FORUM FISHERIES AGENCY
BIG DATA AND AI IN THE FFA REGION
WORK IN PROGRESS

Governance of High Seas Ecosystems:
Big Data & AI Workshop

Sargasso Sea Commission and NLA International

Wednesday, March 2nd, 2022

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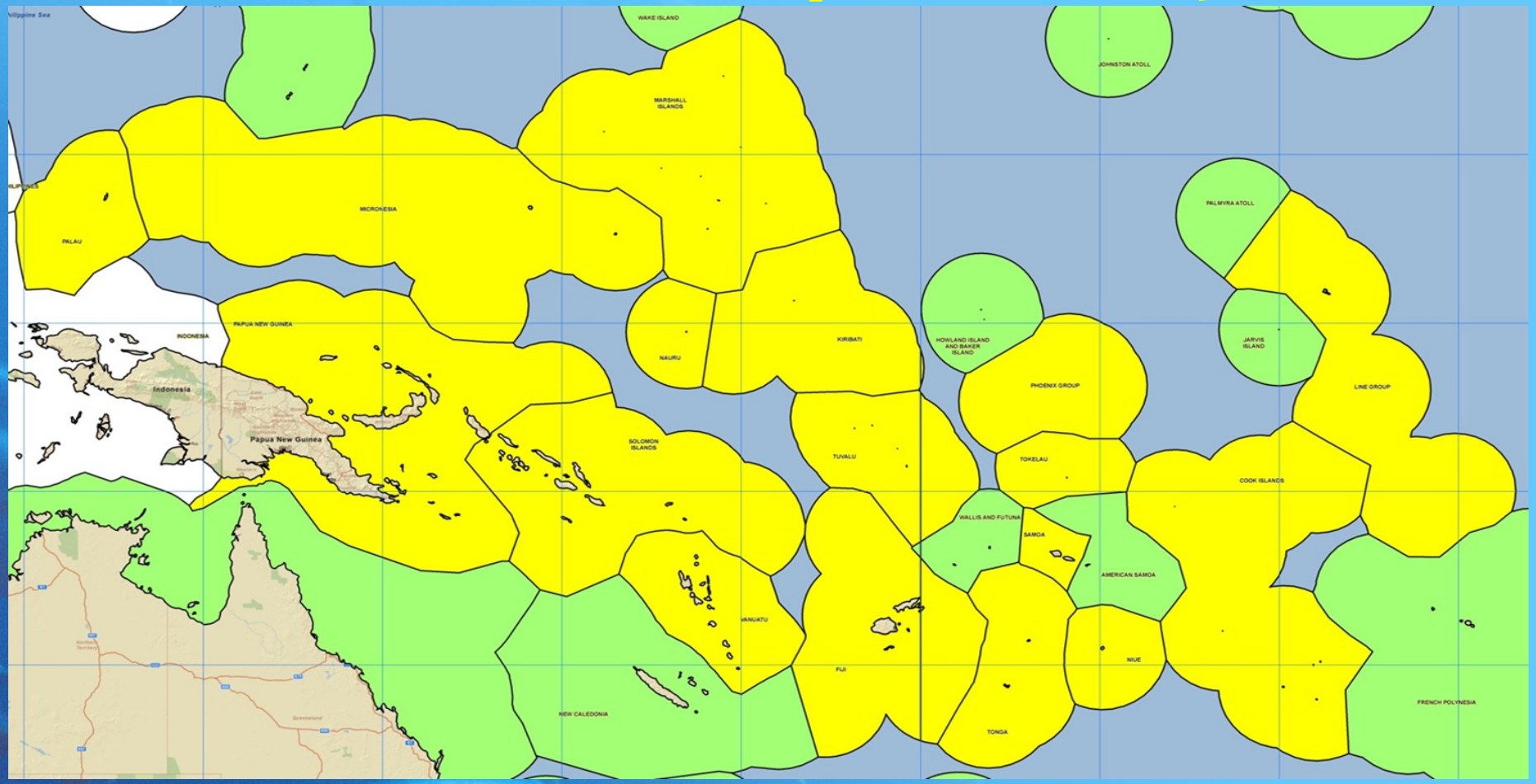
PACIFIC

Forum Fisheries Agency

Area of Responsibility

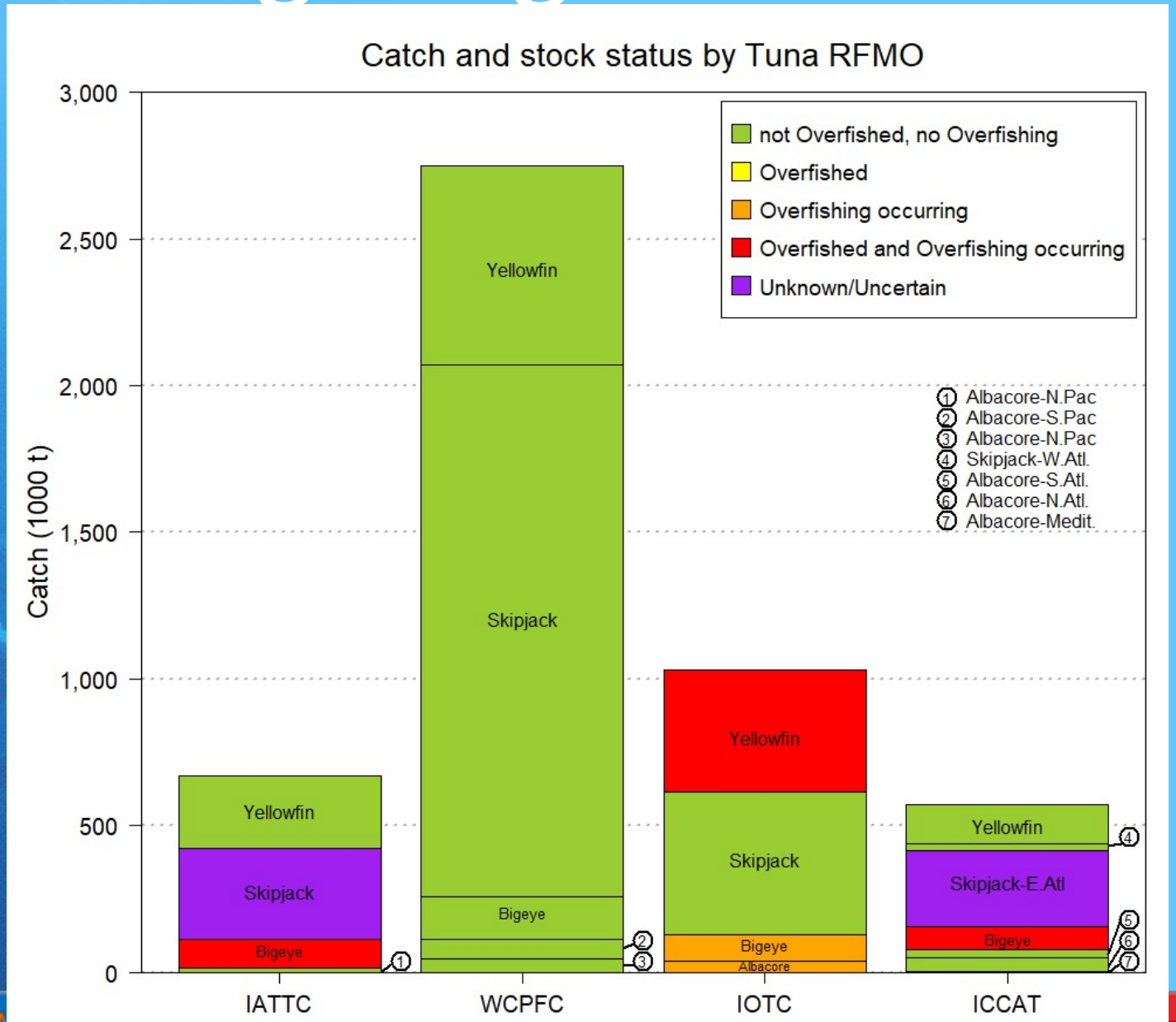


FFA overview

WCPO Region – Data Systems Background

- EEZs & adjacent High Seas cover 30M km² (not inc AU & NZ)
- 17 FFA Members
- Three key agencies – WCPFC, SPC Oceanic Fisheries Program division of the Division of Fisheries, Aquaculture and Marine Ecosystems) Forum Fisheries Agency – Divisions of Fisheries Management, Fisheries Development and Operations – MCS, - including the Regional Fisheries Surveillance Centre and Parties to the Nauru Agreement
- Worlds largest and most productive tuna fishery
- Comprehensive data sources – VMS, AIS, RFSC,Logsheets, Observer reports, transhipment and unloading data, tuna tagging, WCPFC Part 1 and 2 reports
- Combined inter-agency Data Collection Committee
- Comprehensive suite of WCPFC CMMs and part 1 and 2 reporting – science and compliance

The giant green tower

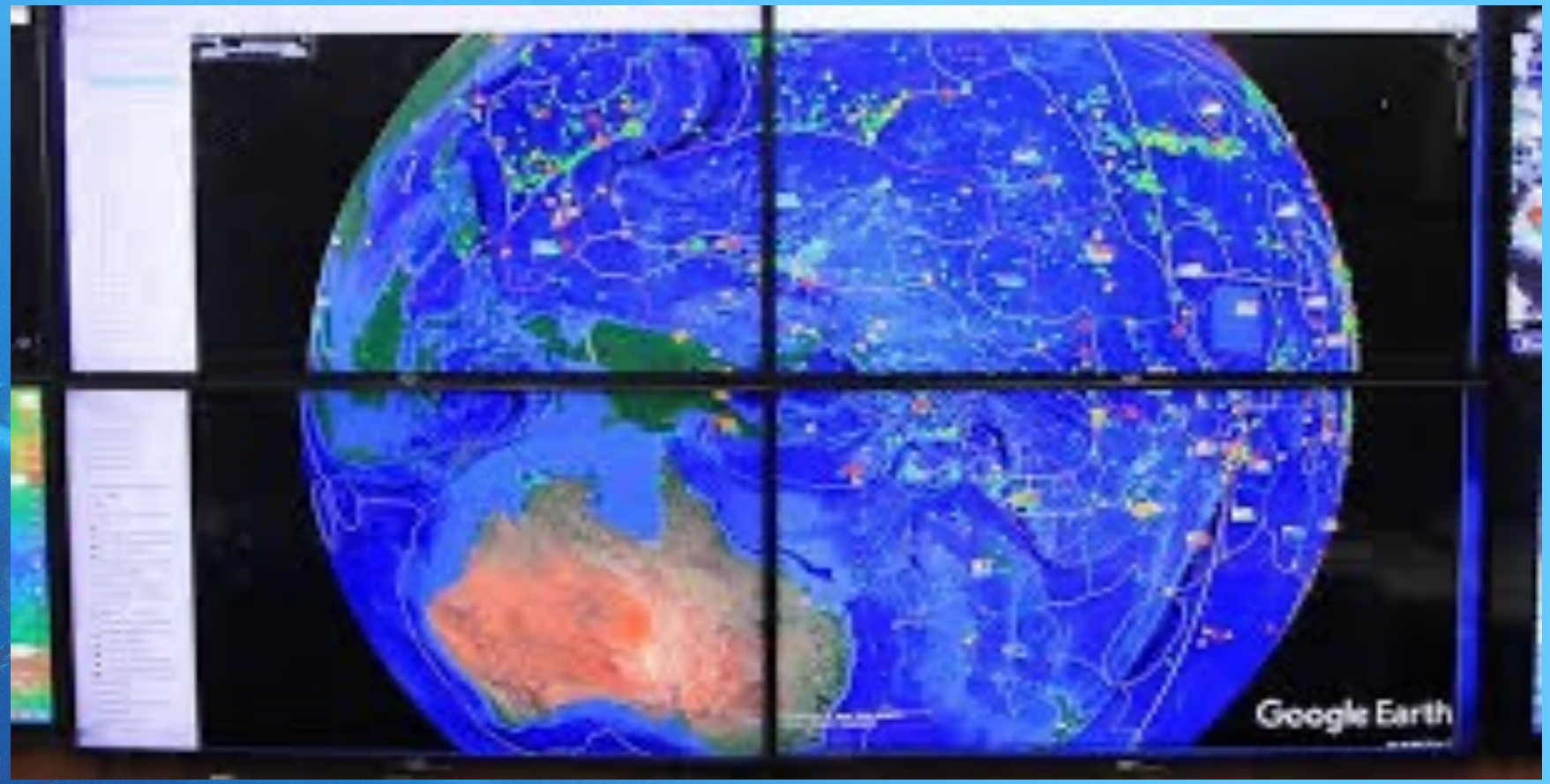


Presentation Focus on FFA and Emerging Technology

IUU mitigation - Ongoing work in progress

- IUU quantification studies 2016 and 2021 –
- 2016 - the 'first cut' estimates in the 2016 study of 306,440t (276,546t to 338,475t) with a **best estimate value of $616.11m ($517.91m to $740.17m)**
- 2021 - best estimate volume was 192,186t, with 90% confidence that the actual figure lies within a range of 183,809t to 200,884t. The best **estimate vessel value of the best estimate figure is $333.49m. The 90% confidence range is between $312.24m and $358.17m**
- IUU mitigation strategies - purse seine fleet is subject to comparatively very strong MCS arrangements including 100% observer coverage, a requirement to tranship in port and a requirement for e-reporting, MCS arrangements for the longline sector are weaker with lower observer coverage, a far higher proportion of effort on the high seas, a higher proportion of the catch transhipped at sea. Focus needs to be on strengthening measures to monitor and validate catch both on longline vessels and as it moves through the supply chain

FFA and Emerging Technology
The Regional Fisheries Surveillance Picture
VMS and AIS

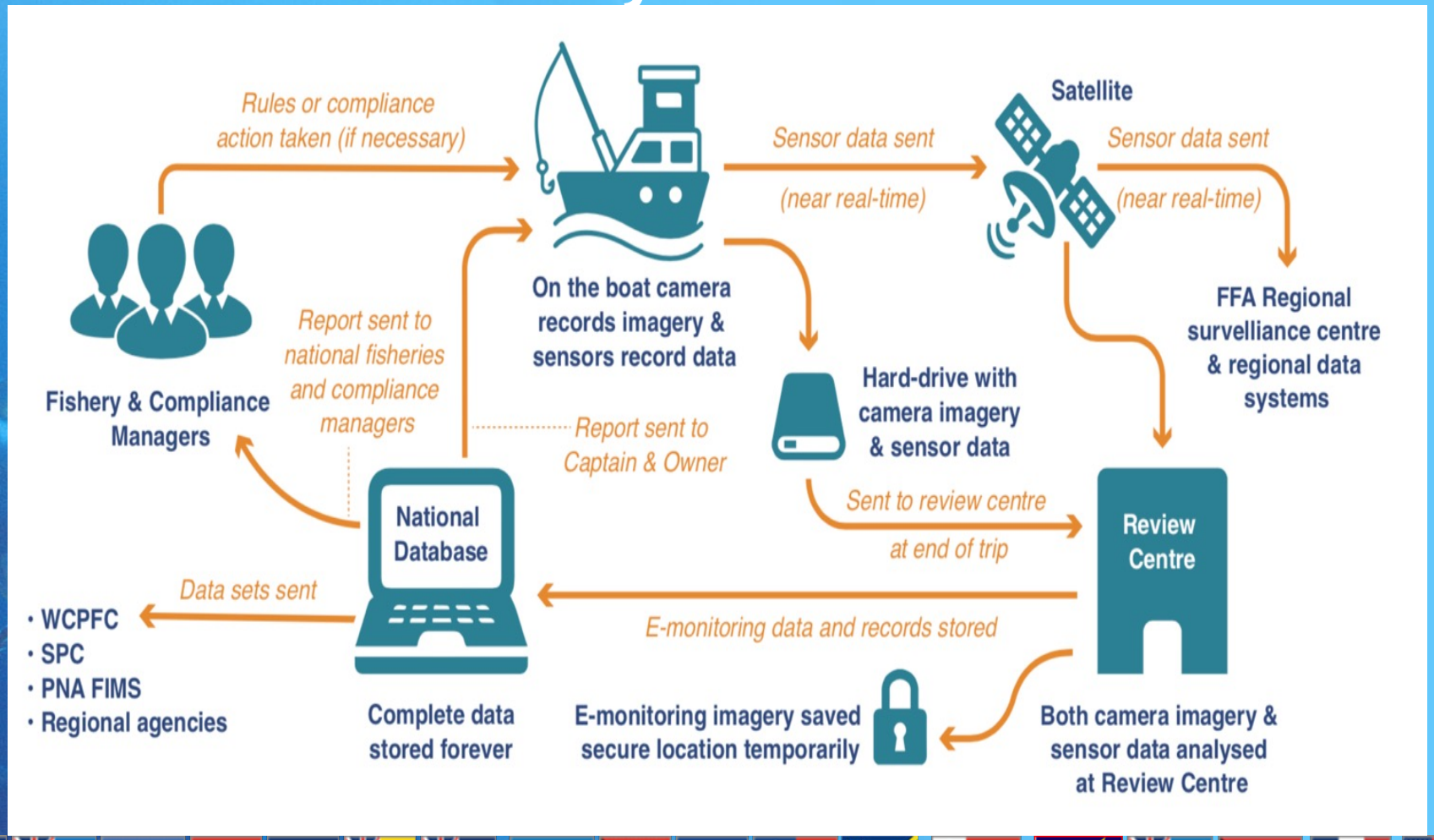


Surveillance – The big picture

- **At sea Monitoring**
- **Fisher reported.** Logsheet
- Zone entry/dep, Transhipment / bunkering
- Observer, VMS, E-monitoring

- **Independent Port monitoring**
- Inspections, Unloading forms
- Port sampler/observer,
- CDS and traceability
- **At sea boarding and Inspection**
- **Arial Surveillance**
- **Satellite Upload**
- **Data analysis**

Big Data and AI – the FFA context- the EM system



EM issues and solution options

- Hard drive data storage – hard drive transfer
- Hard drive analysis – manual systems

Solution

- Supporting advancing new technology
- Satellite upload and cloud based data storage
- AI algorithms applied to analysis

FFA and EM Technology AI Development

New GEF/UNDP/FFA Oceanic Fisheries Project

Support for emerging technology

Output 2.1.1: Strengthened on-board monitoring (observers and electronic monitoring and electronic reporting systems)

Output 2.1.2: Improved frequency/accuracy of monitoring and reporting at port state level (including catch documentation) emphasizing the objective of reducing and eliminating IUU through PSMA, electronic surveillance and subsequent interdiction.

Output 2.1.3: Review existing mechanisms for strengthening vessel tracking as well as tracking/tracing provenance and movement of catches to the market and feasibility of introducing any new and/or potential improvements, in partnership with industry

The Governance of High Seas Ecosystems & Big Data

- Provides us with an excellent review of the current state of play for big data and AI
- Achieves its goal to articulate the potential opportunities in the application of Big Data and AI in supporting future ocean governance at the global level
- Is a great tool to utilise in the advancement of opportunities to enhance data utilisation and mitigate IUU