

Title – Innovative technologies for surveillance across the UK
Overseas Territories

Seafood and Fisheries Emerging Technology Conference
Bangkok
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Compliance & Enforcement



Marine
Management
Organisation



Centre for Environment
Fisheries & Aquaculture
Science



Funded by
UK Government

Introduction

- Background on the MMO and the Blue Belt programme
- Programme and UK-OT context
- Technology work within the programme
- Technology work within the UK



Image Credit-
MMO

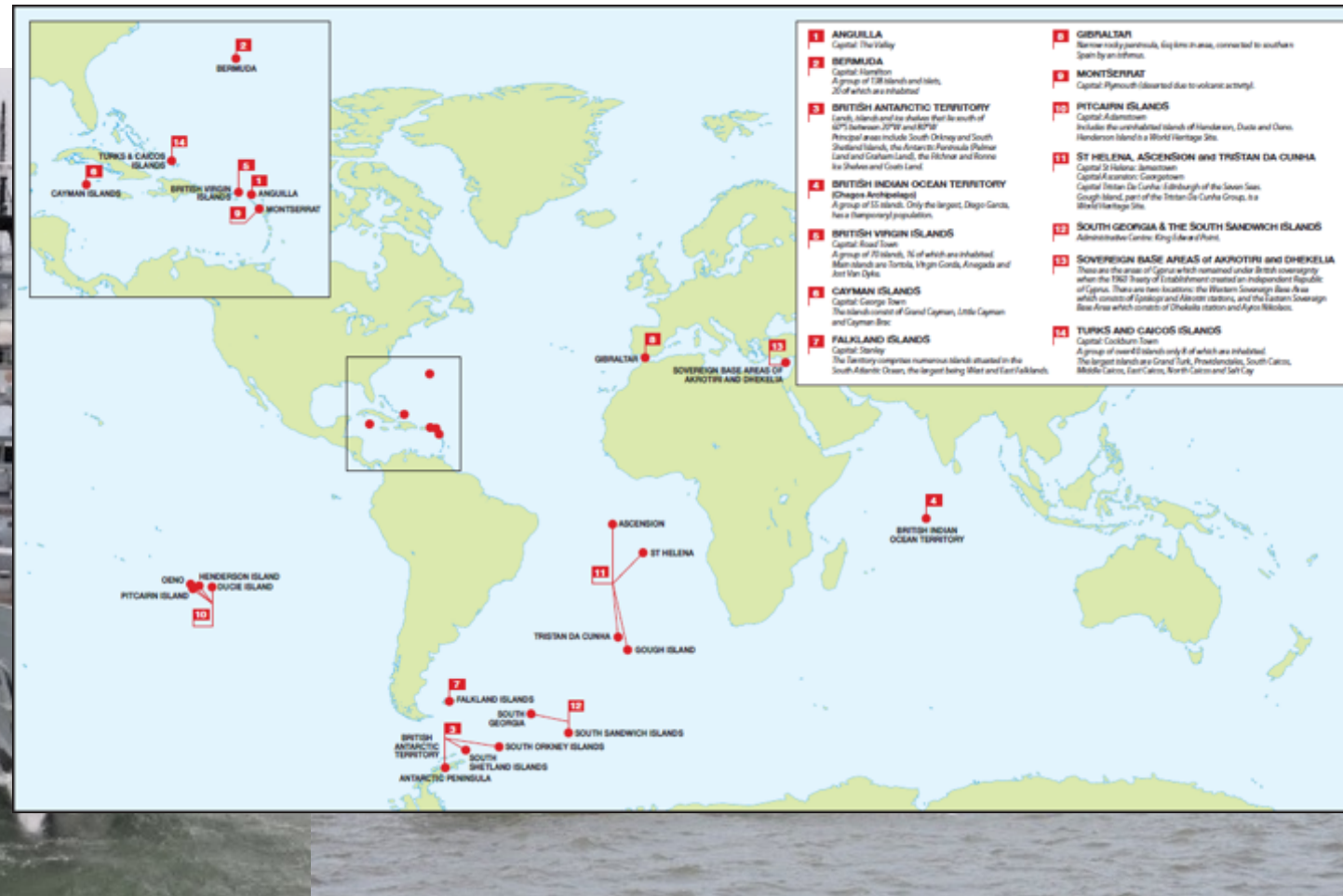
MMO and Blue Belt Pro

Back

Where

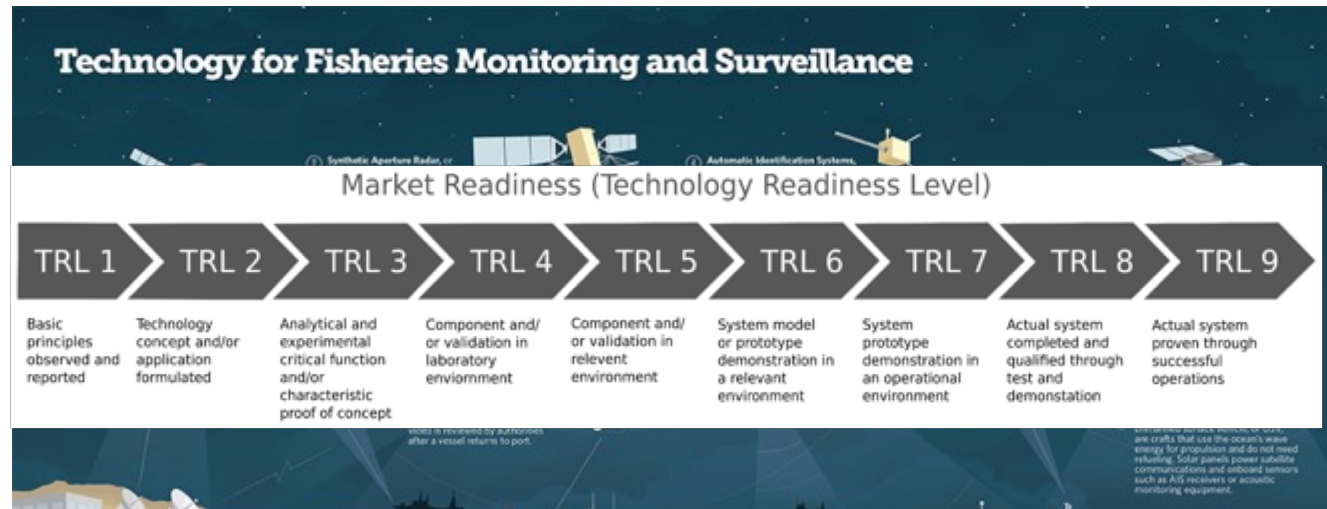
Northern Ireland
mechanism (u
development)

Welsh Asse
Government



Blue Belt Programme and UK-OTs – context

- Challenges to UK-OTs
- Technological options and review
- Legacy and impact



- **Short-term:** Trialling front-runner technologies; focus on High Technology Readiness Level (TRL) – reduced risk
- **Medium and long term:** What might be relevant? – Technology Roadmaps

Blue Belt Technology Roadmap Project

- Technology Roadmaps:
 - Appraised assessment – suite of technologies options for each OT in the short, medium and long term
 - Cross-cutting issues
 - Considering long-term implementation and integration
- Basis: Understanding requirements and opportunities

No discussion on the use of future technology should take place without being in the context of a set of well understood requirements

Blue Belt Technology Roadmap Project

- Satellite surveillance
- Unmanned aerial vehicles (UAVs)
- Passive acoustic monitoring
- Unmanned marine surface vessels
- Natural tags (such as genetic analysis)
- AIS monitoring/analysis
- Ground/buoy based RADAR
- Argo floats

Cross-cutting issues:

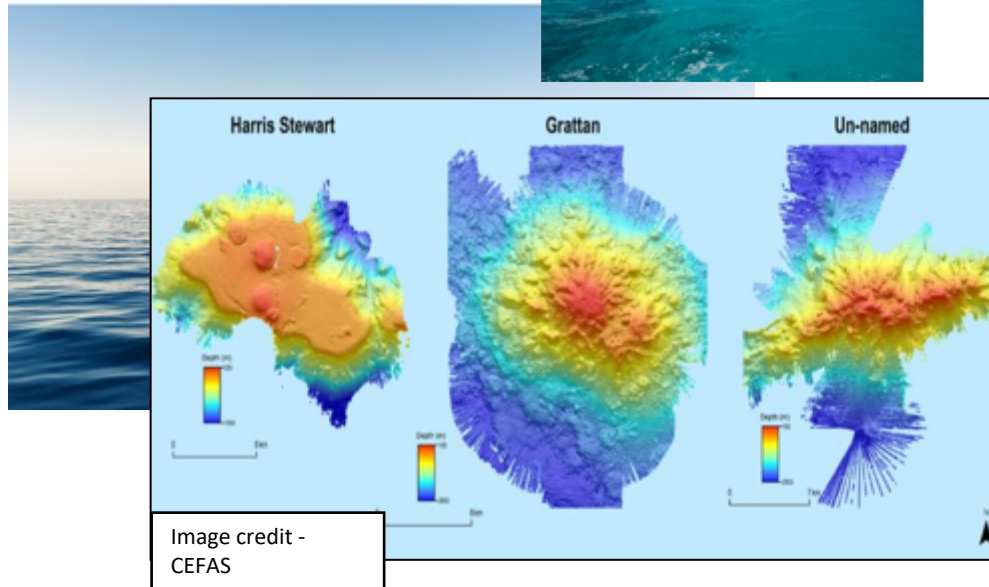
- Intelligence management
- Data acquisition and management
- Training
- Asset tasking



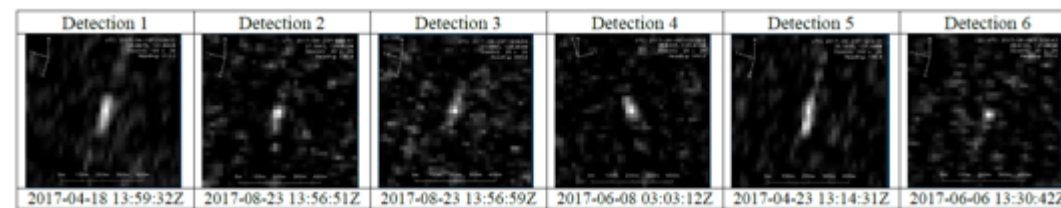
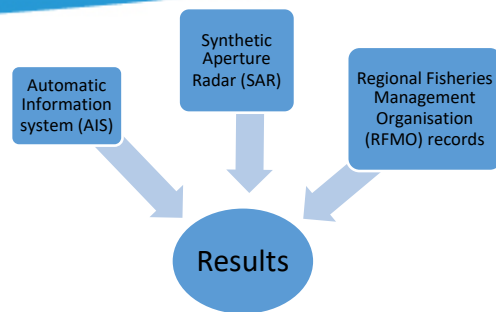
In the meantime...

Operational capability trials – understand operational readiness of front-runner technologies:

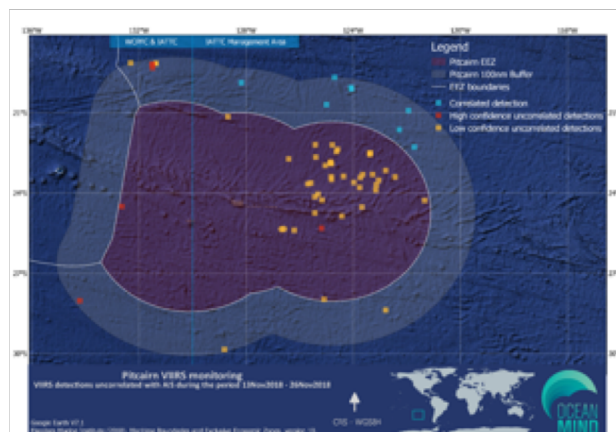
- Satellite surveillance
- Unmanned aerial vehicles (UAVs)
- Passive acoustic monitoring



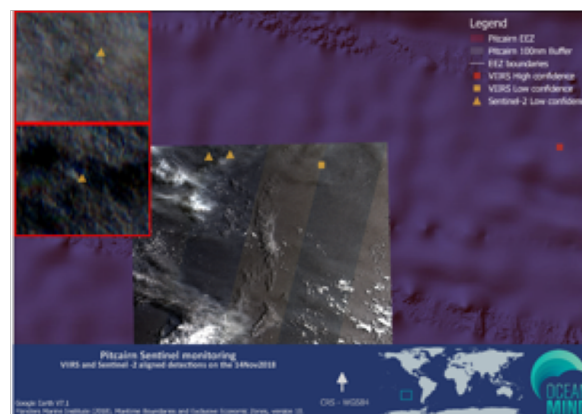
Satellite Surveillance



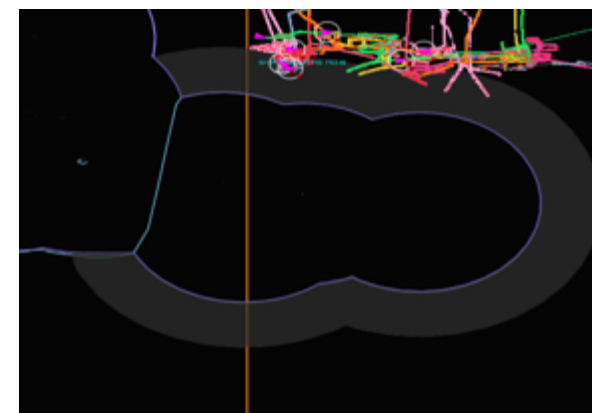
VIIRS detections



Sentinel-2 detections



Vessel risks



Drone Trial Partnership with ZSL



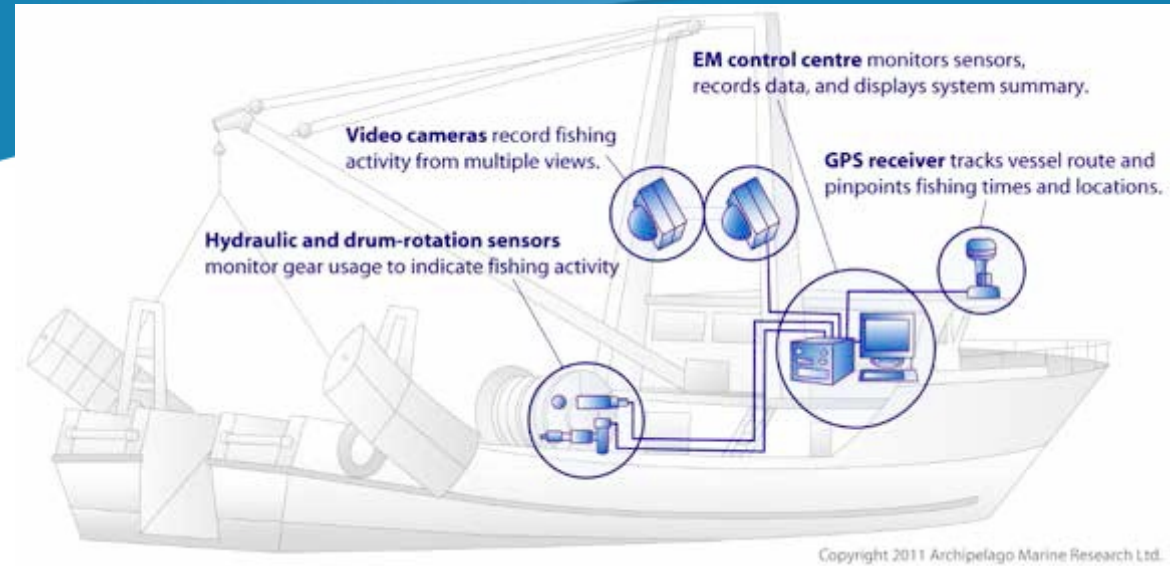
- Dual aims:
 - Compliance and enforcement
 - Biological surveys – large rays and megafauna
- Trialling drone: Affordability? Waterproofing? Can it operate in tropical maritime conditions? Durability? Battery life? What training and maintenance is needed? Supporting legislation and guidance?



In the UK.....

Remote Electronic Monitoring (REM)

- Landing obligations
- Video surveillance
- Catch discards
- Impact



fishing net activity recorded by sensors

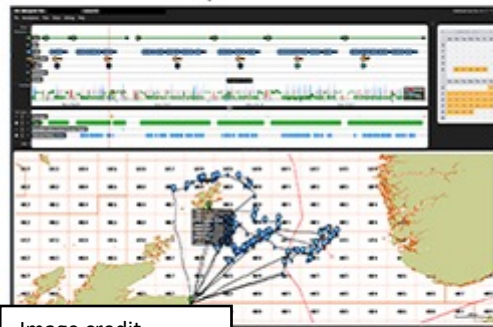


Image credit –
MMO

onboard CCTV footage

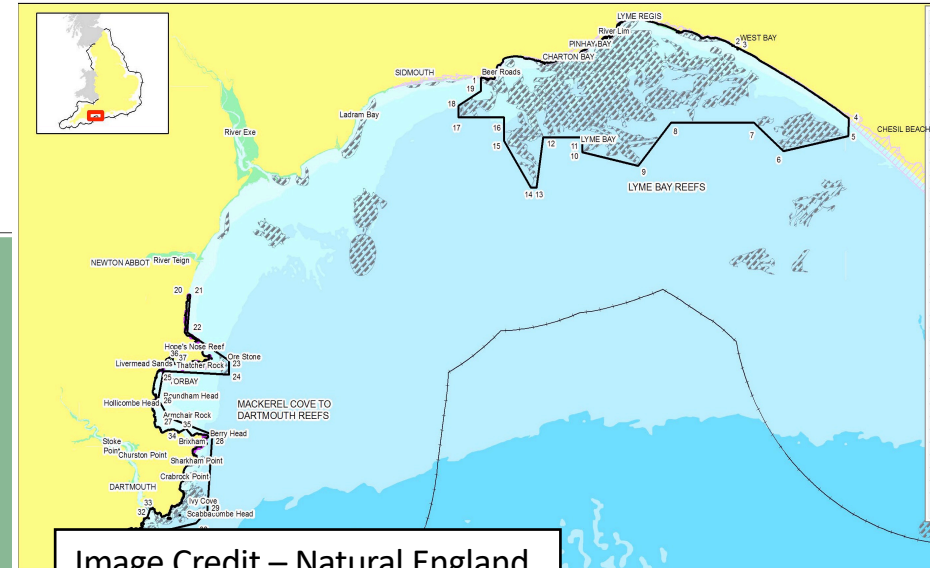
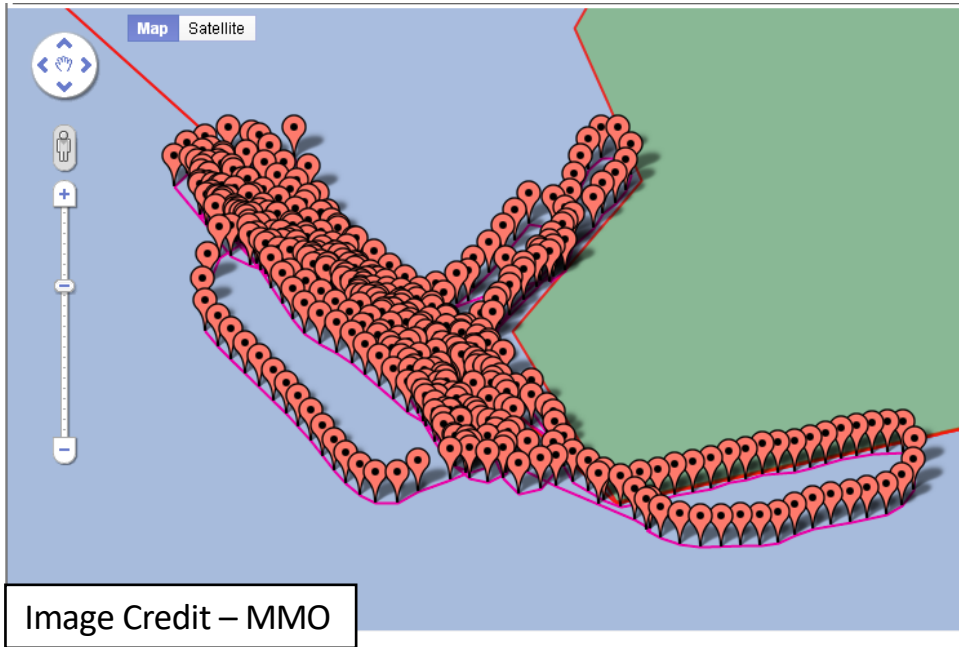


Image credit –
MMO

location of fishing activity via GPS

Inshore Vessel Monitoring System (iVMS)

- Background
- Application
- Future uses



Summary

- Challenges
- Meeting them the challenges
- The UK perspective

Thank you

