

**Report of the Meeting of the
Electronic Monitoring Systems Working Group (EMS WG)**
(hybrid/Porto, Portugal, 10 June 2024)

1. Opening of the meeting and meeting arrangements

The Chair of the Electronic Monitoring Systems Working Group, Mr. Neil Ansell, opened the meeting and welcomed all the participants. He thanked the Government of Portugal and the European Union (EU) for hosting the meeting and the Secretariat for organising. The ICCAT Executive Secretary also welcomed everyone and thanked EU-Portugal for hosting the meeting and outlined the meeting arrangements. He introduced the 24 CPCs and the observers attending.

2. Nomination of Rapporteur

The Secretariat agreed to serve as rapporteur.

3. Adoption of agenda

The Chair indicated his intentions regarding the issues to be raised under each Agenda item. The Agenda was adopted without change and is attached as **Appendix 1**.

The List of participants is attached as **Appendix 2**.

4. Review of information on EMS projects / programmes reported to date

4.1 Pilot projects

The representative of SATLINK, Ms. Carolina Cavero Pérez Frade, presented the results of the pilot project to test the use of a Remote Electronic Monitoring (REM) system, including Closed-Circuit Television (CCTV) on board bluefin tuna processing vessels operating in the bluefin tuna fishery in the eastern Atlantic and Mediterranean Sea, as established by the [*Resolution by ICCAT establishing a Pilot project for the implementation of Remote Electronic Monitoring \(REM\) on bluefin tuna processing vessels \(Res. 21-17\)*](#). SATLINK had been selected following a Call for tenders launched by the ICCAT Secretariat. The project comprised the installation of cameras on two Panamanian flagged processing vessels, with the aims of collecting accurate data from fishing activities, estimating the number and weight of fish and comparing results with current monitoring methods.

The project had been carried out in two phases due to the impossibility of installing some of the sensors planned for the first phase. SATLINK noted that the system achieves 24/7 monitoring coverage (a significant improvement over the current control system), and that the system has performed well during the duration of the project, and allowed an accurate determination of the number of individuals and their weight and an ease of data analysis. Logbook comparison was carried out manually to determine the difference with the EMS system's results and standard monitoring.

In response to questions from Japan, it was noted that the reference to the National Oceanic and Atmosphere Administration (NOAA) on one of the slides of the presentation was due to the fact that the United States had provided 20% of the funding for the project, with EU providing the remaining 80%. Japan also asked for information relating to sensors as well as whether there had been any crane scale failures, similar to those which Japan had detected in their trials due to the conditions at sea. SATLINK explained that there were various sensors, including the angle of the trap door of the freezer. The crane scale had been installed on top of the vessel scale, and in the event that one of the scales failed the system could detect the failure. These issues could be solved remotely or if needed physically at port. SATLINK confirmed that the cameras could not be switched on and off, and there was no interruption in the 24/7 footage. SATLINK also confirmed that the fish were not measured one by one, but usually in groups of between 3-5 in the first phase and 8-10 in the second phase. These measurements were then transformed into weight and compared to the logbook values.

Morocco asked whether there was a need to install a vessel monitoring system (VMS) antenna, and if so, what type, and also whether the information was stored on hard discs or a cloud site which could be analysed by inspectors. SATLINK confirmed that VMS was only used to provide remote support and that any VMS type was compatible with the system. SATLINK had used hard drives for storing images and video footage, which had been sent directly for analyses. No images had been sent to ICCAT, only data summaries. SATLINK noted however that the market was now moving towards wireless transmission which is more expensive. In general, only 20% of the images were transmitted due to the high cost. On the other hand, with wireless transmission, there was no need to go to the vessel to extract the information.

Senegal noted that information was currently analysed in Spain and asked whether this could be done in the flag State. SATLINK confirmed that this was the case and that it also offered training to governments and non-governmental organizations (NGOs), and that it tried where possible to use the cloud services of the country in question.

El Salvador requested more information on the protocol for managing the system and any auditing functions, while Brazil requested information on maintenance costs between trips. SATLINK explained that the system sent reports daily, and in the case of failure, the technical department was contacted to attempt to resolve the problem remotely. Only in cases where this was not possible did they organize a visit to the vessel. Under the pilot project, there had been no maintenance costs due to the short duration of the project. Usually, maintenance would be required only once or twice a year.

Responding to the observer from Pew Charitable Trusts (PEW), SATLINK informed the group that no machine learning tools had been used and that sensors were the main source. SATLINK also confirmed that, as this had been a pilot project, there had been no coordination with projects being carried out in other oceans.

The EU thanked the Secretariat for its work on the project and indicated that, in light of the positive results of the project, it might be worth considering the continuation of such tools onboard processing vessels, in parallel with other monitoring systems, to increase the effectiveness of ICCATs control and monitoring measures, and that it would submit a proposal to amend Recommendation 22-08 with the aim of including this control system. SATLINK noted that geofencing of VMS which sent alerts in certain positions could also assist with the fight against illegal fishing.

Moving to another Pilot Project, the Secretariat informed the EMS WG that, following the [Resolution by ICCAT establishing a pilot project to test the use of stereoscopic cameras during first transfer and the automation of video footage analysis \(Res. 22-15\)](#), two Calls for tenders were issued, one for each objective to be implemented of the pilot project: use of stereoscopic cameras during the first transfer and automation of the analysis of video recordings using Artificial Intelligence (AI). For the first objective, the tender has already been awarded to the Polytechnic University of Valencia (UPV), which is currently implementing the necessary activities for its achievement.

The second objective is awaiting award, as the deadline for submitting bids recently expired and the Evaluation Committee must examine and select from the bids received.

EU-Cyprus reported on two pilot projects in EU-Cyprus; the first, with the aim of monitoring transshipments at sea, had taken place in 2021-2022 and involved two reefer vessels operating in Baltic waters. Although filming had taken place 24/7 in 2023-2024, only the footage involving actual transshipments was analysed. A second project involving two longliners fishing in the Mediterranean Sea was underway, although more vessels were expected to join. In this case, only the footage involving actual fishing activity was analysed, determined on the basis of sensors and logbooks. For these vessels, satellite connection was unnecessary as the vessels returned to port every three or four days and hence data transmission was technically simpler and cheaper.

Several difficulties had been encountered in both cases (e.g. with installation, battery consumption, camera coverage area, connectivity, etc.), but it was found that there were considerable advantages nonetheless, particularly that the system offers sufficient data to conduct verifications with the vessel's logbook declarations, and being time and cost efficient in terms of data analysis.

The European Union noted that, in the case of the reefer vessels, the fish were contained in boxes and asked how species could be identified in these cases. It was clarified that the system could not actually read the labels on the boxes, and these were identified by the crew in advance, but that a different configuration of the cameras would allow this to be done.

In response to an enquiry from the EU, for longliners, it was clarified that only a sample of the fishing trips had been analysed, not 100%, and hence risk analysis was recommended.

Although the software had been provided by SATLINK in this case, some of the analysis had been carried out by the Cypriot officials, and therefore they had been able to compare the results.

No decision had yet been taken with regard to extending the duration or scope of EMS following this pilot project, although it was probable that in time, such systems may become obligatory for reefer vessels in EU-Cyprus.

The United Kingdom presented a paper on the progress made to date on a pilot project underway in Bermuda. The system had only been fitted in mid-May but no fishing activity had yet taken place. The aim of the project was to help Bermuda fulfil its obligations under the *Recommendation by ICCAT to establish minimum standards and programme requirements for the use of Electronic Monitoring Systems (EMS) in ICCAT fisheries (Rec. 23-18)*, and also because deploying human observers was not feasible due to the small size of the vessel. It was noted that further developments were needed as no data collection was possible in the event of power failure. In addition, the side of the vessel could not be monitored, hindering control of release of large specimens, as well as reduced accuracy of length measurement of larger fish. He also noted that currently, the ICCAT algorithms for length/weight conversion were not included in the system.

In response to various questions from CPCs, it was further clarified that the UK had provided a 4-5 day training course to staff for data analysis, and that all such analysis was carried out by the Bermuda competent authorities. The problem of monitoring large individuals was a question of where the cameras were located, and to cover the area reserved for large fish, another camera would be needed. Regarding the ICCAT algorithms, this was an IT problem which could be resolved in the future.

The United States noted that, given the shortcomings, the EMS WG may need to consider further work on minimum standards for EMS on smaller vessels, which would also help them to consider alternative approaches to human observers, as foreseen by the *Recommendation by ICCAT to establish minimum standards for fishing vessel scientific observer program (Rec. 16-14)*. It drew attention to the SCRS workshops on data collection for small scale fleets where this issue had been considered.

The observer from PEW agreed and noted that many tuna Regional Fisheries Management Organizations (RFMOs) were building on the experience of ICCAT, in particular after the establishment by ICCAT of binding minimum standards for EMS, and urged ICCAT to make further progress in the use of EMS, and that updates to the standards adopted could be useful in this regard.

Brazil informed the EMS WG of its plans for EMS trials to be conducted on two longline vessels, through a project financed by Global Environment Facility Management Action Record (GEF-MAR) and hoped to be able to share experiences and preliminary results in the future.

4.2 CPC domestic programmes

Given that Rec. 23-18 had not yet entered into force, no information on CPC domestic programmes had been submitted. The methods for submitting information was discussed under Agenda Item 5.

5. Determination of details/format required for submitting information and results

The Secretariat drew attention to the two suggested formats which were presented with the aim of reminding the CPCs of their obligations under *Rec. 23-18 (Electronic Monitoring Systems (EMS) Domestic Programme Description and Electronic Monitoring Systems (EMS) Domestic Programme Implementation Report)*, noting that these were verbatim from the measure and may need refinement.

The European Union agreed on the desirability of establishing a common format for the submission of EMS domestic programmes and results, which would save time for the different CPCs and ensure the necessary information and facilitate its analysis, and suggested that they be circulated to all Contracting Parties and that an opportunity be given to provide written comments, on the basis of which a revised draft could be presented to the Permanent Working Group for the Improvement of ICCAT Statistics and Conservation Measures (PWG) in the 2024 Annual Meeting. They also raised their concerns over the timing of the submission of information and the review processes, and it was agreed that this would be further considered in any revised workplan (see Item 7).

6. Coordination with the SCRS and other tuna RFMOs as required

The SCRS Chair, Dr Brown, informed the EMS WG that the SCRS continued to work in the Technical Sub-group on EM which will now be focusing on EMS for smaller vessels, and considered that some type of simplified EM systems might be a good approach. The SCRS will continue to organize online meeting(s) of the SCRS Technical Sub-group on EM which would help the SCRS formulate advice on any areas of collaboration needed between SCRS and the EMS WG.

The Chair agreed with the importance of continued coordination between the EMS WG and the SCRS as required in the Resolution. The EU noted that the results from EMS should be evaluated by both the EMS WG and the SCRS, and that this should be further considered in any future workplan.

7. Intersessional work

The Chair introduced the workplan which had been drafted for the period 2022 and 2024 and suggested that this would require updating.

The EU noted that in the next work plan there were at least two components that must be considered; the first was the timeframe involved (including a timeline for the annual cycle of reviewing CPCs programs and reporting of the results) and the second was the inclusion of the elements required by [Rec. 23-18](#) (review domestic programmes in line with paragraph 17, and review of the Recommendation as outlined in paragraph 20). In this regard, it considered that the [Resolution by ICCAT for the establishment of an ICCAT Working Group on the use of Electronic Monitoring Systems \(EMS\) \(Res. 21-22\)](#) may need to be revisited. Once a timeframe was agreed, a workplan could be envisaged.

The United States suggested that a two-to-three-year period should be considered, and that any new workplan should cover up to 2026. They indicated that further reflection on the wording of [Res. 21-22](#) would be needed, but if necessary, a revision could be presented, together with a revised workplan, for consideration by the PWG and the Commission at the 2024 Annual Meeting.

8. Other matters

Hilario Murua from ISSF gave a brief update on the ongoing EMS activities being carried out by the International Seafood Sustainability Foundation (ISSF) under the Areas Beyond National Jurisdiction (ABNJ) Common Oceans Project. These activities will run until 2027. The speaker brought to the attention of the EMS WG a workshop which was tentatively scheduled to be held in December 2024 in San Sebastian (Spain). The aim of this workshop was to initiate a review and harmonize EM standards adopted/drafted by different tuna RFMOs from a technical point of view. It was noted that any move towards any harmonization should ensure that the minimum standards adopted by ICCAT will not be diminished or diluted.

Guinea (Rep.) raised the issue of whether EMS data could be used by the SCRS, as data reporting was the responsibility of the Contracting Parties. The SCRS Chair clarified that its review was limited to the utility of such data to the SCRS and their compatibility with the relevant reporting forms, but the data would still need to be submitted through the Contracting Party.

9. Adoption of report and closure

It was agreed that the report would be adopted by correspondence. The meeting was adjourned.

Agenda

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3. Adoption of agenda
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5. Determination of details/format required for submitting information and results
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