



## VMS 5: UK fishing boats satellite tracking device specification

This specification is intended to assist UK fishing vessel masters, owners and their representatives in ensuring that the satellite tracking device used on board their vessels for satellite monitoring is in accordance with the requirements laid out in Commission Implementing Regulation (EU) 404/2011 of 8 April 2011 laying down detailed rules for the implementation of Council Regulation (EC) No 1224/2009.

If you require further guidance, please contact the relevant UK fishing monitoring centre (see Annex A).

### UK technical specification

#### Contents

1. General requirements .....	2
2. Satellite-tracking device – physicals .....	2
3. Satellite-tracking device – functionality .....	2
4. Satellite-tracking device – back up .....	3
5. Status code list .....	3
6. Satellite-tracking device – outputs .....	3
7. Satellite communication service (SCS) .....	4
8. Supply .....	4
9. Installation .....	5
Annex A: Contact details for fisheries monitoring .....	5

## **1. General requirements**

1.1 All goods, wiring and connections to be built robustly with sufficiently strong materials to withstand normal conditions at sea.

1.2 All goods required to meet EU safety requirements and standards and be CE type approved as appropriate for maritime installation.

## **2. Satellite-tracking device – physicals**

2.1 The satellite-tracking device must have an internal GPS or other automatic satellite-based position reporting system, satellite communications (satcom) antenna and transceivers. These components must be integrated in one single sealed unit.

2.2 Any part of the satellite-tracking device or antenna exposed to the elements must be marinised and waterproof to IP66 standard.

2.3 The satellite-tracking device must be approved for maritime use by the satellite service provider.

2.4 The satellite-tracking device must be able to cope with the power variations likely to be experienced on board fishing vessels over 12 metres in length.

2.5 All satellite-tracking devices are to be physically sealed before they are handed to the installer and the means provided to detect any physical interference with each unit. As a minimum, there must be a sensor in the satellite-tracking device that detects when it is opened and closed and transmits a position report with the appropriate event status code.

2.6 There must be no accessible external connectors on the satellite-tracking device other than those required for power.

2.7 Once the satellite-tracking device is sealed, any adjustments to scripts and other software functionality must only be possible either over the air or by authorised personnel opening the satellite-tracking device.

2.8 Each satellite-tracking device must have a unique serial number indelibly marked on the outer casing (possibly embossed) that must be visible after the installation is complete.

2.9 The serial number of the satellite-tracking device should be stored in its firmware in such a way that does not allow deletion or amendment.

2.10 There must be a visible external display to indicate that mains power is connected.

## **3. Satellite-tracking device – functionality**

3.1 The satellite-tracking device must be able to support hourly reporting.

3.2 If two-hourly reporting is supported then a polling facility must be provided to enable the authorities to determine the current position of the vessel with minimal delay.

3.3 satellite-tracking device must support changes to the frequency of data transmissions that may be higher or lower than that of the regulatory requirements. Such changes must only be possible through secure mechanisms either over the satellite link or through locally authorised access.

3.4 The satellite-tracking device must be capable of providing notification to the fisheries monitoring centre of switch-off prior to arrival in port.

## **4. Satellite-tracking device – back up**

4.1 battery facility must be provided to give the satellite-tracking device the capability to:

- a) when primary power is lost
  - transmit an appropriate status code with position report indicating change in power status
  - then to transmit at the required frequency for at least 72 hours
  - maintain its most recent settings throughout the period of primary power loss.
- b) when battery power falls below the level required to sustain transmissions the satellite-tracking device must maintain its most recent settings
- c) when primary power is restored
  - recommence normal functioning with the most recent settings and not with any default factory settings
  - transmit a position report immediately with an appropriate event status code.

4.2 Following a break in the satellite communications antenna link at the time a report is required to be transmitted, the report to be sent must be stored. On restoration of the link, the satellite-tracking device must be capable of:

- transmitting immediately reports that provide the current position and the last position recorded before the link was broken along with an appropriate status code to indicate there had been a broken link
- then transmitting all stored reports, earliest first.

## **5. Status code list**

5.1 The following status codes must be provided in position reports:

- loss of primary power/switch to battery (when lost)
- restoration of primary power (when restored)
- loss of connection with the satellite link (when restored)
- opening the satellite-tracking device or any connected component of the satellite-tracking device
- no position fix obtained at appointed time.

## **6. Satellite-tracking device – outputs**

6.1 The transmitted position report is to contain:

- fishing vessel identification
- most recent geographical position of the fishing vessel with a position error which shall be less than 500 metres, with a confidence level of 99 per cent (in whatever format delivers this accuracy) – must conform to WGS84
- date and time (in UTC) of the fixing of the said position
- speed and course of the vessel (equivalent to tenths of knots and course express in degrees).

An automatic satellite-based position system meeting the required standard (such as GPS) must be used to derive these data items.

6.2 The satellite-tracking device's unique serial number must be obtainable over the air, either from each report or from a specific poll request.

6.3 The satellite-tracking device must be able to establish a link with the satellite constellation with minimal delay after fixing the position, under the majority of conditions experienced while at sea and in port.

6.4 Mandatory regulatory position reports are to be transmitted individually from the land earth station to the UK vessel monitoring system (VMS). There is to be no batching, other than as a means for conveying reports retrospectively following a break in transmission. Any additional reports transmitted from the satellite-tracking device that do not relate to the latest position report, or to information the authority has requested, are to be removed before transmission from the land earth station to the UK VMS.

## **7. Satellite communication service (SCS)**

7.1 The satellite-tracking device must link with a recognised commercial satellite communications service (SCS).

7.2 The satellite-tracking device must be capable of establishing a link with the SCS satellite constellation without delay for the transmission of position reports at the regulatory frequency.

## **8. Supply**

8.1 Production must be in line with company-wide quality procedures certified to ISO standards for the work involved.

8.2 Records must be available to the authorities showing serial numbers and part numbers of the components of the satellite-tracking device links to the final serial number for the satellite-tracking device.

8.3 The UK fisheries departments' approved supplier is:

AST Marine Sciences Limited  
8 White Lodge Business Park  
Hall Road  
Norwich  
Norfolk  
NR4 6DG

Tel: +44 (0)1493 416566

Email: [info@ast-msl.com](mailto:info@ast-msl.com)

Web: [www.ast-msl.com](http://www.ast-msl.com)

## 9. Installation

9.1 All in-satellite-tracking device mechanisms (such as scripts, account numbers and satellite-tracking device ids) for reporting and other functionality must be pre-loaded before the satellite-tracking device is sealed. The setting must be protected with a unique password for that vessel, known only to persons approved by the fisheries monitoring centre.

9.2 It must be possible to securely fit the components of the satellite-tracking device to the infrastructure of the vessel.

## Annex A: Contact details for fisheries monitoring

### United Kingdom

#### England and Wales

Marine Management Organisation

Lancaster House

Hampshire Court

Newcastle upon Tyne

NE4 7YH

Tel: +44 (0)191 376 2500

Fax: +44 (0)191 376 2501

Email: [vms@marinemanagement.org.uk](mailto:vms@marinemanagement.org.uk)

#### Scotland

Marine Scotland (Compliance)

Area 1A North

Victoria Quay

Edinburgh

EH6 6QQ

Tel: +44 (0)131 244 4194

Fax: +44 (0)131 244 6471

Telex: 727 696

Email: [mmc@scotland.gsi.gov.uk](mailto:mmc@scotland.gsi.gov.uk)

#### Northern Ireland

Department of Agriculture and Rural  
Development NI (Fisheries Division)

Room 421

Dundonald House

Upper Newtownards Road

Belfast

BT4 3SB

Tel: +44 (0)2890 765 821

Fax: +44 (0)2890 522 394

Email: [stephen.mccomiskey@dardni.gov.uk](mailto:stephen.mccomiskey@dardni.gov.uk)

#### UK contact point for submission of manual position reports

United Kingdom Fisheries Call Centre

Tel: +44 (0)131 271 9700

Fax: +44 (0)131 244 6471

Telex: 727 696

Email: [ukfcc@scotland.gsi.gov.uk](mailto:ukfcc@scotland.gsi.gov.uk)

### For vessels administered in Channel Islands

#### Guernsey

Department of Fisheries

Raymond Falla House

PO Box 459

Longue Rue St Martins

Guernsey

GY1 6AF

Te: 01481 235 741

Fax: 01481 235 015

Email: [jon.torode@seafisheries.gov.gg](mailto:jon.torode@seafisheries.gov.gg)

#### Jersey

Department of Agriculture and Fisheries

PO Box 327

Howard David Farm

Trinty  
Jersey  
JE4 8UF

Tel: 01534 866 200  
Fax: 01534 866 201  
Email: [aqfishj@super.net.uk](mailto:aqfishj@super.net.uk)

### For vessels administered in the Isle of Man

Department of Environment, Food and Agriculture  
Thie Slieau Whallian  
Foxdale Road  
St Johns  
Isle of Man  
IM4 3AS  
Tel: 01624 685 837  
Fax: 01624 685 851  
Email: [fisheries@gov.im](mailto:fisheries@gov.im)

### Other member states

#### Belgium

Tel: (32-59) 50 89 66/51 29 94  
Fax: (32-59) 51 45 57  
Telex: 81075

#### Denmark

Tel: (45) 33 96 36 09  
Fax: (45) 33 96 39 00  
Telex: 16144 fm dk

#### Finland

Tel: (368-9) 160 29 02  
Fax: (358-9) 160 22 84

#### France

Tel: (33 2) 97 55 35 35  
Fax: (33 2) 97 55 49 34  
Telex: 950 519

#### Germany

Tel: (30-210) 451 9901  
Fax: (30-120) 419 1561

#### Greece

Tel: (49-40) 3 89 05-173-180  
Fax: (49-40) 3 89 05-128-160  
Telex: 0214/763

#### Ireland

Tel: (353 21) 864 830/864 831  
Fax: (353 21) 378 096

#### Italy

Tel: (39) 06 59 23569  
Fax: (39) 06 59 22737

#### Netherlands

Tel: (31-45) 546 6222/(31-45)  
546 6230  
Fax: (31-45) 546 1011

#### Portugal

Tel: (351-21) 302 51 00/302 51  
90  
Fax: (351-21\_ 302 51 01

#### Spain

Tel: (34) 913 47 17 50  
Fax: (34) 913 47 15 44

#### Sweden

Tel: (46-31) 743 03 00  
Fax: (46-31) 743 04 44

### Third countries

#### Norway

Tel: +47 55 238 132/133  
Fax: +47 55 238 276  
Telex: 42151/40293

#### NEAFC

Tel: +44 20 7631 0016  
Fax: +44 20 7636 9225

#### Faroese

Tel: +298 31 10 65  
Fax: +298 31 39 81

#### Greenland

Tel: +299 345 377  
Fax: +299 323 235/323 236