



MARITIME



Lessons learned on “Good Practices Project”
Regional EM Process Standards Workshop
Noumea, 2017-11-22

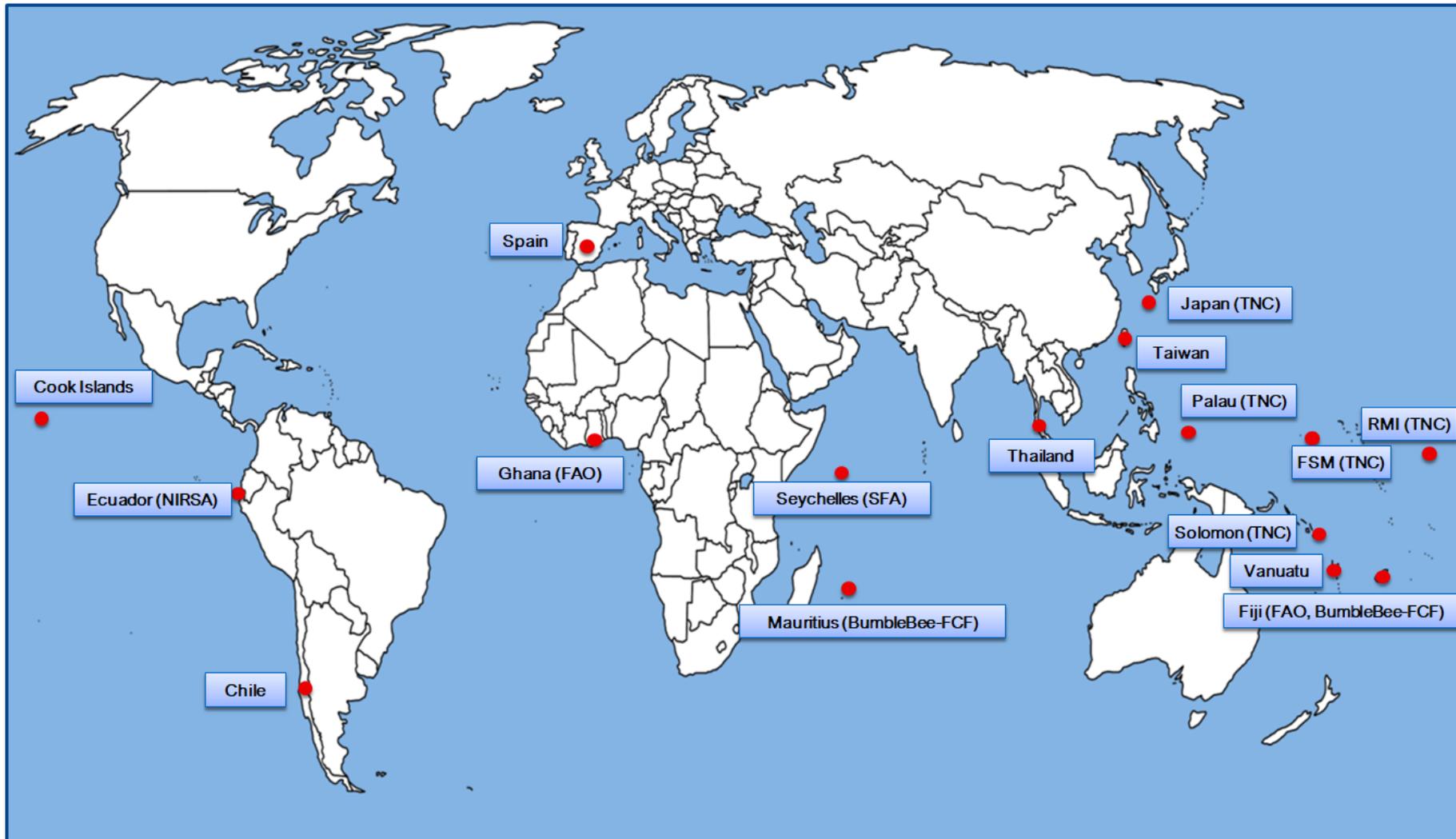
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SeaTube Electronic Monitoring System

EM installations

Purse seiners: 44 Longliners: 99 Supply vessels: 13 Reefers: 1 Trained Observers: 90



Success story

Good Practices Project in Spain - Description

Code of Good Practices Project (OPAGAC)

- Satlink as service provider
- 19 PS equipped with Satlink SeaTube system
- Expected data is defined by AZTI
 - Monitored by AZTI that certifies AENOR “Tuna from Responsible Fishing” Certification of 100% observer coverage and Global Tuna FIP with WWF.
- Digital Observer Services as EM analysts



Success story

Good Practices Project in Spain - Design

Good Practices

- 24/7 recording
- FAD interaction, Sets, Brails, Discards, Bycatch
- At least 6 cameras:
 - C1: Set type information
 - C2: Brailing, Bycatch, discards
 - C3: Cranes and FADs
 - C4: Conveyor belt
 - C5: Bycatch below deck
 - C6: Discards below deck



Success story

Good Practices Project in Spain – Expected data

Main Objective:

Good Practices agreement compliance verification.



Collected data per trip: (PS)

- Fishing time and areas
- Number of sets.
- Type of sets (Free, FAD, WS, Mam).
- Bycatch: Sharks, Turtles, Mantas.
- Handling and release methods.
- FAD related operations.
- FAD component descriptions



Results: (1 year)

1689 Sea days
62 trips from 19 boats

4 EM Analysts

Collected data per trip: (Supplies)

- Fishing time and areas
- FAD related operations.
- FAD component descriptions



Results: (2 years)

5417 Sea days
127 trips from 16 boats

2 EM Analysts

SeaTube, Electronic Observer System

SVM software designed for video footage review



Office Observer



SVM works based on “**declarations**”. Each time a “land-observer” sees something creates a declaration (click)

Each declaration (event) can be customized: “Report Start”, “Catch”, “Discard”, “Bycatch”...

For all declaration:

- Latitude
- Longitude
- Timestamp
- Snapshot
- Specific fields for that declaration



Success story

Good Practices Project in Spain – Lessons learned

“Traditional” analysis

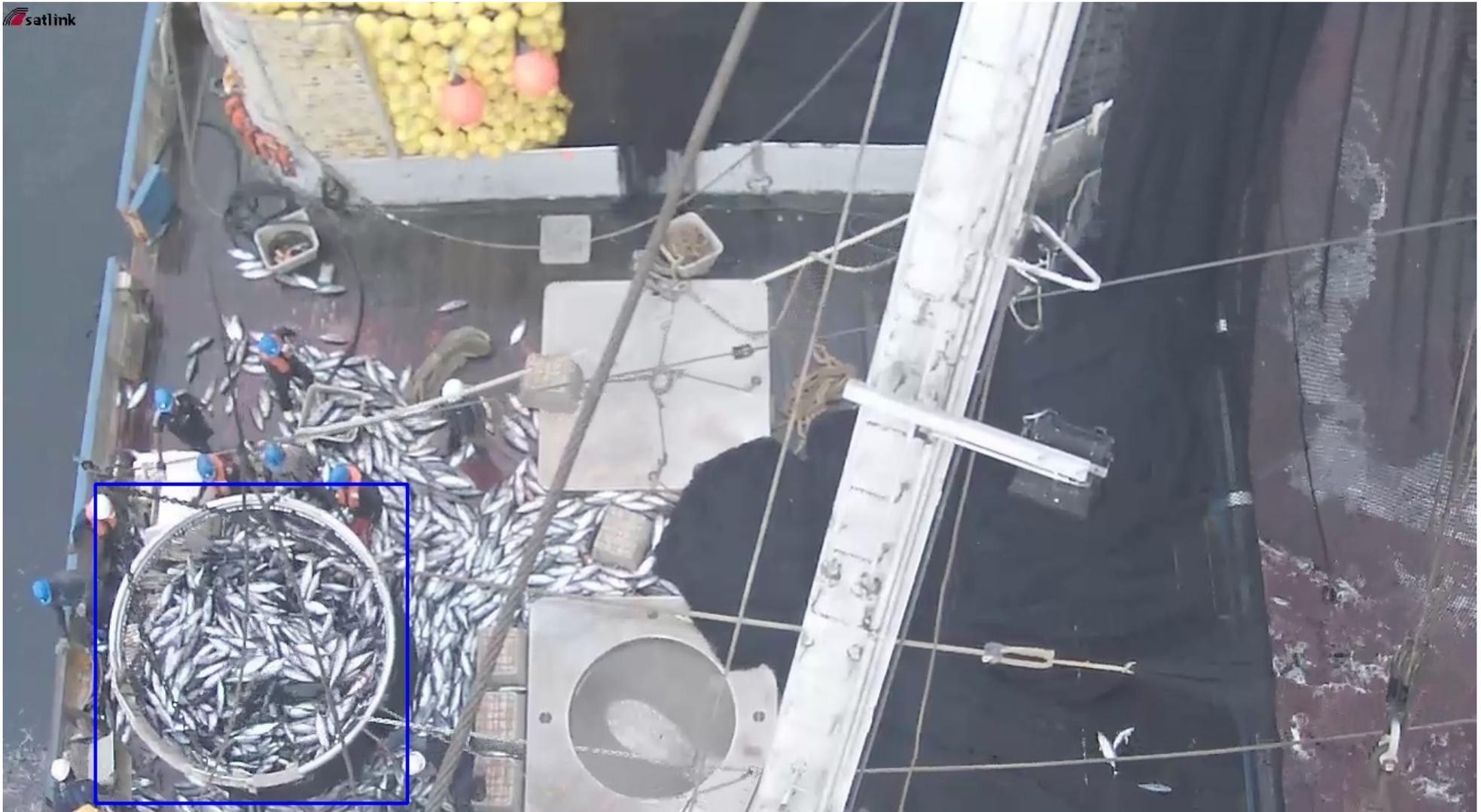
- Satlink has been working on EM for PS since 2013.
- The scope / depth of the analysis is the key point for this kind of projects to be scalable.
- Statistics (sampling) ?
- Time consuming task

Machine Learning & Image Processing

- We’re working on this field since 2015.
- On Purse Seiner vessels:
 - Brail detector algorithm
 - Set detector algorithm
 - ...
- On Longline vessels:
 - Setting/hauling detector
 - Catch detector
 - ...
- Detections
- Reduction on the analysis time
- Accuracy

Machine Learning and Image Processing

Brail detector examples



Machine Learning and Image Processing

Brail detector examples



Machine Learning and Image Processing

Catch detector example



Future

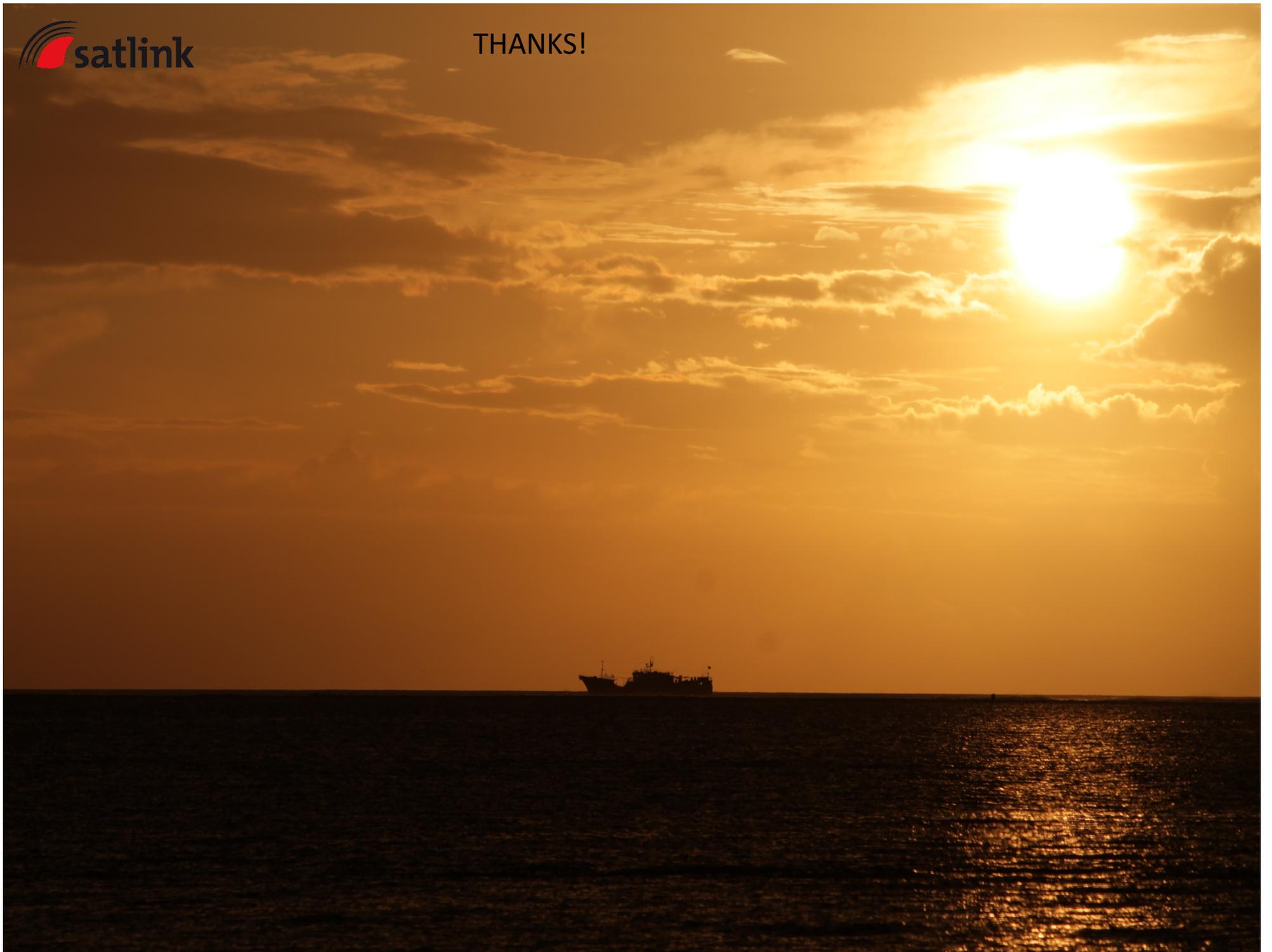
Where do we go now?

- Species recognition
- Combine different sources to create new detections and speedup the analysis
- Create scalable systems
 - More coverage!





THANKS!





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