirements and the installation of the vessel monitoring system for fishing vessels registered as aquatic animal transshipment vessels or storage vessels operating outside the Thai waters attached to this Notification, within 180 days from the date this Notification is effective.

7. This Notification shall be effective from the date of publication in the Royal Gazette.

Notified on 10 February B.E. 2560

Adisorn Promthep  
Director-General of Department of Fisheries

**Equipment Capacity Standards and Functional Requirements and the Installation of the Vessel Monitoring System for Fishing Vessels Registers as Aquatic animal transshipment vessels or storage vessels s s in the High Seas Outside the Thai waters**

Equipment Capacity Standards and Functional Requirements and the Installation of the Vessel Monitoring System for Fishing Vessels in the High Seas Outside the Thai waters consist of the Electronic Recording and Reporting System and the Electronic Monitoring System.

**ELECTRONIC RECORDING AND REPORTING SYSTEM (ERS)**

**Electronic Recording and Reporting System (ERS) Standard:**

**1. Introduction**

The Electronic Recording and Reporting System (ERS) is an information and communication technology for reporting information on fisheries in an electronic form so that Department of Fisheries 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.

**2. Scope of the ERS**

2.1 Inspection Improvement for reporting fisheries activity to have accuracy from actual sources of information by utilizing an electronic system containing information which can be referred and verified from the vessel monitoring system (VMS)

2.2 Requirements on sending and receiving information in the ERS.

2.3 Formats of information reported in the ERS.

**3. Qualifications for the ERS**

3.1 The owner, person authorized to fish in the high seas outside the Thai waters, or person registered for Aquatic animal transshipment vessels or storage vessels s s, shall have an information technology system installed on their fishing and transshipment vessels, as the case may be. This is to support electronic transmission of information reported, that is, 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 arranged into a preformatted text message according to the list of items and formats in paragraph 4 and transmitted via the VMS equipment already installed in the vessel to the Department of Fisheries. On the other hand, the equipment will receive information from the Department of Fisheries with the system user in the vessel having to select to input information items relating to him/herself as required under the submission of information in paragraph 5 using the information technology mentioned.

Note: This information technology may be the same system as that in paragraph 3.1.1 of the Electronic Monitoring System.

3.2 All the information in preformatted text messages as specified in paragraph 3.1 which is transmitted in the system shall have integrity from the time of sending from the VMS equipment on the vessel until reaching the Department of Fisheries.

3.3 Distributors, operators, or vessel owners shall not disclose any information regarding adaptation of the VMS equipment and/ or any part of the system, which will likely deter

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information directly transmitted from the VMS equipment on the vessel to the Department of Fisheries.

3.4 The uninterruptible power supply (UPS) system shall be maintained and available for the system under paragraph 3.1 and the VMS equipment at all time.

3.5 System testing shall be done according to Annex H.

#### 4. Items of Information

The information technology referred in paragraph 3.1 shall be able to receive information input on fishing vessels and transshipment vessels at sea and to automatically arrange such information into the following formats without a burden on the users in arranging for these formats by him/herself.

4.1 Request for authorization of transshipment at sea as specified in detail in Annex B.

4.2 Transshipment declaration as specified in detail in Annex C.

4.3 Report on Annex II: IOTC Transshipment Declaration as specified in detail in Annex D.

4.4 Fishing logbook as specified in detail in Annex E.

4.5 Consideration result on the request under paragraph 4.1 shall consist of the following items:

4.5.1 Type of information: notification of consideration result: input 5.

4.5.2 ID (as required in paragraph 5.4) of the information from the request.

4.5.3 To indicate results, use the codes as follows:

1 means "permitted;"

2 means "not permitted;"

3 means "information received cannot be considered and shall be corrected." The process in 5.1.1 shall start again.

Example: 5,1234567890101171030,1

4.6 Request for **seaman transfer** authorization as specified in detail in Annex F.

4.7 Consideration result on the request under paragraph 4.6 shall consist of the following items:

4.7.1 Type of information: notification of consideration result: input 11.

4.7.2 ID (as required in paragraph 5.4) of the information from the request.

4.7.3 To indicate results, use the codes as follows:

1 means "permitted for all seamen requested;"

2 means "not permitted for all seamen requested;"

3 means "at least one seaman not permitted."

4.7.4 In case of the value under paragraph 4.7.3 indicates 3, identification numbers or passport numbers of seamen not permitted to transfer shall also be submitted.

4.8 An acknowledgment receipt of the information shall be done by inputting 6 followed by the type of information received and ID (as required in paragraph 5.4) of the information received, such as:

- The Department of Fisheries sends an acknowledgment receipt when it receives a request for authorization to transship at sea: the entry will be 61,12345678910117

- A fishing vessel sends an acknowledgement receipt when it receives the consideration result on request for authorization to transship at sea: the entry will be 65,12345678910117

## **5. Requirements for Sending and Receiving Information**

### 5.1 Fishing vessels

5.1.1 Fishing vessels which are to transship fish products, shall transmit information according to the Request for Authorization of Transshipment at Sea under paragraph 4.1 to the Department of Fisheries.

5.1.2 When fishing vessels finish transshipping, they shall send information regarding those transshipments covering the following items to the Department of Fisheries:

5.1.2.1 Transshipment Declaration under paragraph 4.2.

5.1.2.2 Report on Annex II: IOTC Transshipment Declaration under paragraph 4.3.

5.1.3 Fishing vessels in the high seas outside the Thai waters shall submit fishing logbooks under paragraph 4.4 to the Department of Fisheries for each cycle required.

### 5.2 Transshipment vessels

5.2.1 When transshipment vessels finish their activities each time, they shall send information regarding such transshipments covering the following items to the Department of Fisheries:

5.2.1.1 Transshipment Declaration under paragraph 4.2

5.2.1.2 Report on Annex II: IOTC Transshipment declaration under paragraph 4.3.

5.2.2 When transshipment vessels enter a port, they shall transmit information on transshipments in total as a report on Annex II: IOTC Transshipment Declaration under paragraph 4.3 to the Department of Fisheries.

5.3 The Department of Fisheries, upon receiving information under paragraph 5.1.1, shall notify a result of its consideration under paragraph 4.5.

5.4 When transmitting all the information referred in this paragraph 5, the identification (ID) which is a reference for each time of information transmission, shall consist of the vessel registration number of the sender (DOF is used for the Department of Fisheries.) and the time and date (timestamp) on which such information is sent, in the order specified in Annex A. For example, 1234567891030150217

5.5 When fishing vessels, transshipment vessels, and the Department of Fisheries receive any information, they shall automatically send an acknowledgment receipt to the sender in a format as specified in paragraph 4.6. The information technology under paragraph 3.1 shall then operate as follows:

5.5.1 When sending information, ID of the information sent shall be recorded along with its text, which shall be expressed in a format that is easy to understand.

5.5.2 After sending information, there shall be an indication that the text, along with ID, of such information has been sent.

5.5.3 When receiving an acknowledgment receipt, there shall be an indication that the recipient has received the text along with the ID of such information.

5.5.4 When receiving information, there shall be an indication of the ID and text of the information in a format that is easy for the users to understand. When the system responds with an acknowledgment receipt, there shall be an indication that it has acknowledged the receipt of the text along with ID of such information.

5.6 When sending information every time, there shall be an indication of timestamps from the VMS equipment on the vessel at all time.

5.7 All the information sent and received under this requirement shall be recorded (logged) in an original form as sent and received so that it can be inspected for at least three years afterward.

5.8 Time indicators in every item of information shall be indicated in UTC.

5.9 The information technology under paragraph 3.1 can receive the current information, that is, date, time, latitude, longitude, direction and speed in real time from the VMS equipment on the vessel at all time.

5.10 In sending information regarding fishing logbooks under paragraph 4.4 every time, information on the use of fishing gears shall also be sent, that is, the start and end of the use of all the fishing gear(s) during the period of time indicated in the fishing logbook under paragraph 4.1 of the Electronic Sensor System as specified in detail in Annex C of the Electronic Sensor System in order to review the consistency of fishing activities recorded in the Electronic Sensor System with the information appeared in the fishing logbook.

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## 6. Standard of service providers of the ERS

Service providers shall have the following qualifications and/or operations:

6.1 Service providers shall be granted a license from the NBTC as a service provider in the same format as the vessel monitoring system.

6.2 Due to the requirements under paragraph 5, service providers shall do the followings:

6.2.1 Demonstrate how to input in information in each step paragraph under 5 in a format that is easy for the users.

6.2.2 Demonstrate results of informational arrangement after inputs under paragraph 6.2.1 to automatically transform to a preformatted text message as indicated in paragraph 4.

6.2.3 Demonstrate sending of preformatted text messages under paragraph 6.2.2 through the VMS equipment in the same format as that operated in fishing vessels and transshipment vessels sent to the Department of Fisheries and demonstrate an acknowledgment receipt message when that information reaches the Department of Fisheries.

6.2.4 Demonstrate results of the arrangement for preformatted text messages under paragraph 6.2.3 received at the Department of Fisheries in a format that is easy to understand.

6.2.5 Demonstrate inspections of information recorded in logbooks in order to trace back such information under paragraph 5.7 in a format that is easy to understand.

6.3 Service providers shall guarantee the availability of information communication through the VMS equipment on the vessel and the operation of information technology system under paragraph 3.1 at the same level as that of the vessel monitoring system (VMS).

6.4 Service providers shall provide for communication channels for transmissions of preformatted text messages from the Department of Fisheries to the VMS equipment on vessels and transshipment vessels which can be recorded by vessel registration numbers.

## ELECTRONIC MONITORING SYSTEM (EMS)

### **Electronic Monitoring System (EMS) Standard:**

#### **1. Introduction**

The Electronic Monitoring System (EMS) is a system using information technology and satellite communications for getting information on the use of fishing and transshipments gears at sea from electronic sensor equipment on fishing vessels which has direct connections with the equipment/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 and transmitted through a satellite communication in real time. This can be monitored and examined after such video recordings. The 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.

#### **2. Scope of the EMS**

2.1 Reports of fisheries and transshipment activities have accuracy from actual sources of information.

2.2 Requirements on sending and receiving information in the EMS.

2.3 Formats of information reported in the EMS.

2.4 Requirements on electronic sensors and the CCTV system.

#### **3. Qualifications for the EMS**

3.1 The owner, person authorized to fish in the high seas outside the Thai waters, or person registered for Aquatic animal transshipment vessels or storage vessels s s, shall provide for the following system or equipment:

3.1.1 Information technology on electronic hardware equipment such as desktop computers, laptop computers, or tablets installed on fishing and transshipment vessels, by which information received under paragraph 3.1.4 can be arranged in a format in order to communicate with the Department of Fisheries via the VMS equipment already installed on fishing vessels as required under paragraph 5 regarding sending and receiving information. This must also facilitate the users' work of monitoring in a format that is easy to understand.

Note: This information technology may be the same system as that in paragraph 3.1 of the Electronic Reporting and Recording System.

3.1.2 The satellite communication system can send snapshots as explained in paragraph 4.2 to the Department of Fisheries in real time.

3.1.3 The CCTV has the detail as specified in Annex A.

3.1.4 The electronic sensor system to indicate the use and end of use of fishing and transshipment gears has the detail as specified in Annex B.

3.1.5 The uninterruptible power supply (UPS) system shall be maintained and available for the system under paragraph 3.1.1, 3.1.2, 3.1.3, 3.1.4 and the VMS equipment on the vessel at all time.

3.1.6 System testing shall be according to Annex D.

3.2 All the information in preformatted text messages sent and received under this Notification shall have integrity from the time of sending from the VMS equipment or the satellite communications system on the vessel until reaching the Department of Fisheries.

3.3 Any information shall not be disclosed regarding the adaptation of VMS equipment and/ or any part of the system, which will bring the ability in deterring information directly transmitted from the VMS equipment on the vessel to the Department of Fisheries.

#### **4. Items of Information**

The information technology referred in paragraph 3.1.1 shall be able to automatically receive electronic codes/values from the system under paragraphs 3.1.3 and 3.1.4 as well as the VMS equipment and to arrange the information in a format required as follows:

4.1 The start and end of using fishing gears and start and end of transshipments at sea as specified in Annex C with the following items of information:

4.1.1 Start and end of use of capstans.

4.1.2 RFID equipment drifting from and returning to the vessel (only in the case of fishing vessels)

4.1.3 Opening of the hatch of a fish hold on the vessel.

4.1.4 Start and end of using cranes.

4.2 Snapshots directly taken from a video frame recorded in the CCTV under paragraph 3.1.3 at the time having an electronic trigger from the information system under paragraph 3.1.1 or the sensor equipment under paragraph 3.1.4. Snapshots produced separately from the video recording shall be prohibited.

4.3 Instructions to send snapshots (polling) under paragraph 4.2 from the Department of Fisheries via the VMS equipment at any time shall comprise the followings:

4.3.1 Type of information: instruction to send snapshots (polling): input 12.

4.3.2 Vessel registration number

4.4 When the Department of Fisheries receives information sent by a vessel at sea under paragraphs 4.1 and 4.2, the Department of Fisheries shall send an acknowledgment receipt message for such information.

4.5 Formats of information shall follow the requirements under Annex A of the ERS Standard.

#### **5. Requirements for Sending and Receiving Information and Functioning Altogether**

5.1 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 transshipments at sea, the following operation shall occur automatically:

5.1.1 The electronic sensor system under paragraph 3.1.4 for each type will send electronic triggers to the information system under paragraph 3.1.1 and may automatically send the triggers to the CCTV system under paragraph 3.1.3 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.



5.1.2 When the information system under paragraph 3.1.1 receives electronic triggers under paragraph 5.1.1, it shall operate as follows:

5.1.2.1 send information under paragraph 4.1 to the Department of Fisheries via the VMS equipment installed on the vessel.

5.1.2.2 send electronic triggers to the CCTV system under paragraph 3.1.3 if the CCTV is turned off and does not directly receive electronic triggers from the electronic sensor equipment under paragraph 3.1.4.

5.2 The video recorded by the CCTV system under paragraph 3.1.3 shall operate as follows:

5.2.1 being continuously recorded at all time from the time of the vessel leaving a port (as notified to the PIPO Center) until return (as notified to the PIPO 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, and in a format of recording dates and times which can be easily understood and each files' names can be used as an index for finding information, e.g. 2017-01-25 15:30:00.

5.2.2 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.

5.2.3 When the CCTV system receives electronic triggers under paragraph 5.1.1 or from the information system under paragraph 3.1.1, the CCTV system shall capture snapshot frames at a particular time directly from the video being recorded and send them to the Department of Fisheries via the satellite communications under paragraph 3.1.2 without having taken snapshots separately from the video recording.

5.3 When receiving instructions to send snapshots (polling) from the Department of Fisheries via the VMS equipment on the vessel under paragraph 4.3, the information system under paragraph 3.1.1 will send electronic triggers to the CCTV system under paragraph 3.1.3 and automatically operate under paragraph 5.2.3.

5.4 When sending information every time, timestamps from the VMS equipment on the vessel shall always be sent along with the information.

5.5 Determination of information identification shall follow steps under paragraph 5.4 of the ERS standard.

5.6 Acknowledgment receipt of information shall follow steps under paragraph 5.5 of the ERS standard.

5.7 All the information sent and received under this paragraph 5 shall be recorded (logged) in an original form as sent and received so that it can be inspected for at least three years afterward.

5.8 Time indicators in every item of information shall be indicated in UTC.

5.9 The information technology under paragraph 3.1.1 can receive the current information, that is, date, time, latitude, longitude, direction and speed in real time from the VMS equipment on the vessel at all time.

5.10 Information of the start or end of using fishing gears and start or end of transshipments at sea under paragraph 4.1 shall be recorded for use under paragraph 5.10 of the ERS Standard.

## **6. Standard of service provider of the ERS**

Service providers shall have the following qualifications and/or operations:

6.1 Service providers shall be granted a license from the NBTC as a service provider in the same format as the vessel monitoring system.

6.2 Service providers can demonstrate that when the electronic sensor equipment can detect signals which indicate the start and end of using capstans and cranes, the RFID equipment drifting from or returning to the vessel (only in the case of fishing vessels), and opening of the hatch of a fishing hold on the vessel, the process under paragraph 5.1 shall operate automatically.

6.3 With regard to the CCTV system, recorded videos and snapshots, service providers shall:

6.3.1 demonstrate how to search and display video recorded under paragraph 5.2.1 when indicating a particular time for search;

6.3.2 demonstrate that snapshots under paragraph 5.1.2.2 are those captured from a frame in the video recordings in real time by automatically comparing electronically.

6.4 Service providers demonstrate that sending and receiving of information via the VMS system and the satellite communications are operational, i.e. information sent reaches the destination completely and reaches the Department of Fisheries when the system receives an acknowledgment receipt.

6.5 Service providers shall guarantee the availability of information communication through the VMS equipment on the vessel, the satellite communications system, and the operation of the information technology under paragraph 3.1.1 at the same format as that of the vessel monitoring system (VMS).

6.4 Service providers shall provide for communication channels for transmission of information from the Department of Fisheries to the VMS equipment on vessels and transshipment vessels which can be recorded by vessel registration numbers.