



**THIRD E-REPORTING AND E-MONITORING WORKING GROUP MEETING
(ERandEMWG3)
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**CHAIR'S CONCEPT PAPER ON ELECTRONIC MONITORING PRINCIPLES AND
PROCEDURES FOR THE WCPFC**

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ELECTRONIC REPORTING AND ELECTRONIC MONITORING INTERSESSIONAL WORKING GROUP

6 -7 August 2018

Chair's concept paper on electronic monitoring principles and procedures for the WCPFC

Introduction

In 2016, I agreed to draft an electronic monitoring concept paper that explored what a WCPFC E-Monitoring Programme would look like and what may be needed to ensure that data collected under an E-Monitoring Programme could be used by the Commission. The paper is informed by key decisions of the Commission and draws on previous related conservation and management measures or directions that the Commission has made. The paper also recognises that vessel monitoring systems are a form of electronic monitoring (EM) and the Commission has an established data collection/verification programme through the regional observer programme (ROP). The paper also recognises that in recent years many CCMs have committed significant resources to actively undertake trials to further explore the application and necessary requirements to support the implementation of E-monitoring technologies as part of their national or subregional fisheries monitoring activities in the WCPF Convention Area. The concept paper recognises that these approaches can form the basis of a Commission-level E-Monitoring Programme built around minimum standards that would apply at a national and possibly subregional level. The concept paper also includes a number of placeholders where further discussion is expected to be required. This paper provides the basis of discussions at the ERandEM WG meeting in August and if supported, could form a starting point for discussions around a WCPFC Conservation and Management Measure for a regional electronic monitoring programme.

Background

This section describes the various instruments that are relevant when considering how to progress the use of electronic monitoring in fisheries under the mandate of the WCPFC.

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 scope under Article 6 which notes 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*

- a) position verification through vessel monitoring systems;*
- b) scientific observer programmes to monitor catch, effort, catch composition (target and non-target) and other details of fishing operations;*
- c) vessel trip, landing and transshipment reports; and*

d) port sampling.”

Convention Article 23 paragraph 2 (a) provides a cross reference to Annex I of UNFSA.

The Commission's functions are described in Article 10 of the Convention. Specifically relevant to the recognition of electronic monitoring as a data collection tool is *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 1 of the Agreement (UNFSA)*. Further, Article 28, relating to the Regional Observer Programme, 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 regional observer programme recognises the need for independence and impartiality to support verification of data, reaffirms the principle that data can be used for multiple purposes (compliance and science) and seeks to harmonise with existing programmes. These principles are relevant when considering how to approach implementation of electronic monitoring.

The Commission is supported by a number of subsidiary bodies, principally the Scientific Committee and the Technical and Compliance Committee. 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 but not limited to identifying data needs, data collection programmes and the use of technology.

While electronic monitoring has been trialled in some countries, discussions at the Commission around the viability and use of electronic monitoring (as well as electronic reporting) as a tool to collect data on fishing activity began in earnest in 2012. As a result of these discussions, the Commission commissioned a report which was presented to WCPFC10 that looked at the potential for electronic reporting and electronic monitoring in the Western and Central Pacific Fisheries (<https://www.wcpfc.int/node/5961>). WCPFC10 established a working group to consider how these technologies could benefit the work of the Commission. The working group has met twice as well as a preliminary meeting to discuss the recommendations in the report. The Commission has noted the work and has endorsed continuation of the group under agreed Terms of Reference until 2018.

There have been a number of EM trials and work done by CCMs, including implementation at the national level. It is my view that there is sufficient depth of experience to consider formally recognising electronic monitoring as a data collection tool suitable for collecting data on WCPO fishing operations. Human observers will continue to have an important role, their technical expertise and specialist skills are essential to support the management of Pacific fisheries. The use of technology by observers is also increasing, further enabling them to hone their skills and provide timely information and advice. The potential of EM systems as a data collection method is well documented – it can work long hours, it can support human observer programmes, it can collect routine data and can support regulatory and enforcement programmes. EM systems, and the type and scope data they collect, are different to what is collected by human observers. So it is logical that an additional programme, based on minimum standards, is developed that recognises both the opportunities and limitations of the available technology in collecting the data required by the Commission. Such an approach also provides scope for CCMs to 'futureproof' their strategies for the collection of data required by the Commission to ensure their strategies remain efficient and effective.

CHAIR'S DRAFT PROPOSAL – FOR DISCUSSION

With this in mind, Attachment 1 to this paper provides a strawman for a WCPFC Regional Electronic Monitoring Programme. It should be noted that the paper is provided for discussion purposes only and is not intended to be a proposal to go forward to the Commission in 2018. As such, it has not yet been subject to analysis as required by CMM 2013-06. This work will need to be done before any proposal is adopted. As noted above, the paper draws on existing WCPFC ROP and the VMS measures and includes placeholders where further discussions are required. The draft measure draws on the ROP framework and includes some initial drafting of standards under the following annexures:

- programme standards - minimum standards relating to management of a national or subregional E-monitoring programme
- technical standards - minimum standards relating to the E-Monitoring system (including cameras, sensors, any storage devices and software (on board and on shore))
- logistical standards - minimum standards relating to the transfer of records from a fishing vessel to a reviewing or analysis centre
- records analysis standards - minimum standards relating to converting E-monitoring records into data that are submitted to WCPFC.

I hope that the proposed approach provides CCMs with a clear understanding of my expectations of the upcoming working group meeting. Please do not hesitate to contact me if you have any questions and I look forward to discussing this draft further with CCMs at the upcoming ERandEMWG meeting.

Attachment 1

DRAFT CONSULTATIVE PROPOSAL FOR A CMM FOR A REGIONAL E-MONITORING PROGRAMME (REMP)

Preamble

The Western and Central Pacific Fisheries Commission (WCPFC):

Acknowledging that effective conservation and management of highly migratory fish stocks is dependent on the provision of accurate, reliable and timely data;

Recalling Article 5 (i) of the Convention which provides that in order to conserve and manage highly migratory fish stocks in the Convention Area, members of the Commission shall collect and share complete and accurate data concerning fishing activities;

Further recalling Article 10 (d) of the Convention that the Commission shall, adopt standards for collection, verification and for the timely exchange and reporting of data for highly migratory fish stocks in the Convention Area;

Recognising that electronic monitoring is a valid data collection tool and electronic monitoring systems are able to collect data that supports the Convention objective;

Recognising that ensuring compatibility between conservation and management measures established for high seas areas and those established in respect of the same stocks by coastal States;

Committed to Article 30 of the Convention which requires the Commission to give full recognition to the special requirements of developing States, in particular SIDS and territories, including the provision of financial, technical and capacity development assistance,

Committed to the implementation of Conservation and Management Measure 2013-07 to give operational effect to the full recognition of the special requirements of SIDS and territories in the Convention Area, in particular such assistance as may be needed to implement their obligations,

Further committed to the implementation of Conservation and Management Measure 2013-06 by applying the criteria to determine the nature and extent of the impact of a proposal on SIDS and territories in the Convention Area, in order to ensure that they can meet their obligations, and to ensure that any measure does not result in transferring, directly or indirectly, a disproportionate burden of conservation action onto SIDS and territories,

Adopts in accordance with Article 10 of the WCPFC Convention:

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

1. There is hereby established the Commission REMP, which shall be coordinated by the Secretariat of the Commission.
2. The REMP shall be implemented on a phased basis. The implementation schedule is attached as Annex B *[to be developed]*.

3. The Secretariat of the Commission shall provide an annual report to the Commission with regard to the Commission REMP and on other matters relevant to the efficient operation of the programme¹.
4. The REMP is defined as national or subregional data collection programmes using electronic monitoring systems that are authorised/accredited as meeting the standards and procedures as adopted by the Commission.

Objectives

5. The objectives of the Commission REMP shall be to provide a framework whereby WCPFC approved E-monitoring programmes can be used to collect verified catch data, other scientific data, and additional information related to the fishery from the Convention Area [to inform sustainable fisheries management] and to support monitoring the implementation of the conservation and management measures adopted by the Commission².
 - a. *Sub objectives?*

Definitions

6. For the purpose of the Commission REMP the following definitions apply:
 - a. **Electronic monitoring system (or E-monitoring system)**– An e-monitoring system is a closed set of cameras, sensors and recording systems used to electronically record and transmit fishing activity.
 - b. **Electronic monitoring record (or E-monitoring record)** - Imagery and sensor information collected by an e-monitoring system
 - c. **E-monitoring quality control procedures** - Processes and procedures to ensure quality of data collected by e-monitoring system
 - d. **Electronic monitoring analyst** - A person qualified to analyse e-monitoring records and produce e-monitoring data
 - e. **Reviewing centre/data analysis centre** – Location where e-monitoring records are received and the data analysed and processed. Analysis includes required quality checks prior to submission to WCPFC/Scientific Services Provider.
 - f. **E-monitoring data** - Data produced through analysis of e-monitoring records [that conforms with the WCPFC data standards]
 - g. **National E-monitoring programme (EM programme)** - A process administered by a national fisheries authority that includes the use of e-monitoring systems to independently collect, verify and analyse fisheries data and information to support national objectives.
 - h. **Sub-regional E-monitoring programme (EM programme)** – A process administered by a sub-regional body that delivers monitoring services to CCMs that includes the use of e-monitoring systems to independently collect, verify and analyse fisheries data and information to support sub-regional objectives.
 - i. **WCPFC Electronic monitoring standards** – standards adopted by WCPFC that a national or subregional E- monitoring programme must meet in order to be accredited under the WCPFC REMP.
 - j. **Others?**

¹ Reference CMM2007-01 para 1-3

² Modified. Reference CMM2007-01 para 4

Scope of the Commission REMP

7. Subject to the implementation schedule (Annex B - *to be developed*), the Commission REMP shall apply to the following categories of fishing vessels authorised 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 jurisdiction of two or more coastal States³.

Obligations of CCMs of the Commission

8. Each flag CCM shall ensure that fishing vessels as defined in para 7 comply with the requirements established by the Commission for the purposes of the Commission REMP and are equipped with electronic monitoring systems that shall collect such data as determined by the Commission⁴.
9. CCMs shall cooperate to ensure compatibility between national and high seas electronic monitoring programmes⁵.
10. CCMs shall enter into arrangements (either bilaterally or regionally) to ensure data collected via E-monitoring systems are provided, in a timely manner, to the Commission.

Role of the Commission and its subsidiary bodies

11. The Commission shall, through its subsidiary bodies within their respective mandates, monitor and supervise the implementation of the REMP, [agree minimum standards to support implementation of the REMP], develop the priorities and objectives of the REMP, and assess the results of the REMP. The Commission may provide further direction concerning the operation of the REMP, as necessary. The Commission shall ensure the administration and coordination of the REMP is adequately resourced. The Commission may enter into contracts for the REMP⁶.
12. The Commission recognises the special requirements of developing State CCMs, particularly SIDS and Participating Territories, and shall seek to actively engage and cooperate with these CCMs and facilitate their effective participation in the implementation of the REMP including by providing appropriately targeted assistance to improve implementation of the requirements established by the Commission for the purposes of the Commission REMP, including through consideration of the options for capacity building and technical assistance.

Role of the Secretariat

13. The role of the Secretariat will be to:
 - a. coordinate REMP activities, including *inter alia*
 - i) so that existing national programmes and sub-regional programmes participating in the REMP implement E-Monitoring consistent with standards as adopted by the Commission⁷;
 - ii) *Others?*

³ Reference CMM2007-01 para 5

⁴ Modified. Reference CMM2014-02 para 9a)

⁵ Modified. Reference CMM2014-02 para 9b)

⁶ Reference CMM2007-01 para 11

⁷ Reference CMM2007-01 para 12 a) ii)

- b. authorise/accredit national or sub-regional E-Monitoring Programmes as meeting the minimum standards of the REMP.

Role of coastal/flag States

14. Each CCM shall nominate a WCPFC National E-monitoring Programme Coordinator, who shall be the contact point on matters related to the REMP⁸.
15. Each CCM participating in the REMP shall ensure its E-Monitoring implementation is consistent with REMP standards and procedures adopted by WCPFC.

Guiding principles for operation of the Commission REMP

16. The Commission REMP shall operate in accordance with the following principles:
 - a. The Commission REMP shall ensure the security and confidentiality of non-aggregated data and other information which the Commission deems to be of a confidential nature; the release of data and other information collected by the Commission REMP shall be in accordance with guidelines set out in the Commission's Rules and Procedures for Access to, and Dissemination of, Data Compiled by the Commission.
 - b. *Others to be developed?*

Review

17. After two years of implementation, the Commission shall conduct a review of the implementation of this Conservation and Management Measure and consider further improvement to the programme as required⁹.

⁸ Reference CMM2007-01 para 13

⁹ Reference CMM2014-02 para 10

Annex A – Minimum Standards for Electronic Monitoring Programmes (EM Programmes)

A.1 Programme standards – minimum standards relating to management of a national or sub-regional EM programme

- A.1.1 CCMs wishing to use E-Monitoring as a data collection tool shall apply to the WCPFC Secretariat to have their programme accredited. The WCPFC Secretariat shall audit the national or sub-regional programme against these minimum standards and, if the programme meets the standard, then the programme shall be considered accredited by WCPFC. Any national or sub-regional programme that has been accredited shall be subject to regular and periodic audits.
- A.1.2 CCMs shall adopt protocols that ensure personal data (including E-Monitoring records) is handled in a manner that maintains an individuals privacy.
- A.1.3 CCMs shall document and implement procedures to manage the failure of E-Monitoring systems. Such procedures will include, but are not limited to, predeparture checks to ensure E-Monitoring systems are working prior to leaving port, liaison with vessel crew in relation to malfunctioning systems and the imposition of sanctions for malicious or deliberate tampering of equipment.
- A. 1. 4 *OTHERS?*

A.2 Technical standards – minimum standards relating to the E-Monitoring system (including cameras, sensors, any storage devices and software)

- A.2.1 CCMs shall require any E-Monitoring system to
 - a. include a sufficient number of cameras to view fishing activity (set, haul, processing and transshipment),
 - b. include sensors that record when fishing equipment is deployed,
 - c. have sufficient storage for all recorded imagery and sensor information,
 - d. be of sufficient resolution to enable species identification,
 - e. provide GIS data on fishing location
 - f. be capable of sending real time automated alerts when the system is malfunctioning,
 - g. prevent any manual data input or external data manipulation,
 - h. be tamper evident,
 - i. be capable of sending encrypted information,
 - j. be installed by an installer approved by the CCM (or other? Accredited REMP services provider?).
- A.2.2 CCMs shall document the roles and responsibilities of fisheries authorities and vessel crew with respect to *inter alia* maintaining equipment, sending storage devices etc.
- A.2.3 CCMs shall prescribe how costs for maintenance, replacement of equipment shall be attributed, including any cost recovery mechanisms.
- A.2.4 CCMs shall ensure that there are regular updates of hardware/software.
- A.2.5 CCMs shall implement predeparture protocols to ensure that E-Monitoring systems are operational before a vessel departs port.
- A.2.6 *OTHERS?*

A.3 Logistical standards – minimum standards relating to the transfer of data from a fishing vessel to a reviewing centre

- A.3.1 CCMs shall prescribe the method of transmission of E-Monitoring records (eg electronic exchange via cellular/satellite/internet or via storage device exchange).
- A.3.2 If using storage device exchange, CCMs shall have in place operational procedures for the secure collection and distribution of storage devices and other associated equipment, taking into consideration any necessary evidentiary or chain of custody arrangements. Such procedures may require bilateral or multilateral agreements between CCMs setting out roles and responsibilities including dispute resolution.
- A.3.3 CCMs shall document handling and storage procedures for E-Monitoring records including data confidentiality, disposal or clearing of storage devices.
- A.3.4 CCMs shall prescribe how costs for such logistical arrangements shall be attributed, including any cost recovery mechanisms.
- A.3.5 *OTHERS?*

A.4 Data analysis standards – minimum standards relating to converting E-Monitoring record into data to be submitted to WCPFC

- A.4.1 CCMs shall ensure that the data that needs to be collected by an EM programme are documented and if necessary any supplementary programmes (eg port sampling, crew cooperation) are put in place to collect mandatory data fields as prescribed by the Commission. It is a CCMs responsibility to meet obligations regarding the provision of data to the Commission.
- A.4.2 CCMs shall ensure E-Monitoring analysts are trained (including induction and refresher training) and familiar with fishing activity and are adept at identifying fish species, at a minimum.
- A.4.3 CCMs shall implement mechanisms to ensure that E-Monitoring records analysis is quality controlled (including data entry checks and debriefing as required) and includes appropriate feedback mechanisms for both industry and E-Monitoring analysts.
- A.4.4 CCMs shall have in place steps to respond to any suspected incidents of misreporting or other potential non compliant activity (including but not limited to education programmes, workshops, legislated penalties).
- A.4.5 CCMs shall require that data is submitted to WCPFC Secretariat in the appropriate format as prescribed in the ER data standards.
- A.4.6 *OTHERS?*

Annex B - Implementation Schedule

1. Priorities for implementation

Suggested focus - those fisheries that are not meeting the WCPFC's observer coverage requirements, or where it has been recognised that placement of human observers is challenging (eg longline vessels without observers and transshipment vessels)¹⁰.

2. Schedule to be developed

<i>When</i>	<i>What</i>	<i>Where</i>	<i>Comment</i>
<i>30 June 2020</i>	<i>Carrier vessels</i>		
<i>30 June 2021</i>	<i>Longline vessels</i>		

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¹⁰ Reference ERandEM Workshop 1 report -2014

Attachment 2**CMM 2013-06 Analysis**

a. Who is required to implement the proposal?	<i>Responses to be developed</i>
b. Which CCMs would this proposal impact and in what way(s) and what proportion?	
c. Are there linkages with other proposals or instruments in other regional fisheries management organizations or international organizations that reduce the burden of implementation?	
d. Does the proposal affect development opportunities for SIDS?	
e. Does the proposal affect SIDS domestic access to resources and development aspirations?	
f. What resources, including financial and human capacity, are needed by SIDS to implement the proposal?	
g. What mitigation measures are included in the proposal?	
h. What assistance mechanisms and associated timeframe, including training and financial support, are included in the proposal to avoid a disproportionate burden on SIDS? ¹¹	

¹¹ CMM2013-06 para 3