

Conservation and Management Measure for the establishment of a SIOFA Vessel Monitoring System (Vessel Monitoring System)

The Meeting of the Parties to the Southern Indian Ocean Fisheries Agreement:

RECALLING Article 6(1)(h) of the Southern Indian Ocean Fisheries Agreement (SIOFA) which requires the Meeting of the Parties to develop rules and procedures for the monitoring, control and surveillance of fishing activities in order to ensure compliance with conservation and management measures adopted by the Meeting of the Parties including, where appropriate, a system of verification incorporating vessel monitoring and observation of vessels operating in the Agreement Area;

MINDFUL of Article 18(3) of the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNFSA) which outlines the duties of the flag State, including to take measures to ensure recording and timely reporting of vessel position, catch of target and non-target species, fishing effort and other relevant fisheries data, and to ensure the monitoring, control and surveillance of vessels, their fishing operations and related activities by, inter alia, the development and implementation of vessel monitoring systems;

FURTHER MINDFUL of the importance of international cooperation in the fight against illegal, unreported and unregulated (IUU) fishing, in particular through the exchange of information and effective monitoring, control and surveillance;

RECALLING paragraph 14 of the SIOFA Conservation and management measure for the Monitoring of Fisheries in the Agreement Area (CMM 10(2023)) to develop specifications and propose rules and procedures for the establishment of a SIOFA Vessel Monitoring System;

MINDFUL of the key principles upon which the vessel monitoring system should be based, including the confidentiality and security of information handled by the system, and its efficiency, cost-effectiveness and flexibility;

***ADOPTS* the following Conservation and Management Measure (CMM) in accordance with Articles 4 and 6 of the Agreement:**

Definitions

1. The following definitions shall apply to this CMM:
 - a) “Automatic location communicator” (ALC) means a satellite-based on-board device that is capable of continuously, automatically and independently of any intervention of the vessel, transmitting VMS position reports;
 - b) “Fisheries monitoring centre” (FMC) means the authority or agency of a Flag CCP responsible for managing the VMS for its flagged fishing vessels;
 - c) “Vessel Monitoring System” (VMS) means a satellite-based monitoring system which, at regular intervals, provides VMS position reports;
 - d) “SIOFA VMS” means the SIOFA Vessel Monitoring System established under this CMM;
 - e) “Manual reporting” means the transmission via alternative means of the position reporting of a fishing vessel when an ALC fails to transmit VMS position reports;
 - f) VMS position reports shall include at least the following data, which shall be considered confidential (i.e. non-public domain data):

- i. the fishing vessel's unique vessel identifier²;
- ii. the current geographical position (latitude and longitude) of the vessel;
- iii. the date and time (UTC) of the fixing of the position of the vessel;
- iv. the vessel's speed; and
- v. the vessel's course.

Objective

- 2. The main objective of the SIOFA VMS is to monitor in an automatic, continuous and cost-effective manner the movements and activity of fishing vessels operating in the Agreement Area to ensure compliance with SIOFA CMMs.

Application

- 3. The SIOFA VMS shall apply to all fishing vessels flying the flag of a Contracting Party, cooperating non-Contracting Party or participating fishing entity (CCP) that are entered onto the SIOFA Record of Authorised Vessels and operating in the Agreement Area, as defined in Article 3 of the Agreement.

Nature and specifications of the SIOFA VMS

- 4. The SIOFA VMS shall be administered by the SIOFA Secretariat under the guidance of the Meeting of the Parties.
- 5. Each CCP shall ensure that all fishing vessels flying their flag entered onto the SIOFA Record of Authorised Vessels and operating in the Agreement Area are fitted with an operational ALC that complies with the minimum standards for ALCs described in Annex 1.
- 6. Each CCP shall ensure that all fishing vessels flying their flag referred to in paragraph 3 report VMS position reports automatically while they are operating in the Agreement Area either:
 - a) to the SIOFA VMS via their FMC; or
 - b) simultaneously to both the SIOFA VMS and their FMC.
- 7. CCPs that choose to report under option (a) of paragraph 6 shall automatically forward VMS position reports to the SIOFA VMS without delay but not later than one hour after receipt.
- 8. CCPs shall ensure that VMS position reports are reported automatically³ by each of their vessels while operating in the Agreement Area:
 - a) at least once every hour as provided for in paragraph 15 of CMM 15(2025) (Management of Demersal Stocks), and;

² The unique vessel identifier shall be the ALC Unique Identifier or, for vessels reporting pursuant to paragraph 6 a) of this Measure, the vessel's International Radio Call Sign (IRCS) or International Maritime Organisation (IMO) number.

³ In the event that the connection between the ALC and the satellite is temporarily unavailable, the data referred to in paragraph 1(f) of this Measure shall still be collected but shall instead be transmitted as soon as the satellite connection becomes available again.

- b) at least once every two hours in other circumstances.
- 9. VMS position reports, sent pursuant to paragraph 6. a. shall be transmitted to the SIOFA VMS using one of the data formats in Annex 2.
- 10. Each CCP shall ensure that their FMC can automatically receive and, for those CCPs whose vessels transmit VMS position reports in accordance with paragraph 6 a), transmit VMS position reports from ALCs. Each CCP shall provide backup and recovery procedures in case of system failures.
- 11. Each CCP shall provide the Secretariat with the name, address, email, and telephone number(s) of its FMC and shall designate a VMS Point of Contact for the purposes of any communication regarding the SIOFA VMS ("VMS Point of Contact"). Each CCP shall notify the Secretariat of any changes to these details within 30 days after such changes take effect and the Secretariat shall promptly notify this information to the other CCPs and make it available on the non-public area of the SIOFA website.
- 12. Each CCP shall ensure that in vessels flying their flag:
 - a) the ALC is not tampered with in any way;
 - b) VMS position reports are not altered in any way;
 - c) the antenna or antennae are connected to the ALC and not obstructed in any way;
 - d) the power supply of the ALC is not interrupted in any way;
 - e) the ALC is not removed from the vessel except for the purpose set out in paragraph 15; and
 - f) the satellite navigation decoder and transmitter are fully integrated and housed in the same tamper-proof physical enclosure.

Procedure for manual reporting

- 13. In the event of non-reception of four consecutive, expected programmed VMS position reports by the SIOFA VMS, the Secretariat shall notify the CCP whose flag the vessel is flying. The Flag CCP shall immediately notify the vessel Master and direct the Master to provide it with manual reports every four hours of the vessel's position in accordance with the reporting frequency under paragraph 8. The Flag CCP shall ensure that this manual reporting is transmitted to the Secretariat, either by the flag CCP or by the fishing vessel, with a clear distinction between reports that are manual and those that are automatic.
- 14. The Flag CCP shall ensure that the manual reports include at least the information referred to in paragraph 1(f)(i), (ii) and (iii). If automatic reporting to the SIOFA VMS has not been re-established within 60 days of the commencement of manual reporting, the Flag CCP shall order the vessel to cease fishing, stow all fishing gear and return immediately to port in order to undertake repairs or replacement.
- 15. Following a technical failure or non-functioning of the ALC, the Flag CCP shall ensure that the fishing vessel only leaves port once the ALC fitted on board is fully functioning to the satisfaction of the competent authorities of the Flag CCP. By derogation, the Flag

CCP may authorise the fishing vessel to leave port with a non-functioning satellite-tracking device for its repair or replacement.

16. The Flag CCP shall ensure that the vessel recommences fishing in the Agreement Area only when the ALC has been confirmed as operational by its FMC. Four consecutive, programmed VMS position reports must have been received by the FMC to confirm that the ALC is fully operational.
17. Notwithstanding paragraphs 13 to 16, where the Flag CCP confirms that the ALC on board the vessel is functioning normally, but the SIOFA VMS is not receiving the vessel's VMS position reports, the Secretariat shall immediately take steps to resolve any technical or other issue that is preventing the SIOFA VMS from receiving the VMS position reports. If the VMS position reports cannot be retrieved by the SIOFA VMS after the issue has been resolved, the Flag CCP shall send these VMS position reports to the Secretariat via manual reporting and provide the Secretariat with any assistance as may be necessary.

Measures to prevent tampering with ALCs

18. Each CCP shall ensure that the ALCs fitted on board vessels flying their flag are tamper resistant, that is, are of a type of and configuration that prevent the input or output of false positions, and that they are not capable of being over-ridden, whether manually, electronically or otherwise, in accordance with the minimum standards for ALCs set out in Annex 1.
19. Each CCP shall prohibit vessels flying their flag to destroy, damage, switch off, render inoperative or otherwise interfere with the ALC.
20. In the event that a CCP or the Secretariat obtains information that indicates an ALC on board a fishing vessel operating in the Agreement Area does not meet the requirements of Annex 1 or there is evidence that the ALC has been tampered with, it shall immediately notify the Secretariat, and the fishing vessel's Flag CCP which shall:
 - a) investigate the suspected breach of this measure as soon as possible; and
 - b) depending on the outcome of the investigation, if necessary suspend the vessel from fishing until an ALC that meets the specifications outlined in Annex 1 is operational on board the vessel; and
 - c) communicate actions taken to the Meeting of the Parties, including the outcome of the investigation within 30 days of its completion.
21. Nothing in this measure shall prevent a CCP from applying additional or more stringent measures to prevent tampering of ALCs on board vessels flying its flag.

Use and release of VMS position reports

22. All requests for access to VMS position reports must be made to the Secretariat by a VMS Point of Contact by electronic means using the appropriate template⁴ at least 5 working

⁴ The template shall be developed by the Secretariat and submitted to the Compliance Committee and the Meeting of the Parties for consideration.

days in advance of the intended use, except for the purposes of paragraph 23 c), and in accordance with the procedures set out in paragraphs 24 to 29.

23. Upon request of a CCP, the Secretariat shall only provide VMS position reports without the permission of the Flag CCP for the exclusive purposes of:

- a) planning for active surveillance operations and/or boarding and inspection at sea within 72 hours of the expected start of the operations in the Agreement Area;
- b) active surveillance operations and/or boarding and inspection at sea in the Agreement Area;
- c) supporting search and rescue activities undertaken by a competent Maritime Rescue Coordination Centre (MRCC) subject to the terms of an Arrangement between the Secretariat and the competent MRCC. Such Arrangement shall be reported to the Meeting of the Parties.

24. For the purpose of implementing paragraph 23 a) and b):

- a) Boarding and inspection at sea shall be undertaken in accordance with CMM 14(2021) (High Seas Boarding and Inspection Procedures), including its paragraph 7;
- b) each CCP shall only make available VMS position reports relevant to the planned or active surveillance operations and/or boarding and inspection at sea in the Agreement Area to the requesting CCP's inspectors and any other government officials for whom it is deemed necessary to access the reports;
- c) CCPs shall ensure that such inspectors and government officials keep the VMS position reports confidential and only use the reports for the purposes described in paragraph 23 a) and b);
- d) CCPs shall be allowed to retain VMS position reports provided by the Secretariat for the purposes described in paragraph 23 a) and b) until 72 hours after the time that the active operation has concluded. Except in the circumstances outlined in paragraph 24 e), CCPs shall submit a written confirmation to the Secretariat of the deletion of the VMS position reports immediately after the 72 hours' period;
- e) CCPs' inspectors and government officials authorities shall be allowed to retain VMS position reports provided by the Secretariat for the purposes described in paragraph 23 a) and b) for longer than the periods specified in paragraph 24 d) only if it is part of an investigation, judicial or administrative proceeding of an alleged violation of the provisions of the Agreement, any CMMs or decisions adopted by the Meeting of the Parties. CCPs shall inform the Secretariat of the purposes and expected timing of the additional period of retention before the expiration of the initial period and the Secretariat shall promptly notify the concerned Flag CCP of the additional period. CCPs shall submit a written confirmation to the Secretariat of the deletion of the VMS position reports as soon as the purposes have been achieved or immediately after the additional period of retention has expired, whichever is earlier.

25. For the purpose of paragraph 23 a), CCPs requesting VMS position reports shall provide the Secretariat the geographic area of the planned surveillance and/or boarding and inspection activity. In this case, the Secretariat shall provide the most recent available VMS position reports for the notified geographic area at a specified point in time no more than 72 hours prior to the commencement of each surveillance and/or boarding and inspection activity. In the event that the planned surveillance and/or boarding and inspection activity does not proceed, the CCP shall notify the Secretariat, delete the VMS position reports, and confirm their deletion to the Secretariat in writing, without delay. Regardless of whether the planned surveillance and/or boarding and inspection activity were conducted or not, the Secretariat shall notify the Flag CCP that the VMS position reports were provided to the CCP no later than 7 days after the VMS position report provision, and, if applicable, that they have received confirmation that the reports have been deleted.
26. For the purpose of paragraph 23 b), the Secretariat shall provide VMS position reports from the previous 10 days, for vessels detected during the active surveillance and/or boarding and inspection activity by a CCP, and VMS position reports for all vessels within 300 n miles of the surveillance and/or boarding and inspection activity location. The Secretariat shall provide regular updates of VMS position reports to the CCP for the duration of the active surveillance and/or boarding and inspection activity. CCPs conducting the active surveillance and/or boarding and inspection activity shall provide the Secretariat and the VMS Point of Contact of the Flag CCP with a report including the name of the vessel or aircraft on active surveillance and/or boarding and inspection activity. This information shall be made available without undue delay after the surveillance and/or boarding and inspection activities are complete. The Secretariat shall notify the Flag CCP that the VMS position reports were provided to the CCP no later than 7 days after the active surveillance and/or boarding and inspection activity has ended, and, if applicable, that they have received confirmation that the reports have been deleted.
27. For the purpose of paragraph 23 c), upon the request of a CCP, the Secretariat shall provide VMS position reports without the permission of the Flag CCP for the purposes of supporting search and rescue activities undertaken by a competent MRCC subject to the arrangement between the Secretariat and the competent MRCC, including in relation to the provision of VMS position reports to the requesting CCP, and the protection and deletion of those reports.
28. Other than the purposes set out in paragraph 23, the Secretariat shall only provide VMS position reports to a requesting CCP or to the SIOFA Scientific Committee and its Working Groups where the VMS position reports relate to vessels flagged to CCPs that have provided prior written consent through their VMS Point of Contact for the reports to be shared. Such VMS position reports shall be deleted as soon as they have served their intended purpose, and the deletion of the reports shall be confirmed to the Secretariat in writing without delay.
29. CCPs may request VMS position reports for their own flagged vessels from the Secretariat.

Closed areas and interim protected areas

30. If VMS position reports received by the Secretariat indicate the presence of a fishing vessel in a closed area, or of a fishing vessel excluding those using line and trap methods in an interim protected area, as defined in CMM 18(2025) (Benthic Fishery Closures), the Secretariat shall notify the Flag CCP. The Flag CCP shall investigate the matter and provide an explanation within 5 working days to the Secretariat. The explanation shall be provided by the Secretariat to the Compliance Committee for consideration at its next annual meeting.

Data security and confidentiality

31. All CCPs, the Secretariat, the SIOFA Scientific Committee and its Working Groups, and any SIOFA VMS service provider shall ensure the secure and confidential treatment of VMS data in their respective electronic data processing facilities in accordance with the requirements of CMM 02(2025) (Data Standards), CMM 03(2025) (Data Confidentiality) and Annex 3, in particular where the processing involves transmission over a network, including by using secure internet protocols to ensure secure communications and taking all necessary measures to protect VMS data against accidental or unlawful destruction, loss, alteration, unauthorised disclosure or access, and against all unauthorised forms of processing.

Entry into operation

32. The SIOFA VMS shall enter into operation at a date to be determined by the Meeting of the Parties.
33. Upon entry into operation of the SIOFA VMS, paragraphs 5 to 14 of CMM 10(2023) (Monitoring) shall be superseded and replaced by this CMM.

Review

34. Following the entry into operation of the SIOFA VMS, the Secretariat shall report annually to the Meeting of the Parties on the implementation of, and compliance with, this CMM, including on the performance of the SIOFA VMS service provider.
35. After two years of implementation of the SIOFA VMS, the Meeting of the Parties shall conduct a review of this CMM and consider improving it as appropriate.

Annex 1

Minimum standards for Automatic Location Communicators (ALCs) used in the SIOFA VMS

1. The Automatic Location Communicator (ALC) shall continuously, automatically and independently of any intervention by the fishing vessel, communicate VMS position reports referred to in paragraph 1(f) of this CMM.
2. The position reports referred to in paragraph 1(f) shall be obtained from a satellite-based positioning system.
3. ALCs fitted to fishing vessels must be capable of transmitting the position reports referred to in paragraph 1(f) recorded at least every fifteen minutes.
4. ALCs fitted to fishing vessels must be tamper-proof so as to preserve the security and integrity of the position reports referred to in paragraph 1(f).
5. Storage of information within the ALC must be safe, secure and integrated within a single unit under normal operating conditions.
6. It must not be reasonably possible for unauthorised persons to alter any of the VMS position reports stored in the ALC, including the frequency of position reporting to the FMC.
7. Any features built into the ALC or terminal software to assist with servicing shall not allow unauthorised access to any areas of the ALC that could potentially compromise the operation of the VMS.
8. ALCs shall be installed on fishing vessels in accordance with the manufacturer's specifications and applicable standards.
9. Under normal satellite navigation operating conditions, positions derived from the data forwarded must be accurate to within 100 metres ($2 \times \text{Distance Root Mean Squared}$; 2DRMS) i.e., 99 per cent of the positions must be within this range.
10. The satellite navigation decoder and transmitter shall be fully integrated and housed in the same tamper-proof physical enclosure.

Annex 2
Data formats for transmission of VMS position reports

A. North Atlantic Format (NAF)

1. VMS position reports sent in NAF format shall be transmitted using one of the following application layers (secured connection):
 - (i) Hypertext Transfer Protocol Secure (HTTPS);
 - (ii) File Transfer Protocol (FTP) with Transport Layer Security (TLS) (FTPS);
 - (iii) Email.
2. VMS position reports sent in NAF format shall contain, at minimum, the data elements in Table 1.

Table 1: NAF message data elements

Data Element	Field Code	Definition	Contents
Start Record	SR	Defines the start of the message structure.	No Data
Address	AD	Indicates the destination. Provider and Secretariat to define code for SIOFA VMS	3-Alpha code
From	FR	3-alpha code describing the country which FMC is submitting the report.	3-Alpha code
Sequence Number	SQ	Message Sequence Number	0-999999
Internal Reference Number*	IR	Unique Number attributed by the flag state	3-Alpha code. 0-999999999
Type of Message	TM	Letter code of the type of message	POS = position report, MAN = manual report, ENT = entry report, EXI = exit report
Radio Call Sign (IRCS)	RC	Vessel detail: international radio call sign of the vessel	IRCS
Latitude (decimal)	LT	Latitude expressed in degrees and decimals (WGS-84)	+(-)DD.ddd
Longitude (decimal)	LG	Longitude expressed in degrees and decimals (WGS-84)	+(-)DD.ddd
Vessel Speed	SP	Speed of the vessel	Knots * 10
Vessel Course	CO	Heading of the vessel in degrees	1-360
Flag State	FS	State of registration of the vessel	3-Alpha code
Date	DA	Date of reported event	YYYYMMDD
Time	TI	Time of reported event	HHMM
End of Record	ER	Indicates the end of the message/report	No Data

3. VMS position reports sent in NAF format shall be structured as follows:

- (i) double slash (//) and the characters 'SR' indicate the start of a message;
- (ii) a double slash (//) and field code indicate the start of a data element;
- (iii) a single slash (/) separates the field code and the data;
- (iv) pairs of data are separated by a space;
- (v) the characters 'ER' and a double slash (//) indicate the end of a record.

B. Fisheries Language for Universal Exchange (UN/FLUX)

1. VMS position reports sent in UN/FLUX format shall contain, at minimum, the mandatory data elements in Table 2.

Table 2: UN/FLUX data elements

Data Element	Mandatory/ optional	Comments
Addressee	M	Message detail — Addressee Alpha-3 country code Note: Part of the FLUX TL envelope
From	M	Message detail — Sender Alpha-3 country code
Unique message identifier	M	UUID according to RFC 4122 defined by IETF
Date and time of transmission	M	Date and time when the message was created in UTC, using the format YYYY-MM-DDThh:mm:ss[.000000]Z ⁵
Flag State	M	Message detail – Flag of flag State, Alpha-3 country code
Type of message	M	Message detail – Type of message The following codes are to be used: ENTRY: first position recorded after entering the fishing zone) EXIT: first message recorded after leaving the fishing zone POS: positions transmitted while being in the fishing zone MANUAL: position transmitted manually
Radio call sign	M	Vessel detail – Vessel international radio call sign (IRCS)
CCP internal reference number	O	Vessel detail – Unique CCP vessel identifier
Unique Vessel Identifier (UVI)	O	Vessel detail – IMO number
External registration number	O	Vessel detail – Number on side of vessel
Latitude	M	Vessel position detail – Position in degrees and decimal degrees DD.ddd (WGS-84) Positive coordinates for positions north of the Equator; Negative coordinates for positions south of the Equator.

⁵ YYYY= year; MM= month, including leading 0 where month number is less than 10; DD= day of the month including leading 0 where day number is less than 10; T= the letter T to indicate the part of the time section; H24= hours of the day expressed with 2 digits using the 24-hour notation; MI=minutes expressed as 2 digits; SS=seconds expressed as 2 digits; [.000000]= optionally fractions of seconds may be included, not including the brackets; Z= time zone, which must be Z (i.e. UTC).

Longitude	M	Vessel position detail – Position in degrees and decimals DD.ddd (WGS-84) Positive coordinates east of the Greenwich meridian; Negative coordinates west of the Greenwich meridian.
Course	M	Vessel course 360° scale
Speed	M	Vessel speed in knots
Date and time	M	Vessel position detail – date and time of recording of the position in UTC, using the format YYYY-MM-DDThh:mm:ss[.000000]Z ⁶

⁶ YYYY= year; MM= month, including leading 0 where month number is less than 10; DD= day of the month including leading 0 where day number is less than 10; T= the letter T to indicate the part of the time section; H24= hours of the day expressed with 2 digits using the 24-hour notation; Ml=minutes expressed as 2 digits; SS=seconds expressed as 2 digits; [.000000]= optionally fractions of seconds may be included, not including the brackets; Z= time zone, which must be Z (ie. UTC)

Annex 3
Data Confidentiality and Security Provisions

1. The following security measures shall be mandatory for the SIOFA VMS:
 - a. System Access Control: The Secretariat shall ensure that the system can withstand break-in attempts from unauthorised persons.
 - b. Authenticity and data access control: The Secretariat shall limit access of Secretariat staff to the data necessary for them to carry out their tasks via a flexible user identification and password mechanism.
 - c. Communication Security: VMS position reports shall be securely communicated.
 - d. Data Security: All VMS data received by the Secretariat shall be securely stored for a predetermined time and shall not be tampered with.
 - e. Security Procedures: The Secretariat shall implement an Information System Security Policy adopted by the Meeting of the Parties to ensure proper access to the system (hardware and software), system administration and maintenance, backup and general usage of the system.
2. The SIOFA VMS shall have the following mandatory access control features:
 - a. Stringent password and authentication system, attributed to each designated user. The user shall only have access to functions and data that they are designated to have access to.
 - b. All access to physical computer systems shall be controlled by the Secretariat.
 - c. The system shall automatically record all events for analysis and detection of potential security breaches.
 - d. Time-based access control: Access to the system can be specified in terms of times-of-day and days of the week that each user is allowed to log into the system.
 - e. Terminal access control: the system shall specify for each workstation which user(s) is/are allowed to access it.
3. Communication between CCPs, the SIOFA VMS Service Provider, and the Secretariat shall use secure internet protocols. The exchange of VMS position reports may also require the use of digital certificates that correctly identify and validate the party submitting the VMS position reports.
4. The Secretariat shall only provide VMS position reports to the email address specified by the requesting entity at the time the data is requested.
5. The Secretariat shall periodically review access to and the logs of the SIOFA VMS software and ensure the proper maintenance of system security.