HIGH LEVEL SEMINAR ON THE STATUS OF STOCKS IN THE MEDITERRANEAN AND ON THE CFP APPROACH

Control: use of technology and innovations to encourage compliance

MEDITERRANEAN ADVISORY COUNCIL

Catania - ITALY, 09-10 February 2016

Mediterranean Sea

Mediterranean Sea Specificities

- Complex geographical environment: lagoons and deltas, narrow and wider continental shelves, peninsulas, “continental” islands and archipelagos;
- Division in basins and straits with dense traffic;
- Complex geopolitical situation and sea border;
- Recent EEZ and law of the sea disputes;
- GFCM and ICCAT (Inspection Scheme for BFT);
- Landing obligation fully in force 2017;
- **Fishing effort based management**;
- Specific technical measures encompassing distance to the shoreline and depth;
- Complex spatial planning including recreational activities;

Technologies and innovations

- **Cooperative data collection**

  -VMS, AIS, LRIT and Sat AIS datasets (IMDatE)

- **Non cooperative data collection**

  -ex: **Copernicus** Sat. services (SAR & other imagery)

- **Top up classic sighting and radar methodologies**

  -**RPAS** technologies

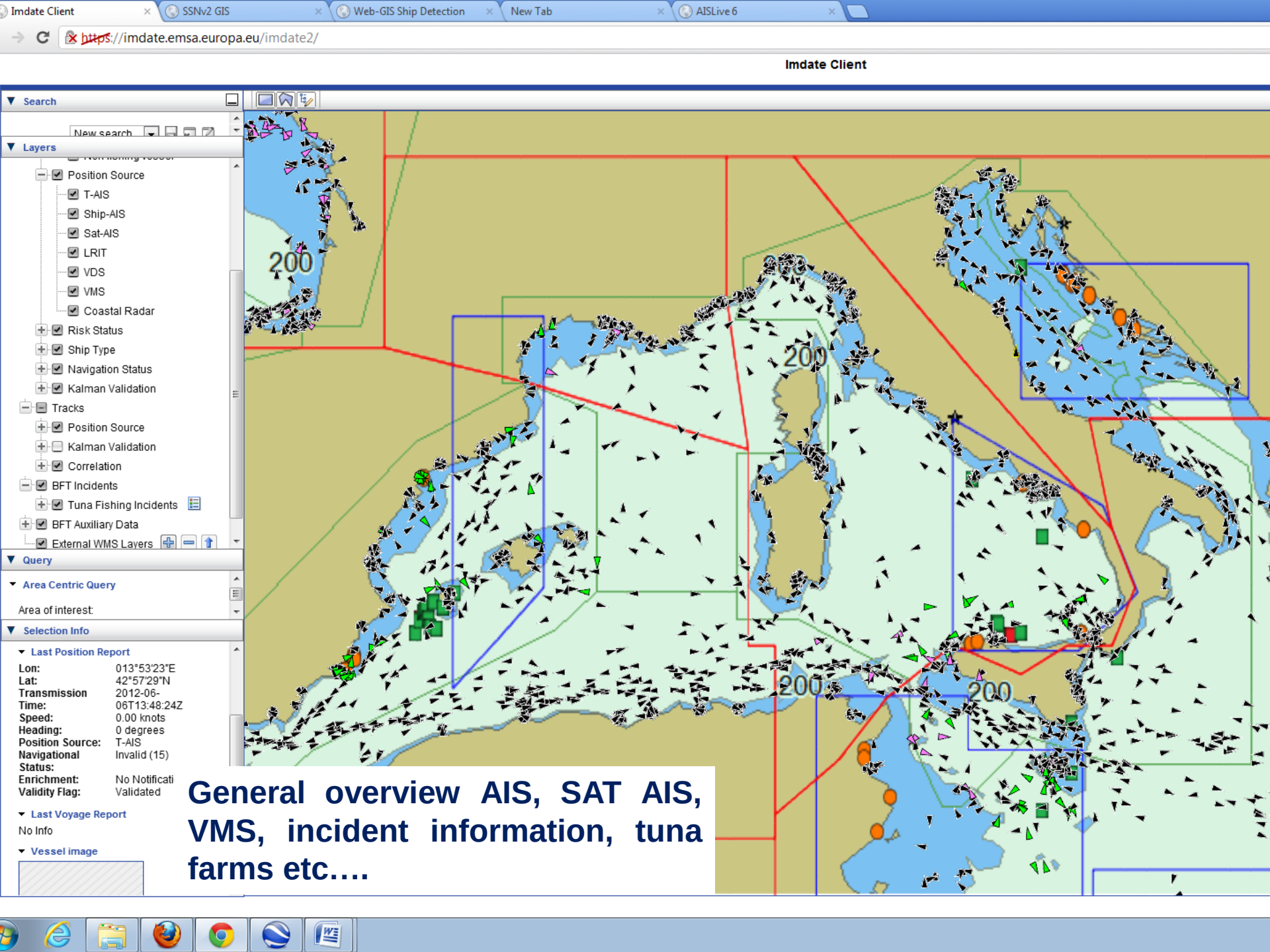
  -integration of MPA surveillance data

  -Integration of **coastal radar** chain

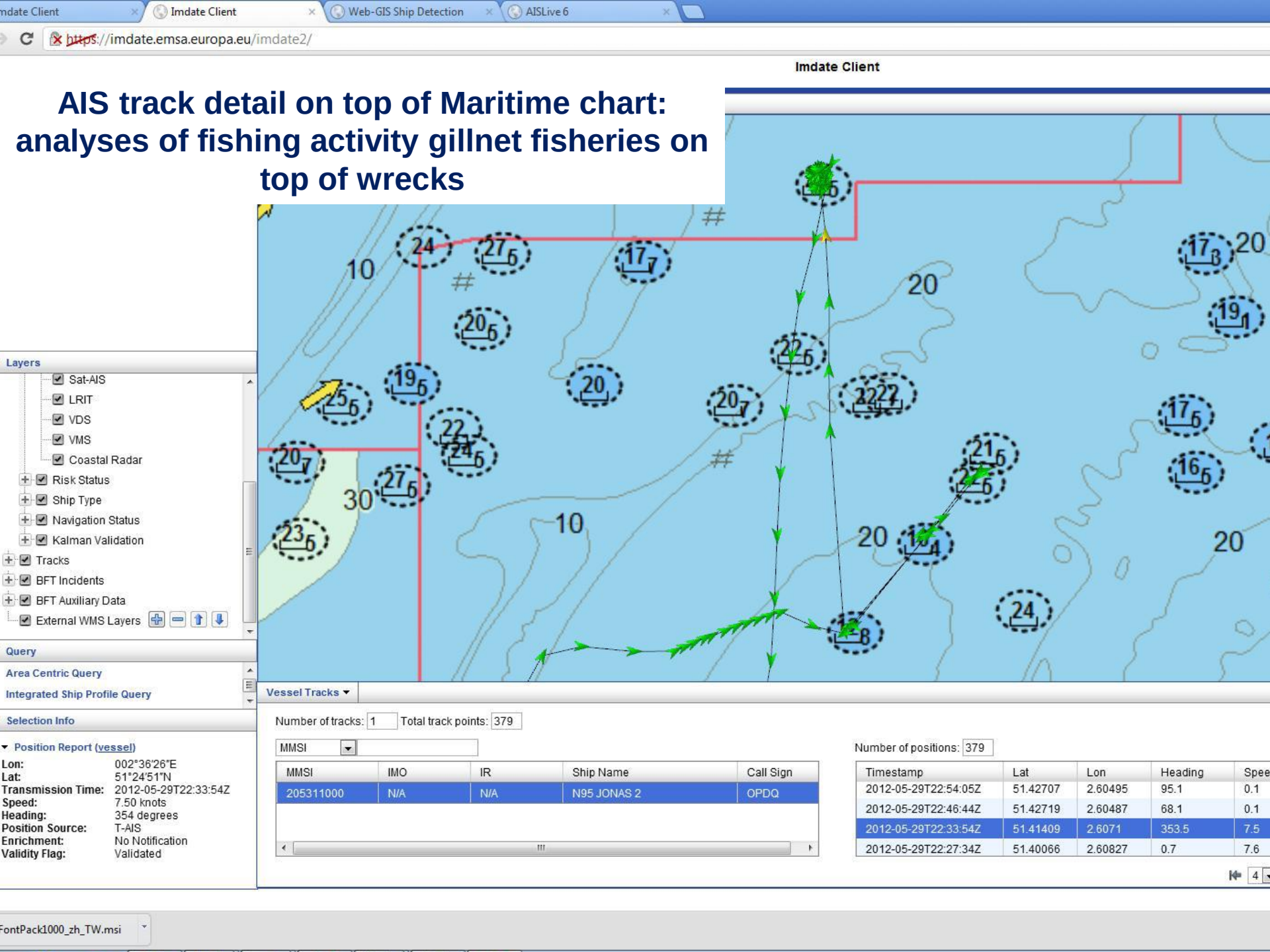
- **on board activity reporting**: CCTV, movement recorder, mobile phone, etc.
- **Integration** with Electronic Reporting Systems and Catch Document Systems (ex: eBCD, CCAMLAR CC, Future IUU e-CC)
- Input of DNA analysis

Ambitions of technologies and innovations

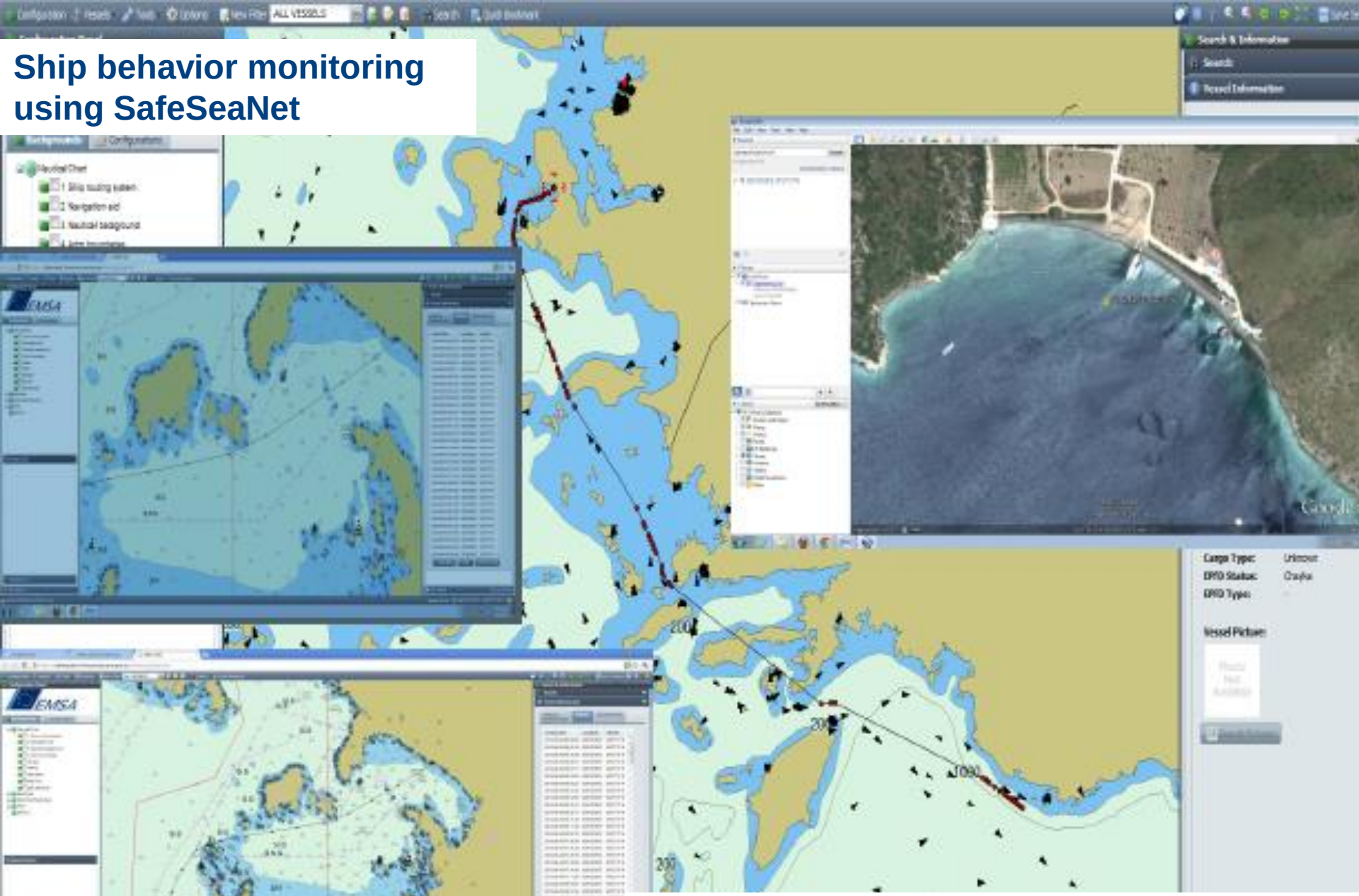
- Resolve **maritime awareness** gaps
- Improve **targeting and risk analyses**
- Enhance **detection capacity** & **evidence gathering**
- Provide assistance to **fisheries management**
- Provide **continuous compliance monitoring**
- Support **information exchange & communication**
- Cope with **challenges:**
  - **85% of EU <12 m** exempted of VMS/AIS (15))
  - **non EU** and **IUU fleet**


Imdate Client
SSNv2 GIS
Web-GIS Ship Detection
New Tab
AISLive 6
https://imdate.emsa.europa.eu/imdate2/
Imdate Client
Search
New search
Layers
Position Source
T-AIS
Ship-AIS
Sat-AIS
LRIT
VDS
VMS
Coastal Radar
Risk Status
Ship Type
Navigation Status
Kalman Validation
Tracks
Position Source
Kalman Validation
Correlation
BFT Incidents
Tuna Fishing Incidents
BFT Auxiliary Data
External WMS Layers
Query
Area Centric Query
Area of interest:
Selection Info
Last Position Report
Lon: 013°53'23"E
Lat: 42°57'29"N
Transmission Time: 2012-06-06T13:48:24Z
Speed: 0.00 knots
Heading: 0 degrees
Position Source: T-AIS
Navigational Status: Invalid (15)
Enrichment: No Notificati
Validity Flag: Validated
Last Voyage Report
No Info
Vessel image
200
200
200
200
200
General overview AIS, SAT AIS, VMS, incident information, tuna farms etc….

AIS track detail on top of Maritime chart: analyses of fishing activity gillnet fisheries on top of wrecks

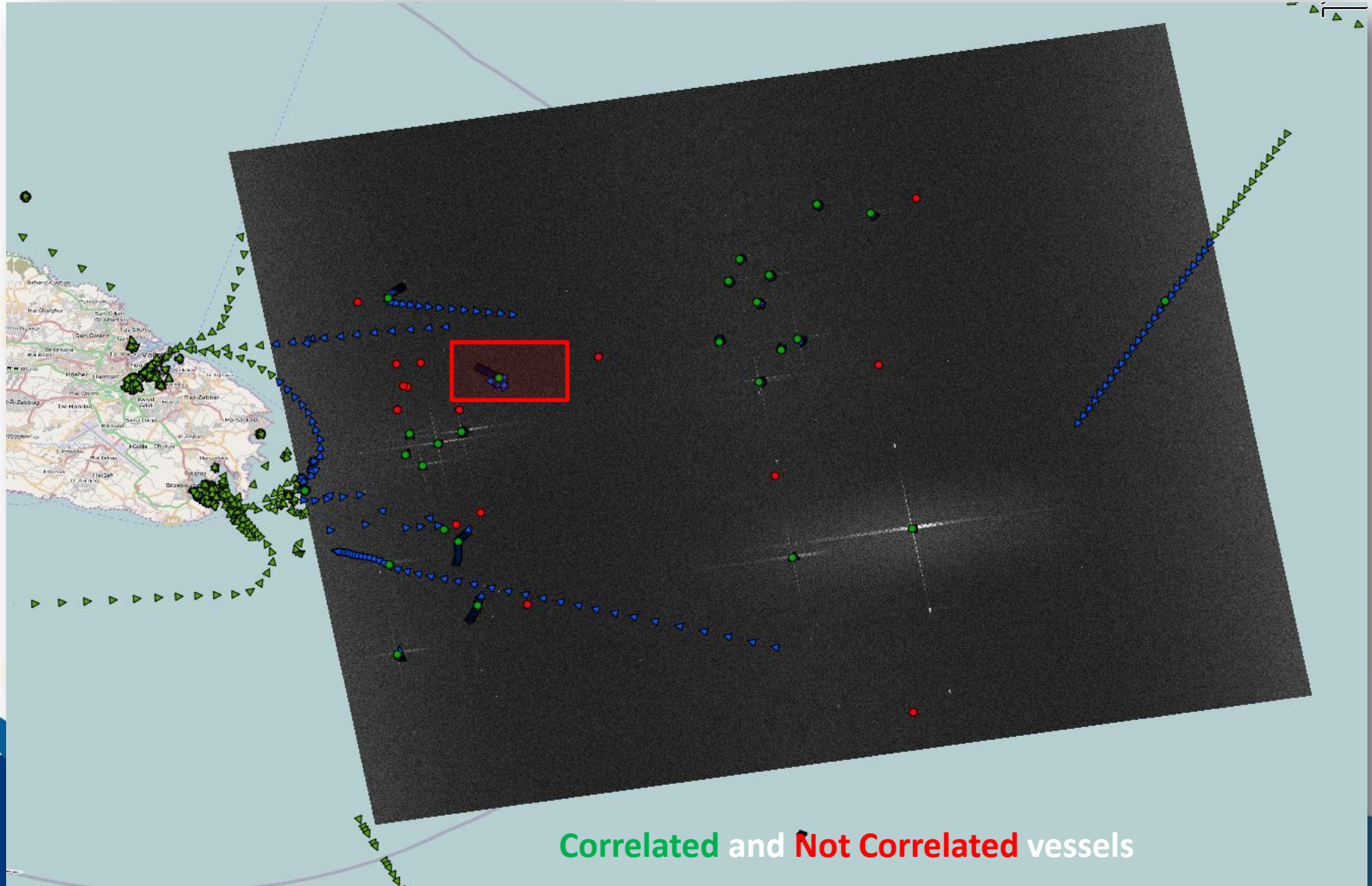


Ship behavior monitoring using SafeSeaNet



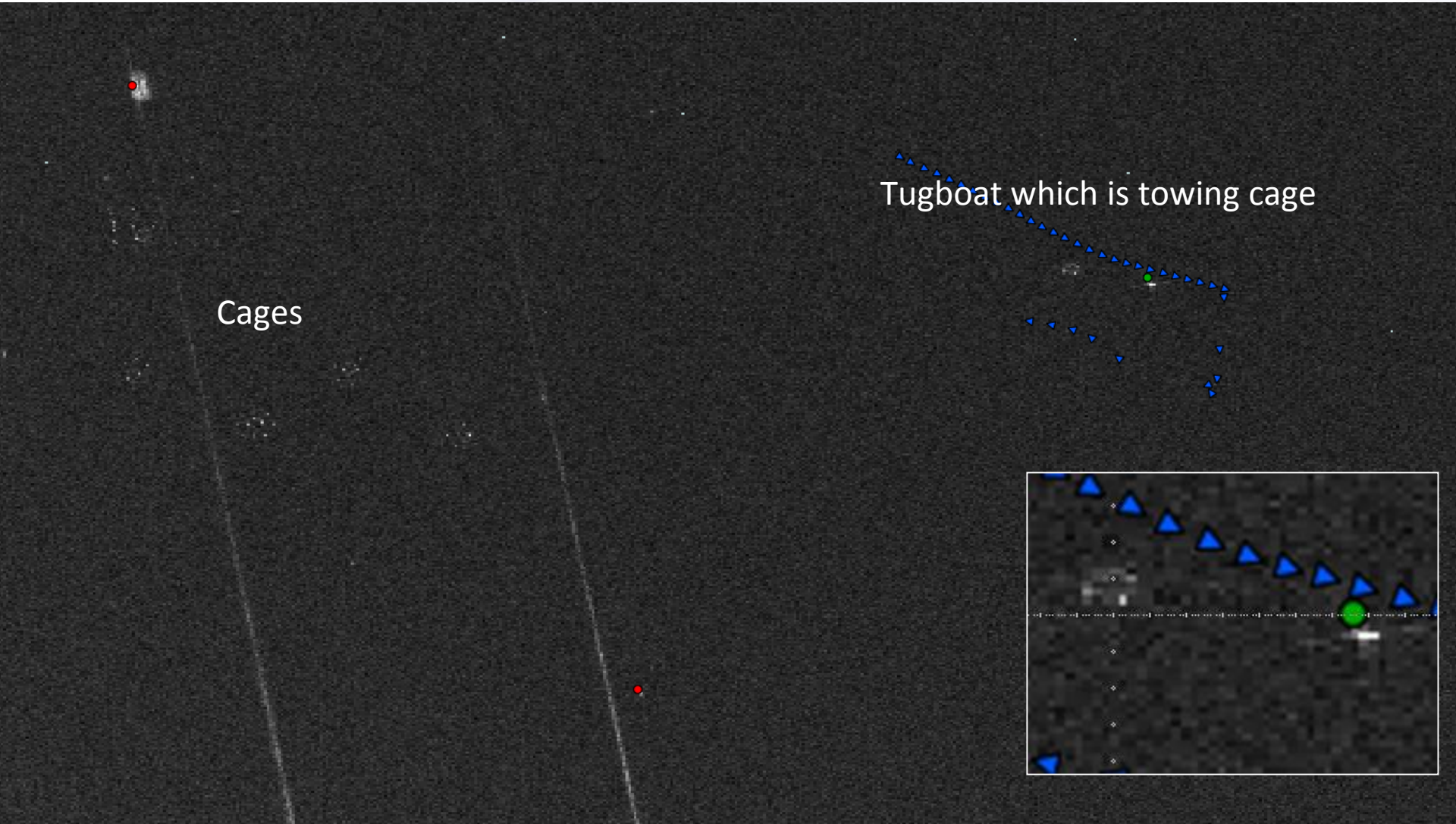
Detection of non charted landing places
Using SSN and transposition of the last known position on google earth….

SAR Imagery



Correlated and Not Correlated vessels

SAR Imagery (detail)



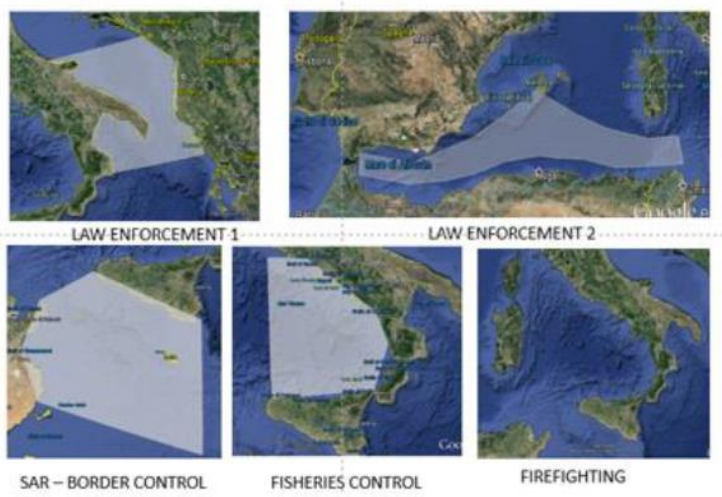
Desire II – Satellite in support of RPAS operations

- second element of the ESA-EDA “RPAS joint demonstration roadmap”
- financed by ESA-EDA
- using satellite in support to RPAS functionalities for non-segregated airspace.
- use of RPAS operating in BRLOS (Beyond Radio Line of Sight) for the provision of integrated commercial and civil services.

Desire II: Operational support needs expressed by the ICG and EFCA:

- Routine monitoring of maritime areas to support anomalies detection
- Detection of non cooperative vessels (AIS and VMS)
- Identification of vessel
- Identification of activity (fishing methods)
- Position of target vessel
- Target vessel :

  -Fishing vessels
  -Length of 5 to 80 meters



Radar systems

- Possible integration and fusion of radar information sources (ex: French system SPATIONAV)
  - shore radar chains
  - Port Authorities radar
  - Naval, Coastguard vessels, maritime patrol aircraft;
- Capacities of trans horizon radar systems

Shipborne continues compliance monitoring

- **On board** technologies
  - -**CCTV** (monitoring of discard activities)
  - -Winch and engine **sensor technology**
- **Reporting** obligation monitoring
  - -**VMS/AIS, ERS** provisions
    - Challenge: 85 % of EU fleet (<12 m/15 m) not required to carry VMS/AIS and ERS;
    - Possible solutions: on board activity reporting/movement recorder reporting through mobile phone technologies and/or port Wi-Fi.

CCTV

Enhancement of detection capacity and evidence gathering

- **Correlation and data fusion technologies** for;

  -**detection** of non cooperative targets;

  -detailed **mapping** of fishing operations;

  - surveillance of MPA;

- Automated targeting using access & **behaviour monitoring algorithms** with integration of
- -recorded catch, access and fishing rights
- -inspection history

Improved targeting and risk analyses

- Real time **comparative monitoring** of situational changes in fishing patterns;
- Use of **port call and transhipment indicators**
- Input of catch document scheme and specific IUU catch certification cross-checks;
- Input of DNA analysis.

Compliance objective

- **Assessment of technologies** to be used in view of **compliance objective**

Example: ***'landing'*** obligation

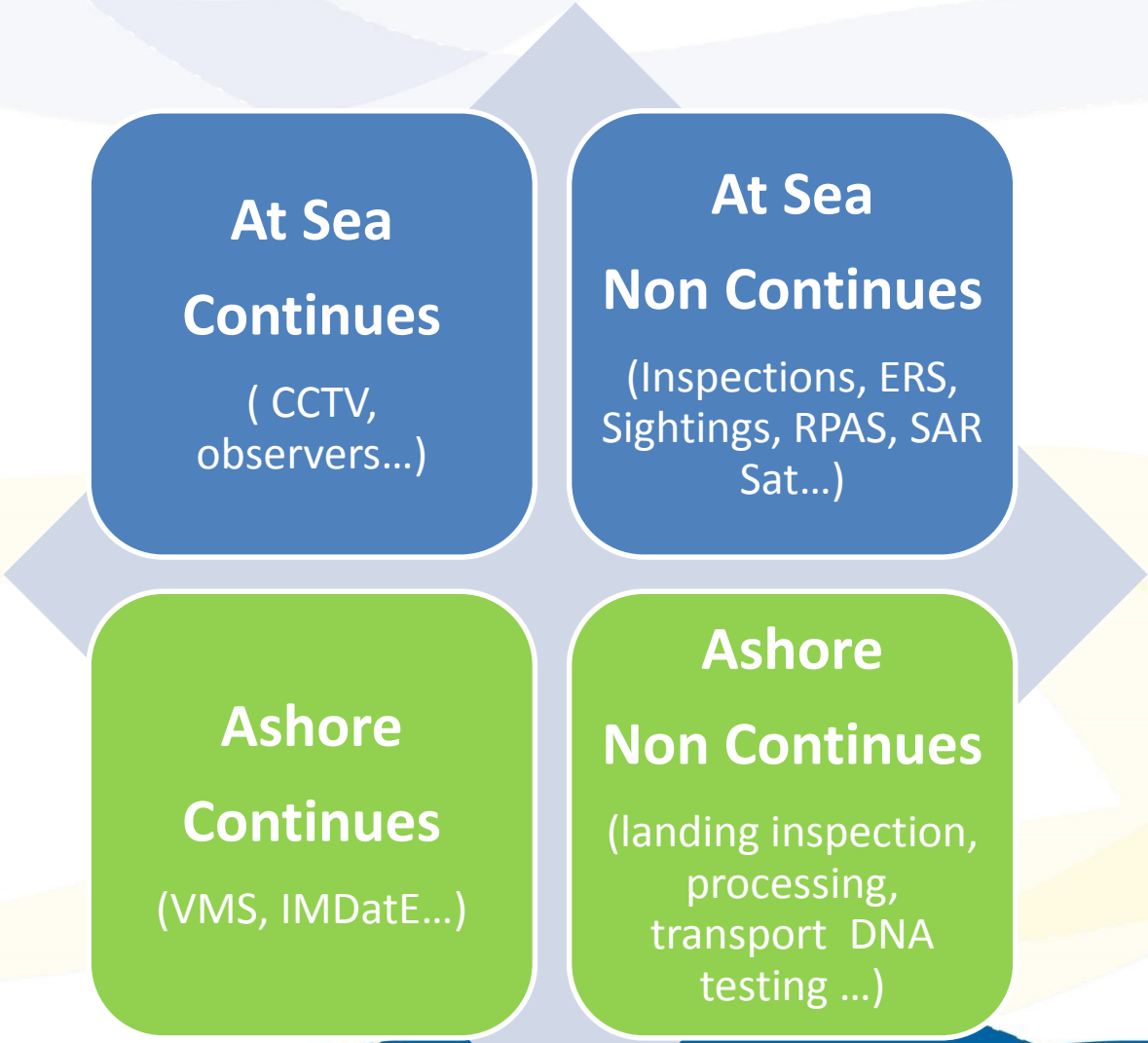
-Verifying compliance
-Deterring non compliance
-Detecting non compliance

} Need for technologies to support control efforts **at sea**

Utility for management

- Fishing Capacity defined as power and tonnage is a proxy…
- Maritime surveillance systems can provide a good evaluation of the fishing effort including non EU vessels;
- They can significantly contribute to the definition of such **fishing effort regimes**;
- Time at sea, MPA, dipping time, length of some static gears can be monitored in near real time

Utility for Compliance



Toolbox principle

- New technologies to be part of a **toolbox**
- **Maritime surveillance tools** seem promising to cope with management and Monitoring, Control and Surveillance (MCS) challenges
- **Combined use** of a selection of tools **in conjunction with existing technologies & methodologies** in view of compliance objective
- **Added value** and cost efficiency of new technologies vis a vis existing technologies need **to be monitored**
- **To strike a balance between MCS and data protection**

THANK YOU!

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