

Vessel Tracking Installation and Maintenance Standard

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	1.00	2018	Commencement of standard for vessel tracking for net, line and crab fisheries
	2.00	2019	Updated to include vessel tracking provisions for remaining trawl and harvest fisheries for commencement from 1 January 2020.
	2.10	2020	Updated to identify the authority holder or a person under direction could register VT units and move units between boats
	3.0	2020	Added the vessel tracking units Thrane and Thrane 3027 and Furuno Felcom-16 to the grandfathered units list.

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1 Legislative basis

In accordance with the *Fisheries Act 1994*, the Chief Executive has established and operates a system that receives a date-time coded vessel position from the vessel tracking unit registered to a primary or tender fishing boat. A departmental database stores for each boat mark/ tender identifier, the position, date, time, unit identifier sent from the registered vessel tracking unit.

The Vessel Tracking Installation and Maintenance Standard provides information to technicians, installers and users of vessel tracking equipment and must be complied with when, configuring installing and maintaining vessel tracking equipment.

2 Installation obligations

Fisheries Queensland requires approved vessel tracking equipment to be installed and maintained by a technician (qualified electrician, including auto or marine electrician, or a technician authorised by the vessel tracking equipment supplier) unless otherwise stated in this document.

The standards required for configuring and installing both the software and hardware of vessel tracking equipment are outlined in this document.

Fisheries Queensland seeks the cooperation of the approved suppliers and technicians in maintaining the integrity of the vessel tracking equipment and ensuring its ongoing viability as an effective tool for managing the Queensland fisheries resources.

In summary, the responsibilities of the installer (technician or self-installer) are to:

- install in accordance with the installation guide provided by the manufacturer;
- comply with the agreed standards for the installation and maintenance of the vessel tracking equipment;
- ensure vessel tracking equipment is installed and maintained, at all times, as approved by Fisheries Queensland;
- cooperate with Fisheries Queensland and the vessel tracking equipment manufacturer in resolving technical faults or incident;
- advise purchasers of equipment for vessel tracking purposes of Fisheries Queensland's requirements for installation; and
- assist in maintaining the system integrity by reporting instances of suspected tampering with equipment to Fisheries Queensland.

3 Approved vessel tracking equipment and plans

All boats required to install vessel tracking equipment must use a Fisheries Queensland approved unit type. Table 1 lists the approved vessel tracking equipment, vessel tracking equipment suppliers and installation methods for particular fisheries.

All approved units must be purchased from an approved provider and associated with an approved polling rate and data plan as listed in Table 2 and Table 3. If an approved unit is not purchased from an approved provider and not associated with an approved data plan, the unit is considered as not compliant with Fisheries Queensland's requirements.

Contact information for unit and data plan suppliers can be found in Section 8.2 of this document.

Under the vessel tracking rebate scheme, approved units are categorised as either A or B dependent on the units prices. Table 1 shows the classification of each units.

Grandfathered units are units that have been reviewed and deemed unsuitable for new installations, replacements or transfers between boats. Grandfathered units, as listed in table 1, that are already installed can be used while still complying with this Standard.

Table 1: Approved vessel tracking unit for Fisheries Queensland

Category ⁶	Unit and provider	Approved units and providers				
		Trawl	Line	Net	Crab	Harvest
A	Spot Trace Pivotel	✓ ²	x	✓	✓	x
B	YB3i⁷ Pivotel PoleStar	✓ ^{1, 2}	✓	✓	✓	✓ ⁴
B	IDP690/ST6100 *approved provider not applicable	✓ ^{1, 2}	✓	✓	✓	✓ ⁴
B	IDP800 *approved provider not applicable	✓ ^{1, 2}	✓	✓	✓	✓ ⁴
B	CLS Triton ADV CLS Oceania	✓ ^{1, 2}	✓	✓	✓	✓ ⁴
Grandfathered Units						
	Thrane & Thrane 3027⁸ *approved provider not applicable	✓ ¹	x	✓ ³	x	✓ ⁵
	Furuno Felcom-16⁸ *approved provider not applicable	✓ ¹	x	✓ ³	x	✓ ⁵

¹ Approved for trawlers operating under symbols T1, T2, T4, M1 and M2

² Approved for trawlers operating under symbols T5, T6, T7, T8 and T9

³ Approved for N4, N12, and N13 only

⁴ Approved for harvest fisheries with the symbols A1, A2, B1, D, J1 and R

⁵ Approved for B1 fishery only

⁶ **Category** refers to the category of approved unit used in the Vessel Tracking Rebate Scheme

⁷ YB3i units purchased from Option Audio before 1 July 2019 remain approved

⁸ Unit grandfathered on 1 January 2021

Table 2: Approved vessel tracking data provider, polling rate and data plan

Unit and Data Provider	Approved vessel tracking data plans and polling rate					
	Trawl ¹	Trawl ²	Line	Net	Crab	Harvest
Spot Trace Pivotel	x	5 minute Unlimited ²	x	5 minute Unlimited	5 minute Unlimited	x
YB3i Pivotel PoleStar	15 minute CAP35+ 60kb ¹	5 minute CAP35+ 60kb ²	5 minute CAP44+ 60kb	5 minute CAP44+ 60kb	5 minute CAP44+ 60kb	15 minute CAP35+ 60kb ⁴
IDP690/ST6100 Pole Star	15 minute CSP – IDPST6100 100k ¹	5 minute CSP – IDPST6100 100k ²	5 minute CSP – IDPST6100 200k	5 minute CSP – IDPST6100 200k	5 minute CSP – IDPST6100 200k	15 minute CSP – IDPST6100 100k ⁴
IDP800 Pole Star	15 minute CSP – IDPST6100 100k ¹	5 minute CSP – IDPST6100 100k ²	5 minute CSP – IDPST6100 200k	5 minute CSP – IDPST6100 200k	5 minute CSP – IDPST6100 200k	15 minute CSP – IDPST6100 100k ⁴
CLS Triton ADV CLS Oceania	15 minute QVMS15 ¹	5 minute QVMS15 ²	5 minute QVMS05	5 minute QVMS05	5 minute QVMS05	15 minute QVMS15 ⁴
Grandfathered Units						
Thrane & Thrane 3027⁶ Pole Star	15 minute Single packet – Inmarsat ¹	x	x	5 minute Single packet – Inmarsat ³	x	15 minute Single packet – Inmarsat ⁵
Furuno Felcom-16⁶ Pole Star	15 minute Single packet – Inmarsat ¹	x	x	5 minute Single packet – Inmarsat ³	x	15 minute Single packet – Inmarsat ⁵

¹ Approved for trawlers operating under symbols T1, T2, T4, M1 and M2

² Approved for trawlers operating under symbols T5, T6, T7, T8 and T9

³ Approved for N4, N12, and N13 only

⁴ Approved for harvest fisheries with the symbols A1, A2, B1, D, J1 and R

⁵ Approved for B1 fishery only

⁶ Unit grandfathered on 1 January 2021

Table 3: Approved vessel tracking unit, approved unit provider and installer requirement

Approved vessel tracking unit	Approved Unit Provider	Installer
Spot Trace	Pivotel	Self-installed or Technician
YB3i (RockFLEET)	Pivotel and PoleStar	Technician or self-installed if approval granted by provider
IDP690/ST6100	NA	Technician or self-installed if approval granted by provider
IDP800	NA	Technician or self-installed if approval granted by provider
CLS Triton ADV	CLS Oceania	Technician

4 Installation standards and requirements

4.1 General

When installing vessel tracking equipment on a boat, a technician, or person if self-installing, must observe all requirements of the equipment manufacturer – satellite provider, relevant safety authorities and Fisheries Queensland.

Technicians should observe normal best practice for carrying out such equipment installations. Fisheries Queensland has additional requirements for some aspects of the installation due to the nature of the use of the system for fishery management purposes.

It is recognised that the physical conditions on boats can vary and as a result, installers must exercise some discretion. For items that are mandatory, there is no room for use of discretion and is indicated by the use of the word 'must'. Any installation problems in these areas must be referred to Fisheries Queensland for resolution.

All boats required to install vessel tracking equipment must use a Fisheries Queensland approved unit type (Table 1) and Fisheries Queensland approved plan (Table 2).

Note: An independent marine surveyor may review installations to verify compliance with these standards.

4.2 Spot Trace and YB3i (RockFLEET) Unit

4.2.1 Unit Location

The unit must be located where it:

- has a clear view of the sky at all times;
- is mounted horizontally or as deemed suitable by the provider;
- is not prone to accidental bumping;
- is secure in the rough sea conditions;

- does not suffer interference from the operation of other equipment on the boat nor cause interference with other essential equipment on board;
- does not interfere with the normal, safe operation of the boat; and
- complies with any other locational requirements from the manufacturer.

Note: The location may need to have easy access so that the unit can be switched between boats and/or replacement of internal batteries can occur.

4.2.2 Power supply

The approved unit must be connected to a reliable external power supply while required to be polling such that:

- it is not subject to large fluctuations in voltage that may cause a reset condition or damage to the unit;
- the power supply must meet the manufacturer's specification for electrical characteristics (e.g. voltage range, power consumption, ripple voltage);
- cabling is protected by ducting, or measures such that is not exposed in any high degree to accidental damage;
- particular care should be taken with cabling which traverses open areas. If this cannot be avoided, then a conduit (preferably metal) must be used to prevent accidental damage and ingress of water; and
- switching between alternate power supply systems must not cause the unit to cease functioning for more than the time period of 3 required positions.

4.3 Skywave, Orbcomm Units (IDP690, ST6100 and IDP800) and CLS Triton ADV Units

For Skywave and Orbcomm units that do not have an external antenna, the technician must refer to Section 4.2.1 for installation location and requirements. The IDP690, ST6100 and IDP800 can operate without external antennas.

For Skywave IDP800 and CLS Triton ADV units, an external antenna may be required. If installing an IDP800 or a CLS Triton ADV with an external antenna, the technician must refer to Section 4.4.2 for installation location and requirements.

For the Skywave and Orbcomm unit, power supply must be connected in accordance with Section 4.2.2.

For the CLS Triton ADV unit, power supply to the transceiver must be connected in accordance with Section 4.4.5.

4.4 Thrane & Thrane and Furuno Units

4.4.1 Transceiver location

The transceiver must be located where it:

- is protected from the elements of water, wind and weather;
- is secure in the roughest of sea conditions;
- does not suffer interference from the operation of other equipment on the boat nor cause interference with other essential equipment on-board;
- is not prone to accidental bumping; and
- does not interfere with the normal, safe operation of the boat.

Where practical, the transceiver must be bolted to the boat's superstructure or fittings and cannot be easily moved. It is not acceptable to affix transceiver to inbuilt walls or easily removed benches.

After installing the transceiver on the nominated boat, the technician must turn on the unit and perform test procedures in accordance with manufacturer's and Inmarsat requirements.

NOTE: Where applicable, Fisheries Queensland DNID, ENID and the member numbers of each mobile are to be treated as confidential and must not be divulged to any party other than Fisheries Queensland. Failure to observe this requirement and to take reasonable steps to secure this information may result in the withdrawal of approval.

4.4.2 Antenna location

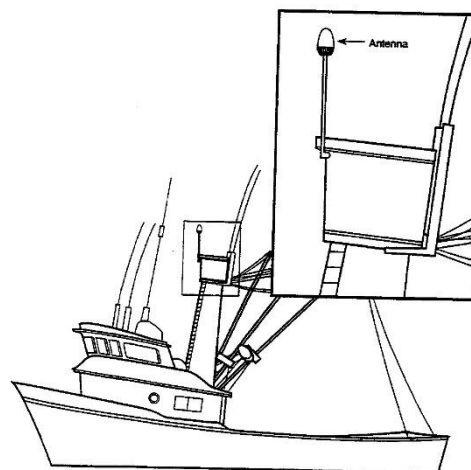
The antenna must be located such that it:

- has sky-wards access which is unobstructed by any part of the boat;
- is the highest antenna where practical on any structure supporting other antenna;
- does not suffer interference from the operation of other equipment on the boat; and
- does not interfere with the normal, safe operation of the boat.

The antenna should be located such that it:

- is as unobstructed as possible by any part of the boat or its equipment, in the horizontal plane
- is at the highest practical point on the boat; and
- does not require the use of scaffolding or lifting equipment to gain service access.

The antenna must be securely bolted to the structure of the boat for example, a mast or other substantial part of the boat which cannot be easily moved.



4.4.3 Cabling

The antenna and the transceiver must be connected by a cable, which:

- If cabling is passing through at least one bulkhead of the boat, it
 - is protected by ducting, or measures such that is not exposed in any high degree to accidental damage;
 - passes through an aperture of a size no greater than is required for the diameter of the cable;
- Particular care should be taken with cabling which traverses open areas such as a deck or roof. If this cannot be avoided, then a conduit (preferably metal) must be used to prevent accidental damage and ingress of water;
- It must be one continuous piece and of the highest quality, especially in relation to insulation and water proofing characteristics;
- It must not be possible to remove the transceiver and antenna from the boat without disconnecting the joining cable; and
- It meets the manufacturer's specifications for appropriate electrical characteristics (e.g. attenuation, DC resistance, etc).

4.4.4 Cable connectors

Antenna cable connectors must:

- have the cable connector pins soldered to the cable; and
- be protected where the cable connects to the Antenna with self-amalgamating tape.

4.4.5 Power supply

The transceiver or approved unit must be connected to a power supply such that:

- it is not subject to large fluctuations in voltage that may cause a reset condition or damage the transceiver;
- the power supply must meet the manufacturer's specification for electrical characteristics (e.g. voltage range, power consumption, ripple voltage);
- there are two separate sources of power, one being an alternate power source (e.g. start-up batteries, emergency batteries, internal batteries); and
- switching between two sources of power supply systems must occur automatically with minimal interruption to power.

5 Activation and Commissioning

5.1 General

It is the responsibility of the licence holder to ensure that any maintenance on vessel tracking equipment has been completed in accordance with the manufacturer requirements. It is recognised that genuine equipment failures will occur, however it is recommended that licence holders and technicians adhere to the best practice for the maintenance of this type of equipment.

5.1.1 Activation and registration of vessel tracking units

Before undertaking any activity under a licence, vessel tracking units must be activated and registered. Additionally, units that are to be used must be activated on a data plan with the unit's associated provider, approved by Fisheries Queensland (see Table 2). Once the unit has been activated by the provider, it is the responsibility of the licence holder, or another person under the direction of the authority holder, to register the unit to the associated licence and boat mark, (and if on a tender, the tender number), on FishNet¹ or the Commercial Fishing Application. A unit can only be registered to one licence at a time.

In addition, it is the responsibility of the licence holder to confirm that the unit is operational and polling correctly before undertaking activities under the licence as per the *Fisheries (General) Regulation 2019*.

5.1.2 Moving vessel tracking units between boats

If the unit remains compliant with this standard, a unit may be moved between primary and tender boats as well as commercial fishing boat licences, commercial harvest fishery licences or a charter fishing licences held by the same licence holder. Units cannot be moved between licences held by different licence holders unless otherwise approved by the Chief Executive.

In addition, it is the responsibility of the licence holder or another person under the direction of the authority holder, to register all unit movements on FishNet¹ or the Commercial Fishing Application before commencing a trip.

5.2 Additional requirements for Thrane & Thrane and Furuno units

Fisheries Queensland has additional requirements for some aspects of the maintenance of the Thrane & Thrane and Furuno units used in the trawl fishery with the symbols T1, T2, T4, M1 and M2.

5.2.1 Software access restrictions

For Thrane & Thrane and Furuno units, the ability to disable a Data Network Identification (DNID) or data reporting in general is normally available to a transceiver user through the attached PC known as the Data Terminating Equipment (DTE).

¹ See the associated Quick Guide for using FishNet for detailed instructions.

Fisheries Queensland requires that, through configuration of the transceiver and its DTE, whether by password or other means, such a function is not available to the boat operator.

For all units, the installer must ensure that lockout facilities are activated and that any potential for the boat operator to bypass such lock out facilities is minimised.

The following alerts must be activated when a unit is configured through the data report modes:

- First/last position report;
- Last position at power up;
- Antenna disconnection report;
- Antenna blockage report;
- Sleep mode must be disabled.

5.2.2 Data reporting configuration

Units must be configured as follows:

- The supplier must ensure that sleep mode is disabled to allow the vessel tracking unit to send automatic positional data reports at programmed intervals;
- The supplier must also ensure that single-packet reporting is enabled (2-packet reporting disabled) to minimise the size of data packets being sent and reduce service costs.

6 Maintenance Standards and Requirements

6.1 General

Any unit listed as requiring a technician for installation in Section 3 is also required to have any maintenance on the equipment be completed by a technician. The technician must complete maintenance on the equipment in accordance with the manufacturer's requirements.

It is recognised that genuine equipment failures will occur from time to time. When this occurs, the person in control of the fishing operation must ensure that the unit is operating prior to commencing any activities under the licence as per the *Fisheries (General) Regulation 2019*.

The maintenance of the equipment should be conducted in a manner to reduce boat downtime and such that it does not unduly interfere with the normal fishing activities of a boat.

If the malfunctioning unit is replaced with a new unit, the technician and licence holder must follow this standard.

6.2 Maintenance of Thrane & Thrane and Furuno Unit

Upon completion of maintenance work, the technician must complete the *Fisheries Queensland vessel tracking Maintenance and Inspection Report*, which can be found on the department's website, identifying:

- The boat name
- Inmarsat Mobile Number

- Manufacturer & Model of ALC
- The nature of the work completed.

The technician must confirm with Fisheries Queensland that the vessel tracking unit is polling correctly and responding to commands as per the Fisheries Queensland's information requirements. This part of the process must be performed during office hours (8.00am to 4.00pm) and Fisheries Queensland must receive a copy of the *Fisheries Queensland vessel tracking Maintenance and Inspection Report* before the boat is used to act under the relevant licence.

The following standards must be observed by technicians in maintaining vessel tracking equipment.

6.3 Vessel tracking equipment integrity

Technicians performing maintenance on boats equipped with Fisheries Queensland approved units, must inspect for indications of tampering. Any indications of tampering must be reported immediately to Fisheries Queensland.

Vessel tracking equipment may be evaluated in the field and is left to the discretion of the technician as to whether the equipment is maintained or replaced. At all times there should be minimal inconvenience to the boat operator.

7 Distress capabilities

Some vessel tracking equipment may provide a facility for distress messaging. Units are not a compulsory safety requirement. Fisheries Queensland does not receive or act on any emergency transmissions made by the units as vessel tracking equipment is not designed as a safety device.

8 Further information

8.1 Documents

This document should be read in conjunction with the *Fisheries Act 1994* and the *Fisheries (General) Regulation 2019* both available on the department's website.

8.2 Contact numbers

For general Fisheries Queensland enquiries, contact 13 25 23, or visit www.daf.qld.gov.au

To contact Pivotel (SPOT Trace units and YB3i (RockFLEET) units)

Phone: 1300 882 448 or 0406 320 088 Email: dafvms@pivotel.com.au

To contact Pole Star (IDP690/ST6100/IDP800 and YB3i (RockFLEET) units)

Phone: 02 4254 1055 Email: sales@polestarglobal.com

To contact CLS Oceania (CLS Triton ADV unit)

Phone: 0418 368 917 Email: enquiries@clsocceania.com

To contact INMARSAT

Phone: +1 70 9748 4226 Email: GlobalCustomerSupport@inmarsat.com

To contact Fisheries Queensland Vessel Tracking Unit (Office Hours only)

Phone: 07 3211 9111 Email: vesseltracking@daf.qld.gov.au

9 Abbreviations, acronyms and definitions

Approved unit – a unit listed in Section 3 of this document.

Approved plan – a plan listed in Section 3 of this document.

Commercial fishing boat, fishing boat or boat – means any mechanically driven or powered ship, boat or other vessel of any size or type that is ever used to take or store fish for trade or commerce.

Department of Agriculture and Fisheries (DAF) – department within the Queensland Government.

Fisheries Queensland – the organisational unit within the Queensland Government, Department of Agriculture and Fisheries (DAF).

FishNet – means the secure web based service provided to licence holders by Fisheries Queensland.

Grandfathered units – vessel tracking units that are no longer approved for new installations, but already installed units can continue to be used until further notice from the Department.

Licence holder - the holder of a Queensland Commercial Fishing Boat Licence (CFBL), Commercial Harvest Fishery Licence or Charter Fishing Licence.

Maintenance and Inspection Report – the document that is completed by a technician when the technician services a vessel tracking unit to ensure its operation according to this Standard.

Operational – transmitting position reports to a communication network at the required frequency.

Person in control of the operation – the licensed commercial fisher operating under a commercial fishing vessel licence.

Position report – a transmission from the vessel tracking equipment containing, at a minimum, information including an identifier, a GPS derived location, and the date and time that the GPS position was derived.

Primary boat – a boat identified as the primary boat on a commercial fishing boat licence or any vessel used as the principle boat for a commercial harvest fishery licence or a charter fishing licence.

Technician – means a marine electrician that has training and qualifications to undertake electrical work or an agent approved by the supplier to undertake installation and maintenance of vessel tracking equipment.

Telecommunications network – the network which receives transmissions from the approved vessel tracking equipment.

Tender boat - other than a primary boat, a boat that may be used under Section 13(2) of the *Fisheries (General) Regulation 2019*, or a vessel that is used as a secondary vessel to assist a primary boat for a charter or commercial harvest fishery operation.

Vessel Tracking Installation and Maintenance Standard – means this document.

Vessel tracking unit – means a unit that sends locational positions via a telecommunications network and is listed as an approved unit in Section 3 of this document.

User – refer to “person in control of the operation” and “licence holder”.

For further and complete definitions, please refer to the *Fisheries Act 1994* and *Fisheries (General) Regulation 2019*.