



**FIFTH E-REPORTING AND E-MONITORING WORKING GROUP MEETING
(ERandEMWG5)**

Electronic Meeting
19 – 20 July 2022 from 10.00am to 2.00pm Pohnpei time

**ELECTRONIC MONITORING WITHIN THE WCPFC FISHERIES MANAGEMENT
FRAMEWORK – CHAIR’S INITIAL CONSULTATIVE DISCUSSION PAPER**

**WCPFC-ERandEMWG5-2022-02
13 June 2022**

Paper by the ERandEM WG Chair

The following paper is my idea, concept and vision for how the REMP can work in concert with existing data collection and monitoring tools, specifically the ROP, to support the delivery of the WCPFC Fisheries Management Framework.

The ideas, concept and vision are a starting point for discussion by the ERandEM WG – they are not a fait accompli – and I am certain that the participants of the ERandEM WG, together with the advice of the SC and TCC will continue to shape this initial consultative discussion paper prior to it being presented to the Commission.

My overarching objective in developing this paper is to find a path through the different starting points and perspectives of CCMs – all of which are valid – to enable the collective design, development and implementation of an REMP that provide critical data to inform the Commission’s decision making, including harvest strategies, CMM’s and monitoring the implementation of those CMM’s.

The paper is not proposing to modify any other CMM or WCPFC requirement, including the application or coverage of the ROP. Rather the paper is seeking to provide the tool to fill critical data gaps and work in concert with the ROP where it has already been implemented.

I welcome informal or formal engagement with CCM’s directly, or through bilateral or multilateral opportunities, on the paper in advance of the July ERandEM WG meeting.

Electronic Monitoring within the WCPFC Fisheries Management Framework

Chair's Initial Consultative Discussion paper

1. Introduction and Context

1. The Commission and the WCPFC ERandEM WG have undertaken a significant body of work on the development of Electronic Monitoring (EM) since 2014, including the development of a draft REMP Conservation and Management Measure (CMM) and draft standards, specifications and procedures (SSPs). The Commission, via the Technical and Compliance Committee (TCC) workplan 2022-24, has tasked the WG to '*consider and provide advice on outputs from the EREM WG including those related to existing obligations, data gaps and the prioritisation of ER and EM, and draft minimum standards for electronic monitoring*' in 2022 and to '*consider and provide advice on outputs from the EREM WG, including a draft EM CMM*' in 2023.
2. Since assuming the role of ERandEM Chair in January 2022, I've reviewed the ERandEM WG progress, participated in regional/subregional Electronic Monitoring (EM) program discussions, and engaged with the IATTC and IOTC on their EM processes. In my opinion and based on my review of the progress to date, I consider that there is a need for further consideration of how a WCPFC Regional Electronic Monitoring Program (REMP), including any national or subregional EMPs, fits into the broader WCPFC fisheries management and institutional framework.
3. This discussion paper outlines a possible approach to integrating the REMP into the overarching WCPFC fisheries management framework. In doing so, I have attempted to ensure the WCPFC's approach to EM, through the eventual adoption of aCMM and associated SSPs support and enhance the WCPFC fisheries management framework.
4. It is critical to note that:
 - a. ***these are my thoughts only*** and I have prepared this paper to outline an approach to meeting the ERandEM WG tasks in a manner consistent with the agreed WCPF Convention and fisheries management framework.
 - b. ***I am not proposing any changes to any other CMM or existing requirements, including the ROP.*** The ERandEM WG has a clear mandate to develop the REMP only and this framework would rely and work in concert with those existing requirements.
 - c. ***this is an initial consultative discussion paper and is a starting point for discussion by the ERandEM WG.*** I have drafted this document to support the development of the REMP and to address the differing positions and requirements of CCM's. I am looking forward to hearing all views on this concept.
5. It is my intention to use the ERandEM meeting in July to discuss this overarching framework, to develop and agree a common understanding among all CCMs, and therefore enable a clear progression for designing, developing and implementing the REMP.
6. Noting the above, my objectives in preparing this paper are to:

- a. Set out a possible institutional framework for the WCPFC REMP within the existing WCPFC management arrangements, including an overarching CMM on At-Sea Monitoring;
 - b. Provide clarity to CCMs and the Secretariat on the relationship between the REMP and the Regional Observer Program (ROP);
 - c. Capture unresolved issues and questions posed by CCMs and to provide possible approaches, solutions and/or a path to resolve these issues;
 - d. Suggest where different elements of the REMP will be situated (CMM, SSPs, etc.).
7. I plan to use our July meeting to discuss my proposed framework and to agree the priority areas for the implementation of the REMP. Depending on the discussions in July, I am looking to achieve the following outcomes to support the development of the REMP this year:
- a. **Discuss how the proposed institutional framework for the WCPFC REMP will work, including clarifying the relationship between the REMP and the ROP, and how it will work in concert with the existing monitoring tools, with a view to presenting the proposal to the Scientific Committee (SC), TCC and to the Commission in December and seeking in-principle approval from the Commission to enable progression by the ERandEM WG in 2023.**
 - b. **Agree the data gaps and priority areas for the implementation of the REMP.**
 - c. **Set out a detailed workplan, that would be presented to TCC and then the Commission for their endorsement, that outlines the path for progressing the development of the *At-Sea Data Collection, Verification and Monitoring CMM*, the REMP specific CMM and associated SSPs, including the proposal way forward for addressing the unresolved issues and questions posed by CCMs (section 12) and where different elements of the REMP will be situated (CMM, SSPs, etc.) (section 13).**

8. The paper is structured with the following sections:

2. Legal Basis for the WCPFC REMP	3
3. Overview of WCPFC Data Needs	4
4. Data Sources	5
5. Current Data Gaps	6
6. EM as a Tool to Meet Data Needs	8
7. How Might the REMP “Work” with the ROP?	9
8. Current Agreed Approach to the EMP	10
9. Proposed Institutional Framework	11
10. Examples of How the Proposal Would Function	13
11. Recommended Next Steps and Workplan	15
12. Working Issues and Questions Pending	17
General	17
Programme Standards	21
Data Standards	22

- [13. Proposed Approach to the Overarching CMM, the REMP CMM and the associated SSP's](#) 24
- [A. CMM on At Sea Monitoring Requirements in the WCPFC \(headings and possible content\)](#) 24
- [B. CMM Establishing the WCPFC EMP \(based on draft prepared in June 2020\)](#) 26
- [C. Standards Specifications and Procedures for the WCPFC Electronic Monitoring Programme \(from draft circulated for comment April 2022, with amended ordering\)](#) 26
9. This discussion paper does not seek to reinvent the wheel, but rather seeks to address the ongoing concerns and issues raised by CCMs through the ERandEM WG since its inception. It is essential to recognise that the ERandEM WG is seeking to develop a framework that will future proof the WCPFC data collection tools to the greatest extent possible and to ensure any approach remains efficient and effective.
10. In considering the WCPFC fisheries management framework and objectives, it is critical to consider how the REMP fits with the WCPFC requirements as set out in the Convention and the CMMs for data collection and monitoring, including at sea monitoring. It is also important to consider how the REMP and national/subregional EMPs will link with existing monitoring tools and how to give effect to precedents, principles and practices already established through the WCPFC Convention, CMMs, procedures and previous decisions of the Commission.
11. The REMP must also help to facilitate WCPFC's future approach to include national and subregional EMPs under the REMP in a way that recognises the importance of "flexibility" as outlined in WCPFC Convention Article 28(2) in relation to the ROP.
12. Importantly, there is a need to separate the discussion of the institutional framework for the REMP from the development of the CMM and associated SSPs. In clearly articulating how the REMP fits within the broader WCPFC fisheries management framework, progress can be made on the CMM and SSPs, including ensuring that the REMP works in concert with existing CMMs and monitoring tools, in particular the ROP.

2. Legal Basis for the WCPFC REMP

13. In 2018, the Chair of the ERandEM WG identified the global and WCPFC basis for the REMP as follows:
14. Annex I of the United Nations Fish Stocks Agreement (UNFSA) outlines general principles for the collection and compilation of data. While electronic monitoring was not envisaged when the Agreement was negotiated, there is latitude under Article 6 which highlights the need for verification mechanisms but does not limit States to particular methods:
- "States or, as appropriate, subregional or regional fisheries management organisations or arrangements should establish mechanisms for verifying fisheries data, such as:
- *position verification through vessel monitoring systems;*
 - *scientific observer programmes to monitor catch, effort, catch composition (target and non-target) and other details of fishing operations;*
 - *vessel trip, landing and transshipment reports; and*
 - *port sampling."*

15. The WCPF Convention Article 23 paragraph 2(a-c) provides a cross reference to Annex I of UNFSA. There is a further link in the Commission's functions which are set out in Article 10 of the Convention. Article 10(1)(d) is specifically relevant in relation to electronic monitoring as it provides for the Commission to:
- “(d) adopt standards for collection, verification and for the timely exchange and reporting of data on fisheries for highly migratory fish stocks in the Convention Area in accordance with Annex I of the Agreement, which shall form an integral part of this Convention;”*
16. It recognises that tools such as electronic monitoring can assist the Commission in meeting its functions in relation to the collection, verification and timely exchange and reporting of data on fisheries for highly migratory fish stocks in the Convention Area in accordance with Annex 1 of the Agreement (UNFSA).
17. Further, WCPF Convention Article 28, relating to the ROP, outlines high level principles and guidelines to support the collection of verified catch data and to monitor the implementation of the conservation and management measures adopted by the Commission. The WCPFC ROP recognises the need for flexibility and for independence and impartiality to support data verification and to monitor the implementation of CMMS. It reaffirms the principle that data can be used for multiple purposes (compliance and science) and seeks to harmonise arrangements with existing national and subregional program.
18. It is worth noting that, apart from vessel monitoring systems (VMS) which is a specific type of electronic monitoring, EM using cameras and sensors onboard fishing boats for at sea monitoring was not specifically contemplated or available at the time the Convention was drafted. More recently, EM has been identified as a proven technology for the collection and verification of data and a useful new tool for at sea monitoring. It stands that **the principles from these Articles are relevant when considering the rationale and implementation of EM for at sea monitoring.**

3. Overview of WCPFC Data Needs

19. The Convention preamble requires Contracting Parties to the Convention to be *“Mindful that effective conservation and management measures require the application of the precautionary approach and the best scientific information available.”* Article 5 Principles and measures for conservation and management is also relevant with paragraph (c) stating *“apply the precautionary approach in accordance with this Convention and all relevant internationally agreed standards and recommended practices and procedures”*. However, it is Article 6, Application of the Precautionary Approach, that is particularly relevant in this regard, requiring the following:
1. *In applying the precautionary approach, the members of the Commission shall:*
 - a) *apply the guidelines set out in Annex II of the Agreement, which shall form an integral part of this Convention, and determine, on the basis of the best scientific information available, stock-specific reference points and the action to be taken if they are exceeded;*
 - b) *take into account, inter alia, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distributions of fishing mortality and the impact of fishing activities on non-target and associated or dependent species*
 - c) *develop data collection and research programmes to assess the impact of fishing on non-target and associated or dependent species and their environment, and adopt plans where*

necessary to ensure the conservation of such species and to protect habitats of special concern.

2. *Members of the Commission shall be more cautious when information is uncertain, unreliable or inadequate. The absence of adequate scientific information shall not be used as a reason for postponing or failing to take conservation and management measures.*

20. Noting the above, **CCM's are duty bound to apply greater precaution in setting harvest strategies and in the adoption of CMM's to support sustainable fisheries management in the absence of independent, verified data.** The corollary of this duty is the implementation of effective data collection, data verification and monitoring programs to support this decision making process. Importantly, greater data confidence will support the implementation of fishery management arrangements, including harvest strategies, to achieve the longterm sustainability of tuna resources under the WPCFC remit.

4. Data Sources

21. The [WCPFC Decision on Scientific Data to be Provided to the Commission](#) (as refined and adopted at WCPFC13, December 2016) outlines the current data requirements including data to be collected at-sea. They require, among other things, the collection of:

- Estimates of annual catch;
- Numbers of active vessels;
- Operational level catch and effort data;

22. The 'Scientific Data to be Provided to the Commission' sets out detailed requirements and, in many cases, relies on best estimates from flag and coastal States. The current advice (ref: Scientific Data available to the WCPFC [[TCC17-2021-IP02](#)]) on the status of the implementation of this requirement is that:

- a. all CCMs have provided recent annual catch estimates;
- b. most of the significant gaps in operational catch and effort data have been resolved in recent years, although coverage is not 100% complete;
- c. the main data gaps are provision of historical operational data for Asian fleets and in recent years for Indonesian fleets.

23. WCPFC's ROP is a critical source of data on which to base important fisheries management decisions.

- a. The ROP, with its direct link to Article 28 of the Convention, has as its objective ".....to collect verified catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the conservation and management measures adopted by the Commission." The ROP has at its core the collection of independent, verified catch and scientific data at-sea, where the data can also be used for compliance purposes in monitoring CCMs' implementation of CMMs.
- b. One of the guiding principles for the operation of the ROP is to provide a sufficient level of coverage as approved by the Commission to ensure that the Commission receives appropriate data and information on catch levels and any additional information related to the fisheries within the Convention Area, taking into account the characteristics of the fisheries.

24. Another source of independent at-sea information is VMS.
- a. The purpose of the VMS is to cost-effectively monitor the activities of fishing vessels authorized by flag States to fish for highly migratory fish species in the Convention Area in areas beyond jurisdiction of the flag State. Data collected by the VMS is used to monitor compliance with CMMs and assist with fisheries scientific analysis and fisheries management decision-making ([see Statement describing purpose and principles of the WCPFC VMS](#)).
 - b. One of the objectives of the Commission VMS is to fully integrate with other MCS frameworks and relevant data held in the Commission's information management system including facilitating linkages with the ROP, transshipment reports, the Record of Fishing Vessels and the IUU Vessel List.

5. Current Data Gaps

25. The Commission is supported by a number of subsidiary bodies, principally the SC and the TCC. Both of these bodies are tasked with specific functions that aim to ensure that data available to the Commission are timely, reliable and accurate including, *inter alia*, identifying data needs, data collection programs and the use of technology.
26. In 2018, the 14th Regular Session of the SC (SC14) recommended that the WCPFC Secretariat, FFA, PNA Office and the Scientific Services Provider jointly work on a project to review the Commission's data needs and collection programs - [SC Project 93](#). The objective of this work was to compare the Commission's data needs against the programs and tools available to the Commission (including the potential for a WCPFC REMP).
27. The agreed approach adopted was to:
- a. Itemise the WCPFC primary data needs arising from WCPFC CMMs;
 - b. Match current and potential WCPFC data sources with these needs;
 - c. Identify instances where independent data collection and verification is low, and where there are current data gaps; and
 - d. Consider the potential for E-monitoring to meet the gaps.
28. The review only considered the data needs of measures implemented by the WCPFC. It noted that CCMs may require other types of data in order to implement national and sub-regional fisheries measures and may thus have additional needs for EM data at the national level.
29. The current arrangements by fleet for collecting independent, verified catch and scientific data in the Convention area and the level of implementation is as follows: (see conclusions below of [SC Project 93 Outcomes of the Review of the Commission's data needs and collection programmes](#) [SC Project 93]).
30. Purse Seine Fleet
- 100% observer coverage – through the tropical tuna CMM ([CMM 2021-01](#) paragraphs 32 and 33) purse-seine vessels fishing within the area bounded by 20° N and 20° S are required to carry an observer. Since 1 January 2010, ROP observers have been required on purse seine vessels fishing (i) exclusively on the high seas, (i) on the high seas and in waters under the jurisdiction of one or more coastal States, or (iii) vessels fishing in waters under the jurisdiction of two or more coastal

States. Since 2013, observers have been required to be placed on purse seine vessels fishing in its national jurisdiction.

The current advice from Project 93 is that this meets current data needs. SC Project 93 found very few data gaps were identified as there are requirements for operational catch and effort data submission and 100% observer coverage in the area 20°N to 20°S. The Review found that there are no significant data gaps that might be addressed by EM at this point in time.

31. Longline fleet

Minimum 5% observer coverage for longliners ([CMM 2018-05](#), Annex C paragraph 6)

The current advice from Project 93 is that this does not meet the current data needs. SC Project 93 found although there are requirements for operational catch and effort data submission, several gaps were identified where data collection and verification is presently low (due to significantly lower levels of observer coverage than in the purse seine sector). The gaps identified include:

- a) Catch: target species;
- b) Catch: bycatch key species;
- c) Catch: other species;
- d) At-sea transshipments;
- e) Gear attributes: general;
- f) Gear attributes: mitigation methods;
- g) Vessel information: personnel;
- h) Vessel information: electronics;
- i) Observer safety incidents.

32. Transshipment

For transshipments at-sea a minimum rate of 100% ROP observer coverage with the observer usually deployed on the receiving vessel.

The current advice from Project 93 is that this does not meet the current data needs because there are no arrangements for the Secretariat to routinely receive ROP Transshipment data (Desktop-study investigating high-level options for the WCPFC Secretariat's role in at-sea transshipment Electronic-Monitoring [[WCPFC18-2021-IP10](#)]).

33. The SC Project 93 has clearly identified deficiencies and gaps in the longline fishery where independent data collection and verification is low due to the low ROP coverage. These findings are consistent with SC, TCC and the Commission's consideration of monitoring of the longline fishery (refer to the reports of these subsidiary bodies in recent years).
34. Longline observer data (both ROP and non-ROP) provided to the Science Service Provider for the WCPFC Area for 2019 show that of the total effort (hooks), only 5.2 percent were observed (TCC17-2021-IP01) and only 3.0 percent in 2020. While the 2019 figure just meets the overall minimum target coverage rate set for the longline fishery it is an average figure, with some CCMs providing significantly higher coverage rates. The spatial coverage of longline observer data, whilst noted by SPC to have improved in recent years, is less representative of fishing activities that occur in the

Convention Area waters further away from areas under national jurisdiction (see Figures 3 and 4 in [TCC17-2021-IP01](#)).

- a. Importantly, in comparison to the purse seine fishery, these observer rates are very low and limit important independent, verified data needed in the development of harvest strategies and other management arrangements.
- b. The absence of comprehensive data increases the uncertainty in the available data and decreases confidence in the decision making leading to more precautionary fisheries management including harvest strategies being implemented in pursuit of the Convention's obligations of sustainable fisheries management.

35. WCPFC16 Summary Report paragraph 556 – *“The Commission agreed that the conclusions from Project 93 in relation to data gaps be considered in the implementation of regional EM standards*

6. EM as a Tool to Meet Data Needs

36. The key findings of the SC Project 93 in relation to the application of EM through the implementation of an EMP found that there is potentially a major application for EM for fleets not already significantly covered by observers. In particular SC Project 93 highlighted:
- a. Reporting against longline catch limits, improving precision of longline catch data for scientific purposes;
 - b. Bycatch and non-target catch monitoring, particularly non-key species;
 - c. Monitoring discards of, and interactions with, key species that do not result in retention for landing;
 - d. Augmenting data for science where coverage is currently low (e.g., size data for key species in the longline fishery);
 - e. Monitoring any exceptional at-sea transshipments permitted under CMM 2009-06;
 - f. Monitoring application of bycatch mitigation measures.
37. It also noted that a major potential application of EM in the longline fishery lies in verification and improving compliance with longline vessel reporting requirements in particular catches of target species taken under catch limits.
38. An EMP uses video and sensor data to independently validate fishing operations and fisheries' logbook information. It can provide verifiable and near real time fisheries data that can be incorporated into fisheries management decisions and be used as a tool to monitor compliance. EM can collect reliable information on the total catch and discards for commercial species and bycatch, total fishery interactions with other species and catch per unit effort for the fishery.
39. The potential of EM systems as a data collection method is well documented globally including in tuna longline fisheries: *it can operate for long periods, it can support human observer programs, it can collect routine data and can support regulatory and enforcement programs. EM systems, and the type and scope of data they collect are different to what is collected by human observers and may vary from fishery to fishery.*
40. Critically, WCPFC's REMF will not negate the use or need for the ROP. The ROP is a proven tool in other WCPFC fisheries, principally the purse seine fishery, and the REMF provides a useful addition to where the ROP has been unable to be used. The proposal is to make both tools available for use

where it is logical to do so, such an approach recognises both the opportunities and limitations of both monitoring tools.

- a. The ROP provides arrangements for collecting independent, verified catch and scientific data in the Convention area. Through the tropical tuna CMM (CMM 2021-01 paragraphs 32 and 33) the purse seine fleet continues to be covered by 100% observer coverage 20°N and 20°S. There are few identified data gaps which an EMP could assist with.

41. In contrast, the longline fleet has only a 5% ROP observer coverage rate and, as a result, a set of clearly identified data gaps. It has been noted that a major potential application of EM in the longline fishery lies in verification and improving compliance with longline vessel reporting requirements in particular catches of target species taken under catch limits.
42. In establishing such a framework, not only are we seeking to future proof the WCPFC data collection tools, but also to ensure the Commission's strategies remain efficient and effective and give effect to "flexibility" as outlined in WCPF Convention Article 28(2) in relation to the ROP.
43. Establishing the REMP that aims to fill critical data gaps and is based on minimum standards for EM will recognise both the opportunities and limitations of the available EM technology in collecting the data required by the Commission and that within the region, national and subregional EMPs are at different stages of trials and implementation.
44. A lack of independent, verified data will have an impact on the development of harvest strategies and associated CMM's as the Commission is required to apply the precautionary approach *inter alia* where information is uncertain, unreliable or inadequate.

7. How Might the REMP "Work" with the ROP?

45. As noted above, the objectives of the Commission ROP are to collect verified catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the CMMs adopted by the Commission.
46. The ROP applies to the following categories of fishing vessels authorized to fish in the Convention Area:
 - a. vessels fishing exclusively on the high seas in the Convention Area; and
 - b. vessels fishing on the high seas and in waters under the jurisdiction of one or more coastal States and vessels fishing in the waters under the national jurisdiction of two or more coastal States.
47. To be part of the WCPFC ROP, a national or subregional program is required to be audited against the ROP Minimum Observer Programme Standards, that includes ensuring their observers collect WCPFC minimum ROP data fields for all relevant vessels as adopted by the Commission (<https://www.wcpfc.int/doc/table-rop-data-fields-including-instructions>), before being authorised.
48. The ERandEM WG has used the structure and overarching approach to the ROP as a useful starting point for considering the development of the REMP. Taking this approach gives the Commission the opportunity to build on the strengths of the ROP, while addressing any shortfalls. For example, EM may be able assist with access to information where observer reports are not available and support CCMs' investigations and to monitor the implementation of the CMMs adopted by the Commission where it is currently not available. However, the ERandEM WG has also identified that it is important that the REMP be designed and implemented to suit EM as a specific tool.

49. To date, the ERandEM WG has developed a draft CMM and draft SSPs (yet to be finalised). In the preparation of this work, the Commission has made the following decisions:
- a. agreed an REMP objective *“The objectives of the Commission Electronic Monitoring Programme (EMP) shall be to verify catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the conservation and management measures adopted by the Commission”* (agreed at WCPFC 17), and
 - b. agreed in 2022 and 2023 to progress the development of the SSPs, the CMM and the priority areas of the implementation of the EMP.
50. The ERandEM WG has also noted the different CCMs’ fisheries, national approaches, and starting points, including, that some CCMs have implemented 100% ROP coverage, some CCMs have operational EMPs, and that some fleets operate in multiple RFMOs.
- a. **I therefore consider it is critical to consider how to integrate existing national and/or subregional programs into the WCPFC fisheries management framework, and to ensure the WCPFC REMP aligns with other RFMO requirements (e.g., IATTC). This will limit the implementation burden and inefficiencies on CCMs, vessel operators and the Secretariat.**
51. I also consider that it is essential that the WCPFC REMP complements the ROP, collecting data that may otherwise be unavailable while assisting in monitoring compliance with CMMs as is the precedent of the ROP.
- a. **As such, I envisaged that CCMs would have the choice of which program or combination of programs they would choose to meet their at-sea data and monitoring obligations. They could choose to solely use the ROP, or the REMP, or a combination of both depending on their fleet.**
 - b. **Critically, existing requirements for the use of the ROP will remain in place; as already agreed by the Commission, the REMP implementation will focus on the priority areas agreed by the ERandEM WG.**
52. The ERandEM WG has commenced the development of minimum SSPs for the REMP and I believe that all CCMs understand that national and/or subregional programs would need to be audited against these standards. The Commission would also need to develop minimum sets of WCPFC data fields that the REMP will need to collect and individual EMPs would need to ensure they collect all WCPFC data fields, and these would also need to link directly to the Scientific Data to be Provided to the Commission.
53. Given the SC Project 93 findings as outlined in Current Data Gaps ([section 5](#) above), the WCPFC REMP, utilising national and subregional EMPs, could provide the capacity to significantly improve the quality and representativeness of data available from the longline fishery, over time leading to higher quality data e.g., logbook, and improved monitoring and improved management decisions. While SC Project 93 did not identify any significant gaps in the purse seine fishery, it did identify four areas which might be addressed by EM. These are: Gear attributes: FAD attributes and Mitigation methods; Vessel information: Personnel and Observer safety incidents.

8. Current Agreed Approach to the EMP

54. There has been recognition by the Commission of a need to prioritise EM implementation in some fisheries. For example, WCPFC12 Summary Report paragraph 543 *“The Commission encouraged the*

development of Electronic Monitoring by CCMs in areas where data gaps exist such as longline observer coverage and high seas transshipment.”

- a. The Commission in adopting the ERandEM WG3 report, accepted a recommendation that *“the Commission agree to prioritising EM in areas where independent data collection and verification is currently low and asked SC14 and TCC14 for advice on priority areas.”*
- b. WCPFC16 Summary Report paragraph 556 – *“The Commission agreed that the conclusions from Project 93 in relation to data gaps be considered in the implementation of regional EM standards.”*

55. The ERandEM WG has previously agreed to develop the following elements to support the implementation of the WCPFC REMP:

- a. An EMP CMM
- b. SSPs consisting of:
 - i. Programme standards – minimum standards relating to management of a national or subregional E-monitoring programme
 - ii. Technical standards – minimum standards relating to the E-Monitoring system (including cameras, sensors, any storage devices and software (on board and on shore))
 - iii. Logistical standards – minimum standards relating to the transfer of records from a fishing vessel to a reviewing or analysis centre
 - iv. Records analysis standards – minimum standards relating to converting E-monitoring records into data that are submitted to WCPFC.

56. Given the considerable work of the ERandEM WG towards the REMP CMM and SSPs, the intent is to build on this work, and in doing so, address the critical issues that have continued to be raised in discussion within the ERandEM WG (outlined in Section 12).

57. I consider that it is essential that the ERandEM WG consider how to address these issues as they will have a direct bearing on the development of the WCPFC REMP CMM and the SSPs and critically on our ability to make progress in accordance with the TCC workplan and the WCPFC18 tasking.

9. Proposed Institutional Framework

58. The proposed institutional framework illustrated below and text in section 13 seeks to articulate **my proposal** for how to integrate the REMP into the WCPFC fisheries management framework, including with the ROP. It takes into account previous decisions of the Commission and the precedents that they naturally set. As identified earlier, I see this as a starting point to progress work this year and consideration of these issues.

59. My proposed framework is based on the Current Agreed Approach to the REMP (section 8 above) and the data needs, sources and gaps (sections 4, 5, and 6 above) together with my review of the ERandEM WG work to date. I have sought to present this framework in Working Issues and Questions Pending (section 12 below).

60. In developing this proposed framework, I have tried to acknowledge the decisions, CMMs and precedents already agreed by WCPFC CCMs.

- a. The well-established data collection program including catch and effort reporting, minimum data requirements and reporting on high seas transshipment activities by vessel.
 - b. The numerous monitoring and inspection programs for example, the ROP, VMS, an active high seas boarding and inspection scheme, and minimum standards for port inspections.
 - c. In terms of decisions and precedents, I have looked to ensure consistency with tools being used for scientific, monitoring/verification and compliance purposes. For example,
 - i. VMS which is well-established as an overarching monitoring and verification tool in the WCPFC and data that is collected from the VMS to is used to monitor compliance with CMMs and assist with fisheries scientific analysis and fisheries management decision-making.
 - ii. The ROP which is similarly well-established with a stated purpose to collect verified catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the CMMs adopted by the Commission.
61. As discussed, my proposal for the consideration of the ERandEM WG is to help separate the different elements of the REMP, the CMM and the SSPs from the broader WCPFC fisheries management framework, with the single objective of articulating how the EMP as a tool to “verify catch data and information and to monitor implementation of CMMs” fits with the ROP, other CMMs, while meeting the objective of the Convention.
62. My proposal is:
- a. To develop an overarching CMM, *On At-Sea Data Collection, Verification and Monitoring*, (section 13a below) to articulate:
 - i. The requirement for at-sea data collection, monitoring and verification of fishing activities;
 - ii. Recognition that there are legitimate and complementary mechanisms to achieve the at-sea data collection monitoring and verification – e.g., the ROP and the REMP;
 - iii. References to relevant monitoring tools and that CCMs can meet the at-sea monitoring requirements using any of these tools or through a combination;
 - iv. The principles of at sea monitoring, particularly for the high seas (e.g., independent, impartial);
 - v. The CCM reporting obligations for the CMM;
 - vi. But **not** dictate which tool a CCM uses, just that the at-sea monitoring needs to be achieved;
 - vii. That critically, this **will not change any existing requirements for the use of the ROP**.
 - b. That the requirements for the REMP, like the ROP, are then described in a specific REMP CMM and associated SSPs and minimum standards. For example, the requirements for the ROP are already described in [CMM 2018-05](#) and its associated SSPs. CCMs that implement the ROP must meet these requirements. Similarly, the REMP will have a specific CMM and associated SSPs and possibly minimum standards, which if a CCM wants to use EM to meet their at-sea monitoring requirements, they are required to be audited and meet these requirements.
 - c. That provision for the REMP to consist of national and/or subregional EMPs is made with the arrangements for footage analysis of high seas trips to be conducted independently, either by

resourcing the Secretariat to undertake these functions or to contract a third-party to undertake these reviews.

63. It is important that existing data sources and levels of coverage achieved to date through the ROP are recognised, and the focus should be expanding ROP and/or EMPs in areas where there is a lack of independent and verified data.

64. It is expected that the WCPFC REMP could set out a framework to organise national and subregional EMPs in a way that allows the use of video and sensor data to independently validate fisheries' logbook information, leading to enhanced data, which will support improved fisheries management arrangements and help verify and monitor implementation of CMMs. In the WCPFC, EM data could then become a source of independent and impartial data which will supplement the ROP and other data sources. The following figure sets out the proposed framework.

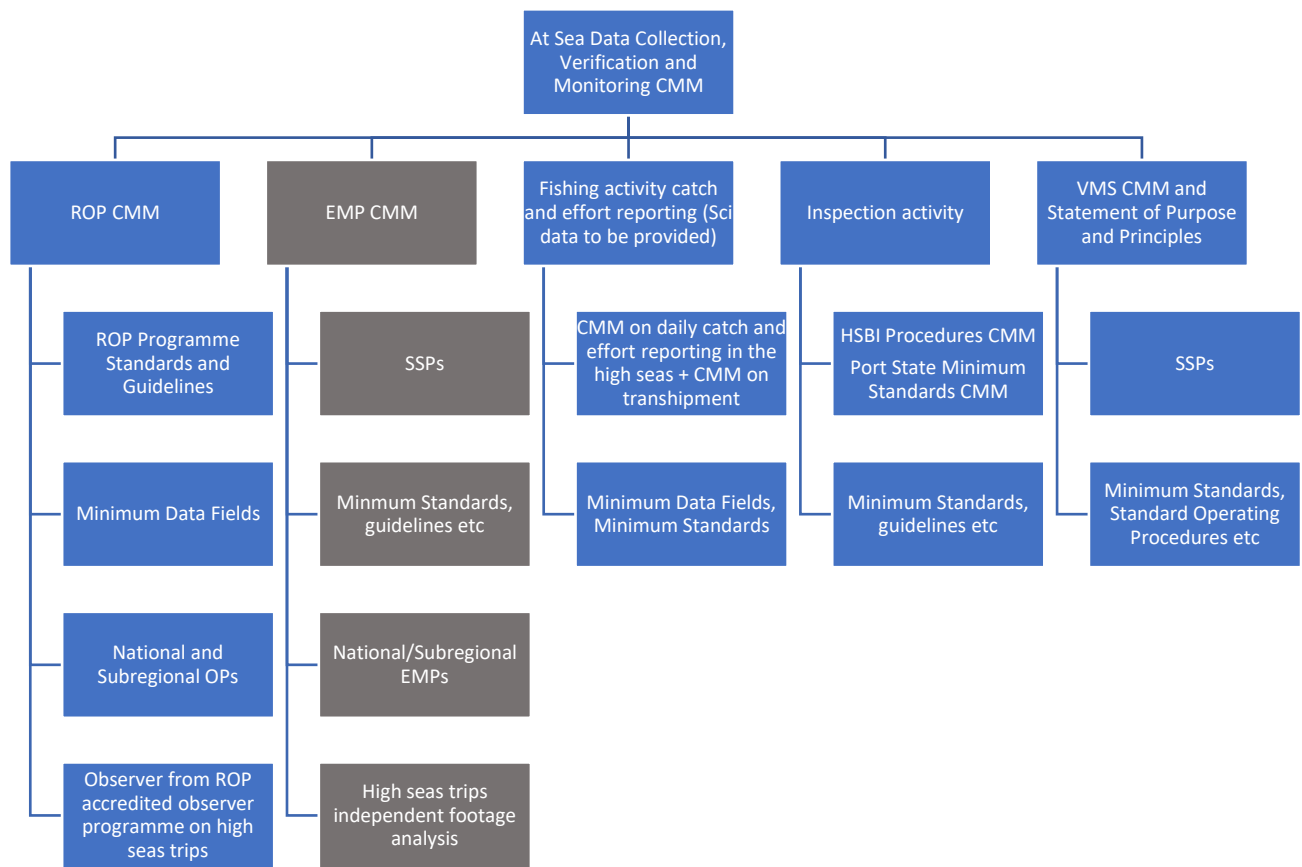


Figure 1: Schematic of how the proposed approach works.

10. Examples of How the Proposal Would Function

65. The following examples are provided for illustrative purposes only.

66. The examples focus on longline fishing operations as this is where the SC 93 Project highlighted data gaps and where the REMP could significantly address these gaps and improve the data

available from this fishery. More specifically, the SC Project 93 highlighted that catch and by-catch of target species; catch of other species; at-sea transshipments; gear information - general and mitigation methods; vessel information - personnel and electronics; and observer safety incidents as the major data gaps.

67. This is not to say that the REMP is redundant in the purse seine fishery, SC Project 93 clearly highlights that the data available from the purse seine sector is being already being met by the implementation of existing monitoring tools – the ROP. However, SC Project 93 did identified four areas that might be addressed by EM in the purse seine sector: gear and FAD attributes and mitigation methods; vessel information: personnel and observer safety incidents.

Trips solely within an EEZ

68. At-Sea Data Collection, Verification and Monitoring arrangements for vessels operating solely within a coastal State EEZ will be predominantly up to the coastal State. There are no formal WCPFC obligations for reporting observer data from fishing activity solely within an EEZ. CCMs will be encouraged to provide the data gathered by the observers and/or EMP for use in the various analyses conducted by the Commission, including stock assessments, in such a manner than protects the ownership and confidentiality of the data ([CMM 2021-01](#), paragraph 33).
69. At-Sea Data Collection, Verification and Monitoring arrangements for both the purse seine and longline fleets in this example will be the same, and these would not change with the introduction of the REMP.

Trips solely on the high seas

70. At-Sea Data Collection, Verification and Monitoring of high seas trips are subject to the WCPFC CMMs that must be implemented by the flag State. For purse seine trips on the high seas (between 20°N-20°S), the flag State is required to carry an observer and meet the requirements of the ROP – these requirements are already well established and there is **no proposal to alter any part of the ROP**. The REMP offers significant benefits in relation to the longline fishery, which prior to COVID-19 had only recently achieved the mandatory ROP 5% observer coverage rate. Flag States with longline vessels could then implement a national EMP that is audited as achieving the minimum WCPFC standards (to be developed) and required data fields and supplementing the biological data requirements with port sampling or similar.
71. The REMP in the high seas needs to consider the precedent set through the ROP for independence and impartiality of data collection. To ensure independence and impartiality of the REMP on the high seas, an independent Data Review Centre (DRC) could be implemented that would be tasked to review footage from high seas trips and simultaneously report the data and any associated alleged non-compliance to the flag State and WCPFC Secretariat. In taking this approach, the data generated from the REMP maintains a high level of integrity and confidence in the at-Sea Data Collection, Verification and Monitoring through EM would then remain high.
72. A REMP would substantially improve the quality and quantity of data available from the longline fishery. Depending on the coverage and review rates and the costs of the DRC, this could not only be a cheaper alternative to the ROP but more cost effective. It would also address the logistical issues of accommodating observers on smaller longline vessels. If near-real time transmission of EM records to the DRC remains cost-prohibitive, the timeliness of availability of EM data for fisheries management would be following the conclusion of the trip.

Trips in multiple EEZs and/or for trips on both the high seas and in one or more EEZs

73. At-Sea Data Collection, Verification and Monitoring of trips that cover both the high seas and one or more EEZs are more complex. For the in-zone component of the trip, the coastal State EMP would apply and for the high seas component, the REMP and independent DRC would be applicable. There are challenges associated with meeting multiple coastal State and the flag State EM standards and being able to provide records to the flag State, the high seas DRC and the other coastal jurisdictions involved.
74. That said, the potential benefits available for independent, verified data collection from longline vessels engaged in high seas and multi-zone trips will be similar to those available to vessels fishing solely on the high seas, so finding a pragmatic way forward is imperative.
75. The key complexity is partitioning the EM Records between those portions of the trip within the EEZ(s) from those on the high seas and then supporting the transmission of the footage to the relevant authority – coastal State(s) or to the independent DRC for the high seas component of the trip.
76. To allow these arrangements to function efficiently, there may need to be data sharing or footage analysis MOUs between each of the jurisdictions where fishing takes place i.e., relevant coastal States, the flag State, and the DRC. Subregional approaches to the EMP may help to reduce some of this complexity. Modelled on the subregional observer programmes that are currently authorised under the ROP, such as the FFA observer programme and the PNA observer agency, subregional EMPs may provide an arrangement between relevant States for undertaking the footage analysis of the entire trip or the subregional group may implement an independent third party to undertake this review for all vessels operating in multiple jurisdictions. It is very likely that there are other options too that could be considered to support the proposed approach.

11. Recommended Next Steps and Workplan

77. The Commission provided the ERandEM WG a clear mandate for 2022 and 2023. The tasking for 2022 was to 1. *“consider and provide advice on outputs from the EREM WG including those related to existing obligations, data gaps and the prioritisation of ER and EM, and 2. draft minimum standards for electronic monitoring.*
78. This discussion paper supports the ERandEMWG to meet its taskings by reviewing the data gaps and identifying the key areas where the existing data requirements are not being met. This supports the ERandEM WG’s work in developing priority areas for the implementation of the REMP.
79. The discussion paper also works through a range of issues that have been identified by CCMs in their engagement in the ERandEM WG. It is vital that these issues are considered by the ERandEM WG. It is also vital that discussion on these issues be progressed and decoupled from the development of the REMP CMM and SSPs for therethere to be progress on the design, development and implementation of the REMP.
80. Critical to progressing the development of the REMP, is that the ERandER WG remain focused on the key issue being addressed, that is:
 - a. the REMP provides another independent data collection, data verification and monitoring tool.

- b. that when implemented, the REMP will be coupled with other Commission data sources to support the scientific advice to the Commission,
- c. that more spatially and temporally comprehensive and relevant data coupled with monitoring the implementation of the CMM's reduces uncertainty in the stock assessment, and provides greater confidence to fishery managers,
- d. that greater data confidence will support the implementation of fishery management arrangements, including harvest strategies, to achieve the long term sustainability of tuna resources under the WPCFC remit.

81. Given the above and noted in my communique of 27 May 2022, I plan to use our July meeting to discuss my proposed framework and to agree the priority areas of the implementation of the REMP. Depending on the discussions in July, I am looking to achieve the following outcomes to support the development of the REMP this year:

- a. **Discuss how the proposed institutional framework for the WCPFC REMP will work, including clarifying the relationship between the REMP and the ROP, and how it will work in concert with the existing monitoring tools, with a view to presenting the proposal to the SC, TCC and to the Commission in December and seeking in-principle approval from the Commission to enable progression by the ERandEM WG in 2023.**
- b. **Agree the data gaps and priority areas for the implementation of the REMP.**
- c. **Set out a detailed workplan, that would be presented to TCC and then the Commission for their endorsement, that outlines the path for progressing the development of the *At-Sea Data Collection, Verification and Monitoring* CMM, the REMP specific CMM and associated SSPs, including the proposal way forward for addressing the unresolved issues and questions posed by CCMs (section 12) and where different elements of the REMP will be situated (CMM, SSPs, etc.) (section 13).**

12. Working Issues and Questions Pending

82. The table below outlines the issues/questions that have been raised that the ERandEM WG since its inception that remain unresolved.

Again, as a starting point, I have provided some initial suggestions and thoughts on possible solutions/approaches and the next steps for the ERandEM WG. I have sought to group these under the broad SSP headings where appropriate, but many are of a general nature.

General

Issue/Question	Possible Solution/Approach	Next Steps
<p>How does the REMP link to existing programs, in particular the ROP?</p> <p>Giving effect to the Convention and the previous decisions of the Commission</p>	<p>Draft an overarching CMM on <i>At-Sea Data Collection, Verification and Monitoring</i> that:</p> <ol style="list-style-type: none"> 1. Outlines the requirements for at-sea data collection monitoring and verification of fishing activities. 2. Recognises that there are legitimate and complementary mechanisms to achieve the at-sea data collection monitoring and verification – e.g., the ROP and the REMP. 3. Refers to relevant monitoring tools and that CCMs can meet the at-sea monitoring requirements using any of these tools or through a combination. 4. Articulates the principles of at sea monitoring, particularly for the high seas (independent, impartial). 5. Articulates the CCM reporting obligations for the CMM. 6. Recognises the existing data sources and levels of coverage achieved to date through the ROP, and the focus should be expanding ROP and/or EMPs in areas where there is a lack of independent and verified data. 	<p>ERandEM WG to discuss at the July meeting the merits of such an approach noting that it will require the development of two CMMs – one on <i>At-Sea Data Collection, Verification and Monitoring</i> and a second on the <i>Electronic Monitoring Programme</i> (already commenced).</p>
<p>Recognise the significant investment by some CCMs, particularly small island developing State CCMs, in</p>	<p>Recognition through the overarching CMM on <i>At Sea Data Collection, Verification and Monitoring</i> of the legitimate status of the ROP and the REMP at achieving the at sea monitoring requirements.</p>	<p>Agreement that multiple tools are required to meet the Commission’s data needs and that an REMP will complement the ROP in achieving this.</p>

Issue/Question	Possible Solution/Approach	Next Steps
developing and implementing the ROP.		
Need for flexible yet pragmatic approaches to achieve the Commission's data objectives.	<p>Articulate in the overarching CMM on <i>At-Sea Data Collection, Verification and Monitoring</i> that the ROP and the REMP are two mechanisms to meet the at-sea monitoring objectives.</p> <p>Build a WCPFC REMP that, like the ROP, includes National EMPs, subregional EMPs, implements a regional EMP for the high seas, with the three components together forming the WCPFC REMP.</p>	<p>If agreed, prepare a draft CMM on <i>At-Sea Data Collection, Verification and Monitoring</i>.</p> <p>Continue developing the draft CMM and SSPs for the REMP to ensure that the language and proposed approach achieves the Commission's data and monitoring objectives including any necessary data integration.</p>
Recognising coastal State primacy over their national jurisdiction/EEZs	<p>Adopt a similar approach to that of the ROP in terms of coastal State primacy over their national jurisdiction/EEZs.</p> <p>Recognising previous decisions of the Commission and allowing coastal States to utilise either the ROP or implement an EMP to meet the at sea monitoring requirements.</p>	<p>Preparing a draft of the CMM on <i>At-Sea Data Collection, Verification and Monitoring</i> will provide an opportunity to enshrine this requirement.</p>
Recognise previous decisions of the Commission regarding the need for independence, impartiality for activities on the high seas, namely through the ROP.	<p>Implement an independent/central arrangement for the review of EM footage/records analysis for high sea trips (could be an opt in arrangement) for flag and coastal States). This could be achieved by:</p> <ol style="list-style-type: none"> 1. tasking the Secretariat to implement a workforce to undertake the EMP Records Analysis, noting that additional resourcing would be required, or 2. implement a third-party contract (similar to the Scientific Service Provider contract) for the independent EMP Records Analysis/Review with the annotated EMP data provided simultaneously to the flag State and the WCPFC Secretariat (in the same way as currently occurs for the VMS on the high seas). 	<p>ERandEM WG will need to discuss the preferred approach. Key questions could include relative cost, security of records and data and the advantages/disadvantages of using one or more third-party providers, among other things.</p>
How to fund the EMP	<p>For national and sub-regional EMP, funding would be via the relevant State or participating States respectively. There would</p>	<p>First agree the approach to the program, then consider how it might be funded.</p>

Issue/Question	Possible Solution/Approach	Next Steps
	<p>be no resourcing via the WCPFC Commission as per all other CMMs.</p> <p>For the high seas, first there needs to be agreement on the approach. If an independent approach is agreed, then the footage analysis/Record review component of the program could be funded via those States that use the program (user pays principle). For example, the number of days spent fishing on the high seas for those vessels utilising the Regional EMP or literally the cost of the review time being billed back to the relevant flag State.</p>	
Capacity building and effective resourcing	<p>A phased introduction of an REMP over a number of years will enable resourcing to be secured and training to be provided to those CCMs that require it.</p> <p>There may be scope for those CCMs who already have functioning EMPs to assist at the national and sub-regional level.</p>	<p>ERandEM WG to:</p> <ol style="list-style-type: none"> 1. develop an indicative timetable for the introduction of the REMP; and 2. notify TCC and the Commission of possible resourcing needs.
Implementation schedule and prioritised data collection	<p>An implementation schedule will need to be developed drawing on the experience in setting up the ROP.</p> <p>SC Project 93 clearly identified priority data collection areas which will need to be endorsed by the Commission. Additional work may be required to further refine this noting that to collect all of the fields currently collected by the ROP would be difficult. We may need to start with what can be efficiently collected currently and build up fields as technology facilitates this.</p>	<p>In 2022 ERandEM WG to:</p> <ol style="list-style-type: none"> 1. develop an indicative implementation schedule drawing on the ROP experience; and 2. nominate priority data collection areas. SC and TCC to review data integration across the broader data sets and data gathering/management mechanisms.
Who owns the hardware?	<p>This will vary depending on the EMP and who has paid for the hardware/installation. It is not envisaged that the Commission will supply or own any hardware.</p>	<p>This will be determined as part of the development of the individual EMPs noting the experience of CCMs in both national and sub-regional programs.</p>
What scope is there on the use of the data for compliance purposes, e.g., fishing activity, seabird	<p>The data generated by the REMP should be able to be used for compliance purposes consistent with previous decisions of the Commission e.g., the ROP data.</p>	<p>ERandEM WG to consider appropriate language to cover this in the draft EM CMM.</p>

Issue/Question	Possible Solution/Approach	Next Steps
mitigation, other (labour standards)	The scope should be clearly defined by relevant CMMs and Resolutions. EMP data should facilitate compliance monitoring at both the national and regional levels.	
What would the REMP CMM cover?	The CMM should draw on the form and content of CMM 2018-05. It should provide flexibility to allow for differing approaches to meet agreed rules for the EMP	ERandEM WG to review the existing draft CMM and decide on necessary changes in light of more recent discussion/decisions.
Who owns the video footage and associated annotated data?	This is a significant issue for the ERandEM WG to work through. It is clear that irrespective of the ownership, the data will be provided to the science service provider and the Commission. Importantly, the ERandEM WG will be first looking to the precedents set through previous decisions and CMMs.	Review current principles that establish data ownership for other data sources and consider their applicability to EM related data ERandEM WG to: <ol style="list-style-type: none"> 1. seek assistance from the WCPFC legal provider to consider if the existing data access and sharing arrangements are fit for purpose in the EM context. 2. consider the legal advice and, if necessary, develop amendments to these existing documents for the consideration of TCC and decision by the Commission.

Programme Standards

Issue/Question	Possible Solution/Approach	Next Steps
Interoperability	Setting common minimum standards for the REMP should provide for interoperability at the level of those minimum standards. If national or subregional programs set higher standards there will be a need to ensure they can communicate with the regional system. In this regard, the EMP would follow the example set by the ROP. A similar approach between RFMOs may need to be considered	The ERandEM WG will need to develop the EMP SSPs in 2022, having regard to the work currently underway by CCMs on national and sub-regional programs. ERandEM WG to link with other RFMOs to ensure interoperability across RFMOs and for those fleets operating in multiple RFMOs
Multi-zone partitioning	This is an issue which requires further consideration. It has both technical and practical implications but clearly partitioning or geofencing will facilitate records downloads where multi-jurisdictional trips occur. This issue also overlaps with the data confidentiality, sharing and access. This is a significant body of work that would be taken up in its own right.	Continue to explore technical and other solutions while drafting the EMP SSPs. Link this element to the data sharing and access component of the EMP. ERandEM WG to: 1. seek assistance from the WCPFC legal provider to consider if the existing data access and sharing arrangements are fit for purpose in the EM context. 2. consider the legal advice and, if necessary, develop amendments to these existing documents for the consideration of TCC and decision by the Commission.
Who is responsible for what – owners vs. custodians	Continue to establish Guiding Principles, similar to that established for the ROP for the REMP and include in the EM CMM to clarify roles and responsibilities.	Continue drafting the CMM including the Guiding Principles noting that the agreement on the framework may have a bearing on the scope and nature of these Guiding Principles.
CCMs EM maintenance responsibilities	The requirements of CCMs with respect to vessels to ensure the quality of EM footage and data (e.g., cleaning cameras, HDD/data transmission, malfunction and return to port protocols, etc.) will be addressed in the SSPs.	Continue to develop and refine the SSPs to clearly articulate these requirements.

Data Standards

Issue/Question	Possible Solution/Approach	Next Steps
Extent of the mandatory data fields	<p>Ensure that the EM CMM recognises the Scientific Data to be Provided to the Commission as the basis for the data needs. Consider what data can be routinely collected by EM in priority fisheries</p> <p>Additional work will be required to further refine the data fields, noting that to collect all of the fields currently collected by the ROP would be difficult. We may need to start with what can be efficiently collected currently and build up fields as technology facilitates this. Such an approach will need to consider review rates and associated costs.</p>	<p>ERandEM WG will need to consider and nominate priority data collection areas.</p> <p>SC and TCC to review data integration across the broader data sets and data gathering/management mechanisms to ensure consistency without duplicating requirements and obligations.</p>
Auditing and oversight	Auditing and oversight of the EMP will use the processes established for the ROP as a starting point.	ERandEM WG to consider the auditing following the completion of the draft CMM and associated SSPs.
Developing standardised templates	Review the need for standardised templates as part of developing EMP SSPs, in particular in meeting data standards.	ERandEM WG to consider the need for standardised templates as part of the process to develop SSPs and develop as required.
Timeframe for the retention/disposal of records	<p>Clearly differentiate between EM footage and EM data. Data retention would be aligned to the existing rules adopted by the Commission. Footage may need to be reconsidered, particularly in relation the cost of storing video files.</p> <p>Review current national/sub-regional EMP policies for the retention and disposal of records where they exist. Consider the appropriateness of existing WCPFC policies for the ROP and other data sources.</p> <p>Records may need to be retained for differing timeframes depending on their use. Footage used for compliance purposes may need to be retained for a longer period than that used for scientific purposes.</p>	<p>Review appropriate WCPFC policies to see if they are fit for purpose.</p> <p>Seek advice from CCMs with EMPs on current retention/disposal policies.</p> <p>Consideration may be needed of variation to standard retention policies for specific purposes e.g., to support national investigations or prosecutions which can require a longer retention period.</p>

Issue/Question	Possible Solution/Approach	Next Steps
Access to and sharing of data – what does WCPFC get?	As a general principle the access and sharing of data should be consistent with existing Commission data rules and mirror arrangements for existing programs (e.g., ROP, logbooks and VMS).	ERandEM WG to review current Commission data access and sharing arrangements and ensure EM data can be accommodated within these arrangements or recommend changes as necessary.
Data access rules	As a general principle the access and sharing of data should be consistent with existing Commission data rules and mirror arrangements for existing programs (e.g., ROP, logbooks and VMS).	ERandEM WG to review the existing data access rules, including access to non-public domain data to ensure that EMP footage and data is covered as relevant. Provide proposed amendments as necessary.
Coverage and review rates	<p>As with all new programs this will need to be discussed and agreed.</p> <p>It will be possible to learn from CCMs with EMPs of their experience, but it is likely that the coverage and review rates will be a negotiated outcome bearing in mind the need to capture a minimum necessary level of data. This will be linked to the agreed data collection priorities.</p>	First seek to agree the framework. If agreeable, then the coverage and review rates would be based on the priority data gaps and need to link to the WCPFC data needs.
Audit protocols	Audit protocols will need to be developed for the REMP. The ROP provides a useful guide as the approach needed will be similar. Standards will be set and the Secretariat or an independent third-party auditor will need to assess individual EMPs against the Standards. Just as in the ROP, periodic follow up audits will be required. Irrespective of the approach adopted additional resourcing for the Secretariat will be needed to support auditing processes.	The SSPs will provide the basis for the audit protocols. Once the SSPs are finalised a Standard can be prepared. Consideration of the additional resourcing required for audits will be necessary.

13. Proposed Approach to the Overarching CMM, the REMP CMM and the associated SSP's

A. CMM on At Sea Monitoring Requirements in the WCPFC (headings and possible content)

Objective

At WCPFC17, the intersessional progress report by the ERandEM WG ([WCPFC17-2020-ERandEMWG4](#)) noted that a minor change had been made to the objectives agreed at WCPFC16. This was to clarify what is meant by “verified catch data”. The Chair acknowledged that data is only verified once the footage has been reviewed, and suggested that a change be made to “verify catch data”. The revised objective considering this suggestion is:

The objectives of the Commission Electronic Monitoring Programme (EMP) shall be to verify catch data, other scientific data, and additional information related to the fishery from the Convention Area and to monitor the implementation of the conservation and management measures adopted by the Commission

Supporting Convention provisions include:

Article 5 requirements

- (i) collect and share, in a timely manner, complete and accurate data concerning fishing activities on, inter alia, vessel position, catch of target and non-target species and fishing effort, as well as information from national and international research programmes; and
- (j) implement and enforce conservation and management measures through effective monitoring, control and surveillance.

Article 10 requirements

- 1.(d) adopt standards for collection, verification and for the timely exchange and reporting of data on fisheries for highly migratory fish stocks in the Convention Area in accordance with Annex I of the Agreement, which shall form an integral part of this Convention; and
- 1. (e) compile and disseminate accurate and complete statistical data to ensure that the best scientific information is available, while maintaining confidentiality, where appropriate;

Article 23 Obligations of members of the Commission

- 2. (a) provide annually to the Commission statistical, biological and other data and information in accordance with Annex I of the Agreement and, in addition, such data and information as the Commission may require;

Article 28 Regional observer programme

The ROP is one source of the data covered by this measure.

Article 29 Transshipment

- 4. Transshipment at sea in the Convention Area beyond areas under national jurisdiction shall take place only in accordance with the terms and conditions set out in article 4 of Annex III to this Convention, and any procedures established by the Commission pursuant to paragraph 3 of this article. Such procedures shall take into account the characteristics of the fishery concerned.

Annex III Terms and Conditions for Fishing

Article 5 Reporting

The operator shall record and report vessel position, catch of target and non-target species, fishing effort and other relevant fisheries data in accordance with the standards for collection of such data set out in Annex I of the Agreement.

Scope

The measure will apply to fishing vessels fishing:

- a) exclusively on the high seas;
- b) on the high seas and in the waters under the jurisdiction of one or more coastal State waters;
and
- c) in the waters under the jurisdiction of two or more coastal State waters

Links to some of the Existing CMMs or WCPFC Guidelines, Procedures and Regulations to identify and assess linkages and any need for consequential review.

CMMs

2009-06 Conservation and Management Measure on the Regulation of Transshipment

2012-03 Conservation and Management Measure for Implementing the Regional Observer Programme by Vessels Fishing for Fresh Fish North of 20°N

2013-05 Conservation and Management Measure on daily catch and effort reporting

2018-05 Conservation and Management Measure for the Regional Observer Programme

2021-03 Conservation and Management Measure for Compliance Monitoring Scheme

Guidelines, Procedures and Regulations

Data-02 – Rules and Procedures for the Protection, Access to, and Dissemination of Data Compiled by the Commission (as revised by WCPFC18 2021)

Data-04 - Rules and Procedures for the Protection, Access to, and Dissemination of High Seas Non-Public Domain Data and Information Compiled by the Commission for the Purpose of MCS Activities and Access to and Dissemination of High Seas VMS Data for Scientific Purposes

Annual Report Part 1 - SC-01 Annual Report to the Commission, Part 1 (Information on Fisheries Research and Statistics (revised to reflect decisions as at WCPFC15) (Annual Report Part 1)

Annual Report Part 2

Agree data requirements

The Commission's current at sea data needs as set out in the [WCPFC Decision on Scientific Data to be Provided to the Commission](#) (as refined and adopted at WCPFC13, December 2016).

CCMs obligations can be met by ROP and/or EMP

CCMs can use the ROP and/or the EMP or a combination of both to meet their data and monitoring obligations. Both programs are tools to assist CCMs in meeting their obligations for at sea monitoring and the provision of catch and other scientific data. The choice of which program, or combination of programs to use will be up to CCMs and will depend on the nature of their fishing activity and where they fish. It will also be subject to ensuring they meet data and monitoring obligations.

Guiding principles for at sea monitoring

These principles would pick up the key elements of the ROP Guiding Principles including being independent and impartial, arrangements for vessels operating in coastal waters, the need for flexibility, cost effectiveness and avoid duplication, appropriate level of coverage and security and confidentiality of non-aggregated data. They could also cover the relationship between regional, sub-regional and national programs and where CCMs could choose to apply a regional or sub-regional process if, for example, aspects of an EMP were not initially feasible or required support for implementation.

B. CMM Establishing the WCPFC EMP (based on draft prepared in June 2020)

Establishment of the Commission Regional E-Monitoring Programme (REMP)

Objectives

Definitions

Scope of the Commission REMP

Obligations of participating CCMs of the Commission

Role of the Commission and its subsidiary bodies

Role of the Secretariat

Role of coastal/flag States

Guiding principles for operation of the Commission REMP

Review

C. Standards Specifications and Procedures for the WCPFC Electronic Monitoring Programme (from draft circulated for comment April 2022, with amended ordering)

Program Specifications

Acceptable Program Downtime

Predeparture and System Failure Procedures

Data transmission, confidentiality, security, sharing and storage

Technical Specifications

General specifications of EM Systems

Specifications for Specific EM Systems Components

Cameras

Sensors

Geolocation

EM Control

Communication

EM Records

EM Records Storage

Logistical Specifications

Transmission of EM Records

Accreditation in the WCPFC EMP

Compatibility

EM Records Analysis Specifications

EM Records Analysis for trips in the high seas

Submission of Data to the WCPFC Secretariat

Data Standards

Audit Protocols