



**2<sup>nd</sup> Meeting of the SIOFA VMS Working Group (VMSWG-02)**

*Online, 29<sup>th</sup> February 2024*

**VMSWG-02-02**

# 2<sup>nd</sup> Draft of the Proposed Standards, Specifications and Procedures (SSPs) for the SIOFA VMS

SIOFA Secretariat

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<b>Abstract</b>	
<p>The Secretariat presented a first draft of these SSPs for discussion and consideration by the 1<sup>st</sup> meeting of the working group. Following comments of the VMSWG01 and from CCPs after the conclusion of the VMSWG01, the Secretariat prepared a second draft of the VMS SSPs for consideration by the VMSWG02.</p>	
<b>Recommendations (for proposals and working papers only)</b>	
<ul style="list-style-type: none"><li>• That the SIOFA VMS WG notes and considers these SSPs</li><li>• That the SIOFA VMS WG proposes the adoption of these SSPs by the MoP, through the Compliance Committee.</li></ul>	

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# Proposed Standards, Specifications and Procedures (SSPs) for the SIOFA VMS.

*Draft 2*

**SIOFA Secretariat**

**SIOFA | APSOI**

Southern Indian Ocean Fisheries Agreement  
*Accord relatif aux Pêches dans le Sud de l'Océan Indien*



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## Background

Vessel Monitoring Systems (VMS) are satellite-based monitoring systems that enable flag States and regional fisheries management organisations (RFMOs) to track and monitor the activities of fishing vessels in a defined geographical area through the transmission of position data by fishing vessels at regular intervals. They are a cornerstone of monitoring control and surveillance (MCS) programmes at national and international levels and a key instrument in the fight against illegal, unreported and unregulated (IUU) fishing.

Article 6(1)(h) of the Southern Indian Ocean Fisheries Agreement (SIOFA) requires SIOFA to develop rules and procedures for the monitoring, control and surveillance of fishing activities to ensure compliance with SIOFA conservation and management measures (CMM), including a system of verification incorporating vessel monitoring and observation of vessels operating in the SIOFA Area. While flag CCPs are required to track and monitor their vessels' activities using VMS, SIOFA does not operate a VMS system. In this respect, it is behind other RFMOs that have installed and operated a VMS. However, CMM 10 on Monitoring also requires SIOFA to develop specifications and propose rules and procedures for establishing a SIOFA VMS.

To close this gap, the 10th Meeting of the Parties to the SIOFA (MoP10) adopted a Conservation and Management Measure (CMM) setting out the framework of the SIOFA VMS covering all critical aspects, including the scope of application, definitions, nature and specifications of the VMS, prevention of tampering and actions in case of suspected breach, use and release of VMS data requiring / not requiring the consent of Contracting Parties, Participating Fishing Entities and Cooperating non-Contracting Parties (collectively: CCPs), closed and interim protected areas, as well as data security and confidentiality. However, this framework needs to be further completed through the development of Standards, Specifications and Procedures (SSPs) as required by paragraph 9 of [CMM 16 \(2023\) \(Vessel Monitoring System\)](#),<sup>1</sup> prior to the entry into operation of the SIOFA VMS.

This Second draft of the SSPs for the SIOFA VMS takes into consideration comments from the 1<sup>st</sup> Meeting of the SIOFA VMS Working Group and other comments received from CCPs after the conclusion of the 1<sup>st</sup> Meeting.

***The proposed SSPs assume that Cooperating Non-Contracting Parties (CNCPs) will have similar privileges as CPs and PFEs, recalling that CNCPs do not currently contribute to the budget, which may be impacted by the implementation of the SIOFA VMS.***

***For the purpose of this document, all terms and terminologies used shall have the same meanings as those in CMM 16 (2023) unless otherwise specified.***

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<sup>1</sup> Conservation and Management Measure for the establishment of a SIOFA Vessel Monitoring System (Vessel Monitoring System)

## 1. Purpose

1. The purpose of these Standards, Specifications and Procedures (SSPs) is to complement measures established under CMM 16 (2023) so as to achieve the objectives of the CMM, which are 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 Conservation and Management Measures (CMMs).

## 2. Application

2. These SSPs applies to all fishing vessels flying the flag of a CCP, that are entered onto the SIOFA Record of Authorised Vessels (RAV) and operating within the Agreement Area (Area), as defined in Article 3 of the Agreement.
3. Installation and use of ALCs will be subject to these SSPs, as adopted by the Meeting of Parties.
4. Non-compliance with these SSPs should be considered non-compliance with CMM 16 (2023), recalling that these SSPs are an integral element thereof. The compliance with these SSPs will be assessed as part of the SIOFA Compliance Monitoring Scheme (CMS) and processes established thereunder.
5. These SSPs do not prejudice the right of CCPs to apply additional or more stringent measures to prevent tampering with ALCs on board vessels flying their flag.

## 3. General Provisions

6. CCPs should:
  - a. For vessels entered onto the SIOFA Record of Authorized Vessels (RAV) prior to the entry into force of CMM 16 (2023), provide ALC details specified in paragraph 7 for each vessel registered on the SIOFA RAV within [15 days after the entry into operation of the SIOFA VMS] or [30 days/ one month after the entry into force of CMM 16 (2023).]
  - b. For vessels to be entered onto the SIOFA RAV after the entry into operation of the SIOFA VMS, provide ALC details specified in paragraph 7 at the time of the submission of information required by [CMM 07 \(2022\) \(Vessel Authorization\)](#).<sup>2</sup>
7. Details to be submitted upon the attribution of ALCs to a fishing vessel should include the following:
  - a. Model and Brand
  - b. Serial Number<sup>3</sup>
  - c. Service Provider (Inmarsat/Iridium/ARGOS etc...) ID
8. [Moved to Confidentiality and Security Section]

8bis: For the purposes of CMM 16 (2023), the term Unique Vessel Identifier (UVI) will have the following meaning:

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<sup>2</sup> Conservation and Management Measures for Vessel Authorisation and Notification to Fish.

<sup>3</sup> For INMARSAT ALCs, the CCPs should provide the *Inmarsat Serial Number* (ISN)

- a) For CCPs transmitting VMS position reports pursuant to paragraph 6 a), the UVI should be the International Radio Call Sign (ICRS) or the International Maritime Organization (IMO) Number.
- b) For CCPs transmitting VMS position reports pursuant to paragraph 6 b) the UVI should be either the Serial Number or the Service Provider number of the ALC
- c) 8bis alt [Thailand] the SIOFA unique vessel number.

#### 4. [Methods to ensure ALCs comply with SIOFA Standards]

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##### *Explanatory Notes*

Paragraph 12 of CMM 16 (2023) sets out the general standards by which ALCs are expected to be installed and operated. Paragraphs 18 and 19 expand on the requirements to have tamper-proof ALCs while also prohibiting the tampering of ALCs. The minimum standards for ALCs are further described in Annex 1 of CMM 16 (2023).

To ensure that vessels and CCPs can monitor compliance with these requirements, this section of the SSP prescribes procedures for flag CCPs to assess compliance with SIOFA Standards of ALCs installed on their vessels. Port States and Authorized Inspection Officers participating in the High Seas Boarding and Inspections Scheme (HSBI) may also implement these procedures, recalling that the purpose of both applicable CMMs is to ensure compliance with the provisions of CMMs adopted by the MoP.

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9. The MoP should adopt a list of approved ALCs that may be used by vessels entered onto the SIOFA Record of Authorized Vessels (RAV). In preparing this list, the MoP may consider lists approved by existing regional and subregional VMS programs, including RFMOs which have the most robust vetting systems and have had long ongoing testing which have identified units that have become problematic, and lists approved by CCPs. The list may be updated based on an established set of processes according to a type approval process.
10. The MoP may also adopt a *type approval process* ([Annex 1](#)) that will describe the testing and verification procedure, and lead to an ALC being approved for use by vessels on the SIOFA RAV and subsequent listing on the list of approved ALCs.
11. Periodic audits of a representative sample of installed ALCs should be carried out by CCPs to verify that the specification and standards as set out in Annex 1 of CMM 16 (2023) are being complied with and that there is no visible evidence of tampering. The auditing process will also be used to ensure that anti-tampering standards for ALCs are being met.
12. The number of audits to be planned annually should be [10% or 1 unit (whichever is the greatest) per year minimum.] or [determined by MoP (CC)].
  - 13 Alt (Mauritius): The CCPs may undertake these audits quarterly or at the end of each fishing campaign.
13. CCPs are responsible for ensuring that the audits are conducted by qualified operatives, such as duly authorised officers.

14. Audit reports should include, at minimum, measurements of ALC position accuracy, elapsed time between transmission and reception of data, the integrity of VMS position reports, and any physical anomalies (connections, power supply, evidence of tampering) noted by the inspecting personnel.
15. The results of these audits should be provided to the Secretariat, who will consider the outcome of these audits when preparing the draft SIOFA Compliance Report (dSCR) for each CCP. The audits may also be included in the report prepared pursuant to paragraph 35 of CMM 16 (2023), including any evidence to support compliance with these audit processes.
16. Audits carried pursuant to these SSPs should have due regard to the safety of the officers designated for this purpose and the crew of the vessel. These audits should also be undertaken in a manner that does not unreasonably cause delays to the normal operations of a fishing vessel.

## 5. [ALC Inspection Protocols]

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### *Explanatory Notes*

These SSPs provide guidelines for facilitating the inspection of ALCs by a duly authorised inspecting party. It places the relevant obligations on the master of fishing vessels and also allows for accountability by authorised inspecting parties.

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17. Inspections carried out by flag CCPs Port State CCPs should be undertaken in accordance with the laws of these CCPs, these SSPs and any other applicable provisions of CMMs adopted by the Meeting of Parties. Inspections carried out within the Area should also be undertaken with due regard to the requirements of [CMM 14 \(2021\) \(High Seas Boarding and Inspection Procedures\)](#).<sup>4</sup>
18. Upon boarding for inspections, the master of the fishing vessel shall make its ALC, including antenna, connectors, power supply, and antenna cable, available for inspection as directed by the inspecting party.
19. Should a master refuse access to its ALC unit, any parts thereof, or the power supplies to an inspecting party, the inspecting party should inform the relevant flag state (if different from the inspecting party), who should, without delay, notify the Secretariat. The flag state will order the concerned vessel to comply immediately. The flag state will direct any vessel that refuses this order while operating in the Area to conclude the fishing trip and direct them to a port where a full equipment inspection will be carried out.
20. [A report issued as a result of each inspection will indicate the conformity of the ACL unit and installations with specifications set out in CMM 16 (2023), including annex 1 thereof.]
21. Reports of all inspections carried out will be submitted to the Meeting of Parties.
22. Flag CCPs should take action pursuant to their domestic legislation against vessels that do not comply with these SSPs. They should also provide a report to the Compliance Committee of actions taken against such vessels.

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<sup>4</sup> Conservation and Management Measure for High Seas Boarding and Inspection Procedures for the Southern Indian Ocean Fisheries Agreement.

23. ALC inspections carried out pursuant to these SSPs should have due regard to the safety of the inspecting party<sup>5</sup> and the crew of the vessel. These inspections should also be undertaken in a manner that does not unreasonably cause delays to the normal operations of a fishing vessel.

6. Rules for Polling and Programming for Vessels Reporting to the Secretariat in accordance with Paragraph 6 b).

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### ***Explanatory Notes***

Paragraph 6 b) of CMM 16 (2023) allows for simultaneously reporting VMS position reports automatically to the Secretariat. In this regard, there may be a need to interact with the ALCs to program its automatic reporting and to change its reporting frequency based on location (programming) and also to "query" an unscheduled position report (polling). It should be noted that while CMM 16 (2023) does not provide for polling of ALCs, it may be required during diagnosis when the good reception of position reports cannot be achieved. Other cases may be to stop the reporting temporarily or indefinitely based on scenarios, such as the deletion of the vessels from the SIOFA RAV, repairs, flagging and decommissioning of fishing vessels.

The procedure and complexity for such will depend on the model of the ALC and its service provider. This should also consider that the MoP should provide guidance on the following:

- The Secretariat is to undertake any polling and programming with the consent of the CCP (Scenario 2.1). Or:
- The CCPs do the polling and programming of ALCs reporting simultaneously to the Secretariat (Scenario 2.2)

In the case of the former, it shall be assumed that the CCPs provide consent for the polling and programming of the ALCs upon the registration vessels on the SIOFA RAV. It should be noted that there are no specified mechanisms for the registration of VMS to the Secretariat. As such, these SSPs suggest procedures for the same.

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#### **Scenario 2.1**

For ALCs that require programming, the Secretariat should do the needful to download the Data Network Identifiers (DNID), if needed, and proceed with the programming of the ALC based on procedures established by the service provider of the ALC. This will include automated or manual modification of reporting frequency as required by SIOFA CMMs. For ALCs that are programmed directly by their service providers, the CCPs should submit the request for the automated reporting of VMS position reports to the ALC service provider, including the automated modification of position report once every hour when vessels are present in the Del Cano Rise, in accordance with

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<sup>5</sup> For the purposes of these SSPs, Inspecting party (ies) includes any personnel duly authorised by the flag CCP for the purposes of inspecting ALCs, an authorised inspection officer as defined in CMM 14 (2021), or an inspector authorised pursuant to CMM 08 (2020).



paragraph 25 of [CMM 15\(2023\) \(Management of Demersal Stocks\)](#).<sup>6</sup> CCPs should promptly inform the Secretariat once the ALC has been programmed as necessary. In either case, the Secretariat should confirm good receipt of the position report prior to the vessel being authorised to commence any fishing trip in the Area.

### Scenario 2.2

For ALCs that require the programming of ALCs, the CCPs shall do the needful to download the Data Network Identifiers (DNID), if needed, and proceed with the programming of the ALC based on procedures established by the service provider of the ALC. This will include automated or manual modification of reporting frequency as required by SIOFA CMMs. For ALCs that are programmed directly by their service providers, the CCPs shall submit the request for the automated reporting of VMS position reports to the ALC service provider, including the automated modification of position report once every hour when vessels are present in the Del Cano Rise, in accordance with paragraph 25 of [CMM 15\(2023\) \(Management of Demersal Stocks\)](#).<sup>7</sup> CCPs shall promptly inform the Secretariat once the ALC has been programmed as necessary. In either case, the Secretariat shall confirm good receipt of the position report prior to the vessel being authorised to commence any fishing trip in the Area.

#### Japan Proposal

With the responsibility for ensuring that the program of the ALC is compliant with CMM16 including para 8, CCPs should take the responsibility to configure the ALC or send programming commands including the frequency of the transmission.

26bis. CCPs, which choose simultaneously reporting, should contract with the ALC service provider which is capable of providing the simultaneous reporting to multiple destinations (receivers), and bear the cost for reporting to CCP and to the Secretariat as well as for polling/programming command sending. The Secretariat (SIOFA VMS) receives the "simultaneously reporting" data in accordance with the protocol provided by the service provider

25. [The Secretariat may conduct additional ALC polling to query unscheduled position reports from ALCs installed on fishing vessels. These procedures shall depend on the ALC model and the applicable procedures as instructed by the ALC service provider. In cases where the Secretariat may not undertake polling due to limitations of the ALC, the CCPs shall, at the request of the Secretariat, submit such request to the ALC service provider. The Secretariat shall confirm the reception of VMS position reports to the concerned CCPs.]

26. [The SIOFA VMS shall include an automated alert to report when vessels enter or exit the Area.]

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<sup>6</sup> Assuming that CCPs may have access to their vessels' data via the SIOFA VMS while their vessels are in the Agreement Area.

<sup>7</sup> Assuming that CCPs may have access to their vessels' data via the SIOFA VMS while their vessels are in the Agreement Area.

## 7. [Obligations and roles of CCPs and the Secretariat]

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### *Explanatory Notes*

These SSPs set out the obligations and roles of all parties involved in implementing the SIOFA VMS. They assume that:

- The Secretariat will take on the role of monitoring fishing activities in the Area against SIOFA CMMs, similar to a regional FMC. And;
  - That CCPs may have access to their vessels' data via the SIOFA VMS while their vessels are in the Agreement Area.
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### *[CCPs*

27. To ensure compliance by their vessels and operators with the provisions of CMM 16 (2023) and these SSPs.
28. To conduct and report results of ALC Audits and ALC Inspections in accordance with procedures established for that purpose, including all information required by these SSPs.
29. To utilise the SIOFA VMS in accordance with applicable SIOFA CMMs ,CMM 03 (2016) and these SSPs.<sup>8</sup>
30. To provide the SIOFA Secretariat with details of the ALC attributed to a vessel on the SIOFA RAV, as required by paragraph 23.

### *]The SIOFA Secretariat*

31. To ensure that data, once received by the SIOFA VMS, are not altered, manipulated, copied or interfered with in any way or used by anyone other than those authorised to do so, and in accordance with CMM 03 (2016), or any such additional data security and confidentiality rules adopted by the Meeting of Parties for the purposes of the SIOFA VMS.
32. To provide a stable, reliable, fully maintained and supported SIOFA VMS that is in compliance with CMM 03 (2016), or any such additional data security and confidentiality rules adopted by the Meeting of Parties for the purposes of the SIOFA VMS.
33. To utilise the SIOFA VMS in a manner consistent with the Agreement, CMMs and these SSPs.
34. To administer the list of ALCs approved for use in the SIOFA VMS.
35. To compile and report annually to the MoP, through the Compliance Committee, a list of registered ALCs by vessels and flags in compliance or non-compliance with CMM 2016 (2023) and these SSPs. The Secretariat will include in its annual report all details for non-compliant ALCs detected in the previous assessment period.
36. To monitor and report annually to the Compliance Committee the performance of the SIOFA VMS and its application and, as necessary, make recommendations for improvement or modifications

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<sup>8</sup> Assuming that CCPs may have access to their vessels' data via the SIOFA VMS while their vessels are in the Agreement Area.

to the systems and these SSPs established to support it, in order to ensure the SIOFA VMS continues to function as a stable, secure, reliable, cost-effective, efficient, fully maintained and supported system.

## 8. Data format for data transmission

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### *Explanatory Notes*

Paragraph 6 a) of CMM 16 (2023) allows for CPCPs to report VMS positions automatically to the Secretariat via their FMC. However, these provisions do not provide for the data format and standards that will allow these transfers to take place.

There are at least two globally accepted data formats for data exchange of fisheries information. These are the North Atlantic Format (NAF) and the Fisheries Language for Universal Exchange (UN/FLUX). NAF is recognised as an older format with a number of limitations, and therefore there are a number of ongoing endeavours to improve on NAF or develop new standards for the exchange of fisheries information altogether.

UN/FLUX is one such proposed standard that has already gained recognition by the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT), with more states and regional organisations adopting its use for VMS data exchange, among others. The most significant advantage of UN/FLUX over NAF is its ability to cater to other data types, such as inspection reports, catch and effort reporting, etc. It should be recognised, however, that the uptake of UN/FLUX is still relatively low, and implementation may present challenges to the Secretariat and CCPs.

Noting the above, the following SSPs recognise the two data formats and provide standards to enable CCPs to exchange data using those formats.

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37. Position report sent to the SIOFA VMS, in accordance with paragraph 6 a) should be transferred to the SIOFA VMS using the following data formats;
  - a. The North Atlantic Format (NAF) ([Annex 2](#))
  - b. Fisheries Language for Universal Exchange, (UN/FLUX)
38. Vessel position reports sent using NAF should include, at minimum, information required in paragraph 1 f) of CMM 16 (2023). It should also follow the structure of NAF messages provided in [Annex 2](#).
39. The transfer of NAF data should be sent using one of the following application layers (secured connection):
  - a. Hypertext Transfer Protocol Secure (HTTPS)
  - b. File Transfer Protocol (FTP) with Transport Layer Security (TLS) (FTPS)
  - c. Email

40. VMS position reports sent using FLUX should adhere to the specifications of the Flux P1000-1 (General Principles) and Flux P1000-7 (Vessel Position Domain), as described in Annex 3.<sup>9</sup>

## 9. [Manual Position Reporting Standard]

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### *Explanatory Notes*

Paragraphs 13-17 already prescribe an elaborate set of procedures in the event of non-reception of programmed position reports. However, these paragraphs do not provide the agreed medium for manual reporting, leaving a number of possibilities to be explored once the VMS system is acquired. This would therefore default to the manual positions being sent via email to the Secretariat, which shall do the needful to capture those positions manually in the VMS system. While specific SSPs may not be necessary for other mediums or modalities at this point, they may be explored once the SIOFA VMS system is acquired.

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41. Manual positions sent to the SIOFA VMS pursuant to Paragraphs 13 – 17 of CMM 16 (2023) should be sent via email to the Secretariat, who should do the needful to record that information in the SIOFA VMS.

## 10. Data Confidentiality and Security Provisions

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### *Explanatory Notes*

As instructed by the VMSWG01, the SSP will also cover the relevant Confidentiality and Security procedures required to ensure the secure and confidential treatment of VMS data being exchanged between CCPs and the Secretariat.

⚠ The inclusion of these provisions in the SSPs may not necessarily be of a binding nature, given that the whole SSP is redrafted as such. Recalling that the CMM itself contains a number of confidentiality procedures already, this may introduce disparity in the application of confidentiality and security provisions. As such, the WG should be mindful of potential implications.

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42. Contracting Parties, cooperating non-Contracting Parties and participating fishing entities (CCPs) and the Secretariat should comply with these provisions, which establish the confidentiality and security procedures in the treatment of VMS data received pursuant to CMM 16 (202) (Vessel Monitoring System).
43. The Secretariat will inform the Meeting of the Parties of measures taken to implement these confidentiality and Security provisions.
44. The CCPs and the Secretariat should only use data for the purposes specified in CMM 16 (2023)

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<sup>9</sup> <https://unece.org/trade/uncefact/unflux>

45. The Secretariat will maintain a database of ALCs attributed to vessels entered onto the SIOFA RAV. ALC details contained in the database should be treated as confidential information and should not be public domain data. Notwithstanding, the Secretariat may share ALC details to a requesting CCP: when a vessel enters its Exclusive Economic Zone (EEZ) or with the consent of the vessels flag CCP.

[Mauritius Proposal] The Secretariat will also make these ALC details to a list of approved personnel based on a risk assessment conducted.

46. The Secretariat should only provide VMS data to a secure email address specified at the time a CCP has made the request for VMS data.

47. [Criteria for data release, as guided by WG]

48. CCPs should destroy data received VMS data, including ALC details, received for purposes other than those specified in paragraph 24 of CMM 16 (2023) and confirm their deletion to the Secretariat in writing without delay once the data has served its intended purpose.

49. CCPs and the Secretariat should take appropriate measures to protect VMS data against accidental or unlawful destruction, loss alteration, unauthorised disclosure or access, and against all inappropriate form of processing.

50. The following security measures shall be mandatory for the SIOFA VMS:

- a. System Access Control: the system has to withstand break-in attempts from unauthorised persons
- b. Authenticity and data access control: the system has to be able to limit access of unauthorised parties to only the data necessary for their task via a flexible user identification and password mechanism
- c. VMS data must be securely communicated: communication between CCPs, Service Provider, and the Secretariat shall use secure protocols in accordance with the VMS Specifications, Standards and Procedures (SSPs).
- 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 the Information System Security Policy to ensure proper access to the system (hardware and software), system administration and maintenance, backup and general usage of the system.

51. The Secretariat should periodically review access and logs of the VMS software, ensure the proper maintenance of the system security, and restrict access to the system as deemed necessary.

## [Annex 1: Type Approval Process]

This annex proposes a type approval process for the inclusion of ALC on the list of approved ALCs.

### *Introduction*

As proposed in the SSPs for the SIOFA VMS, the Meeting of the Parties (MoP) may also adopt a *type approval process* that will describe the procedure of testing and verification, which will lead to an ALC being approved for use by vessels on the SIOFA RAV and subsequent listing on the list of approved RAV. The proposed type approval process is drawn from the *FAO Technical Guidelines for Responsible Fisheries - Fishing Operations - 1 Suppl. 1 - 1. Vessel Monitoring Systems*, adapted for the SIOFA context. The basis of the tests are the requirements outlined in CMM 2016 (2023) and its Standards, Specifications and Procedures (SSPs).

The Type approval Process is presented as a questionnaire, where the ALC should comply with all of the requirements therein.

### *Type Approval Questionnaire*

1. Is the ALC's unique identifier stored in non-volatile memory which constitutes part of the system's unmodifiable firmware?
2. Is the ALC capable of detecting that it is incapable of sending or receiving messages because of antenna blockage or disconnection?
3. Is the entire communication sequence from the ALC to the VMS monitoring authority of the CCP or the Secretariat, including relay by the satellite service provider, secure and immune to interception, under reasonable circumstances?
4. Does the satellite system employed offer full, continuous coverage, at minimum, within the SIOFA Agreement Area?
5. Are the positions received accurate within the specified tolerance of CMM 16 (2023)?
6. Does the received position reports contain all data required by paragraph 1 f) of CMM 16 (2023)?
7. Is message delivery completed within 1 hour after being emitted by the ALC under normal circumstances?
8. Is transmission of position reports unobservable aboard the vessel, under normal circumstances?
9. Is the ALC sufficiently protected against having the automated position reporting function altered or disabled, other than by the CCPs FMC or the Secretariat?
10. Is the ALC capable of providing independently calculated speed and course?
11. Does the ALC respond automatically and immediately to a remote request for a position?

***Positive answers to all of the above questions would certify that an ALC met the necessary standards for inclusion on the list of approved ALCs.***

## Annex 2: Description of the North Atlantic Format (NAF)<sup>10</sup>

### Data Elements of NAF Messages

All NAF Messages sent to the SIOFA VMS should contain, at minimum, the information required in paragraph 1. f) of CMM 16 (2023). The general structure and data elements are as below

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 (ISO-3166)
Sequence Number	SQ	Message Sequence Number	0-999999
Type of Message	TM	Letter code of the type of message	POS = position report, MAN = manual report, ENT = entry report, EXI = exit report
International Radio Call Sign (ICRS)	RC	Vessel detail: international radio call sign of the vessel	IRCS
Vessel Name	NA	Name of the vessel	ISO 8859.1 characters
Latitude	LT	Latitude expressed in degrees and decimals (WGS-84)	+(-)DD.ddd
Longitude	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
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

### Structure of the position report

Each data transmission shall be structured as follows:

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

<sup>10</sup> <https://www.naf-format.org/index.htm>

## Annex 3: Description of the Fisheries Language for Universal Exchange, (UN/FLUX)

All position reports sent to the SIOFA VMS using UN/FLUX format should contain, at minimum, the information required in paragraph 1. f) of CMM 16 (2023). The general structure and data elements are as below

Data	Mandatory/optional	Comments
Addressee	M	Message detail — Addressee Alpha-3 country code (ISO-3166)  Note: Part of the FLUX TL envelope
From	M	Message detail — Sender Alpha-3 country code (ISO-3166)
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 according to ISO 8601, using the format YYYY-MM-DDThh:mm:ss[.000000]Z <sup>11</sup>
Flag State	M	Message detail – Flag of flag State, Alpha-3 country code (ISO-3166)
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
International Radio Call Sign	M	Vessel detail – Vessel international radio call sign (IRCS)
Contracting party internal reference number	O	Vessel detail – Unique contracting party vessel identifier
Unique Vessel Identifier (UVI)	O	Vessel detail – IMO number

<sup>11</sup> 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)



External registration number	O	Vessel detail – Number on side of vessel (ISO 8859.1)
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.
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 according to ISO 8601, using the format YYYY-MM-DDThh:mm:ss[.000000]Z <sup>12</sup>

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<sup>12</sup> 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; M1=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)