WGEMS Recommendations, Terms of Reference and Workplan

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PURPOSE

To report to the Working Party Data Collection and Statistics the Recommendations, Terms of References and Workplan for the period 2022-2026 adopted at the 1st Ad-hoc Working Group on the Development of Electronic Monitoring Programme Standards (WGEMS).

BACKGROUND

The 1st Ad-hoc Working Group on the Development of Electronic Monitoring Programme Standards (WGEMS) was held online on Zoom from 15 to 17 November. The WGEMS did not adopt the report during the online meeting and planned to do so via correspondence. The WGEMS reports to the WPDCS and, because the report was not going to be available for the WPDCS17 on time, the WGEMS adopted key recommendations and priorities to ensure its functioning and future progress to be presented at the WPDCS.

DISCUSSION

Participants at the WGDCS17 are requested to consider the priorities set by the Commission and the Scientific Committee, via Conservation and Management Measures, and revise the WGEMS Recommendations, Terms of References, and the Program of Work to match those priorities.

The recommendations from the WGEMS01 are provided in **Appendix I**, the WGEMS Terms of References in **Appendix II,** and the Workplan for 2022-2026 in **Appendix III.**

RECOMMENDATION/S

That the WPDCS17:

1) **NOTE** paper IOTC–2021–WPDCS17–13, which requested the WGDCS to further develop and refine the Terms of Reference and its Program of Work for 2022–2026 to align with the requests and directives from the Scientific Committee and Commission.
2) **RECOMMEND** the WGEMS Recommendations, Terms of References and Program of Work for 2022–2026 to the WPDCS (and Scientific Committee) for its consideration and potential endorsement.

APPENDIX I

WGEMS RECOMMENDATIONS

- The WGEMS NOTED the progress made during the current meeting to discuss issues related to Electronic Monitoring Systems but also NOTED that much work is required in the future. As such the WGEMS **RECOMMENDED** that the WPDCS endorse the continuation of the ad hoc Working Group on Electronic Monitoring Systems Standards.

- Noting that the WCPFC Commission has agreed the objectives[1] and the scope of the EM program to facilitate the development of EM standards, the WGEMS **RECOMMENDED** that early in the process a workshop including scientist and managers is organized to advance dialogue on these issues.

- The WGEMS NOTED that although the focus in the current meeting is on the scientific aspects of EMS as required by IOTC Resolution 11/04 Regional Observer Scheme, there is a potential to use EMS to address compliance issues as well. The WGEMS therefore **RECOMMENDED** that future WGEMS meetings include participation of scientists as well as compliance experts to advance the discussions on the benefits and use of EMS in the IOTC.

- Noting the delay in the completion of the small-scale EMS pilot project due to the insurgence of the CoViD pandemic, the WGEMS **RECOMMENDED** that the project continues, with future activities included in the WPDCS work plan, and that similar studies are prioritized in the workplan of IOTC WGEMS as well. The WGEMS also requested EM technology providers to liaise with the Secretariat to assess the possibility that EMS data are exported in an electronic format compatible with the ROS electronic formats, for future incorporation within the IOTC databases.

- The WGEMS NOTED that although the focus in the current meeting is on the scientific aspects of EMS as required by IOTC Resolution 11/04 Regional Observer Scheme, there is a potential to use EMS to address compliance issues as well. The WGEMS therefore **RECOMMENDED** that future WGEMS meetings include participation of scientists as well as compliance experts to advance the discussions on the benefits and use of EMS in the IOTC.

- **NOTING** the Rules of Procedure (2014), the WGEMS CALLED for nominations for the position of Chairperson of the IOTC WGEMS. Dr. Hilario Murua (ISSF, USA) was nominated, seconded, and elected as Chair of the WGEMS, and Dr. Don Bromhead (AFMA, Australia) was nominated, seconded, and elected as Vice-Chair of the WGEMS.

[1] *to collect verified catch and effort 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 WCPFC Commission*

APPENDIX II

TERMS OF REFERENCES FOR THE AD-HOC WORKING GROUP ON THE DEVELOPMENT OF ELECTRONIC MONITORING PROGRAMME STANDARDS (WGEMS)

OBJECTIVES

To develop EM Program Standards (i.e. how the institutional structure and management of the program is organized) and EM Data Standards (i.e. the minimum data requirements to be collected and technical specifications and requirement of the EM system).

SPECIFIC OBJECTIVES

- To define the objectives and scope of the EM Program in the IOTC.
- Develop and agree on Electronic Monitoring related terms definitions.
- To draft EM Program Standards and EM Data Standards
    - **For EM Program Standards**: objectives of the Programme, scope of the fleets, institutional structure and management of the programme, data collection and review coverage, roles and responsibilities of members, specifications and procedures, timeframes for implementation, accreditation of vendors, data confidentiality and access and use, coordination, observer training, cost and financial considerations, etc.
    - **For EM Data Standards**: minimum requirements for EM system and equipment, EM data collection and storage, EM data transfer logistics, EM data analysis and submission, EM maintenance and functioning, EM data validation and quality control, roles of EM users, including the collection of minimum data requirements.
- Identify and assess areas where EM could strengthen current IOTC collection and reporting processes.
- Develop a roadmap and workplan to progressively implemented an EM Program for IOTC fisheries including, but not limited to, fleet specific cost benefit analyses and capacity building.
- Consider how to ensure the compatibility of the data collected by EM Programmes with other data currently collected through other programmes (VMS, ROS, etc…).
- Consider and review the best approach (e.g. through a Resolution) to implement the EM Programme in IOTC.
- Develop tools, innovative strategies and collaborative projects for collecting, handling, processing and analysing fishery-dependent data from electronic technologies; for example, through machine learning and artificial intelligence and seek the collaboration from academia in joint-initiatives to progress on the matter.
- Consider how to ensure standards are flexible enough to not exclude or limit the use of future technological advances
- Hold an expert workshop(s) to review the draft EM Program Standards and EM Data Standards for IOTC Commission consideration.

FUNCTIONING

- The working group shall be open to all Commission Members, Cooperating non-members and observers and constituted preferably scientist, experts, EMS designers/vendors, other stakeholders, and, whenever possible, include the participation of managers.
- The working group shall conduct its work electronically as well as by presential meeting(s), whenever possible, that should be annually or bi-annually organized.
- The working group shall consider existing and proposed EM Programme standards and EM minimum standards and formats in other regional bodies and tuna RFMOs.
- The working group shall collaborate and communicate with the EM working groups of other tuna RFMOs as well as take into account the Kobe III recommendations and recommendations by

relevant EM International groups.

- The working group shall consider the impacts of EM technologies on the broader work of the Commission/Secretariat and look at ways to minimize data collection and management costs.
- The working group shall report to the WP on Data Collection and Statistics and the Scientific Committee, where its advice and recommendations shall be discussed and endorsed for Commission consideration,
- The working group could consult or seek advice from technical experts including EM vendors as necessary.
- The working group shall be supported by the Secretariat. In particular, the Secretariat shall provide technical advice and engage relevant stakeholders in providing input into the work of the working group.

REPORTING and PROGRESS

- The working group and its progress will be annually report and reviewed at the IOTC WPDCS as well as to inform the Compliance Committee of its progress.
- Consistent with outcomes from EM workshop, a phased in approach to the implementation of these technologies should be considered by the Commission as specified in the workplan described in Appendix III.

APPENDIX III

WORKING GROUP ON THE DEVELOPMENT OF ELECTRONIC MONITORING PROGRAMME STANDARDS PROGRAM OF WORK (2022–2026)

The Program of Work consists of the following, noting that a timeline for implementation would be developed by the SC once it has agreed to the priority projects across all of its Working Parties:

Table 1. Priority topics for obtaining the information necessary to deliver the necessary advice to the Commission. Resolution 11/04 and 16/04 elements have been incorporated as required by the Commission.

					Timing				
Topic	**Sub-topic and project**	**Priority**	**Ranking**	**Lead / Participation**	**2022**	**2023**	**2024**	**2025**	**2026**
1. EMS Pilot Projects	1.1 Facilitation of EMS pilot projects in IOTC fisheries (LL, PS, PL, GN, and others) to ensure that ROP minimum data requirements are collected by EMS 1.2 Cross validation of EM information with other data sources 1.3 Identify needs and encourage pilots for new electronic tools and systems.	High	3	Scientists					
2. EM Minimum data Standards[2]	2.1 Agree on definitions 2.2 Minimum technical specifications and equipment 2.3 Data collection (including EM capabilities to collect ROP minimum data requirements) and storage 2.4 Data transfer and logistical specifications	High	2	Scientists, vendors, experts, stakeholders, and managers					

[2] To be discussed at a first WGEMS expert workshop with the participation of scientist, experts, vendors and stakeholders.

	2.5 Data analysis specification and data submission 2.6 EM maintenance and functioning, 2.7 EM data analysis, validation, and quality control specifications 2.8 Roles of EM users								
3. EM Programme Standards[3]	3.1 Objectives and Scope of the Programme 3.2 Institutional structure and management 3.3 EMS coverage and data review coverage 3.4 Roles and responsibilities 3.5 Specifications and Procedures 3.6 Timeframe for EMS implementation 3.7 Accreditation of EMS Systems/vendors 3.8 Data confidentiality, access, and use 3.9 EMS Program cost	High	1 (In parallel with Item 2)	Managers, scientists, experts.					
4. Compatibility and Interoperability	4.1 Compatibility of IOTC databases and other collection platforms (e.g., VMS)	Medium	4	Secretariat / scientists					
	4.2 Interoperability among different vendor's EMSs	Medium	5	Secretariat / scientists					
5. Development of tools and innovative strategies	5.1 Artificial Intelligence and Machine learning for EMS data analysis	Low	7	Scientists / Secretariat					

[3] To be discussed at a second WGEMS expert workshop between managers, scientist, and stakeholders.

6. Capacity building	6.1 Capacity building	High	6	Secretariat / Scientist/ managers					