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Standards, specifications and procedures (SSP) for the fishing vessel monitoring system (VMS) of the Western and Central Pacific Fisheries Commission (WCPFC)¹

Responsible for conservation and management of highly migratory species within its convention area, WCPFC is empowered to establish a VMS under Article 24(8) of the *Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean* and, subsequently, by the adoption of Conservation and Management Measure 2007-02 at its fourth regular session. Annex 1 of this Measure defines the basic, functional specification for the VMS in terms of the generic equipment to be used, position accuracy and reporting frequency and data delivery time.

The purpose of these SSP is to establish the terms of implementation of the VMS, including methods to ensure compliance of Automatic Location Communicators (ALCs: term identical with the FFA's Mobile Transceiver/Transmitter Unit or MTU) with the Annex 1 standards; inspection protocols; rules on polling; reporting frequencies; tampering prevention measures; and obligations and roles of fishing vessels, CCMs, the FFA secretariat and the Commission secretariat.

1. Application

The SSPs shall apply to the Commission VMS that covers the high seas within the Convention Area. The SSP for the operation of VMS programs within waters under national jurisdiction shall be the exclusive responsibility of the Coastal State.

¹ The first WCPFC VMS SSPs were approved at WCPFC5 (Dec 2008). This version incorporates i) as an attachment the WCPFC9 adopted amendment related to the reporting timeframes for manual reporting in the event of ALC malfunction which applies from 1 March 2013 - 1 March 2017 and the standard reporting format for these manual reports; ii) agreed amendments at WCPFC12 (Dec 2015) to Section 2 paragraph 7; and iii) updates throughout of references of "CMM 2007-02" with "CMM 2014-02 (or its successor measure)". The update from WCPFC13 was to extend Attachment 1 requirements for two years, The update from WCPFC15 was to amend Section 2 paragraph 7 and to extend Attachment 1 requirements for two years until 1 March 2021. The update from WCPFC18 was to amend Section 2 paragraph 7 and to extend Attachment 1 requirements through 1 March 2024, and WCPFC18 also agreed that this remains in force thereafter unless the Commission directs otherwise.

2. Methods to ensure ALCs comply with WCPFC standards

1. Vessels subject to the Commission's VMS in the WCPFC Convention Area will be required to carry a fully operational ALC that complies with the full range of minimum standards set out in Annex 1 of CMM-2007-02, (hereafter referred to as Annex 1).
2. The installation and use of ALCs will be governed by rules, based upon the principles set down in this SSP, and adopted and published by the Commission.
3. Vessels with ALCs that comply with the full range of the minimum standards set out in Annex I, but that cannot be remotely polled must either have a regular reporting rate of one hour or less, or will carry and operate, in addition to the ALC, a means of two-way communication by voice (e.g., radio, satellite telephone) or data (e.g., telex, facsimile, email) permitting real time contact with the WCPFC Secretariat, as necessary, with the assistance of the flag CCM, in the English language.
4. At the time of registration of the VMS, vessels equipped with a means of two-way communication, as provided in paragraph 3 above, will declare this means of communication as well as relevant user ID and any additional information required by the Secretariat to be able to establish communications with the vessel.
5. Verification of compliance with the requirements of Annex 1 will be the responsibility of the flag-state CCM for a given vessel.
6. In preparing the initial list of approved ALCs, the WCPFC Secretariat will take into account lists approved by existing regional and sub-regional VMS programmes and lists approved by CCMs.
7. The Secretariat will assess proposals for inclusion of additional ALC/MTU makes and models on this list from both CCMs and equipment manufacturers. The Secretariat shall include the ALC/MTU make or model being proposed on this list, if no CCM objects in writing within 30 days of the Secretariat circulating notice of its intent to all CCMs, and, if in the Secretariat's assessment, the ALC/MTU make or model meets the minimum standards for the Commission VMS as set out in Annex 1 of CMM 2014-02 (or its successor measure), the WCPFC SSPs, as relevant, by determining that the ALC/MTU make and model has the ability to successfully report to the Commission VMS, and by using the methodology established by the FFA with expenses for type approval processing to be borne by the proposing entity. Where the Secretariat concludes in its assessment that a proposed ALC/MTU make or model does not meet these requirements, or if a CCM objects in writing to the Secretariat's proposal to approve a new ALC/MTU make or model, the Secretariat within the annual report shall make recommendations

regarding the proposed ALC/MTU make or model for the TCC's consideration and the Commission's approval. The Secretariat will recommend, as needed, to TCC the removal of units currently on the list of approved ALC/MTU makes and models that it has determined no longer meet the minimum standards set out in Annex 1 of CMM2014-02 (or successor measure), or do not have the ability to successfully report to the Commission VMS. If an ALC/MTU make and model is removed from the list of approved ALC/MTU types, flag CCMs will ensure that their fishing vessels replace non-type approved ALC/MTUs with approved ALC/MTUs by the next replacement of the ALC/MTU, but no later than three years after the Commission's decision.

8. The Secretariat will administer a Commission VMS database. For each fishing vessel required to report to the Commission VMS the flag CCM will submit all necessary data to complete its data file in the Commission's VMS database. This data will include the name of the vessel, unique vessel identification number (UVI)², radio call sign, length, gross registered tonnage, power of engine expressed in kilowatts/horsepower, types of fishing gear(s) used as well as the make, model, unique network identifier (user ID) and equipment identifier (manufacturer's serial number) of the ALC that vessel will be using to fulfil its Commission VMS reporting requirements.

9. Periodic audits of a representative sample of installed ALCs are to be carried out by CCMs to verify that the specification and standards as set out in Annex 1 are being complied with, and that there is no visible evidence of tampering.

10. The number of audits, to be planned on an annual basis, will be determined by cost/benefit, logistical and practical aspects.

11. CCMs are responsible for ensuring that the audits are conducted by qualified operatives, such as officers currently authorised under CCM national fisheries legislation.

12. Audit reports will include measurements of ALC position accuracy, elapsed time between transmission and reception of data, and any physical anomalies (connections, power supply, evidence of tampering) noted by the inspectors.

13. The results of these audits will be provided to the Commission in the part 2 component of the annual report to the Commission by the CCMs and those results compiled by the Secretariat into a VMS Audit Report Document.

14. Furthermore, the Secretariat of the WCPFC, or its appointee will be, at the Secretariat's discretion and on *prima facie* grounds, entitled to audit ALCs from any CCM to independently verify conformity with standards. The execution of such examinations will be guided by an analysis of the on-going data files kept on

² If, and when, adopted by the Commission

each vessel. The resulting reports will be made available to the Commission through the Technical and Compliance Committee (TCC).

3. ALC inspection protocol

1. At the time of a boarding and inspection of a vessel authorised to fish in the Convention Area, such inspections to be conducted in accordance with national laws, when undertaken inside a country's EEZ and, when on the high seas, in accordance with the CMM-2006-08.
2. On boarding, the vessel master must make available for inspection, where so directed by an authorised fisheries officer or inspector, its ALC unit, including antenna, connectors and antenna cable.
3. Should a vessel master refuse access to its ALC unit, antenna and connectors to an authorised fisheries officer or inspector, the inspecting party will immediately inform the relevant flag state CCM and the Secretariat. The flag State will order the vessel to immediately comply. Any vessels which refuse this order will be directed by the flag State, or the chartering State, to head directly to port where a full inspection of the equipment in question can be carried out.
4. Failure to carry out this order may result in the suspension or revocation of a vessel's authorisation to fish in the Convention Area by the flag State responsible. The responsibilities of a vessel master during boarding and inspection on the high seas are detailed in CMM 2006-08.
5. A report issued as a result of each inspection will confirm conformity of the ALC unit and installation with the specifications set out in Annex 1. A copy of this report will be given to the master of the vessel and forwarded to the vessel's responsible flag State.
6. In the case where the inspection reveals any anomaly with the specification, the inspector will inform the flag State CCM, the Secretariat and, if applicable, its chartering State. From that date, the vessel operator will have 30 days to rectify the problem and to submit to a new inspection to verify the installation. During that period, the vessel will be required to report its position at intervals of four (4) hours by an alternative communications means approved by the Secretariat.
7. A report of each inspection will be submitted to the CCM to which the vessel is flagged and to the Commission by the inspecting authority, as provided for in CMM-2006-08 and at Article 25 of the Convention.

4. Rules on polling and reporting of ALC units incapable of being polled

1. Any request by the WCPFC monitoring authority for a vessel's current position must receive a response within 90 minutes after its transmission, that response to include the vessel position in latitude and longitude, and date and time of message transmission.
2. For vessels carrying an ALC that uses the ARGOS system to report to the Commission VMS, the Commission VMS will use the ARGOS proprietary positioning system as a means of verifying the GPS calculated positions provided by the vessel's ALC.

5. Vessel reporting, including position reporting frequencies

1. In accordance with Annex 1, ALCs fitted to vessels subject to the Commission's VMS must be capable of transmitting data hourly. The Commission may vary these standards depending upon the fishery, applicable Conservation and Management Measures or for monitoring control and surveillance purposes.
2. The Secretariat will require written authorisation from the vessel operator to download a DNID or equivalent. Should a vessel operator withhold such an authorisation then the vessel's authorisation to fish may be made invalid by the relevant flag State CCM.
3. The Commission VMS shall include an automated alert to report when vessels enter or exit the high seas of the Convention Area. Vessels subject to the Commission's VMS must be reporting to the Commission VMS through automatic means upon entry into the high seas of the Convention Area and continue reporting until the high seas of the Convention Area is exited. In the case of ALC failure or malfunction, these reports shall be provided by the vessel on a manual basis. It is the responsibility of a vessel's flag State CCM to ensure compliance with this requirement.

See Attachment 1 for decisions that replaces Section 5 paragraphs 4 and 5 from 1 March 2013 – 1 March 2021.

[4. In the event of non-reception of two consecutive, programmed high seas VMS positions, and where the Secretariat has exhausted all reasonable steps to re-establish normal automatic reception of VMS positions the Secretariat shall inform the vessel's flag State CCM and the vessel Master. From the time of transmission of this communication to the CCM, the vessel Master shall be required to take immediate steps to re-establish automatic reporting and in any event within [30 days or at its first port of call if less than 30 days]. During this period the vessel shall be required to report its position manually to the Secretariat every [8][4] hours. In cases where automatic reporting has not been re-established within [30] days the CCM shall order the vessel to cease fishing, stow all fishing gear and return to port. The vessel may recommence fishing on the high seas only when the ALC has been confirmed as operational by the Secretariat following the flag State CCM informing the Secretariat that the vessel's automatic reporting complies with the regulations established in this SSP.]

[5. In exceptional circumstances, the flag State CCM may extend the period established in paragraph 4 for an additional consecutive [15] days during which time the vessel will continue to report its position manually every [4] hours to the Secretariat while on the high seas. When such permission is provided the flag State CCM shall provide a report to the Secretariat as to the nature of the exceptional circumstances and steps taken to re-establish automatic reporting. Such reports shall be included in the Secretariat's annual report on the operations of the Commission's VMS to the TCC as required under paragraph 7.3.9.]

6. The Secretariat shall maintain and make available to all CCMs a current list of those vessels subject to manual reporting and the duration of that reporting.

6. Measures to prevent tampering

1. Before being authorized for operation aboard vessels authorised to fish in the Convention Area, ALCs must be included on the WCPFC approved list of ALCs.

2. ALCs so designated during their type approval process, will be fitted with a physical security mechanism to prevent access to the processing unit.

3. It will be the responsibility of WCPFC to provide CCMs with requirements for the physical security, which will be chosen taking into account the cost, facility of fitting and security quality as well as relevant ISO standards.

4. Data routes from ALCs to the Commission VMS will use international data communications services provided by recognized telecommunications authorities whose systems and operations conform to current ISO guidelines for network data security, or to standards that may supersede these guidelines in the future or their equivalents.

5. The auditing processes described in Section 1 of this document will be used to assure that anti-tampering and, tamper-evident, standards for ALCs are being met.
6. Security of the Commission Secretariat's VMS data will reflect the Secretariat's role as the guardian of the confidential VMS data for the high seas in Convention Area.
7. All security standards, procedures and practices will be consistent with the Commission's Information Security Policy (ISP).
8. Access to the Secretariat's VMS data computer system will be in conformity with the Commission's ISP.
9. A set of Standard Operating Procedures, elaborated by the Secretariat, and subject to approval by the Commission on the recommendation of the TCC, will be developed to deal with all operational anomalies of the VMS, such as interruption of position reports, downloading of DNIDs and their equivalent and responding to reports providing incoherent data (e.g. vessel on land, excessive speed, etc.).
10. The integrity of the Secretariat's VMS data will be verified annually by qualified personnel, exterior to Commission Secretariat staff.

7. Obligations and roles of fishing vessels, CCMs, Service Level Provider(s) and the WCPFC Secretariat

7.1 Fishing vessel obligations

1. To register, carry and continually operate an ALC that meets the standards set out in Annex 1 as well as any additional standards, specifications and procedures agreed by the Commission.
2. To provide access to the ALC, associated connections and antennas, when directed by authorized fisheries officers, inspectors or other authorized persons or organizations, in accordance with relevant inspection provisions whilst on the high seas or in port.
3. To carry aboard and monitor at all times a two-way communication device that supports real-time communication between vessels and the Commission's VMS, with the assistance of the flag State, as necessary.
4. To ensure that a vessel's ALC is protected from any attempt to tamper with its operation, data transmission or integrity of data transmitted in conformity with Section 5 above.

7.2 CCMs

1. To ensure compliance by their vessels and operators with the provisions of Annex 1 and any other WCPFC standards, specifications and procedures, including those that may be established in relation to the management and use of VMS data in the high seas by application of the inspection protocol described in section 2 above.
2. To conduct and report results of ALC inspections in accordance to procedures established for that purpose, results to include data specified in Section 2 above.
3. To utilize the Commission VMS in accordance with the Commission's conservation and management measures and any of the standards, specifications and procedures agreed by the Commission.
4. To provide to the WCPFC Secretariat a list of all ALC inspections by flag and vessels type, including a summary of the results of each inspection.
5. To report, by e-mail, facsimile or data entry procedures established by the Commission to the Secretariat within a period of 5 days any registered ALC, including connections and antennas, associated vessels (by name and flag) and vessel masters that appear to not be in compliance with CMM-20014-02 (or its successor measure) and/or specifications and procedures agreed by the Commission as well as the details of the non-compliance. The Secretariat will issue an acknowledgement of reception of each report and, in the absence of this acknowledgement within 72 hours of transmission, the CCM is required to re-transmit any unacknowledged report.
6. To apply sanctions and penalties sufficient to deter violations of applicable VMS requirements and standards and to report action taken and sanctions applied to ensure compliance.

7.3 The WCPFC Secretariat

1. To ensure that data once received at the Commission VMS is not altered, accessed, manipulated, copied or interfered with in any way, or used by anyone other than those authorized to do so, as prescribed in the Commission's ISP and the associated rules and procedures developed by the AHTG [Data] adopted by the Commission.
2. To provide a stable, reliable, fully maintained and supported Commission VMS that conforms to the security standards set out in the Commission's ISP.
3. To develop and manage a service level agreement (SLA) with the FFA for provision of VMS services. An additional SLA may be required for the provision of

VMS software, support and the possible provision of out sourced VMS services between the WCPFC secretariat and a software provider.

4. SLAs will include provisions for confidentiality and non-disclosure; SLA contract clauses; services provided under the SLA; service rates; target response times; help desk support; billing; possible provision of outsourced VMS services (e.g. front-line ALC management).

5. To enter into, and to maintain, direct contracts with mobile communications service providers for the provision of position (and other) data from the ALCs to the Commission VMS. A strategy of joining cooperating RFMOs, where possible, will be followed to achieve a goal of negotiating the best possible rates for these services.

6. To utilize the Commission VMS in a manner consistent with the Convention, the Commission's conservation and management measures, and any of the standards, specifications and procedures relating to the Commission's VMS adopted by the Commission. Unless explicitly requested by a coastal State in accordance with Article 24(8) of the Convention the Commission shall not have access to, interfere with, or use any VMS data owned by the coastal State.

7. To administer the list of ALCs approved for use in the Commission VMS.

8. To compile and circulate to all CCMs a list of registered ALCs by vessel and flag reported to the Commission in compliance or non-compliance with CMM-2014-02 (or its successor measure) and these standards, specifications and procedures, as agreed by the Commission.

9. To monitor and report annually to the TCC the performance of the Commission VMS and its application and, as necessary, make recommendations for improvements or modifications to the system, standards, specifications or procedures established to support it, in order to ensure the Commission VMS continues to function as a stable, secure, reliable, cost effective, efficient, fully maintained and supported system.

10. The Secretariat will include in its annual report (6.3.9) on the operations of the Commission's VMS to the Technical and Compliance Committee, all details for non-compliant ALCs detected in the previous 12 months. The TCC may recommend appropriate penalties or sanctions to the Commission as a means of deterring non-compliance.

Attachment 1: WCPFC9 adopted amendments to the VMS SSPs extended at WCPFC11, WCPFC13 & WCPFC15 & WCPFC18

Section 5 of the Commission's VMS SSPs is to be modified as follows:

“4. In the event of non-reception of two consecutive, programmed high seas VMS positions, and where the Secretariat has exhausted all reasonable steps³ to re-establish normal automatic reception of VMS positions the Secretariat will notify the flag State CCM who shall then direct the vessel Master to begin manual reporting. During this period the vessel shall be required to report its position manually to the Secretariat every 6 hours. If automatic reporting to the Commission VMS has not been re-established within 30 days of the commencement of manual reporting the flag state CCM shall order the vessel to cease fishing, stow all fishing gear and return immediately to port. The vessel may recommence fishing on the high seas only when the ALC/MTU has been confirmed as operational by the Secretariat following the flag State CCM informing the Secretariat that the vessel's automatic reporting complies with the regulations established in this SSP.

4bis. The standards outlined in Paragraph 4 above will apply for the period 1 March 2013 to 1 March 2024 and will remain in force thereafter unless the Commission directs otherwise. This will also be reviewed for MCS effectiveness by TCC.

5 In exceptional circumstances⁴, the flag State CCM may extend the period established in paragraph 4 for an additional consecutive 15 days during which time the vessel will continue to report its position manually every 4 hours to the Secretariat while on the high seas. When such permission is provided the flag State CCM shall provide a report to the Secretariat as to the nature of the exceptional circumstances and steps taken to re-establish automatic reporting. Such reports shall be included in the Secretariat's annual report on the operations of the Commission's VMS to the TCC as required under paragraph 7.3.9.

WCPFC9 agreed a standard format for manual position reporting in the event of ALC/MTU Malfunction or Failure:

- 1 WIN
- 2 Vessel Name
- 3 Date: dd/mm/yy
- 4 Time: 24 hour format HH:MM (UTC)
- 5 Latitude – DD-MM-SS (N/S)
- 6 Longitude – DDD-MM-SS (E/W)
- 7 Activity (Fishing/Searching/Transit/Transshipping)

³ The flag State CCM, in coordination with the Secretariat and through communication with the vessel master as appropriate, will endeavour to re-establish normal automatic reception of VMS positions. If such efforts reveal that the vessel is successfully reporting to the flag State CCM's VMS or a sub-regional VMS (indicating that the vessel's VMS hardware is functional), the Secretariat, in coordination with the flag State CCM will take additional steps to re-establish automatic reporting to the Commission VMS.

⁴ Exceptional circumstances includes such events as satellite malfunction unrelated to MTU/ALC and mechanical failure of fishing vessel that reduces the ability of the fishing vessel to return to port within 30 days. ”