

**CMM 20-2026**  
**Conservation and Management Measure Establishing Minimum Standards for**  
**Electronic Monitoring in SPRFMO Fisheries**

*(Adopted in 2026)*

**The Commission of the South Pacific Regional Fisheries Management Organisation;**

*NOTING* that Article 28 of the Convention sets out the functions of the observer programme and that the observer programme shall be coordinated by the Secretariat of the Commission in a flexible manner to take account of the nature of the fisheries resources and other relevant factors;

*NOTING* that the primary function of observers on board fishing vessels is the collection of scientific information and that observers are not enforcement officials, but that Article 28 of the Convention specifies that the information collected by the observer programme shall, as appropriate, also be used to support the functions of the Commission and its subsidiary bodies, including the Scientific Committee (SC) and the Compliance and Technical Committee (CTC);

*NOTING* the importance of the collection of robust scientific information, consideration should be given to *inter alia* cost-effectiveness and technical feasibility;

*NOTING ALSO* that one of the functions of the Commission is to promote the conduct of scientific research to improve knowledge of fishery resources and marine ecosystems in the Convention Area and of the same fishery resources in adjacent waters under national jurisdiction;

*ACKNOWLEDGING* that high-quality data and information related to the fishing activity in the Convention Area, and its impacts on the marine environment occurring in the SPRFMO area are essential for the Commission to adopt and implement effective and timely Conservation and Management Measures (CMMs);

*DETERMINED* to ensure the collection of data and information that can be used for effective assessment and management of SPRFMO fisheries resources, including target species and bycatch, and interaction of fishing activities with the environment and species occurring in the Convention Area, to improve the certainty of future scientific advice while taking into account ecosystem considerations;

*DESIRING* to allow the use of Electronic Monitoring to fulfil or supplement observer requirements;

*COMMITTED* to ensure that the SPRFMO Electronic Monitoring Programme is developed under a robust and transparent governance framework;

*NOTING* the work of the Ad Hoc Working Group on Electronic Monitoring Standards during the 2025-2026 intersessional period;

*ADOPTS* the following CMM in accordance with Articles 8 and 28 of the Convention:



## Objective, Purpose, and Scope

1. This CMM applies to all SPRFMO fisheries in which the use of Electronic Monitoring Systems (EMS) has been approved by the Commission to fulfil the data requirements of SPRFMO CMMs. For the purposes of this CMM, Electronic Monitoring (EM) means the use of electronic devices to record a fishing vessel's activities using camera technology linked to a Global Position System (GPS) or its equivalent, and which may include sensors. Other definitions of key terms are provided in Annex 1.
2. The objective of the SPRFMO Electronic Monitoring Programme (EMP) is to enable collection, via EMS, of verified catch and other data related to the conduct of SPRFMO fisheries in the SPRFMO area of competence in order to facilitate the collection of verified scientific data and additional information related to fishing activities in the Convention Area and their impacts on the ecosystem, and also to support the functions of the Commission and its subsidiary bodies, including the SC and the CTC.
3. To achieve the objective in paragraph 2, this CMM establishes minimum requirements for EM domestic programmes, EMS, and EM data that shall apply when EM is used in SPRFMO fisheries to fulfill the data requirements of SPRFMO CMMs to ensure that it generates data of equivalent confidence to data derived from human observation under the SPRFMO Observer Programme established by CMM 16 (2025) (SPRFMO Observer Programme).
4. Notwithstanding paragraphs 2 and 3, the implementation of EM is optional, and this CMM does not create any independent obligation for Members and CNCPs to implement EM onboard their fishing vessels.
5. Members and CNCPs that implement EM in order to fulfil the data requirements of SPRFMO CMMs shall ensure that their EM domestic programmes fulfil the minimum programme requirements and standards and technical specifications set out in this CMM.
6. Unless otherwise decided by the Commission, Members and CNCPs shall ensure that they meet the human observer coverage levels required in accordance with the relevant CMMs, and if they choose to implement EM in accordance with this CMM to fulfil the data requirements of SPRFMO CMMs, EM shall be used to supplement the required level of human observer coverage and the required tasks to be performed by these human observers.
7. Members and CNCPs shall ensure that they meet any EM coverage levels required in accordance with relevant CMMs.

## EM minimum standards and minimum data fields

8. EM equipment shall operate from port to port during a fishing trip, shall automatically and autonomously collect EM records to generate the required EM data, and shall be tamper-evident (i.e., any attempts to tamper with the equipment will be detectable to the EM service provider/vessel owner and reported to the respective vessel flag authority).
9. The minimum technical requirements, performance standards, and activities that shall be covered under EM and captured by the camera(s) are provided in Annex 2. General recommendations for the configuration of EM equipment (e.g., camera placement and subsequent views) for each vessel type, are also in Annex 2.
10. The minimum data fields that shall be collected by EMS for each vessel type are provided in Annex 3.
11. For the purposes of calculating EM coverage based on proportion of fishing days, in order to count a specific day as covered by EM, records must be reviewed for the entire duration of fishing activities on that specific day.
12. For the purposes of calculating EM coverage based on other units, requirements will be developed as necessary.



## Vessel Monitoring Plan (VMP)

13. If a Member or CNCP intends to generate data via EM to fulfil the data requirements of SPRFMO CMMs, such a Member or CNCP shall develop an EM Vessel Monitoring Plan (VMP) for each of their flagged vessels fishing for SPRFMO fishery resources, and on which EM equipment is to be operated and applying the SPRFMO minimum standards for EMS. The VMP shall describe the configuration, components and installation of EM equipment on each vessel, and this configuration shall be capable of collecting EM records consistent with all relevant minimum standards and technical specifications in this CMM. Members and CNCPs may use the same VMP for similar vessel types that share the same EM system configuration. The VMP requirements are detailed in Annex 4.
14. A copy of a vessel's current VMP approved by the Member or CNCP shall be maintained onboard each vessel at all times when EM equipment is deployed to monitor the vessel's activities.

## Data management

15. Members and CNCPs shall implement the requirements for data storage and retention, data transmission and retrieval, and data review and reporting detailed in Annex 5.

## Obligations of Members and CNCPs

16. Members and CNCPs that choose to implement EM to meet the data requirements of SPRFMO CMMs, shall require that the masters of their flagged vessels that are required to carry an EM system:
- a. do not take a vessel out of port if the EMS is not capable of operating properly in the Convention Area unless the flag Member or CNCP authorises the master to do so and ensures that any relevant data collection or other SPRFMO obligations, such as minimum observer coverage requirements, can be met through other means (e.g., with human observers or EMS deployed on other vessels);
  - b. in case the EMS malfunctions while at sea, report the malfunction, including the display of any critical warning, to the flag Member or CNCP competent authorities, through automatic real time notification of the malfunction or manually, within a maximum of 48 hours;
  - c. provide on-board physical access to the EMS components and to physical or electronic copies of the approved VMP if requested by a Member or CNCP authorised observer and/or inspection personnel;
  - d. ensure that, in accordance with the VMP and the minimum areas of vessel coverage as specified in Annexes 2 and 3, the cameras have an un-obstructed view, and following pre-established protocols, that the camera lenses are kept clean;
  - e. ensure that the handling of the catch and other vessel operations does not hinder the proper identification and estimation of the catch composition by the onboard EMS, including by-catch;
  - f. ensure that the transmission or retrieval of EMS data is carried out in accordance with the provisions of Annex 5;
  - g. ensure that unless authorised by the flag Member or CNCP to take a specific action, the EMS is not tampered with (e.g., disconnect the system, rearrange, or obstruct the view of the cameras, disconnect cameras or sensors, switch-off the onboard EMS manually, intentionally break the system).
17. Any Member or CNCP that chooses to implement EM to meet the data requirements of SPRFMO CMMs, shall ensure:
- a. that the EMS deployed on any fishing vessel flying its flag meets the requirements set out in this CMM;
  - b. that for fisheries where 100 percent EM coverage is not required that the method of installing EM systems and reviewing EM records to vessels flying their flag is representative for the fishery to be monitored and commensurate with the specific data needs of the fishery as a whole. This requirement is subject to practical constraints related to Members and CNCPs with a small number of fishing vessels or trips;



- c. that EM domestic programmes are developed, designed, implemented, and managed in a manner that ensures they are independent, transparent, and accountable, in accordance with requirements set out in this CMM;
- d. that the analysis of the EM data is done by independent EM review providers authorised by Members or CNCPs or by the institutions or authorities of Members or CNCPs, with the necessary knowledge, skills and technical abilities to ensure effective data analysis, including sufficiently accurate species identification;
- e. that rules and procedures are established in case of EMS failure, including to ensure that any relevant data collection or other SPRFMO obligations, such as minimum observer coverage requirements, can be met through other means;
- f. that appropriate follow-up is undertaken if potential infringements of SPRFMO conservation and management measures are detected through the Member or CNCP's EM domestic programme.

18.A Member or CNCP that chooses to implement an EM programme for vessels operating in SPRFMO fisheries to generate data to fulfil the data requirements of SPRFMO CMMs shall submit a description of its EM domestic programme to the Secretariat. The Secretariat shall circulate the programme descriptions to the Commission.

19.The EM domestic programme description in paragraph 18 shall include at least the following information:

- a. VMPs for each unique fishing vessel configuration used in the programme;
- b. responsibilities of fisheries authorities and vessel owner/crew with respect to installing and maintaining equipment, including routine cleaning of cameras, and responses to mechanical or technical failure of the EMS;
- c. methods for EM record review, including the EM review provider and EM review system;
- d. EM service provider, intended EM installation coverage and overall EM coverage;
- e. protocols for EM record and EM data storage, retention, and retrieval; and
- f. a list of any SPRFMO measures for which EM will be used by the Member or CNCP to meet the requirements of SPRFMO CMMs for monitoring compliance, and the protocols for reporting and following up on potential infringements detected by EM.

20.No Member or CNCP may use an EM domestic programme to fulfil SPRFMO data requirements until it has submitted the EM domestic programme description required in paragraph 18 above.

21.Members and CNCPs shall report any substantial changes to the information provided pursuant to paragraphs 18 and 19 to the Secretariat whenever such changes occur.

22.A Member or CNCP that chooses to implement EM in its fisheries to generate data to fulfil the data requirements of SPRFMO CMMs, shall:

- a. when EM is used to fulfil the data requirements of SPRFMO CMMs, report to the SC each year, using the electronic formats that are developed by the SC, the EM data collected through EM domestic programmes, in line with procedures in place for other data reporting requirements and consistent with domestic confidentiality requirements; and
- b. report to the Commission in its annual implementation report other relevant information on the results of the implementation of its EM domestic programme during the previous year, including, at least, the EM installation coverage of the fleet, the EM coverage levels achieved by fishery and gear type; details on how those coverage levels were calculated; and, where appropriate, information on compliance monitoring.



- c. provide the data in Annex 3 collected by their EM domestic programmes in a standardised format, to be included in the SPRFMO Observer/EM Database. Specifications and standards for data submissions are in Annex 5. EM data will be submitted in Microsoft Excel format, JavaScript Object Notation (JSON), or in such other machine-readable format as the Secretariat may prescribe following consultation with the Scientific Committee. In the first two years after adoption of these standards Members and CNCPs may submit data derived from EM as soon as practicable. After two years Members and CNCPs will provide by 30 June, their previous (January to December) year's data, consistent with the deadline for the SPRFMO Regional Observer Programme. In exceptional cases, and only where a written notification is submitted to the Secretariat by 30 June explaining the need for an extension, the notifying Member/CNCP shall submit available data by 30 June and shall submit the remaining data as soon as possible but not later than 30 September.

## Secretariat roles and responsibilities

23. The Secretariat shall:

- a. communicate with the Members and CNCPs implementing EM domestic programmes to ensure that they understand the applicable SPRFMO reporting obligations;
- b. summarise and provide Annual Reports to the Commission about the progress of Member and CNCPs in implementing EM domestic programmes;
- c. compile and disseminate accurate and complete EM data to ensure that the best scientific evidence is available, while maintaining confidentiality where appropriate. In doing so, the Secretariat is to follow the procedures specified in CMM 02-2025 Section 6;
- d. explore the possibility of developing a system, such as an Application Programming Interface, to automate EM data submission workflow for both Members and CNCPs and the Secretariat.

## Reporting

24. Members and CNCPs shall include a brief overview of the EM domestic programs, service providers, or review providers covering their fishing activity as a component of the Annual Reports submitted by Members and CNCPs to the SC and developed in accordance with the "Guidelines for Annual Reports to the SPRFMO Scientific Committee".
25. The Secretariat shall prepare a report on the implementation of the SPRFMO EMP for presentation at each annual meeting of the CTC, using information from annual reports, EM data, and all other suitably documented and relevant information in its possession. The SPRFMO EMP Implementation Report will address, inter alia: (1) information on problems that have been encountered; (2) recommendations for improving current standards and practices; (3) developments in EM programs and observational methods; (4) constraints to accreditation and (5) in general any identifiable problem or obstacle in fulfilling the objectives and purpose of this CMM as outlined in paragraphs 2 and 3.
26. The SPRFMO EMP Implementation Report shall be distributed to Members and CNCPs 30 days prior to each annual CTC meeting.
27. The CTC shall review the recommendations delivered by the SPRFMO EMP Implementation Report and provide advice to the Commission thereon, including proposed actions to be taken.
28. The Secretariat shall make available EM data to the SC, at its request. Data confidentiality shall be maintained as set forth in procedures specified in paragraph 6 of CMM 02-2026 (Data Standards) and in any other data procedures that may be adopted by the Commission.

## Review

29. The CTC shall review the implementation and effectiveness of this CMM at its meeting in 2028 and at least every five years thereafter, including the applicability of the SPRFMO Electronic Monitoring Programme to other fishing vessels, and any additional requirements as necessary to meet the objectives of both Article 28 of the Convention and this CMM.



30. SC shall periodically evaluate the scientific data collected by EM domestic programmes and, if appropriate, suggest improvements and adjustments to ensure that SPRFMO scientific data collection requirements are met, including advice on the minimum data fields for and appropriate level of EM coverage needed in each fishery to meet data needs.
31. In relation to paragraph 17b of this CMM, Members and CNCPs shall document and provide information on the methods used to install EM systems and review EM records on fishing vessels flying their flag to meet EM coverage requirements, and shall also provide this information in their Annual Report to the SC. The SC shall review the method used by each Member or CNCP and provide recommendations for improvement when necessary.
32. Should the SC recommend that a change in coverage or research priorities for specific fisheries is needed, the revised EM coverage levels, if adopted by the Commission, will be specified in the relevant fishery CMMs.

## Accreditation

### *EMP Accreditation Evaluator*

33. The SPRFMO EMP Accreditation Evaluator is the public or private person or entity tasked by the Commission to assess and evaluate the applications for accreditation. The SPRFMO EMP Accreditation Evaluator shall have addressed any potential or actual conflict of interest in the course of delivering its service.
34. Applications for the accreditation of EM domestic programmes may be submitted by Members or CNCPs. Subject to paragraphs 52 and 54 of this CMM, the evaluation of each EM domestic programme or service provider shall only be undertaken by the SPRFMO EMP Accreditation Evaluator.
35. Subject to paragraphs 45, 46 and 47 of this CMM, the SPRFMO EMP Accreditation Evaluator shall evaluate the EM domestic programmes, including service providers and review providers against the minimum requirements and standards set by the Commission in Annex 6 of this CMM.
36. The Secretariat shall ensure that the SPRFMO EMP Accreditation Evaluator is required, through its service contract, to maintain the confidentiality of any information received by a Member, CNCP or service provider pursuant to this accreditation process.
37. A Decision of the Commission will designate a SPRFMO EMP Accreditation Evaluator no later than at its 16th annual meeting. The procedure for appointing the SPRFMO EMP Accreditation Evaluator, as well as the terms and conditions of engagement, will be decided by the Commission by its 15th annual meeting.
38. The SPRFMO EMP Accreditation Evaluator shall be paid out of the Commission budget.





### *Evaluation of EM Domestic Programmes by the SPRFMO EMP Accreditation Evaluator*

39. Consistent with Article 28(1) of the Convention, the SPRFMO EMP, including the accreditation process, shall be coordinated by the Secretariat and operated in accordance with the standards, rules and procedures detailed in this CMM.
40. Each Member, CNCP seeking to accredit its EM domestic programme under the SPRFMO EMP shall submit to the Secretariat and the Accreditation Evaluator, at any time, all the relevant information and documentation to demonstrate the fulfilment of the standards provided for in this CMM, including VMPs, manuals, guides and training materials. All the information and documentation shall be provided in the official language of the Commission or with appropriate translations. The Secretariat may recommend that the Member or CNCP, service provider, or review provider complete the application when there is clear evidence that substantive or essential information is missing.
41. Members and CNCPs are encouraged to inform the Secretariat and the Accreditation Evaluator as early as possible of their intention to pursue accreditation under the SPRFMO EMP and to commence the accreditation process at least six months prior to the date fixed for the opening of the next Commission meeting.
42. The Secretariat shall promptly provide the information and documentation referred to in paragraph 40 to the SPRFMO EMP Accreditation Evaluator.
43. The SPRFMO EMP Accreditation Evaluator shall liaise with Members and CNCPs, as appropriate. Members and CNCPs and service providers shall have the opportunity to provide additional information and corrections relevant to their evaluation to the Secretariat and the EMP Accreditation Evaluator. This process will be conducted by the SPRFMO EMP Accreditation Evaluator in a fair, equitable, transparent and non-discriminatory manner.
44. Following evaluation and bilateral consultation, the SPRFMO EMP Accreditation Evaluator shall provide a Draft Preliminary Evaluation Report to the Member or CNCP pursuing accreditation within 30 days for comment prior to the report being provided to the Secretariat. The SPRFMO EMP Accreditation Evaluator shall then incorporate any additional information and provide the Preliminary Evaluation Report simultaneously to both the Secretariat and the Member or CNCP, indicating whether the nominated EM domestic programme has met the minimum standards for accreditation under the SPRFMO EMP.
45. When preparing a Preliminary Evaluation Report, and in addition to assessing the fulfilment of the standards indicated in Annex 6, the SPRFMO EMP Accreditation Evaluator shall also consider those EM programmes currently accredited by other RFMOs.
46. The SPRFMO EMP Accreditation Evaluator shall assess the consistency and compatibility between the SPRFMO Minimum standards for accreditation under Annex 6 and those required by other RFMOs, along with their practical implementation and functioning. The Member or CNCP shall provide to the Secretariat the name of the EM domestic programme accredited by other RFMOs, the RFMO that has accredited it, and any other supporting information requested by the Accreditation Evaluator.
47. If the Accreditation Evaluator finds that the EM domestic programme has accreditation under another RFMO or arrangement that meets the SPRFMO Minimum standards for accreditation under Annex 6, along with its practical implementation and functioning, it will find the application favourable.
48. The Accreditation Evaluator shall submit the Final Evaluation Report to the Secretariat no later than 60 days in advance of the Commission meeting at which it is to be considered. The Secretariat shall circulate the Final Evaluation Report as an annex to the SPRFMO Electronic Monitoring Programme Implementation Report prior to the CTC meeting at which it is to be considered.
49. The CTC shall assess the Final Evaluation Report and make recommendations to the Commission regarding whether the EM domestic programme has met the requirements of this CMM and, where relevant, whether a recommendation based on paragraphs 51 to 54 is appropriate.
50. The Commission shall decide whether to grant accreditation at its next meeting on the basis of the Final Evaluation Report and any recommendations from the CTC.



- 51.If the Final Evaluation Report by the SPRFMO EMP Accreditation Evaluator is favourable, the Commission may decide to adopt the report and grant accreditation under the SPRFMO EMP for 5 years from the date upon which accreditation is granted.
- 52.Should the Commission decide that, despite the favourable findings of the Final Evaluation Report by the SPRFMO EMP Accreditation Evaluator, the application does not meet the minimum standard required for accreditation (Annex 6), it may decide not to grant accreditation. In that case it shall clearly outline the basis for its decision.
- 53.If the Final Report by the SPRFMO EMP Accreditation Evaluator is not favourable, the Commission may decide to adopt the report and not grant accreditation.
- 54.Should the Commission decide that, despite the findings of the non-favourable Final Evaluation Report by the SPRFMO EMP Accreditation Evaluator, the application meets the minimum standard required for accreditation (Annex 6), the Commission may decide to grant accreditation under any conditions as may be specified by the Commission. These conditions may include the accreditation of an EM domestic programme on a temporary and conditional basis pending the fulfilment by that Member or CNCP of the deficiencies detected during the accreditation process.
- 55.In case an application for accreditation is not granted, nothing prevents a Member or CNCP from presenting a new application to seek accreditation. When reapplying for accreditation Members and CNCPs shall consider the findings and recommendations of the SPRFMO EMP Accreditation Evaluator and the Commission.
- 56.Members and CNCPs shall be entitled to renew accreditation.
- 57.A Member may request that the Commission revoke, condition or suspend accreditation for an EM domestic programme at any time, but not later than 30 days in advance of the next CTC meeting, by providing evidence that the EM domestic programme is not meeting the minimum standards for accreditation. The Executive Secretary shall circulate the request for revocation, condition or suspension to Members as soon as possible but no later than 15 days after the request is received, and the SPRFMO EMP Accreditation Evaluator shall be asked to advise the CTC on the matter no later than 20 days after the request was circulated.
- 58.The CTC shall assess the request to revoke, condition or suspend an accreditation and the information provided at its next annual meeting, as well as any information provided by other Members, and may provide recommendations to the Commission. The Commission shall consider the recommendations of the CTC and the request to revoke, suspend, or condition accreditation at its next annual meeting.
- 59.The Secretariat shall publicise the name of all EM domestic programmes accredited under the SPRFMO EMP, together with relevant contact details, on the SPRFMO website and shall include a list of all EM domestic programmes accredited under the SPRFMO EMP in the annual EMP Implementation Report described in paragraph 25.

### *Entry into force*

- 60.Members and CNCPs may continue using their own non-accredited EM domestic programmes to generate data to fulfil the data requirements of SPRFMO CMMs until 30 September 2029. From 1 October 2029 Members and CNCPs shall only utilise EM domestic programmes accredited by SPRFMO to fulfil the data requirements of SPRFMO CMMs.





## ANNEX 1 - Terms and Definitions

**Electronic Technologies (ET):** any electronic tool that is used to support fisheries-dependent data collection, both on shore and at sea, including electronic reporting (ER) and electronic monitoring (EM).

**Electronic Reporting (ER):** the use of electronic systems (application, software, form or file) to record, store, receive and transmit fisheries data.

**Electronic Monitoring (EM):** the use of electronic devices to record a fishing vessel's activities using camera technology linked to a Global Position System (GPS) or its equivalent, and which may include sensors.

**Electronic Monitoring System (EMS):** the system comprising the vessel and shore-based components for collecting, transmitting and reviewing EM records, reporting of EM data and implementing an EM Programme.

**EM Domestic Programme:** a process administered by the competent authorities of a Member or CNCP that regulates the use of EMS on vessels to collect and verify fisheries data and information responsible through an implementation of an EMS in a defined area and/or fishery.

**EM Programme standards:** standards, specifications and procedures governing the establishment and operation of the SPRFMO EM Programme, applicable to all components of the EMS as set out in this CMM.

**EM records:** Electronic data, including imagery and sensor, and positional data collected by EM equipment that can be reviewed to produce EM data.

**EM data:** processed/analysed data produced through review of EM records that conforms with the EM data standards.

**EM equipment:** a network of electronic cameras, sensors, and data storage devices installed on a vessel and used to record the vessel's fisheries-related activities.

**EM review:** the review of EM records by EM reviewers to produce EM data.

**EM reviewer:** a person qualified to review EM records, store and produce EM data in accordance with this CMM, including Annex 5, "Data Storage, Retention, Transmission, Retrieval, Review, and Reporting".

**EM review system:** application software used by the EM reviewer to review the EM records and produce the processed EM data as per the EM data standards.

**EM review provider:** a third-party provider of EM review services selected by the competent authorities of the Member or CNCP to review EM records to produce EM data. The same third-party organisation can provide both the EM equipment and EM review services but they can also be supplied by different providers.

**EM installation coverage:** the proportion of vessels by fleet that has EM equipment installed that is operational.

**EM record coverage:** the proportion of fishing effort for which EM records are collected by installed EM equipment.

**EM coverage:** the proportion of fishing effort for which EM records are reviewed to produce EM data (e.g., proportion of fishing days).

**EM service provider:** a third-party provider of EM equipment (and/or system), technical and logistical services to maintain the EM equipment and monitor its proper functioning.

**Fishing activities:** any action related to the catching, taking, or harvesting of fish and other marine resources, including the preparatory steps and post-harvest handling.

**Fishing trip:** a voyage by a fishing vessel, for the purpose of fishing in the SPRFMO Convention Area, starting when the vessel departs from port, including all times that it is in the Convention Area and ending once it enters port.



**Vessel Monitoring Plan (VMP):** A plan setting out the EM equipment characteristics of a fishing vessel, or a group of vessels, and how the vessel's the EM equipment is installed, maintained, and configured to monitor fishing activities and meet the requirements of this CMM.



## ANNEX 2 - Minimum technical requirements, performance standards, camera views of fishing activities under coverage by EMS, EM installation coverage, and recommended configurations for EM equipment for each vessel type

### *EM equipment*

1. The EM system and associated equipment used to meet the requirements of these standards must have sufficient specifications (e.g., image resolution, frame rate, user interface) to enable, and must be configured to:
  - a. continuously record and store vessel location (latitude/longitude coordinates), speed, course, and records from any sensors used to trigger image collection (e.g., hydraulic and winch activity) for the entire fishing trip;
  - b. record the time, date, and location of all fishing activities, bycatch, or discard events;
  - c. record and store image records from all fishing activities;

The EM equipment shall be protected against onboard power outage, with a backup power system capable of operating for at least 30 minutes.

2. Digital video is typically preferred for capturing information during the different phases of vessel activity, but still images can also serve as a viable option, especially due to limited storage capacity. An optimal configuration may involve a camera setting, using video for specific areas, cameras, or moments, while utilising still photos for others.
3. EM records shall include, at a minimum, location, date, and time stamps, and to the extent possible, vessel ID, and integrate with other data collection and monitoring tools (e.g., sensors).
4. The onboard interface shall allow verification by the master or crew of the correct functioning of the EM equipment.
5. The Member or CNCP shall require the EM provider to ensure that radio frequency interference from EM equipment with other on-board vessel communication, navigation, safety, geolocation devices or fishing equipment is prevented.
6. EM Equipment shall be tamper-evident/resistant and record automatic alerts which shall be transmitted to the appropriate Member or CNCP point of contact and EM provider in near real-time in cases of malfunctions, manual activation/shutdown, manual data input, external data manipulation, or attempts to tamper with the equipment or EM records. If these recorded automatic alerts cannot be sent in near real-time to the appropriate Member or CNCP point of contact and EM provider they shall be provided as soon as possible, along with other EM records at the end of the corresponding trip. It must also be possible for data recording to be controlled manually, but only in case the EM equipment fails to start or stop automatically, and any manual activation shall trigger an automatic alert. Manual shutdown shall not be permitted unless authorised by the Member or CNCP.
7. Onboard EM equipment components shall be sufficiently dust and water resistant and durable enough to operate reliably under the range of conditions expected in their location on vessels.

### *Cameras*

8. Cameras shall be sufficient in number and quality to allow the identification of species, specific fishing activities including bycatch, discards, and the vessel's surroundings.
9. Cameras shall be capable of recording video and/or still images in Full High Definition (FHD), 1080p and 30 frame per second (FPS). The resolution, frame rate, and capture intervals set for individual cameras shall achieve the purpose of the individual camera in capturing records sufficient to generate the required data. For cameras used for species identification, video should be set at a minimum resolution of 720p, with a minimum frame rate of 5 FPS. Still images shall have a minimum capture interval of no more than 1 second and a resolution of no less than 2MP.



- 10.Placement of cameras shall provide clear and unobstructed views of the areas that are being covered.
- 11.On jigging vessels the cameras shall provide, at a minimum, a view of all hooked fauna, both those brought aboard the vessel and, when possible, those discarded or released without first bringing them on the vessel. Cameras shall also provide views of products entering post-production storage areas in order to facilitate counting of cases or other containers for catch estimation. Descriptions and diagrams of example camera locations for jigging vessels are provided in Table 1 and Figure 1.
- 12.Required camera views for other vessel and gear types will be developed at such time as the Commission decides to allow the use of EM to fulfill data requirements for those vessel and gear types.
- 13.Cameras should be able to record activities in low and very bright natural light conditions (low and high contrasts). Nocturnal fishing activities involving species captured should be illuminated with sufficient lighting, and image quality should be tested to ensure there is not excessive glare.

### *Sensors*

- 14.EM equipment may also include sensors for recording non-visual data (e.g., vessel movement, hydraulic pressure, environmental information), and also possibly mechanisms for activating/disactivating cameras so as to focus visual data collection during activities of interest.
- 15.A GPS sensor or equivalent shall be capable of automatically recording the position and, unless the EM equipment uses cameras that will record continuously, the speed and course of the vessel.

### *Data storage*

- 16.EM equipment shall include sufficient capacity to store all required EM records, including images, GPS (or equivalent) records, position, date, time, vessel name and sensor information where applicable at a minimum, for the duration of a fishing trip.
- 17.Vessels shall have onboard enough blank data storage devices (preferably solid-state drives) in case these must be replaced at sea. A specially trained crew member may need to replace the devices during a fishing trip if the data storage capacity is exhausted, always in coordination with the EM service provider.
- 18.EM equipment should include separate duplicate backup devices, to ensure that data are not lost if one device fails.

### *Compatibility*

- 19.EM data shall be submitted to SPRFMO in a format compatible with SPRFMO databases and IT resources (e.g., data structure, units, species ID/other fishing activity codes, etc.). Recorded imagery should be recorded in a widely used and accessible video or image file format, such as MP4 or JPEG.
- 20.All EM Records generated by the EM system shall be compatible with EM analysis software being used by the EM Review Center where EM Records will be sent to generate EM data.

### *EM equipment maintenance*

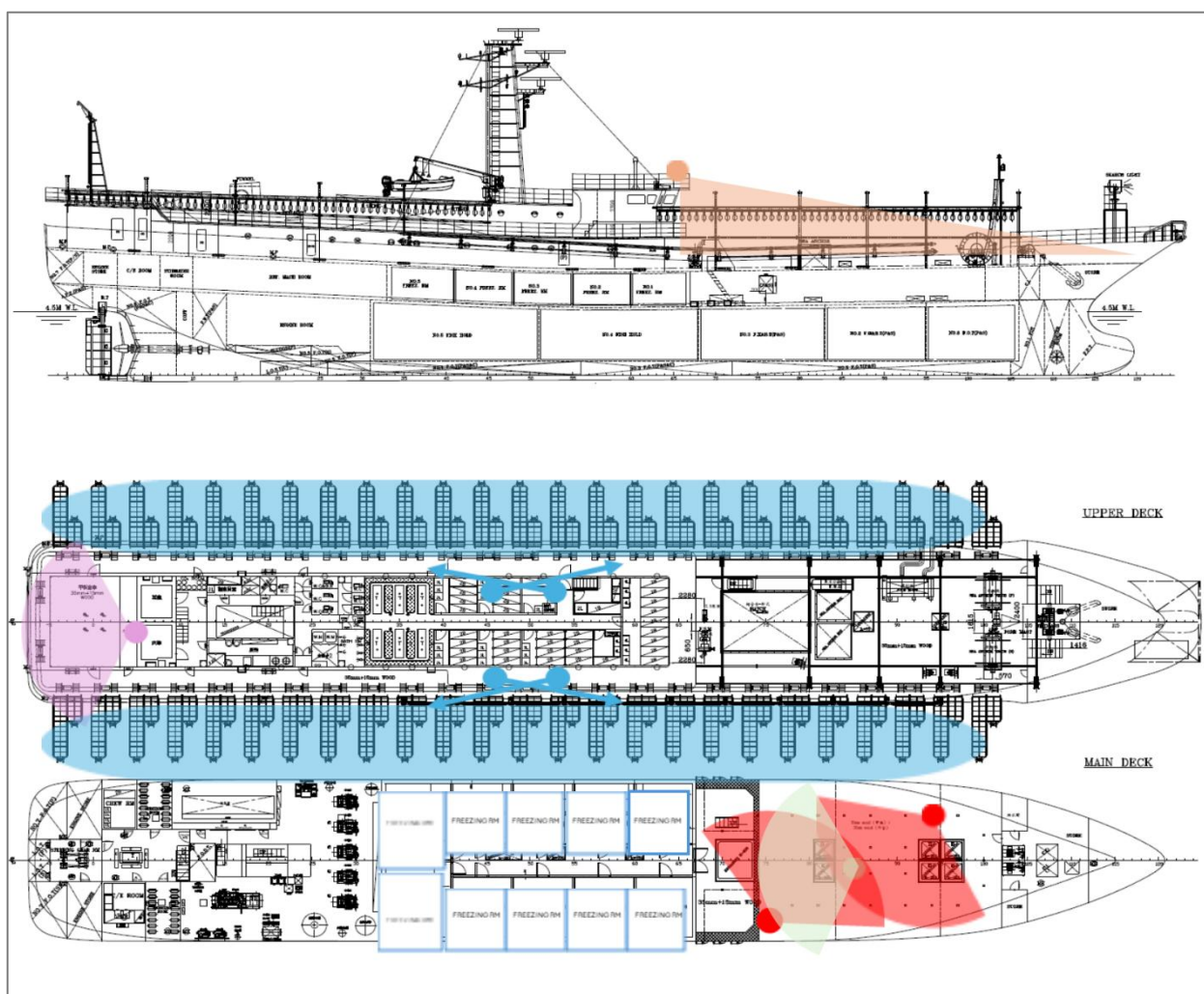
- 21.At sea, all maintenance, repairs and replacement activities of EM equipment shall be conducted by a designated trained vessel crew member(s), only in coordination and when instructed to do so remotely by the EM service provider.
- 22.On land, all maintenance, repairs and replacement activities of EM equipment shall be conducted by a technician in coordination with EM service provider.
- 23.Each vessel shall have a designated crew member responsible for routine camera lens cleansing, per a specific protocol, to ensure the clarity of EM records. Appropriate cleaning materials must be used to avoid lens damage and should always be available onboard.



**Table 1:** An example for the location of cameras on jigging vessels:

a.	One camera (e.g., 105°) on bridge roof, covering the forward upper deck, starboard and port areas, and part of the bow, thereby providing an additional view of fishing activities.
b.	One camera (e.g., 105°) at the stern of upper deck, covering fishing activities. (Optional, if jiggers are located at the stern)
c.	Two cameras (e.g., 105°) or 1 camera (e.g., 180°) located at the port side of upper deck, covering fishing activities.
d.	Two cameras (e.g., 105°) or 1 camera (e.g., 180°) located at the starboard side of upper deck, covering fishing activities.
e.	Three cameras (e.g., 105°) on the work deck: two cameras cover the catch handling process, and one camera covers the entrance to the freezing rooms and fish holds.

Example locations for other vessel types will be developed at such time as the Commission decides to allow the use of EM to fulfil data requirements for those vessel types.



**Figure 1.** Example of camera placement for jigging vessels



## ANNEX 3 - Minimum data requirements by vessel type

Taking into account CMM 02-2025 Annex 8.

**Table 1:** Vessel Data to be Collected via EM for Each Trip. Vessel data must be reported in a way that links the vessel data to data required in Tables 2, 3, 4 5, 6, and 7.

The following vessel data are to be collected for each observed trip:	Comments:
Trip ID;	As metadata
SPRFMO ROV Unique ID;	As metadata
Current vessel flag;	As metadata
Name of vessel;	As metadata
IMO number;	As metadata

**Table 2:** Catch & Effort Data to be Collected Daily for Jigging Fishing Activity

The following data are to be collected for each observed day of squid jig effort:	Comments
Trip ID;	As metadata
SPRFMO ROV Unique ID;	As metadata
Current vessel flag;	As metadata
Name of vessel;	As metadata
IMO number;	As metadata
Fishing start date and time (UTC);	
Fishing end date and time (UTC);	
Position at start of drift (1/10th degree - decimal) latitude and longitude;	
Position at end of drift (1/10th degree - decimal) latitude and longitude;	
Number of hand jig lines;	
Number of single jig machines;	
Number of double jig machines;	
Number of jigs per line;	
Estimated catch of all species (FAO species code) retained on board, split by species, in live weight (to the nearest kg);	
Estimated catch of all species (FAO species code) discarded, split by species, including all benthic taxa, in number of individuals, and in live weight when feasible (to the nearest kg);	
If any marine mammals, seabirds, reptiles or other species of concern were caught, report as per requirements described in Table 6.	



**Table 3:** Catch & Effort Data to be Collected via EM for Trawl Fishing Activity

Minimum data fields for trawl fishing activity will be developed at such time as the Commission decides to allow the use of EM to fulfill data requirements for that activity.

**Table 4:** Catch & Effort Data to be Collected via EM for Purse Seine Fishing Activity

Minimum data fields for purse seine fishing activity will be developed at such time as the Commission decides to allow the use of EM to fulfill data requirements for that activity.

**Table 5:** Catch & Effort Data to be Collected for Bottom Long Line Fishing Activity

Minimum data fields for bottom long line fishing activity will be developed at such time as the Commission decides to allow the use of EM to fulfill data requirements for that activity.

**Table 6:** Data to be Collected on Incidental Captures of seabirds, mammals, reptiles (turtles) and other species of concern

The following data are to be collected for all seabirds, mammals, reptiles (turtles) and other species of concern caught in fishing operations:	Comments:
Trip ID	As metadata
SPRFMO ROV Unique ID;	As metadata
Current vessel flag;	As metadata
Name of vessel;	As metadata
IMO number;	As metadata
Species (identified taxonomically as far as possible, or accompanied by photographs if identification is difficult) and, when feasible size;	
Count of the number of each species caught per tow or set, or in the case of jigging, per drift;	
Fate of bycaught animal(s) (retained or released/discarded);	
If released, life status (vigorous, alive, lethargic, dead) at time of release;	
Record the type of interaction (hook/line entanglement/warp strike/net capture/other).	
Record sex of each individual for taxa where this is feasible from external observation, e.g., pinnipeds, small cetaceans or elasmobranchii species of concern.	
When feasible, record the length of each individual (cm), with record of the type of length measurement used. Measurement precision and type should be determined on a species-by-species basis.	
Record the life-history stage of each individual where this is feasible (i.e., juvenile/adult).	

**Table 7:** Detection of Fishing in Association with Vulnerable Marine Ecosystems

Minimum data fields for detection of fishing in association with vulnerable marine ecosystems may be developed at such time as the Commission decides to allow the use of EM to fulfil data requirements for fishing activities that occur in association with vulnerable marine ecosystems.





## ANNEX 4 - Description of the EM Vessel Monitoring Plan (VMP)

The VMP shall meet the following requirements:

1. Members and CNCPs shall develop a VMP for each vessel on which EM equipment is to be installed. Members and CNCPs may use the same VMP for similar vessel types that share the same EM system configuration
2. Members and CNCPs shall ensure that a survey of each vessel or example vessel for a group of similar vessel types intended for EM equipment installation is conducted. During this survey, the following aspects shall be taken into account in the development of the VMP, aimed at ensuring that the system meets the minimum data collection requirements outlined in Annex 2:
  - a. Camera placement and settings.
  - b. Number of cameras to be installed to ensure optimisation of the view of the catch-handling area.
  - c. Key areas to be surveyed are catch handling areas for species identification and storage of the individual and areas of discards or release.
3. The minimum sections to be contained in a VMP shall include:
  - a. Contact information: current contact information for the vessel owner, vessel operator and EM service provider as long as the contract lasts.
  - b. General vessel information: basic information about the vessel and its fishing activities and operations (e.g., vessel name, IMO number, target fishery, fishing areas, fishing gear, LOA, etc.).
  - c. Fishing gear type and configuration:
  - d. Vessel layout: equipment of the vessel with detailed information, plan of the vessel disposition and different areas (deck, processing, storage -including number of wells, etc.).
  - e. EM equipment set up: description of the settings of the EM equipment, such as time running, number of cameras, settings of the cameras (frame rate and resolution), and areas covered, time recording for each of the cameras, number of sensors, where applicable, software used, control box disposition, etc.
  - f. Catch and discard handling procedures: description of the crew and their operations, including protocols for handling both targeted and incidental catches and discards that facilitate or allow for EM record collection.
  - g. An example view from each required camera view.
4. Members and CNCPs shall require that vessel owners report any physical changes to the vessel, modifications in vessel categorisation (fleet segmentation), or adjustments to the catch handling deck, including those resulting in the vessel no longer belonging to its original group, to the appropriate flag Member or CNCP authorities. Subsequently, the Member or CNCP shall ensure that the VMP is updated accordingly before the commencement of the next fishing trip.
5. The VMP shall be signed off by the vessel owner and approved by the Member or CNCP competent authority.
6. The EM equipment shall not compromise vessel stability, posing risks to vessel operations, crew safety, or the environment. Additionally, it shall not hinder the vessel's safe navigation.
7. An example template of a VMP is presented below. Members and CNCPs may choose another format of a VMP provided it contains the minimum requirements described in paragraph 4 of this annex.



### Example EM Vessel Monitoring Plan Part A

(Should be provided by the vessel owner to the competent authority of flag Member or CNCP)

#### 1. Information provided by the owner of the vessel

External registration:		Main fishery(es):	
Vessel name:		Gear type(s):	
IMO No.:		Crew size:	
IRCS:		May carry an observer:	
Port base:		Owner(s) representative:	
Vessel length (m):		Phone No.:	
Vessel type:		Email:	
Net length (fathoms):		Mainline length (fathoms):	
Net depth (strips):		Hook type:	
Brail capacity (mt):		Branch line material:	

#### 2. Description of the crew fish handling and any other useful details

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#### 3. If available, copy or image of the vessel general arrangement plan

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#### 4. General layout and handling (not necessarily to scale)

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#### 5. General remarks

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## Part B

(Responsibility of the flag Member or CNCP competent authority and to be validated by the flag Member or CNCP competent authority) 1. Vessel image

### 2. EM equipment configuration

#### a. System Operation – General Description

Sensor recording, where applicable:	Description of the settings:
Video recording:	Description of the settings:

#### b. System Components Location

Control box:	User Interface:
Image of location of the control box	
GPS or equivalent:	GPS details:
Image of location of the GPS or equivalent	
Drum Rotation Sensor:	Drum Rotation Sensor details:
Image of location of drum sensor	



Hydraulic Pressure Sensor (HPS):	HPS details:
Image of location of the HPS	
Sensor XX:	XX Sensor details:
Image of location of the XX Sensor	
Sensor XX:	XX Sensor details:
Image of location of the XX Sensor	

Camera 1 - Deck Camera	
Image of Location of Camera 1	View and Objectives:
Image of Location of deck camera	Camera settings:
Camera 2 - Retain/General View Camera	
Image of Location of Camera 2	View and Objectives:
Image Retain/General View Camera	Camera settings:
Camera 3 - Sorting Belt Camera	
Image of Location of Camera 3	View and Objectives:
Image Sorting Belt Camera	Camera settings:
Camera 4 - Discard Camera	
Image of Location of Camera 4	Image of Location of Camera 4
Image Discard Camera	Image Discard Camera

Camera XX - XX Camera	
Image of Location of Camera XX	View and Objectives:
Image of XX Camera	Camera settings:
Camera XX - XX Camera	
Image of Location of Camera XX	View and Objectives:
Image of XX Camera	Camera settings:
Camera XX - XX Camera	
Image of Location of Camera XX	View and Objectives:
Image of XX Camera	Camera settings:
Camera XX - XX Camera	
Image of Location of Camera XX	View and Objectives:
Image of XX Camera	Camera settings:

Control Box Setting Summary:	Camera Setting summary:
Main configuration screen	



Sorting Area Measurement Details:

### Part C

*(To be completed by the EM service provider)*

1. EM User Guide

- Description on how to retrieve memory devices
- Description on how to power up the system
- Description on how to do a function test

2. Vessel-specific handling protocols

Description of any special protocols that may apply to the vessel referred in the VMP.

- Description and diagrams of control points with specific procedures carried out. For each area description, there must be a protocol on how to ensure the catch remains in camera view.

### Part D

*(To be completed by the EM service provider)*

List of EMS service providers contact information:

Name and Last Name	Phone	Email	Office address

### Part E

*(To be completed by the vessel owner and the EM service provider)*

This part should certify that the vessel owner/operators have been trained in and understand the function and operation on the EMS installed on the vessel, and that the operator agrees to comply to the VMP.

<u>Vessel owner/operator</u>	<u>EM service provider</u>
Full name:	Full name:
Signature:	Signature:
Date and time:	Date and time:



## ANNEX 5 - Data Storage, Retention, Transmission, Retrieval, Review, and Reporting

### Data transfer

1. The vessel flag Member or CNCP authority shall allow for the recovery and secure transmission of EM Records at the end of each trip.
2. A detailed protocol on how to retrieve the data from the vessel to the authorities or to the EM review center should be established in the VMP.
3. When EM records are transmitted (via WI-FI, mobile data network or satellite, or hard disk delivery), the transmission of the data should be done at the end of the fishing trip where possible. If not possible the data shall be securely stored and transmitted without delay/at the earliest opportunity.
4. Irrespective of the data transfer method used for EM records, and according to the recommendation in Annex 2, the transmission should ensure the information is properly encrypted. Also, an encrypted storage device containing the same EM record information should remain on board as backup. The deletion of records from the vessel's backup devices should only occur once the EM records have been converted to EM data at the EM review center.

### Data review

5. EM data shall be generated by the programme that monitored that trip. Provided that standard protocols and procedures are followed, Members or CNCPs may choose whether to contract the work out through a commercial EM review service provider, authorised contractor, or do it themselves.
6. EM equipment should include separate backup devices, to ensure that data are not lost if one device fails.

### EM data storage and retention

7. All information regarding fishing operations of the vessel shall be treated as confidential by SPRFMO and subject to SPRFMO confidentiality rules.
8. Procedures for where, how, and how long the EM records will be stored after EM analysis should be specified by the flag Member or CNCP. Storage decisions should be based on the EM domestic programme's goals and the staff who will need to access monitoring records, at what frequency, and for what purpose. EM records and associated EM data must be retained in accordance with any SPRFMO audit requirements.

### Data analysis and reporting standards

#### *Training*

9. The Member or CNCP should design and organise training courses for EM analysts, with input from the Secretariat, EM service providers and other experts, where necessary.
10. EM analyses shall only be conducted by qualified EM analysts, ideally possessing some experience in fishing activities, with skills on how to use the dedicated analysis software and observe and accurately record data to be collected under the programme. EM analysts shall not be employees of a fishing vessel company involved in the observed fishery or have other direct conflicts of interest.

#### *Automation*

11. When feasible, make EM data generation automatic and user-friendly to expedite EM analysis and directly include information in EM data or reports.
12. EM records subject to EM analysis shall contain at least: the trip ID; SPRFMO ROV Unique ID; current vessel flag; name of vessel; UVI (Unique Vessel Identifier) / Lloyd's / IMO number; camera number; geolocation data (date, time (UTC) latitude and longitude); sensor data where applicable; camera recording status and EM equipment system status, where available; and images.



### *Data quality*

13. The EM analysis should involve dedicated software, which shall permit the analysis of all the stored data, images, and sensor data where applicable, in a synchronised way. Members or CNCPs shall ensure that data analysis procedures ensure traceability and effective analysis of data and routines to flag potential errors, and digital measuring tools.
14. The EM analysis software shall allow reporting the mandatory minimum data fields requirements established in Tables 1 - 6 of Annex 3 (Areas of fishing activities under coverage by EMS and minimum data requirements for vessel type). It may also allow reporting of the voluntary data fields.

### *Format*

15. Standard formats applicable to human observers reporting should be used for generating EM data fields (e.g., dates as DDMMYY, latitude and longitude in decimal units, speeds in knots, weights in kg, lengths in centimetres) and creating resulting EM data files (Microsoft Excel format, JavaScript Object Notation (JSON), or in such other machine-readable format as the Secretariat may prescribe following consultation with the Scientific Committee).

### *Reporting procedure*

16. EM data may be submitted via a dedicated cloud-based portal which may be developed by the Secretariat, or other appropriate means. The portal should be as user-friendly and automated as possible, and include quality control procedures (e.g., format checking, error flagging), as well as automatic reminders for the timely submission of EM data.





## ANNEX 6 - Minimum Standards for Accreditation Under the SPRFMO EMP

This Annex contains the Commission's minimum standards for accreditation under the SPRFMO OP. In accordance with paragraphs 44 and 48 of this CMM, the EMP Accreditation Evaluator shall assess and decide all applications against these standards.

### *Impartiality, Independence and Integrity*

1. EM domestic programmes and EM service and review providers shall ensure independence and impartiality of all relevant staff, including individual EM reviewers. This means that neither the EM domestic programme, or the review or service provider, or any individual they employ, has a direct financial interest, ownership or business links with vessels, processors, agents and retailers involved in the catching, taking, harvesting, transporting, processing or selling of fish or fish products.
2. The EM domestic programme, EM service and review providers, and the individual EM reviewers:
  - a) Shall not have a direct financial interest, other than the provision of EM review or EM equipment-related services, in the fisheries under the purview of the Commission, including, but not limited to: i) any ownership, mortgage holder, or other secured interest in a vessel or processor involved in the catching, taking, harvesting or processing of fish; ii) any business selling supplies or services to any vessel or processor in the fishery; iii) any business purchasing raw or processed products from any vessel or processor in the fishery;
  - b) Shall not solicit or accept, directly or indirectly, any gratuity, gift, favour, entertainment, inordinate accommodation, loan or anything of monetary value from anyone who either conducts activities that are regulated by a Member or CNCP connected with its services or the Commission, or has interests that may be substantially affected by the performance or non-performance of the observer's official duties;
  - c) Shall not serve as an observer on any vessel or at any processors owned or operated by a person who previously employed the observer in another capacity within the last three years (e.g., as a crew member); and,
  - d) Shall not solicit or accept employment as a crew member or an employee of a vessel or processor while employed by an EM domestic programme or service or review provider.

### *EM Reviewer Qualifications*

3. The qualification of individual EM reviewers is the responsibility of EM domestic programmes or service providers. The EM domestic programme or service provider shall demonstrate that EM reviewers that are recruited into their programme have relevant education or technical training and/or experience for the fleets concerned; ability to meet the EM reviewer duties described in this annex; no record of convictions calling into question the integrity of the EM reviewer.

### *EM Reviewer Training*

4. EM domestic programmes shall demonstrate that EM reviewers are adequately trained before they review EM records, or store and produce EM data. Training shall cover all topics necessary to generate data as required under Annex 3, including, inter alia, the following:
  - a) The relationship between fisheries science and fisheries management and the importance of data collection in this context;
  - b) The relevant provisions of the Convention and SPRFMO CMMs relevant to the functions and duties of observers;
  - c) Use of video footage for species identification and record of species encountered at sea, including target and non-target species, protected species, seabirds, marine mammals, sea turtles, invertebrates indicating vulnerable marine ecosystems, etc.;



- d) Estimating length, weight, sex, life-history stage where this is feasible (i.e., juvenile/adult), life status (vigorous, alive, lethargic, dead) at time of release, type of interaction (hook/line entanglement/warp strike/net capture/other), from video footage as required, along with recording when a fish cannot be identified;
  - e) Training on the specific video review software and handling of large data sets;
  - f) Auditing and Quality Control: Reviewers are trained to evaluate video quality and system performance, ensuring that the data collected is reliable;
  - g) Knowledge of the different types and functioning of bycatch mitigation devices required by SPRFMO CMMs;
  - h) Safe handling protocols to rehabilitate and release seabirds, marine mammals and sea turtles;
  - i) Fishing vessel and fishing gear types relevant to SPRFMO;
  - j) Techniques and procedures for estimating catch and species composition;
  - k) Data collection codes and data collection formats;
5. Refresher training should be ongoing dependent on the qualification requirements. Relevant updates to CMMs and EMP requirements should be communicated to observers before each deployment as part of the briefing process, for example in an updated manual.

#### *EM Reviewer Trainers*

6. EM domestic programmes or service providers shall demonstrate that EM reviewer trainers have the appropriate skills and have been authorised by that EM domestic programme to train EM reviewers.

#### *EM Equipment*

7. EM domestic programmes shall demonstrate that EM equipment is installed and operated in accordance with this CMM, including paragraphs 8 and 9 and Annex 2.

#### *Vessel Monitoring Plans*

8. EM domestic programmes shall demonstrate that VMPs are developed and deployed in accordance with this CMM, including paragraphs 13, 14, 16c, 16d, 19a, and Annex 4.

#### *EM Data and Data Validation Process*

9. EM domestic programmes shall demonstrate that EM data produced through review of EM records conforms with the required data fields in Annex 3, and that the data storage and retention, data transmission or and retrieval, and data review and reporting are conducted in accordance with paragraphs 17c, 17d, and Annex 5.
10. EM domestic programmes or service providers shall demonstrate that they have an EM data validation process in place. The data validation process shall be conducted by properly trained personnel and shall ensure that data and information generated from EM records are checked for discrepancies or inaccuracies that are corrected before the information is entered into a database or used for analysis. This includes ensuring that the EM domestic programme or EM review provider has in place a mechanism to receive EM records, EM data, and any other relevant information generated by EM systems in such a way that prevents interference in that data from other sources. The accreditation evaluator may audit EM systems and EM records in order to conduct its evaluation. The data validation process shall ensure that the data meet the following standards:

- a) A mechanism that allows scientific data to be stored and transferred to the EM domestic



programme (or EM review provider) in a secure and confidential manner.

- b) Vessel information uniquely identifies the actual vessel from which the fishing occurred;
- c) Dates and times of fishing effort are included and internally consistent (for example an end time should be after a start time);
- d) Location of fishing is included and valid (for example, logical latitude/longitude combinations), internally consistent and entered in the correct units;
- e) Effort data allows quantification of the amount of effort invested by the vessel, appropriate to the fishing method used, which is also identified;
- f) Catch information identifies the fishery resource (to the species level where possible) and the quantity of that species retained or discarded. If used, species codes are accurate;
- g) Where biological or length information is collected for a fish, it is directly linked to the effort in which it was caught – including date and time, location, and fishing method information, and includes the methodology of data collection;
- h) If the EM domestic programme extends to transshipment and/or landings, then the amount and species of fishery resources transhipped/landed is quantified and recorded according to a standard methodology;
- i) Interaction data involving marine mammals, seabirds, reptiles and/or other species of concern identifies the individual species (where possible), the number of animals, fate (retained or released/discarded), life status if released (vigorous, alive, lethargic, dead), and the type of interaction (hook/line entanglement/warpstrike/net capture/other).