

# Five Years of Electronic Monitoring Onboard Tropical Tuna Purse Seiners

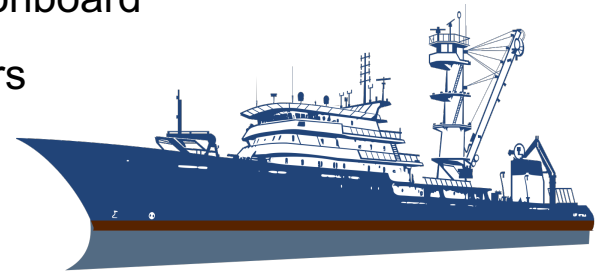
Side Event • Víctor Restrepo, Jon Ruiz, Gala Moreno  
Friday, 24 August 2018 • 93<sup>rd</sup> Meeting of the IATTC

**ISSF**

INTERNATIONAL  
SEAFOOD  
SUSTAINABILITY  
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# Background

- **≈ 86%** — Percentage of tropical tuna caught by purse seine vessels in the EPO
- **>230** Tropical tuna purse seine vessels authorized by IATTC
- **100%** observer coverage only applies to Class 6 PS vessels
- **28%** of object sets are made by vessels below Class 6
- Need to improve monitoring: increase coverage and collect new data
- Observers: a single person can not follow all activities onboard
- Some vessels do not have space for a human observers
- Observer safety concerns



# Background



## 2011 adopted – 2013 effective

ISSF Conservation Measure 4.3(a) requires ISSF Participating Companies to "conduct transactions only with those large-scale purse seine vessels that have 100% observer coverage (human or electronic if proven to be effective). Applies to PS vessels  $>335\text{m}^3$  (some below Class 6).

## 2012

First EMS pilot studies on tuna purse seiners: AO, IO, CPO. Funded by ISSF

# Background

2012 – 2016

Since 2012, at least 4 different EMS vendors have been tested on PS.



# Background

**2014 – 2015**

The ICCAT/IOTC Scientific Committees recommended that standards for EMS would need to be developed, specially for purse seiners.



**2016**

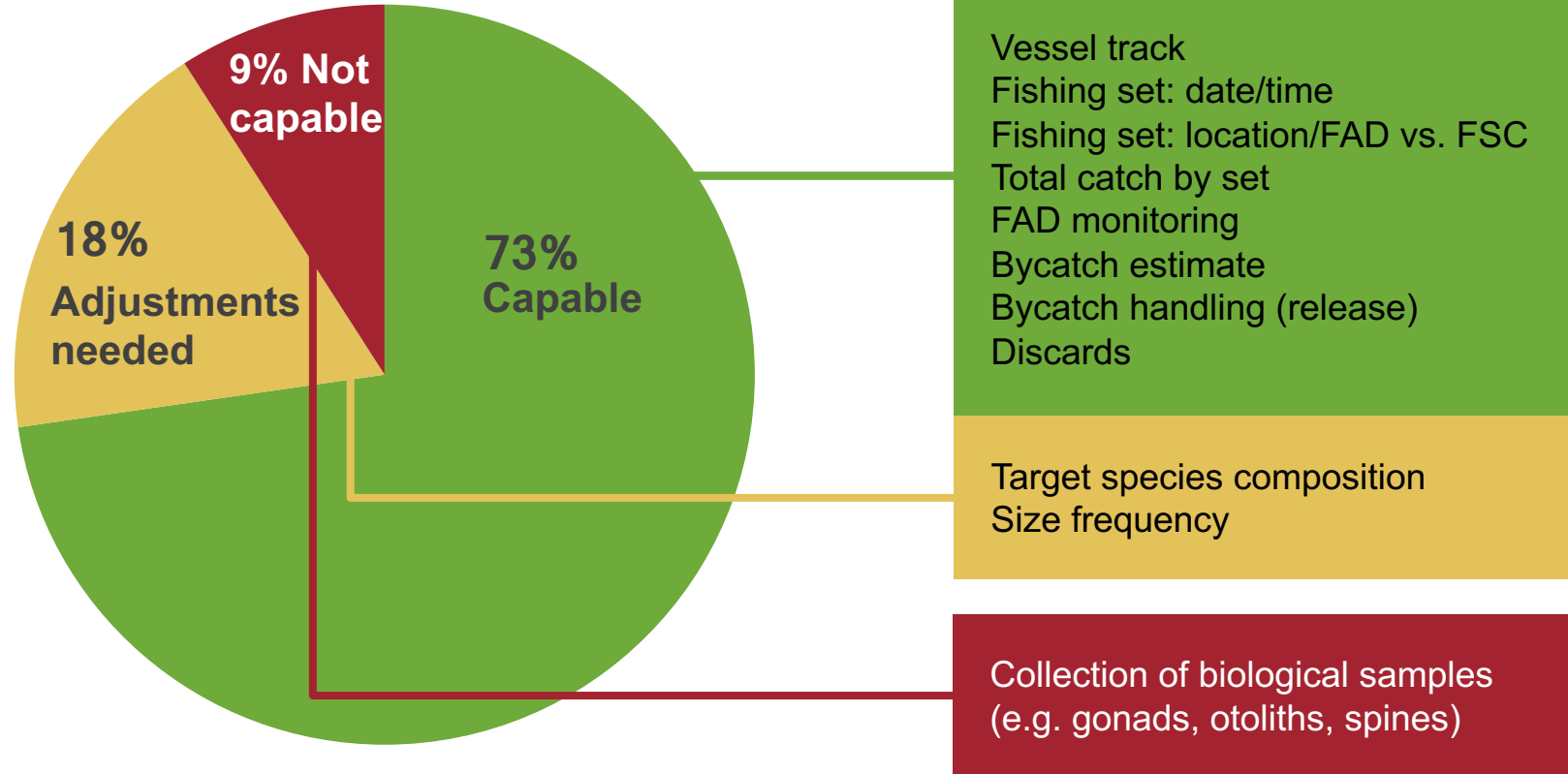
These minimum standards were developed and adopted by ICCAT/IOTC.



**2016 – 2017**

Pilot studies have given way to the implementation of EM programs (e.g. Spain).

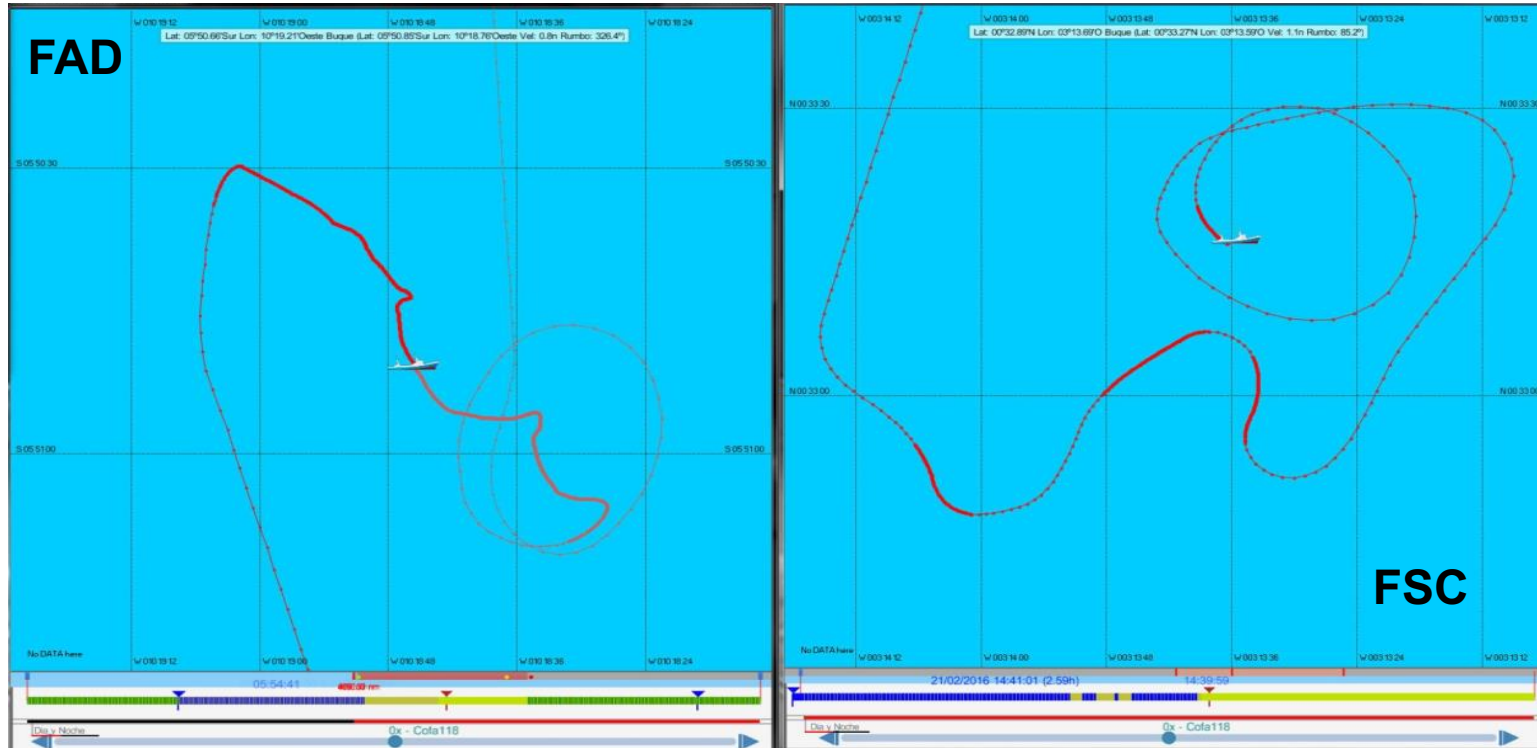
# EMS capabilities to conduct observer duties



Some level of human coverage will always be needed

# EMS capabilities to conduct observers duties

## Location and type of sets



# EMS capabilities to conduct observers duties

## Total catch by set



Gofa175: 19/11/2016 03:44:22 UTC (04:44:22 Local Time) 07°23.52'S 62°42.11'E



Consola179: 15/11/2016 10:05:46 UTC (11:05:46 Local Time) 02°17.84'S 57°37.70'E





# EMS capabilities to conduct observers duties

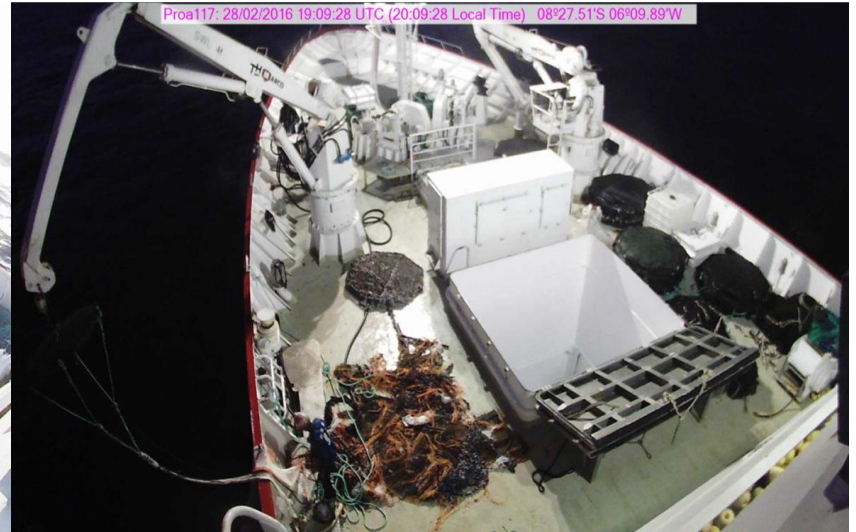
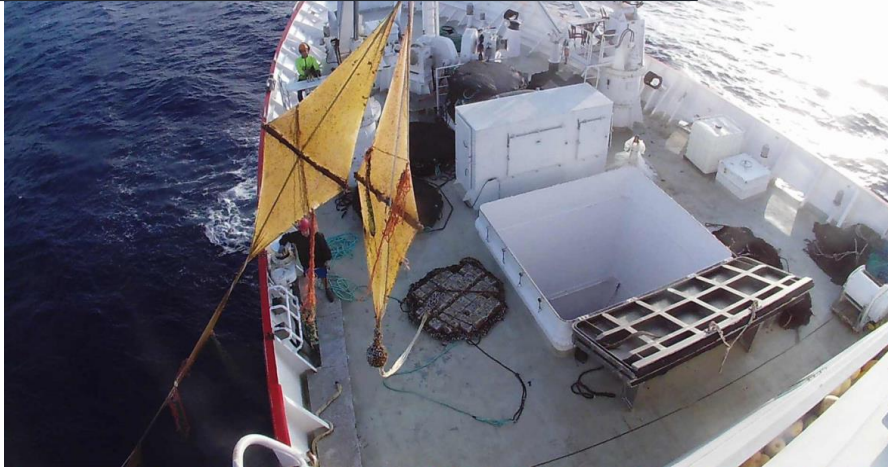
## Bycatch estimates



Good for large specimens

# EMS capabilities to conduct observers duties

## FAD monitoring



Good. Also tested on supply vessels



# EMS capabilities to conduct observers duties

## Target species composition



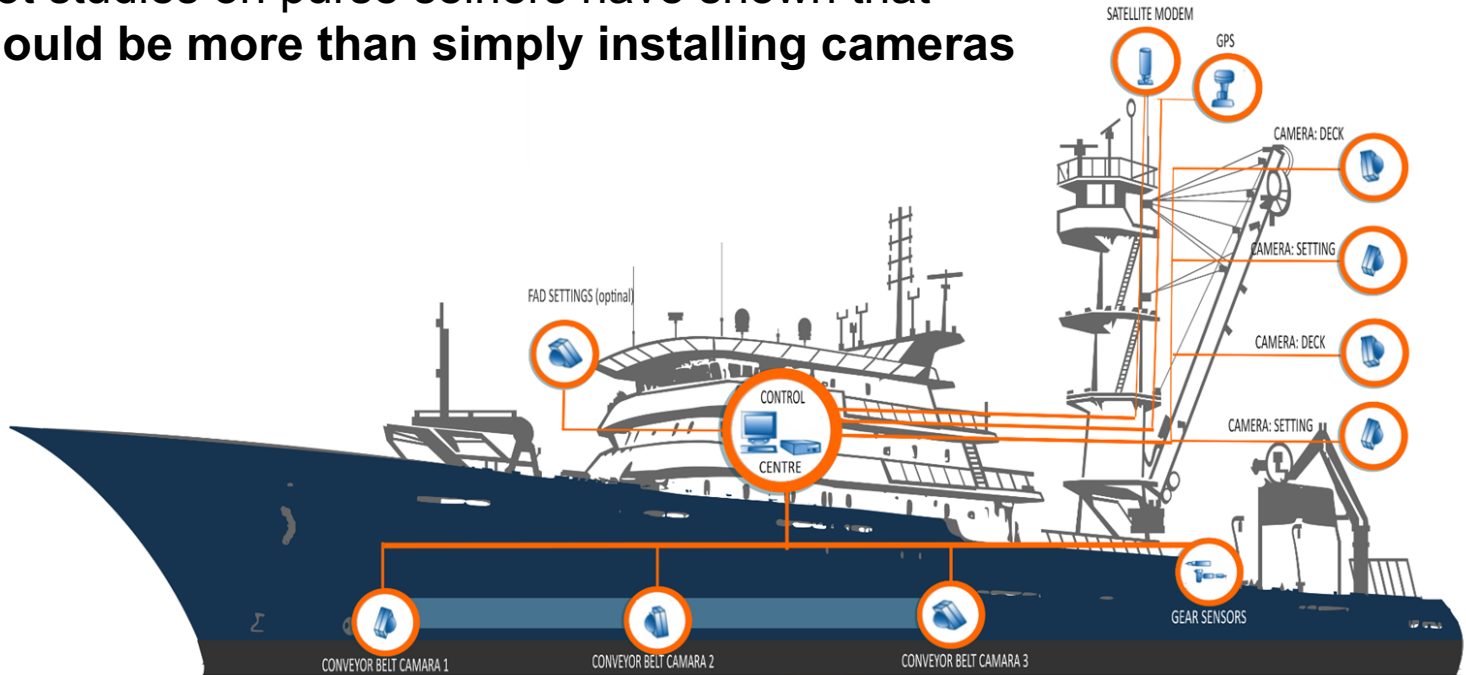
Needs work

# EMS capabilities to conduct observers duties

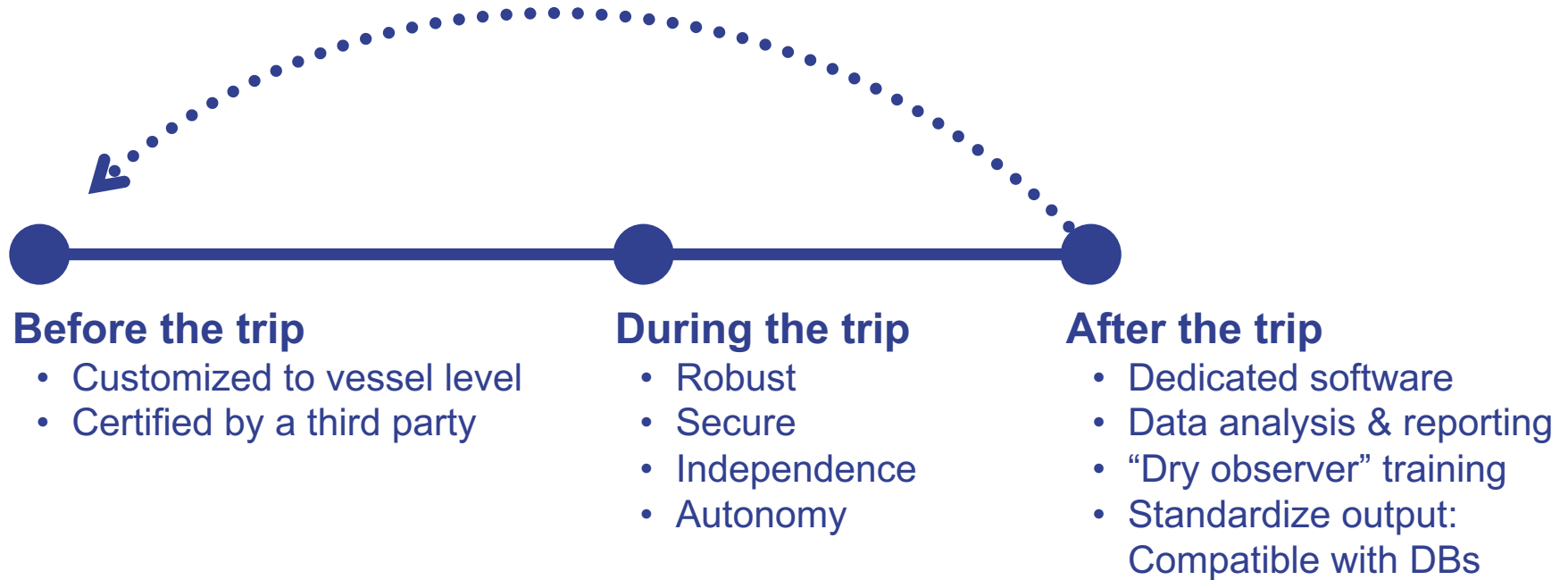
CAPABILITIES	POTENTIAL USES
<b>COMPLIANCE</b>	<ul style="list-style-type: none"><li>• Area/time closure monitoring</li><li>• Full retention, or obligation to release certain species</li><li>• Total Catch in a given EEZ</li><li>• High seas transshipment</li><li>• Ecolabels</li><li>• Use of FADs</li></ul>
<b>SCIENCE</b>	<ul style="list-style-type: none"><li>• National observer program (limited even if many tasks included in the protocol can be conducted)</li></ul>

# Minimum standards

- EMS pilot studies on purse seiners have shown that **EMS should be more than simply installing cameras**



# Minimum standards for EM



# Conclusion

- ✓ **Data collected by EM** would **only be useful if it is collected in a consistent way**, following developed minimum standards for PS.
- ✓ **Both human observers and EMS** are **complementary**, each with their own weaknesses and strengths.
  - **Science:** Currently limited for a purely scientific monitoring program, covering all observers' tasks. However, EM is valuable where it is difficult to place an observer onboard, or to increase the coverage achieved by human observers.
  - **Compliance:** EM has the advantage from the point of view of inviolability of the data, the possibility to review images as many times as desired and the lower cost.

EM also useful when there are human safety concerns with observers

# Next steps in IATTC region

## Improving data collection

- Proof-of-concept study is in progress

Román et al. 2018. [http://www.iattc.org/Meetings/Meetings2018/SAC-09/PDFs/PRES/English/SAC-09-PRES\\_Electronic-Monitoring-\(EM\)-of-Purse-Seine-Vessel-Activities-and-Catches.pdf](http://www.iattc.org/Meetings/Meetings2018/SAC-09/PDFs/PRES/English/SAC-09-PRES_Electronic-Monitoring-(EM)-of-Purse-Seine-Vessel-Activities-and-Catches.pdf)

- FAD use by Class 1-5 vessels: Electronic monitoring (EM)
- Test EM for collecting catch and operational information, including data on FAD deployments and FAD sets.

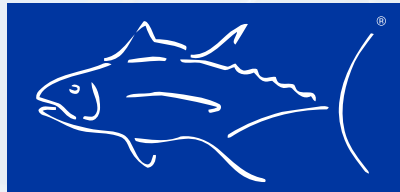
**Support from fishing industry needed to advance towards EM implementation**



# Thank you

For more information:

- **ISSF 2018-04**  
[Minimum Standards for Electronic Monitoring in Tropical Tuna Purse Seine Fisheries](#)
- **ISSF 2016-07**  
[Application of Electronic Monitoring Systems in Tuna Longline Fisheries. International Workshop](#)
- **ISSF 2018-03**  
[Efficiency of Electronic Monitoring on FAD-Related Activities by Supply Vessels in the Indian Ocean](#)



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