

WWF Electronic Monitoring Side Event

Western and Central Pacific Fisheries
Commission 21st Regular Meeting
(WCPFC21)

Suva, Fiji

November 30, 2024





Introduction

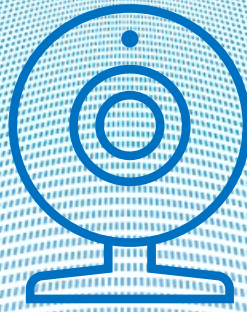
The Common Oceans Areas Beyond National Jurisdiction (ABNJ) Program, funded by the Global Environment Facility (GEF) and coordinated by the FAO, aims to enhance sustainable management of marine biodiversity and fisheries in international waters. As part of this program, the development of Electronic Monitoring (EM) for fishing vessels is a key initiative.

EM technology helps improve compliance, data collection, and transparency by using cameras and sensors on fishing vessels to monitor fishing activities. This system supports enforcement of regulations, reduces illegal, unreported, and unregulated (IUU) fishing, and promotes sustainable fishing practices. The program collaborates with the United Nations Environment Programme (UNEP), the World Bank, and other partners to pilot and scale EM systems, integrating them into broader efforts to manage marine resources responsibly in areas beyond national jurisdictions.

WWF, as a project partner, agreed to advance an initiative focused on providing guidance to coastal states on the governance of electronic monitoring (EM) to facilitate the smooth implementation of this important tool to improve the management of tuna fisheries globally. Throughout 2024, WWF has conducted outreach and education efforts aimed at key constituencies of the Western and Central Pacific Fisheries Commission (WCPFC).

On November 30, 2024, WWF led a side event in advance of the 21st Regular Meeting of the Western and Central Pacific Fisheries Commission (WCPFC21). The meeting was strategically executed immediately following the Electronic Reporting and Electronic Monitoring Intersessional Working Group (EREM IWG), which discussed proposed EM Minimum Standards. Eighty-six participants attended the EM side event.





WCPFC21 Side Event

WWF convened a side event at WCPFC21 in partnership with the WCPFC Secretariat, International Seafood Sustainability Foundation (ISSF), and The Nature Conservancy (TNC). WWF used the side event to highlight its recent work on EM Governance Toolkits to encourage discussion among WCPFC members and facilitate strong outcomes from the EREM IWG that preceded the event and would continue throughout the meeting. The EREM IWG focused on delivering a decision on minimum standards for EM at WCPFC21 that WWF and partners aimed to support.

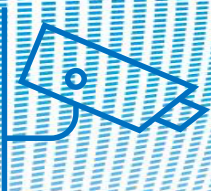
ISSF presented on work they have conducted to incentivize EM development and adoption. TNC joined the effort to highlight work they have conducted as part of various pilot applications of EM and advancements in EM and EM-related technology. The combined effort demonstrating the governance tools and approaches, the real-world and practical application of the technology currently underway, and the communication of incentives supporting implementation aimed to catalyze discussion and convey the imminent reality of EM as a valid and viable tool for collecting scientific information and ensuring monitoring and compliance.

Specific objectives of the side event included:

1. Introduce and distribute the EM toolkits
2. Briefly explain the contents and purpose of the EM toolkits
3. Introduce and discuss incentives for adopting EM
4. Discuss the current state and recent advancements in EM technology
5. Solicit further interest in EM and facilitate adoption of the EM Minimum Standards at WCPFC21.

WWF submitted the EM Governance Toolkit materials to the WCPFC Secretariat, to be included on the WCPFC21 website.

All presentations delivered at the side event as well as the EM Governance Toolkits are now maintained on the WCPFC website and available on request from WWF.



Appendix 1: Invitation and Agenda

WWF & WCPFC ELECTRONIC MONITORING (EM) LUNCHEON

Join WWF, ISSF, GEF, WCPFC and other NGOs at the WCPFC's 21st Regular Session of the Commission to discuss advances in Electronic Monitoring (EM) for industrial tuna fisheries.

The presentation will be held during the lunch break.

AGENDA

- WWF: Reports on the Governance of EM as part of the Common Oceans Program
- ISSF: Promoting Electronic Monitoring Utilization – Tools and the Need for Harmonization
- Closing Remarks & Q&A

SPEAKERS:

World Wildlife Fund New Zealand &
International Seafood Sustainability Foundation



global
environment
facility
INVESTING IN OUR PLANET



Food and Agriculture
Organization of the
United Nations



Western & Central Pacific
Fisheries Commission



JOIN US

SATURDAY, NOVEMBER 30TH

DURING LUNCH BREAK

SUVA, FIJI

VODAFONE ARENA | MAIN MEETING ROOM

GOVERNANCE
OF ELECTRONIC
MONITORING
REPORTS





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INVESTING IN OUR PLANET



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speakers

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VODAFONE ARENA | MAIN MEETING ROOM

**GOVERNANCE
OF ELECTRONIC
MONITORING
REPORTS**



Appendix 2: Photos

In addition to the photos below more photos may be found here:

https://drive.google.com/drive/folders/1T53UVBn4oJ4qmr517t4bb8kzVFNILUXT?usp=drive_link





Promoting Electronic Monitoring Utilization

ISSF Tools and the Need for Harmonization

WWF Side Event at WCPFC21 | Suva, Fiji

Holly Koehler

Policy and Outreach, ISSF

ISSF

INTERNATIONAL
SEAFOOD
SUSTAINABILITY
FOUNDATION

A large school of bluefin tuna swimming in clear blue water. The fish are sleek, silver-blue with yellowish-orange dorsal fins and tails. They are swimming in various directions, creating a sense of movement and depth. The background is a deep, clear blue, suggesting an open ocean environment.

First, a bit about ISSF

Continuously Improving Global Tuna Fishery Sustainability

ABOUT ISSF

In 2009, acclaimed scientists, leaders in industry, and environmental champions launched the International Seafood Sustainability Foundation (ISSF) based on shared concerns about the future of tuna fisheries and a desire to do something about it — together.

ISSF MISSION

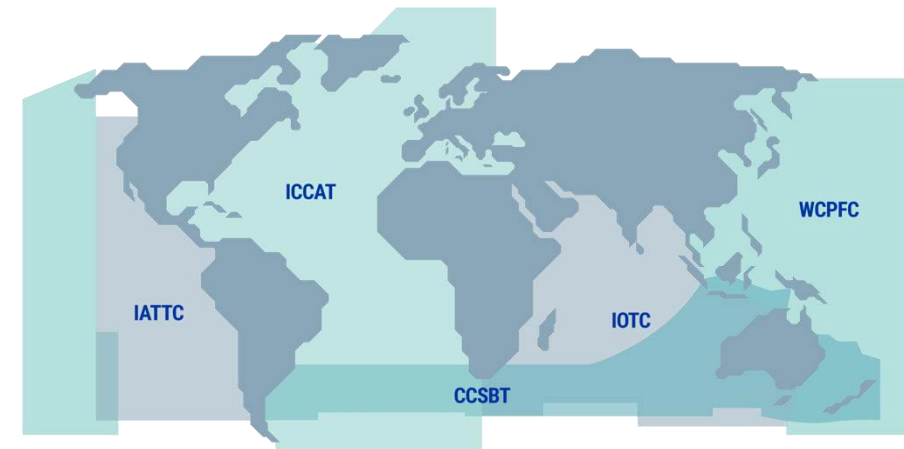
To undertake and facilitate science-based initiatives to continuously improve the sustainability of global tuna fisheries and the health of the ecosystems that support them.

ISSF OBJECTIVE

To continuously improve the sustainability of global tuna fisheries and the ecosystems that support them to result in those fisheries meeting and maintaining the MSC certification standard.

We achieve this through:

- ✓ **The development and implementation of verifiable, science-based practices, measurable commitments, and conservation management measures by participating companies**
- ✓ **Advocacy to tuna RFMOs**



RFMOs: Regional Fisheries Management Organizations

IATTC: Inter-American Tropical Tuna Commission

ICCAT: International Commission for the Conservation of Atlantic Tunas

IOTC: Indian Ocean Tuna Commission

WCPFC: Western and Central Pacific Fisheries Commission

CCSBT: Commission for the Conservation of Southern Bluefin Tuna

Strategic Pillars and Core Area of Focus



Science

Continuously improve the sustainability of global tuna fisheries and the health of the ecosystems that support them – measurably demonstrated.



Verification

Maintain and enhance credibility through transparency and compliance.



Influence

Exercise influence among stakeholders to promote and expedite actions necessary to continuously improve the sustainability of global fisheries and the health of the ecosystems that support them.

ISSF Supports & Enables FIPs That Seek MSC Certification

 Tuna Fisheries & Stocks

 Ecosystem Impacts

 Monitoring, Control, & Surveillance

 Fishing Capacity



 Participating Company Compliance & Communication

 Progress Tracking

 ProActive Vessel Register (PVR)

 Vessels in Other Sustainability Initiatives (VOSI)

 RFMOs & Member Nations

 NGOs

 Markets

 Vessels

Partnerships with Organizations/Experts to Facilitate Improvement/Implementation

Labor & Social Issues in Tuna Fisheries

Verified Transparency & Accountability

ISSF TOOLS & RESOURCES FOR VESSELS

Our approach for tuna fisheries & stakeholders promotes the verifiable implementation of best practices in tuna supply chains.

✓ **Independent auditing** of vessel compliance with best practices on the



ProActive Vessel Register (PVR)



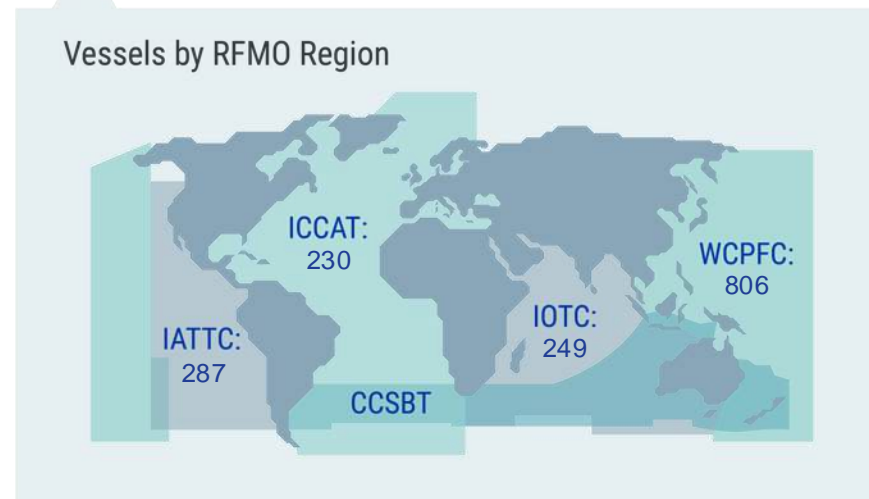
Vessels in Other Sustainability Initiatives (VOSI)



ISSF works with tuna vessels & processors **globally**

 **1,500+**
vessels worldwide

 **23** participating
companies with operations in
~80 countries



A large school of bluefin tuna swimming in clear blue water. The fish are arranged in a dense, somewhat circular pattern, moving towards the right. They have a silvery-blue color with a yellowish-gold stripe along their sides and a prominent dorsal fin.

VOSI: Vessels in Other Sustainability Initiatives

- Like the ProActive Vessel Register (PVR), ISSF's VOSI list is a transparency tool for the public — including seafood companies that want to understand which tuna vessels have made public commitments to more sustainable fishing beyond the commitments reflected on the PVR
- VOSI offers vessels the opportunity to publicly report compliance with voluntary commitments made beyond PVR commitments, which are exclusively tied to ISSF conservation measures
- The list is verified through a third-party audit process conducted by MRAG Americas

To learn more about the VOSI:
<https://www.iss-foundation.org/vessel-and-company-commitments/vessels-in-other-sustainability-initiatives-vosi/>

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✓ **Independent verification**
by MRAG Americas

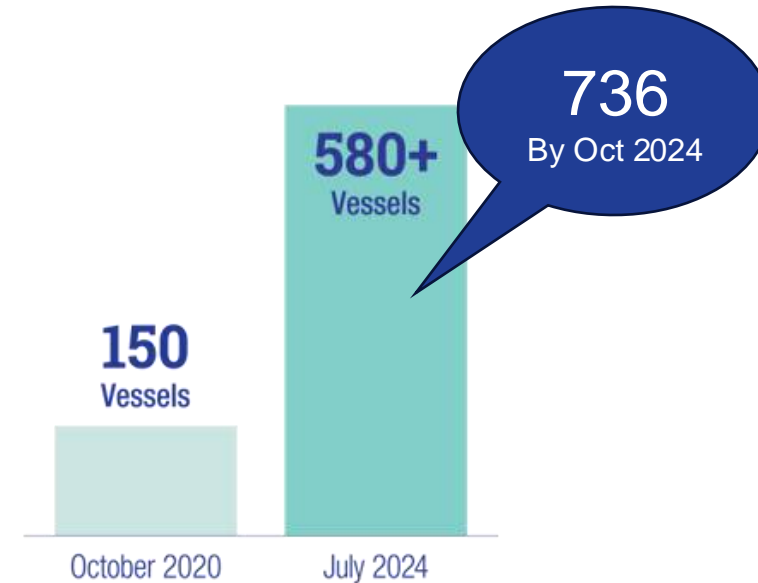


Learn more about the VOSI
www.iss-foundation.org/vessel-and-company-commitments/other-vessel-lists/vessels-in-other-sustainability-initiatives-vosi/



VOSI indicates if a vessel is:

- Using only fully non-entangling FADs (with no netting)
- Providing FAD echosounder biomass data
- Providing FAD buoy daily position data
- Participating in bio-FAD trials
- Participating in FAD recovery initiatives
- Participating in a FIP or MSC-certified fishery
- NEW** Participating in an In Transition to MSC (ITM) fishery
- NEW** Has installed and is using electronic monitoring systems (EMS)



The **NUMBER OF VESSELS** on the **VOSI HAS MORE THAN TRIPLED** since its creation in 2020.

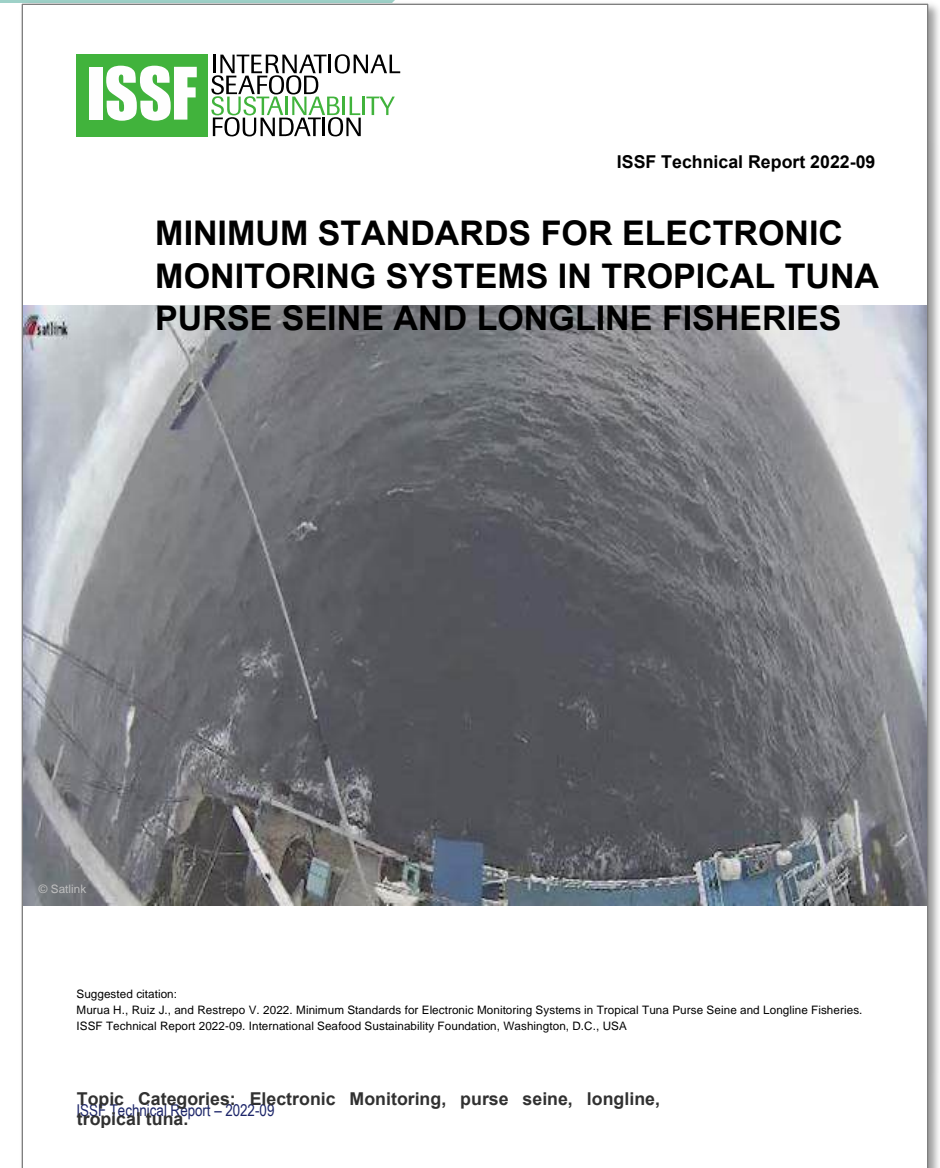
Column for Electronic Monitoring initiatives

Vessel meets, or exceeds, the minimum standards for EM as described in **ISSF 2022-09: Minimum Standards for Electronic Monitoring Systems in Tropical Tuna Purse Seine and Longline Fisheries**:

<https://www.iss-foundation.org/issf-downloads/download-info/issf-2022-09-minimum-standards-for-electronic-monitoring-systems-in-tropical-tuna-purse-seine-and-longline-fisheries/>

List of Electronic Monitoring System Vendors & Service Providers

**Vessels with EM on VOSI
~80 as of Oct 2024**



Resources and How to Participate

If your vessel(s) is **NOT** listed on the VOSI, submit your vessel(s) using VOSI Application Form on ISSF website: <https://www.issf-foundation.org/vessel-and-company-commitments/other-vessel-lists/vessels-in-other-sustainability-initiatives-vosi/>

If your vessel(s) is **CURRENTLY** listed on the VOSI, you may now submit information on your vessel(s)'s participation in the initiatives outlined above directly to MRAG via e-mail to Oleg Martens oleg.martens@mragamericas.com

Vessels in Other Sustainability Initiatives (VOSI)

524 Vessels Total
Last updated 30 Jan 2023

Vessel Name	UVI Number	UVI Type	Vessel Flag	Vessel Type	On the LPS Record?	On the PVR?	Biodegradable FAD trial	FAD recovery initiative	NE FADs w/ netting	FAD buoy position data	FAD echosounder data	Electronic Monitoring	In a FIP?	In an MSC Certified Fishery?	Initiative Type	Initiative
CORONA DEL MAR	8093206	IMO#	France	Handline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Eastern
AN WEN FA 188	8781571	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
AN WEN FA 2	8781533	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
AN WEN FA 26	8781569	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
AN WEN FA 3	8781545	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
AN WEN FA 36	8537126	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
AN WONE FA 1	8782525	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
AN WUN FA 16	8786985	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
ATUN TRES	8821553	IMO#	Korea, Republic of	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A		✓	MSC-certified	Pan Pac
CHEN YI FA 6	8782537	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
CHENG QING FENG	8789298	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
CHENG QING FENG 168	8789286	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O
CHENG QING FENG 268	8781612	IMO#	Chinese Taipei	Longline	N/A	✓	N/A	N/A	N/A	N/A	N/A	N/A	✓		FIP	Indian O

ISSF has prepared electronic monitoring (EM) vendors & FAD data submission information including (1) an EM vendor list; and (2) contact information for submitting (a) FAD tracking and echosounder biomass data; (b) bycatch data; and (c) data submission guidelines.

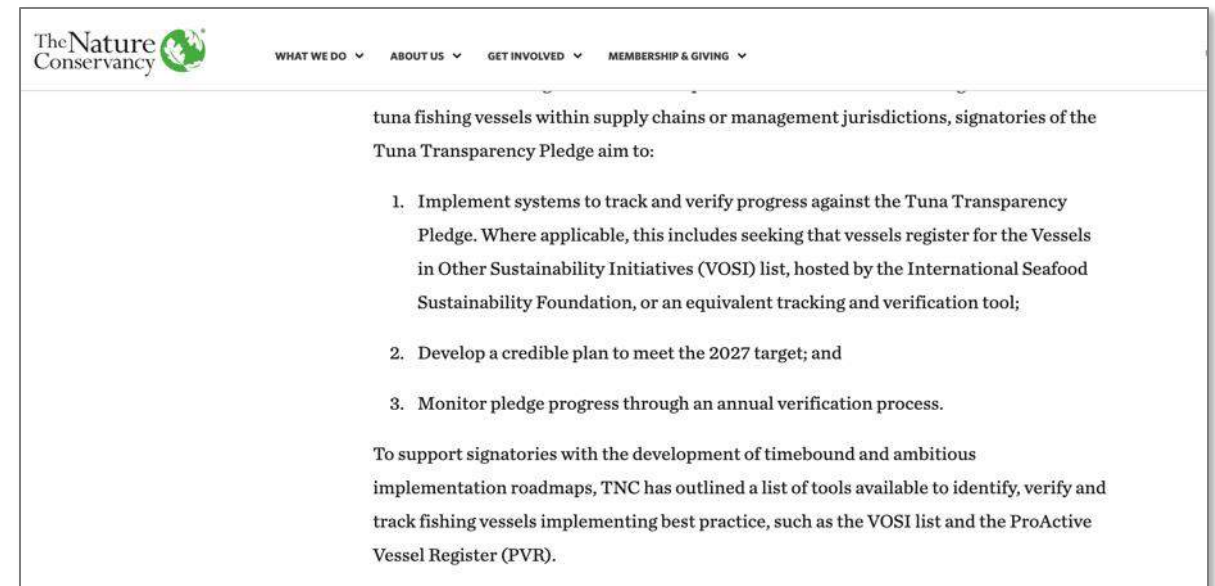
<https://www.issf-foundation.org/issf-downloads/download-info/electronic-monitoring-vendors-and-data-submission-information/>



- **ISSF is a partner in this work**
- **Objective:**
 - To review and discuss EM standards adopted/drafted by different tuna RFMOs and organizations from a technical point of view
 - Identify similarities and discrepancies among tRFMOs EM standards and propose a potential harmonization (not to lower EM standards but to compare them).
- **Activity: consensus building workshops** designed to identify minimum standards and best practices for Electronic Monitoring (EM) and Electronic Reporting (ER) for tuna RFMOs
- **Audience:**
 - Chairs of RFMO EM WGs, EM Scientists, EM Providers, tuna-RFMO Secretariat's Data managers.

- ✓ Column on the ISSF VOSI public vessel list shows vessel participation in EMS implementation
- ✓ Vessels listed on VOSI have to meet, or exceed, the minimum standards for EM as described in ISSF EM minimum standards for the implementation of EM systems in PS & LL
- ✓ ISSF contacting vessels, FIPs, MSC-certified fisheries encouraging vessels/fleets to apply to VOSI
- ✓ The Nature Conservancy Tuna Transparency Pledge includes VOSI re: verification
- ✓ EM is core component of ISSF RFMO advocacy

All RFMOs are developing or have adopted minimum standards for EM programs.



The Nature Conservancy

WHAT WE DO ▾ ABOUT US ▾ GET INVOLVED ▾ MEMBERSHIP & GIVING ▾

tuna fishing vessels within supply chains or management jurisdictions, signatories of the Tuna Transparency Pledge aim to:

1. Implement systems to track and verify progress against the Tuna Transparency Pledge. Where applicable, this includes seeking that vessels register for the Vessels in Other Sustainability Initiatives (VOSI) list, hosted by the International Seafood Sustainability Foundation, or an equivalent tracking and verification tool;
2. Develop a credible plan to meet the 2027 target; and
3. Monitor pledge progress through an annual verification process.

To support signatories with the development of timebound and ambitious implementation roadmaps, TNC has outlined a list of tools available to identify, verify and track fishing vessels implementing best practice, such as the VOSI list and the ProActive Vessel Register (PVR).



Thank You!

iss-foundation.org

Email: info@iss-foundation.org



Accelerating **Electronic Monitoring**

Driving transparency & sustainability in our fisheries

Craig Heberer

TNC Large Scale Fisheries Program

WWF EM Side Event – WCPFC21 Fiji

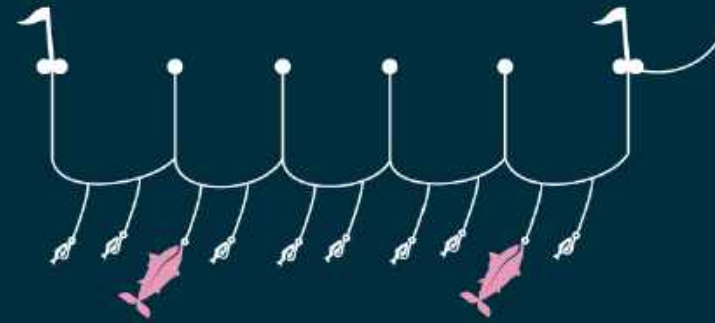
Illegal fishing on vessels is going unchecked.

Commit to 100% on-the-water monitoring of industrial tuna fishing vessels. A proven way to stop illegal, unreported and unregulated fishing.

Let's shine a light on the blind spots in the tuna supply chain.

#EyesOnTuna

5 MILLION
tons of tuna are caught
per year



LESS THAN 2%
of long line tuna are currently
monitored



1 IN EVERY 5
fish caught comes from
IUU fishing



Cooperative Pacific Island Longline EM Project 2016-2019



The Nature Conservancy
Large Scale Fisheries Program



Project Partners

- BMR Palau
- NORMA Federated States of Micronesia
- MIMRA Republic of Marshall Islands
- MFMR Solomon Islands
- National Offshore Tuna Fisheries Association of Japan
- Luen Thai Fishing Ventures
- Satlink/Digital Observer Services
- SPC



Deliverables

- Install EM systems & train support staff
- Establish In-country EM Data Review Centers
 - Train RFOP observers for EM analysis
 - Generate EM data, link with relevant databases
- Final report
 - Data standards/EM review challenges
 - Scaling up/increase regional EM coverage
 - Legislative/regulatory hurdles
 - Lessons Learned

- ✓ TNC IS **ADVANCING EM IN OVER 18 COUNTRIES GLOBALLY** WITH FISHERIES AGENCIES, COMMUNITIES, AND FISHING INDUSTRY.
- ✓ DIRECTLY **SUPPORTING SIX COUNTRIES' PUBLIC COMMITMENTS** TO EM.



Electronic Monitoring:

Our path to 100% fisheries transparency focuses on 4 areas:





Electronic Monitoring:

TECHNOLOGY

ON-THE-WATER

MARKETS

POLICY

Achieve critical mass and test new EM applications



AI & Automation

CASE STUDY: USING AI FOR RISK BASED REVIEW

If the trip has a high risk score - send a notification to the program director and flag the vessel for review by an EM analyst.



AI detection does not have to be perfect - it just needs to be good enough to create better review selections for high risk vessels.

AI is only one small part of the program - algorithms and additional data sources are equally important.



Electronic Monitoring:

TECHNOLOGY

ON-THE-WATER

MARKETS

POLICY

Create private sector demand for EM adoption

- ▶ Driving industry leadership and 100% monitoring commitments
- ▶ Deepening market engagements across the supply chain



© JASON HUSTON

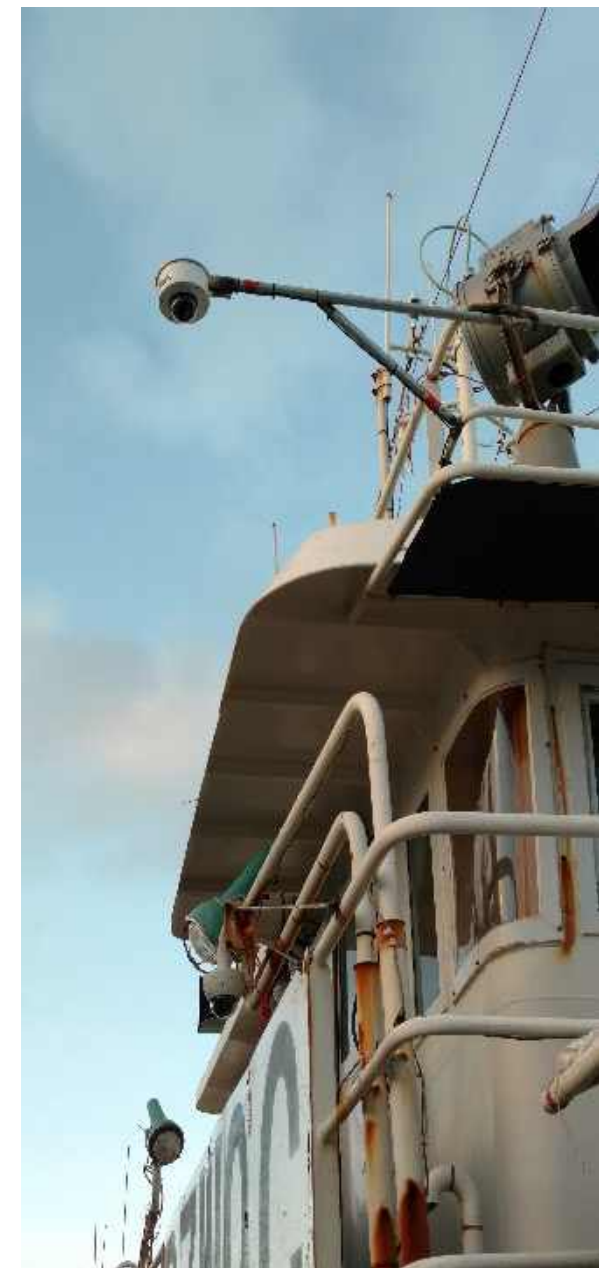
TNC's Private Sector Global EM Accelerator

Project Outputs

- EM shared infrastructure & performance standards
- Hardware bulk procurement
- Third-party video review & data annotation

Participants

- Longline vessels fishing in the Pacific, Atlantic, and Indian Oceans
- Thai Union, StarKist, Luen Thai Fishing Ventures
- TNC, ISSF, Key Traceability
- Governments, Regional Support Organizations



DATA SOURCES

Vessel Info

Log Reports

EM Reviews

3rd Party Data
(i.e., Sat data,
weather, etc.)

Ingest

Data Platform Example

Governance



Store & Access



Data Lake



Data Warehouse

Normalize

AI / ML / NLP Enrichment

Consume

DATA STORIES



Analysis



Reports



Applications



Notifications



#EyesOnTuna

Introduction

The Tuna Transparency Pledge is a global initiative, led by The Nature Conservancy, uniting actors throughout the tuna supply chain, to advance 100% on-the-water monitoring on all industrial tuna fishing vessels by 2027.

We're on a mission to end illegal, unreported and unregulated (IUU) tuna fishing worldwide.



Founding signatories:



Pacific Island Tuna

Private EM Program to Drive Continuous Improvement
in Sustainable Fishing Practices and Crew Safety



EM drives transparency, accountability, and sustainable fishing practices

Pacific Island Tuna requires EM with 3rd party data review and reporting on all partner vessels:

- ✓ **Verifies that sustainable fishing practices are upheld**
 - Verify best practices for bycatch handling including live release of ETP species
 - Monitor interactions with ETP species
 - No shark finning
 - No illegal retention or discarding

- ✓ **Verifies compliance with labor standards**
 - Crew safety - Safe working conditions, use of PPE
 - No physical abuse of crew or observers

- ✓ **Creates system of accountability when non-conformities are observed**
 - Fishing partners required to provide corrective action plans with the goal of driving continuous improvement on-the-water.
 - Major non-conformities including any IUU activities result in termination of the supply contract and possible referral to flag state authorities



Electronic Monitoring:

Our path to 100% fisheries transparency focuses on 4 areas:





FORUM FISHERIES AGENCY
REGIONAL LONGLINE FISHERIES ELECTRONIC MONITORING
STANDARDS, SPECIFICATIONS, AND PROCEDURES

TECHNICAL PROPOSAL

May 31, 2021

PREPARED FOR:

FFA Director General, FFA Tender Committee Forum Fisheries Agency (FFA)
P.O. Box 629, Honiara, Solomon Islands

PREPARED BY:

Rhea Moss-Christian
Independent Consultant

N. Barbara Hanchard
Independent Consultant





Electronic Monitoring:

TECHNOLOGY

ON-THE-WATER

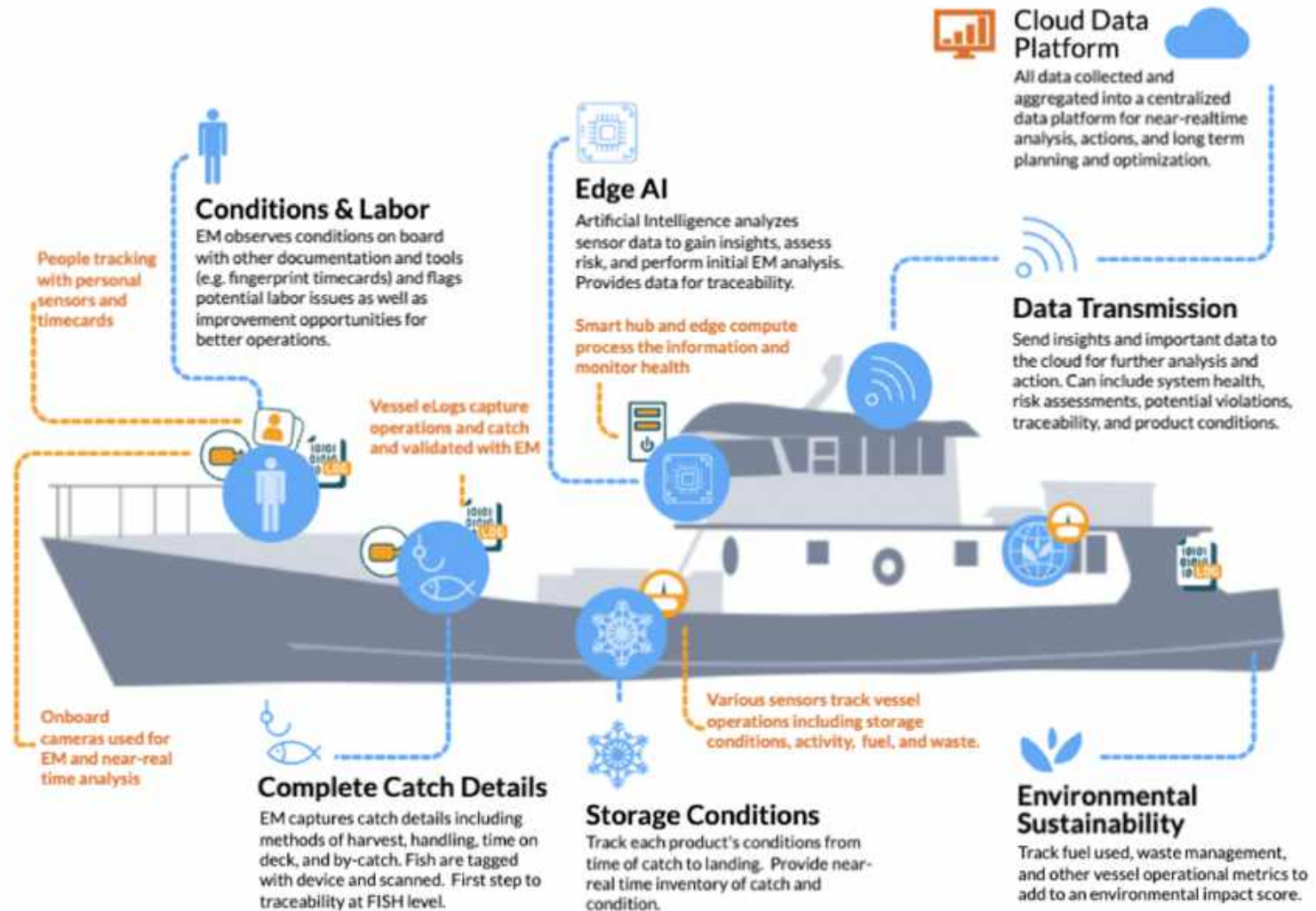
MARKETS

POLICY



productions

Future of EM tech?





Thanks for listening!
craig.heberer@tnc.org



GOVERNANCE OF EM FOR INDUSTRIAL TUNA FLEETS

November 30, 2024

Prepared by Melissa Garren & Mark Michelin

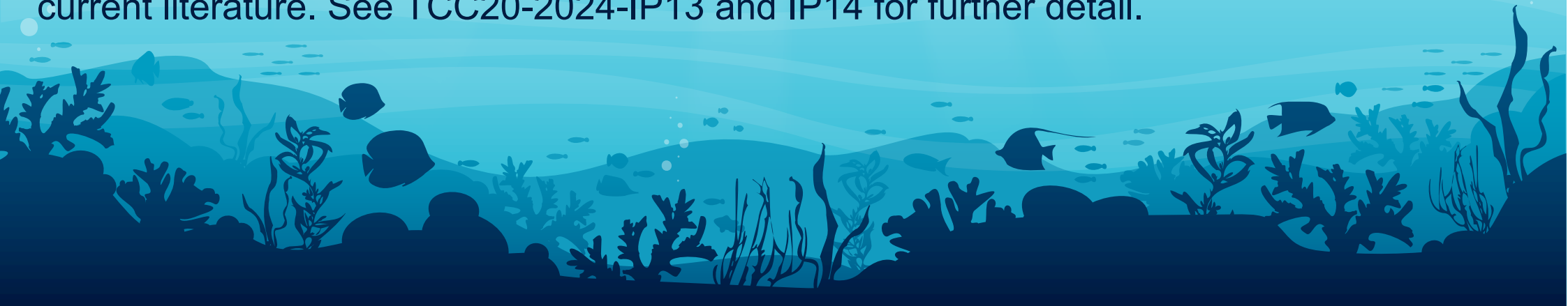


Introduction and Purpose

WWF is working on a project to provide guidance to coastal states on the governance of electronic monitoring (EM) to facilitate the smooth implementation of this important program to improve the management of tuna fisheries globally.

The project is funded by the Common Oceans program of the GEF/ABNJ implemented by FAO.

In the preparation of the document on EM governance, a key part has been consultation with government representatives to gather their ideas and address critical gaps in the current literature. See TCC20-2024-IP13 and IP14 for further detail.



Governance of EM at the RFMO level will require:

-  Definition of program objectives and requirements
-  Minimum standards for EM systems
-  National regulations/legislation on program requirements
-  Multinational or regional agreements
-  Specifications and procedures
-  Infrastructure
-  Consultation process or program
-  Training and personnel resources

4 What is Happening at the RFMO Level?

- 🐟 IOTC – First to adopt minimum standards for an RFMO
- 🐟 ICCAT – Adopted minimum standards in 2023
- 🐟 IATTC – Adopted minimum standards in 2024
- 🐟 WCPFC – Draft standards are under consideration

Other regional efforts include:

- 🐟 FFA – Adopted draft standards, specifications, and procedures (SSPs) for longline vessels in 2021
- 🐟 ISSF – Minimum standards for longline and purse seine vessels

How EM is Working to Scale

Streamlining program design to reduce costs and increase effectiveness

- 🐟 Defining data needs to meet program objectives
- 🐟 Leveraging other data collection programs (e.g., logbook audit model; discard monitoring to support dockside monitoring, etc.)
- 🐟 Review rates (100% analysis necessary to meet the program objectives?)
- 🐟 Data storage durations
- 🐟 Performance-focused standards to encourage innovation

Market development

- 🐟 Coordination on technical foundations (e.g., developing regional standards, progress on new MSC standard) and political foundations (e.g., large-scale commitments to EM from governments and industry (e.g., Walmart))
- 🐟 Bulk procurement coupled with harmonized performance standards

Technology advances

- 🐟 Fit-for-purpose systems
- 🐟 Automation and artificial intelligence (AI)
- 🐟 Data transmission options

Top Scenarios for EM Development

 **Centralized management**

 **Decentralized and harmonized management**

Scenario 1: Centralized Management

Advantages

- 🐟 Highest level of regional harmonization
- 🐟 Data immediately actionable to fulfill fisheries management mandates of RFMO
- 🐟 Easier to harmonize across RFMOs for vessels that fish in multiple jurisdictions

Challenges and Questions

- 🐟 Program design and implementation may be slower due to more stakeholders required to buy-in
- 🐟 Cost burden may reside more with the RFMO Secretariat

Scenario 2: Decentralized Management

Advantages

- 🐟 Highest level of autonomy for individual members/cooperating parties
- 🐟 Programs can be specifically tailored to meet localized needs
- 🐟 Members/cooperating parties can more easily progress towards implementation at different rates

Challenges and Questions

- 🐟 Members/cooperating parties can more easily progress towards implementation at different rates
- 🐟 Harmonization with RFMO requires more explicit attention and effort
- 🐟 Risk of disparate levels of data quality and quantity

Options for Interacting with Suppliers

- 🐟 Which parts of the process do you want to manage in-house vs. outsource to a provider/providers
 - 🐟 installation and maintenance?
 - 🐟 data transmissions?
 - 🐟 data review and analysis?
- 🐟 How will you ensure high quality data and integrity in the processes?
 - 🐟 Audit mechanisms? (by whom?)
 - 🐟 Feedback mechanisms between footage analysts and vessel/providers?
- 🐟 How will data review centers be managed?
 - 🐟 Who provides the training for analysts?
 - 🐟 Who undertakes the analysis? (e.g., in-house staff vs. 3rd party contractor)
- 🐟 Sole-source vs. multi-vendor program?

Why is a Certification Process Important?

- 🐟 To ensure high quality data is collected
- 🐟 To harmonize the tools being used throughout the region and ensure that everyone can rely on each other's data
- 🐟 To provide enough consistency and framework to enable audits against the standards, specifications, and procedures

Three General Options for Certifying EM Systems



Type Approval



Individual systems/components are evaluated by the RFMO or other designated regional body against minimum standards (also set by the evaluation body)



RFMO members/cooperating parties can then choose to implement any or all of the approved hardware and software components in their programs



EM Service Provider Approval



Individual EM Service Providers are evaluated by the RFMO or other designated regional body, and are re-evaluated/certified regularly.



Certified Providers are responsible for ensuring that all of their hardware, software, or services remain in compliance with the SSPs set forth by the RFMO/regional program.



RFMO members/cooperating parties can choose to work with any or all of the certified Providers



Minimum Standards



Standards are set by RFMO in conjunction with the regional EM policies



Individual members/cooperating parties undertake their own process of determining which systems meet (or exceed) the minimum standards, and approve them for use in their own programs

Option 1: Type Approval¹² assessed by a regional body

Advantages

- 🐟 Excellent Regional harmonization
- 🐟 Lower cost to members (as regional body does the approval process)
- 🐟 Providers do not have to submit to multiple countries for approval
- 🐟 Process is familiar from VMS
- 🐟 Lower risk than a minimum standards approach for low-performing systems to be approved

Challenges and Questions

- 🐟 Cost burdens:
 - 🐟 For RFMO Secretariat to review each individual system
 - 🐟 For Providers to resubmit each new generation of a system for approval
- 🐟 Difficult to keep standards up to date with changing technology, and may constrain innovation
- 🐟 Less autonomy for RFMO members/cooperating parties

Option 2: EM Provider Approval assessed by a regional body ¹³

Advantages

- 🐟 Good regional harmonisation
- 🐟 Lower burden on the designated review body (RFMO or otherwise)
- 🐟 Greater burden (but more autonomy) for members/CPs to get an acceptable system
- 🐟 Providers do not have to submit to multiple countries for approval
- 🐟 Most strongly incentivizes innovation from Providers
- 🐟 Performance-focused

Challenges and Questions

- 🐟 Potential barrier for entry for unproven Providers
- 🐟 The flexibility granted to certified providers may be risky, particularly for relatively new/unproven entities
- 🐟 Requires regular feedback between Certified Providers and EM Data Analysts/EM Data Users to ensure any problems are rapidly resolved, and high quality is maintained

Option 3: Minimum Standards assessed by RFMO members/CPs¹⁴

Advantages

- 🐟 Most autonomy for each individual member/ cooperating party
- 🐟 Lower cost burden on Regional body as it only needs to set and maintain standards, not do assessments

Challenges and Questions

- 🐟 Higher cost burden on members/CPs as each program must conduct its own approval process
- 🐟 Repeat work for Providers, who must submit their offerings to multiple independent review processes
- 🐟 **Harmonization risk:** highest potential for divergent performance across the region based on interpretation of and assessment against the minimum standards



Thank You!

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