Fisheries (Vessel Monitoring Systems – Minimum Standards for Automatic Location Communicators) Circular 2014

Pursuant to regulation 4 of the Fisheries (Satellite Vessel Monitoring) Regulations 1993, the Director, Compliance, Ministry for Primary Industries (acting pursuant to a delegated authority in accordance with section 41 of the State Sector Act 1988) gives the following notice for the purpose of specifying standards and requirements applying in respect of Automatic Location Communicators

Circular

1. Title

This circular is the Fisheries (Vessel Monitoring Systems – Minimum Standards for Automatic Location Communicators) Circular 2014

2. Commencement

This circular comes into force on 27th June 2014

3. Interpretation

In this circular:

"ALC" means Automatic Location Communicator

"Approved Communication Channel" means the channel described in clause 4(10) of this circular

"Approved service provider" means the provider of a vessel monitoring portal as determined by the Ministry

"Ministry" means the Ministry for Primary Industries

"SCP" Means Satellite Communications Provider such as Inmarsat or Iridium

4. Position Reporting

(1) Continuous Position Reporting

The ALC must be capable of automatically and continuously transmitting position reports which contain the attributes specified in clause 1 of the Schedule.

(2) Remote Moderation of Reporting Frequency

The frequency of positions received from the ALC must be able to be altered by the Ministry in near real time without the need for third party human intervention.

(3) Parameters of Report Frequency

The minimum interval for the provision of position reports must be at least 10 minutes and the maximum interval no more than 24 hours.

(4) Immediate Position Reports

The ALC must provide an immediate position report to the Ministry (without any human intervention on the vessel) within a maximum of 10 minutes of the time of request from the Ministry.

(5) Anonymity of Operation

It must not be reasonably possible for the reporting interval to be observed (visually or otherwise) to determine when a position report is generated by the ALC.

(6) Security of Reporting Frequency

It must not be reasonably possible for anyone other than the Ministry to alter or disable the automated position reporting to the Ministry.

(7) Latency of Reports

Position data must be available to the Ministry within 10 minutes of transmission from the ALC.

(8) Accuracy of Position Reports

Positions derived from the data forwarded must be accurate to within 100 metre^2 Distance Root Mean Squared, such that 98 per cent of the positions are within this range. Position data must be supplied so that it contains the attributes specified in clause 2 of the Schedule.

(9) Attributes

At the point of forwarding from the Approved Communication Channel, position reports must contain the attributes specified in clause 1 of the Schedule.

(10) Approved Communication Channel

All communications with the Ministry, including position reports and messages must be transmitted directly to the SCP before being supplied immediately and exclusively to the Ministry approved service provider.

5. Power On/Off Messages

(1) Automatic Message Sent on Power On

A "Power-On" message must be automatically sent to the Ministry by the ALC when it is turned on after having been powered off. It must be the first message sent, must be identifiable as a "Power-On" message, and must be accompanied by a position report.

(2) Automatic Message Sent on Power Off

A "Power-Off" message must be sent when the ALC is deliberately shut down by the operator by selecting an appropriate menu option. When the ALC is abruptly powered off without warning (such as when the plug is pulled or power has been otherwise lost) this event must be recognised at the next power-up and an appropriate message sent accordingly.

6. Fit for Purpose

(1) Marine Use

The ALC and any peripherals should be designed for marine use. The components that are exposed to the elements in the normal course of operations must be suitably rated to ensure reliable operation. Components that are housed below deck in the normal course of operation must be suitably rated to ensure reliable continuous operation.

(2) Temperature and Humidity

The ALC and any peripherals must be able to operate without degradation within the temperature and humidity ranges experienced within the waters in which they operate.

7. Security

(1) Unique Identification

ALCs must be provided with a unique ALC identifier that must not be capable of being set or altered by any person other than the manufacturer or the manufacturer's authorised agent. In addition the same unique ALC identifier must be attached or etched onto the outside casing of the ALC.

(2) Confidentiality of Data

Data transmitted from the ALC to the SCP, from the SCP to the Ministry and in the reverse direction, must be provided in a secure manner which preserves the integrity and confidentiality of the data, and does not allow any of the information to be intercepted by third parties.

(3) Protection from Compromise

ALCs must provide robust protection against wilful attempts to compromise the physical security of the ALC or otherwise allow an ALC to be modified such that one ALC could be used to masquerade as another or to appear to be in a location that it is not.

8. Global Coverage

The ALC type must offer global coverage (with the exception of the extreme Polar Regions) through the satellite or other service providers, such that the Ministry can accurately plot positions of vessels all around the world.

9. Approved Communications Channel – Forwarding Service Provider

(1) Multiple Users

The ALC must be able to support the ability for position data to be sent concurrently to multiple independent clients such as the Ministry, other fisheries agencies, and the vessel owner.

(2) Ownership of Data

All positional data once transmitted by the ALC is considered to be the property of the intended recipient, that is, the Ministry.

(3) Integrity of Data

The SCP must ensure the integrity of data from the point of receipt at the satellite or other receiving station and be able to prove the accuracy of the information where called upon to do so.

10. Revocation

The circular titled 'Vessel Monitoring Systems Circular – Minimum Standards for Automatic Location Communicators 2010' issued under regulation 4 of the Fisheries (Satellite Vessel Monitoring) Regulations 1993 is revoked from 27th June 2014.

Dated at Wellington this 26 day of June 2014

D.L. BAIGENT

Director Compliance

Acting under delegated authority

SCHEDULE

1. Position Reports – Attributes

These are the attributes that must be contained in each transmitted position report sent by the ALC, in order:

ID	Such as Inmarsat-C IMN or unique number for that unit (Forward ID, Serial number) that is contained in the firmware or solid-state storage (cannot be user changed)
Date / time of position	In GMT YYYYMMDDHHMMSS (24 Hour Clock) Example 20100320125643 (resolution)
Latitude of position	Decimal latitude (example -36.34565) WGS84
Longitude of position	Decimal longitude (example 174.4567) WGS84
Speed of position	Knots, 2 decimal resolution (example 10.13)
Heading at time of position	Deg 0-360
Type / event of position	Normal First position Power up Power off Blocked antenna Antenna Disconnected Other

2. Position Logs – Attributes

These are the attributes that must be contained in each of the stored position reports inside the ALC:

ID of the ALC	Such as Inmarsat-C IMN or unique number for that unit (Forward ID, Serial number) that is contained in the firmware or solid-state storage (cannot be user changed)
Date / time of the position	In GMT YYYYMMDDHHMMSS (24 Hour Clock) Example 20100320125643 (resolution)
Latitude of position report	Decimal latitude (example -36.34565) WGS84
Longitude of position report	Decimal longitude (example 174.4567) WGS84
Speed at time of position	Knots, 2 decimal resolution (example 10.13)
Heading at time of position	Deg 0-360
Type / event of position	0 = Normal 1 = First position 2 = Power up 3 = Blocked antenna 4 = Antenna Disconnected 5 = Power off 6 = Other
Signal Level of positioning system	Such as for GPS you could use HDOP or another level

Type of positioning used in this position	1 = GPS 2 = ASSISTED GPS 3 = GALILEO 4 = GLONASS 5 = DOPPLER 6 = BEIDOU 7 = RADIO 8 = OTHER 9 = COMBINATION
Signal Level of Transceiver system at time of position	Inmarsat-C can use BBER, others can use signal levels
Manufacturer specific data	Optional Manufacturer specific, this could be sensor data, input power levels, over air status messages, equipment internal events
Checksum	To check position integrity (no corruption in information)