

1st IMDatE Meeting

IMDatE Functional Prototype

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Integrated Maritime Data
Lisbon, 28th February 2012**

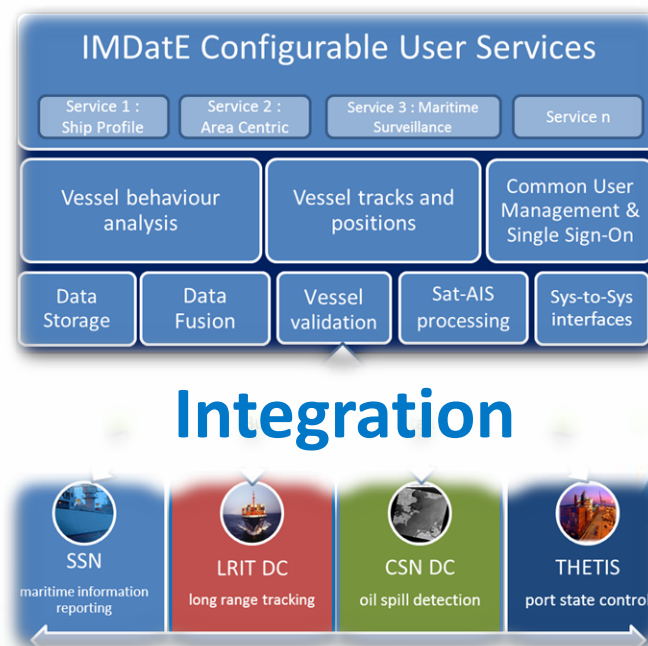
IMDatE Project Drivers

Main objectives:

1. To integrate existing maritime services (LRIT, SSN, CSN, THETIS) to fully exploit their cross-platform capabilities.
2. To develop value added services – on top of the integrated framework.

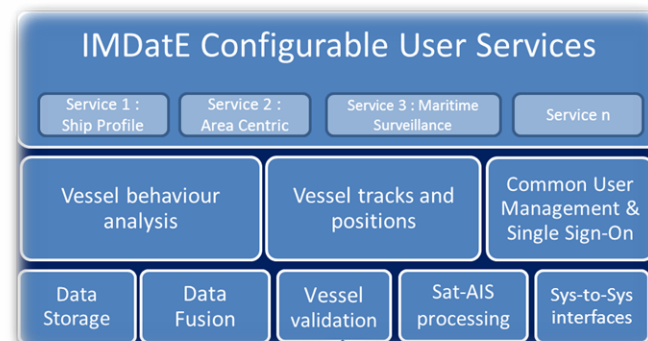
IMDatE as the integration of EMSA maritime applications

- Up-to-date technology and practices
- Improved interaction between EMSA applications
- Common services (enterprise level)
- Single-sign-on for all maritime applications
- Common management console
- Extended data sharing capabilities
- Easier to integrate new data sources
- Easier to develop pilot projects

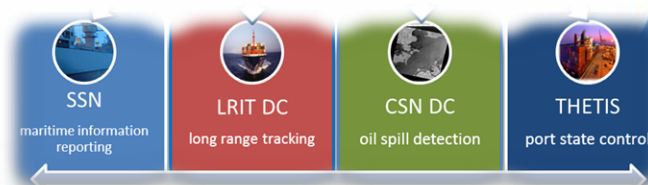


IMDatE as the development of value – added services

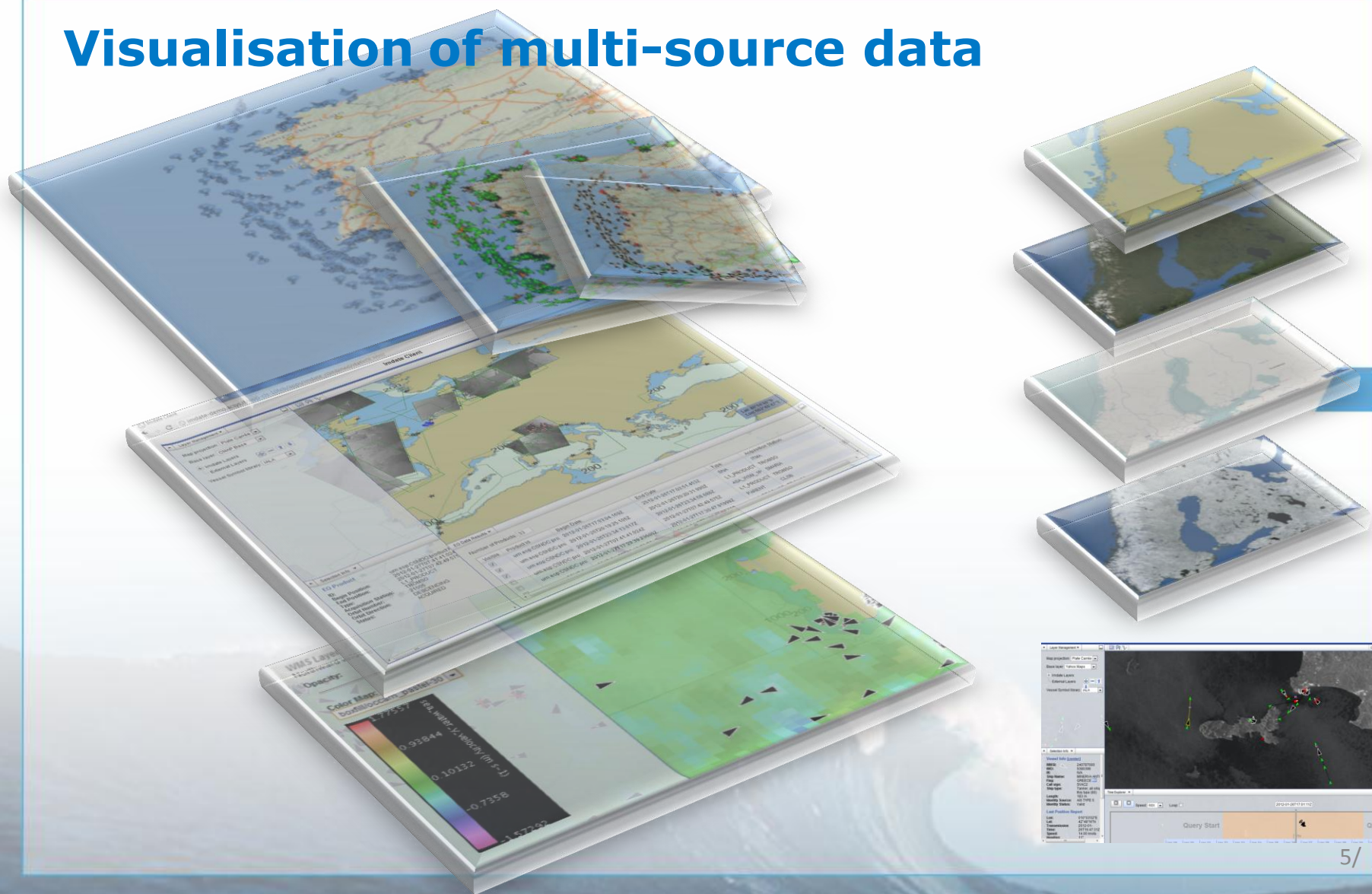
- A flexible processing engine to accommodate new and different types of data. Fused vessel positions and complete vessel track
- New machine-to-machine interfaces providing integrated data and services.
- Satellite AIS data centre
- Automated monitoring/watchdog and alerting features (by email or dedicated interfaces)
- Innovative user interface - a single visualisation interface with various types of data, not just position information.



Value added services



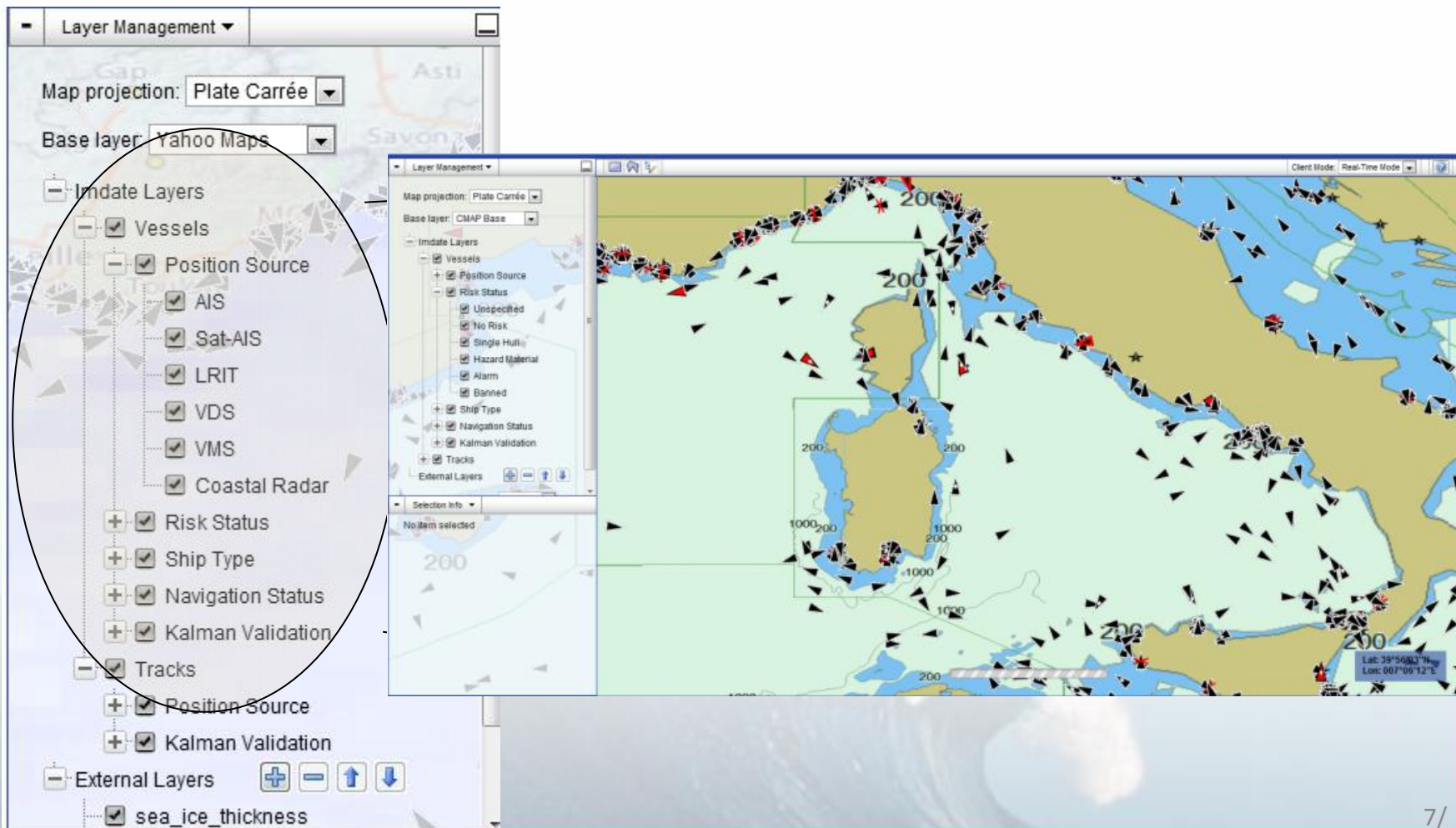
Visualisation of multi-source data



Combining maritime data – first level

- Last known vessel position from multiple data sources:
 - AIS + LRIT + S-AIS + VMS + coastal radar + satellite radar
- Ship tracks:
 - Generation of ship track based on single source of position reports
 - Generation of ship track based on multiple types of position reports.
 - Correlation of satellite radar and coastal radar detected vessels with other position report sources to establish identified/non-identified vessels.

Visualisation filters for last reported position



The screenshot displays the EMSA Layer Management interface, which allows users to configure the visualisation of vessel data. The interface is divided into several sections:

- Map projection:** Set to "Plate Carrée".
- Base layer:** Set to "Yahoo Maps".
- Imdate Layers:** A list of layers that can be toggled on or off. The following layers are currently checked:
 - Vessels
 - Position Source
 - AIS
 - Sat-AIS
 - LRIT
 - VDS
 - VMS
 - Coastal Radar
 - Risk Status
 - Unspecified
 - No Risk
 - Single Hull
 - Hazard Material
 - Alarm
 - Banned
 - Ship Type
 - Navigation Status
 - Kalman Validation
- Tracks:** A section for managing track data, currently showing "No item selected".
- External Layers:** A section for managing external data layers, currently showing "sea_ice_thickness".

The main map area displays a coastal region with numerous vessel icons, each representing a vessel's last reported position. The map includes depth contours (e.g., 200, 1000) and a coordinate display in the bottom right corner (Lat: 39°50'N, Lon: 007°05'E).

Mock-up: Single and multi-source ship tracks (1 of 2)

Imdate Client

imdate-demo.acsys.it/imdate-fat-0.2/apps/imdate_combined/staticGL.html#

Layer Management

☒ Navigation Status
☒ Kalman Validation
☒ Tracks [Symbol legend](#)
☒ Position Source

☒ AIS
☒ Sat-AIS
☒ VDS
☒ VMS
☒ Coastal Radar
☒ Interpolated
☒ Extrapolated

Tree for filtering vessel data based on several criteria


Selection Info

Vessel Info (center)

MMSI: 636013615
IMO: 9390692
IR: N/A
Ship Name: SOCRATES
Flag: LIBERIA
Call sign: A8OE2
Ship type: Tanker, all ships of this type (80)
Length: 228 m
Identity Source: AIS TYPE 5
Identity Status: Valid

Last Position Report

Lon: 019°17'05"W
Lat: 28°41'49"N
Transmission Time: 2012-02-23T16:14:42Z
Speed: 14.00 knots
Heading: 202°
Position Source: AIS
Destination: Under way using engine
Navigation Status: Validated
Validity Flag: No Notification
Enrichment:


[Marine Traffic Vessel Details](#)

Vessel Tracks

Number of tracks: 3 Total track points: 260

MMSI

MMSI	IMO	IR
244193000	9224166	N/A
354622608	N/A	N/A
636013615	9390692	N/A

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Client Mode: Real-Time Mode

Number of positions: 79

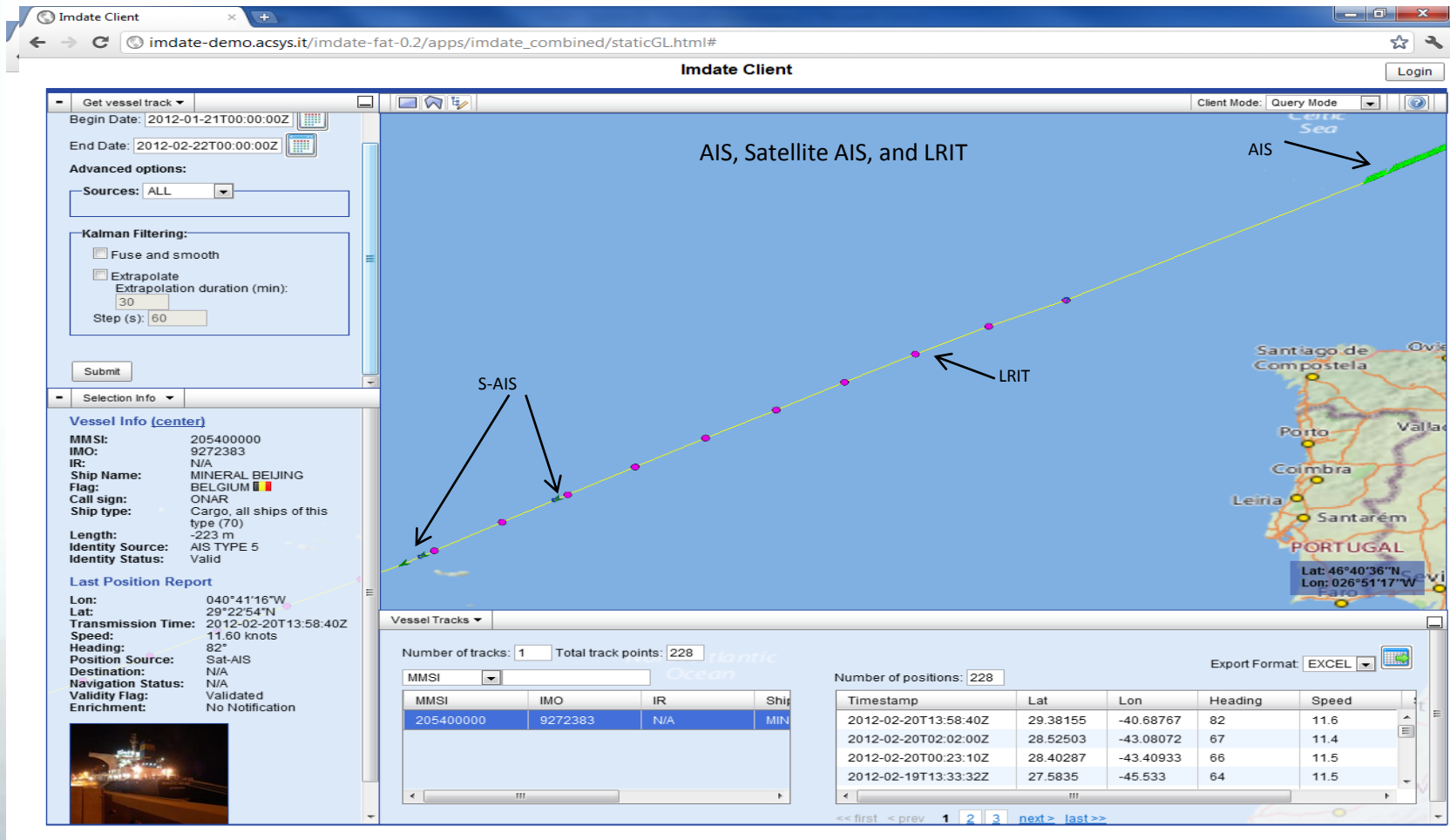
Export Format: EXCEL

Timestamp	Lat	Lon	Heading	Speed
2012-02-23T16:14:42Z	28.69705	-19.2846	201.5	13.8
2012-02-23T16:02:22Z	28.74116	-19.26518	199.9	13.8
2012-02-23T15:56:11Z	28.76339	-19.25548	200.6	13.9
2012-02-23T15:50:09Z	28.78533	-19.24601	199.9	13.9

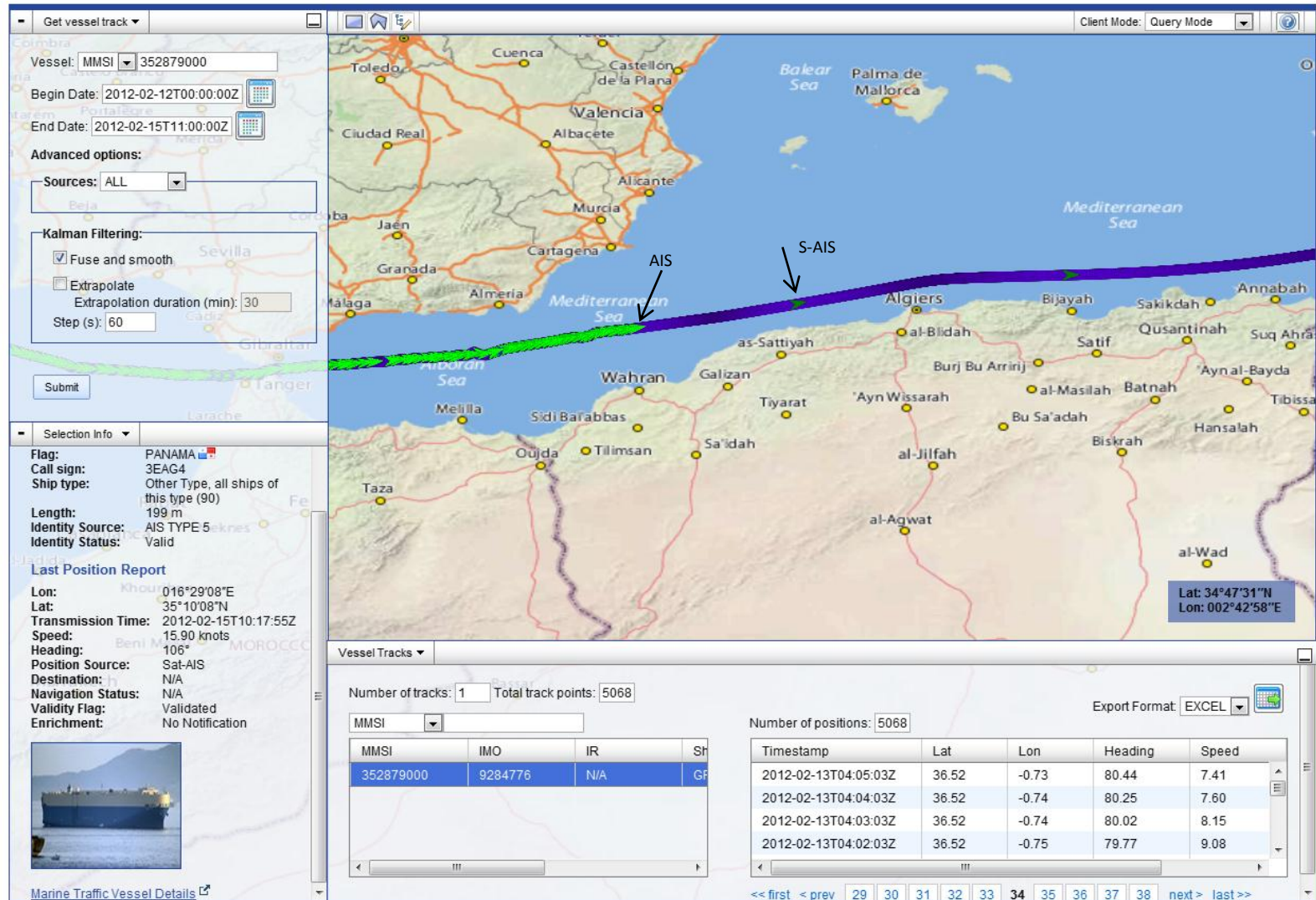
AIS only

AIS and S-AIS

Mock-up: Single and multi-source ship tracks (2 of 2)



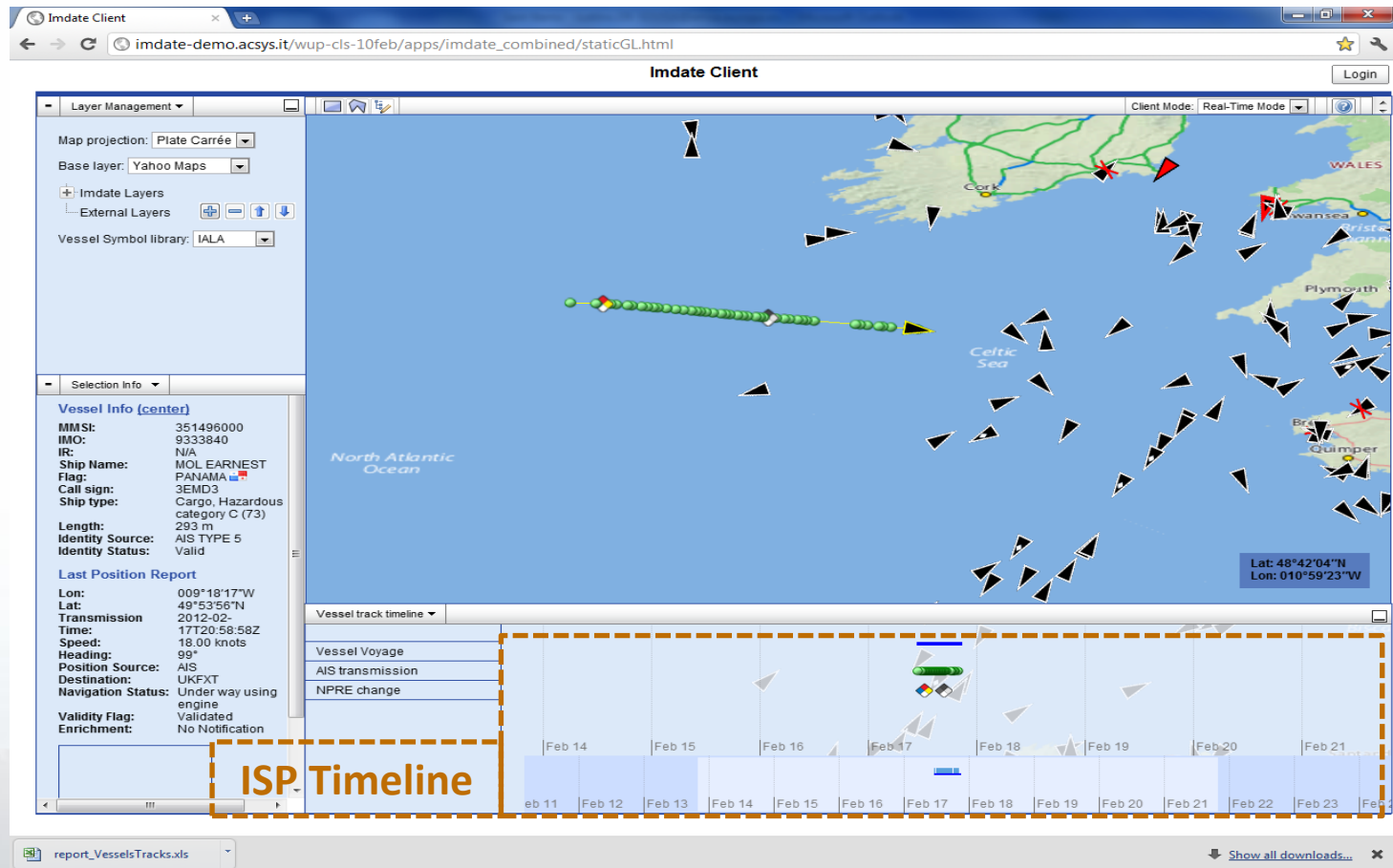
Mock-up: AIS and S-AIS reports with track interpolation



Combining maritime data – second level

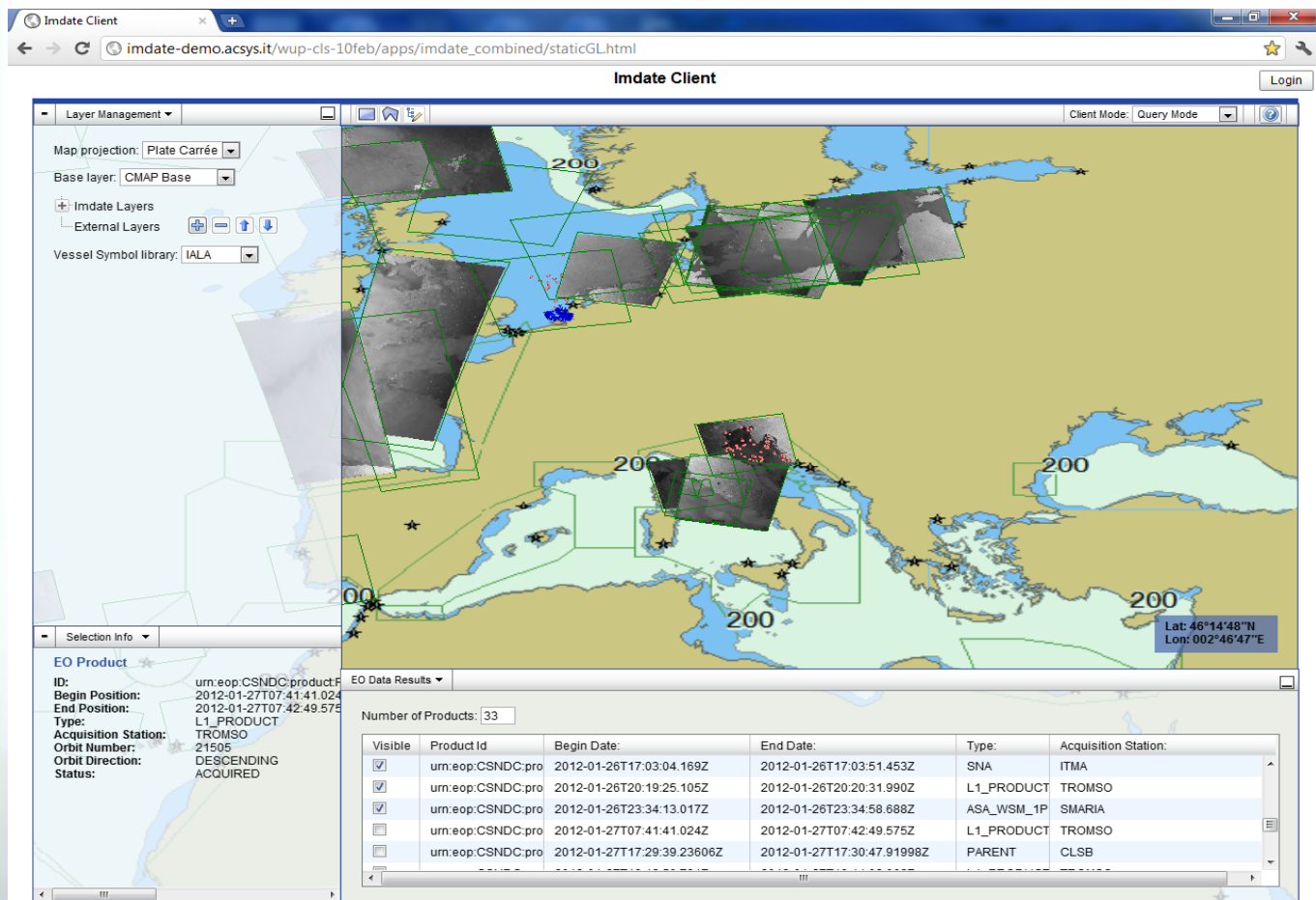
- *Integrated Ship Profile*
 - A single operation to aggregate information on a vessel from all EMSA applications.
 - SSN notifications, THETIS - SRP, Priority of inspection etc.
 - May be supported through a machine-to-machine interface or through the IMDatE graphical interface.
 - A 'Timeline' tool to provide better awareness of temporal events and information.
- *Area Centric*
 - Any position related information and ship tracks
 - Overlay of satellite images
 - Correlation for satellite detected vessels (VDS)
 - Checking detected vessel position against position reports.
 - External information layers (oceanographic and meteorological information, ad-hoc external information sources)

Mock-up: Integrated Ship Profile

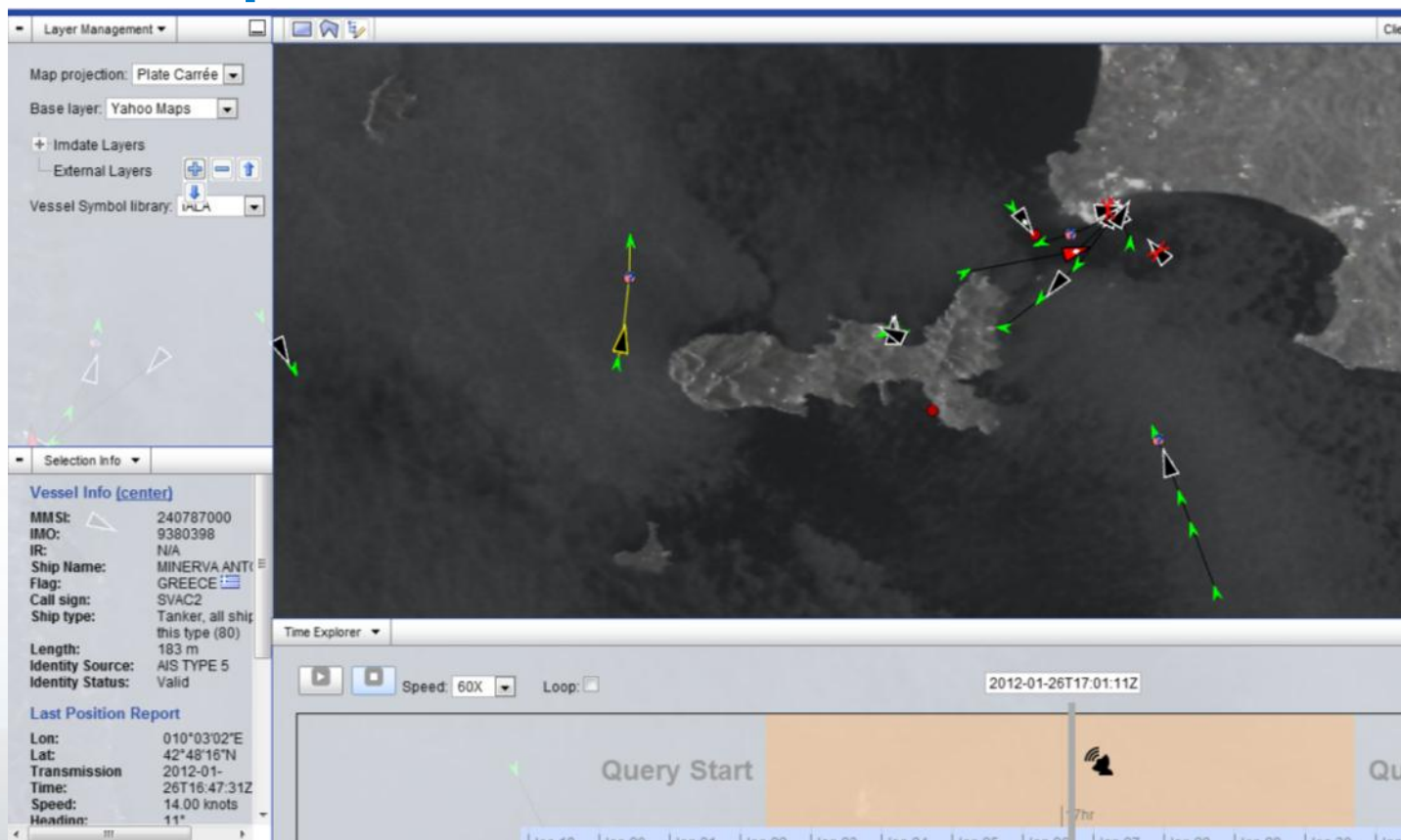


In addition to the map view, a 'Timeline' tool may provide better awareness of time related events/information. Clicking on an element in the timeline would refocus on the relevant part of the map.

Mock-up: Visualisation of satellite imagery

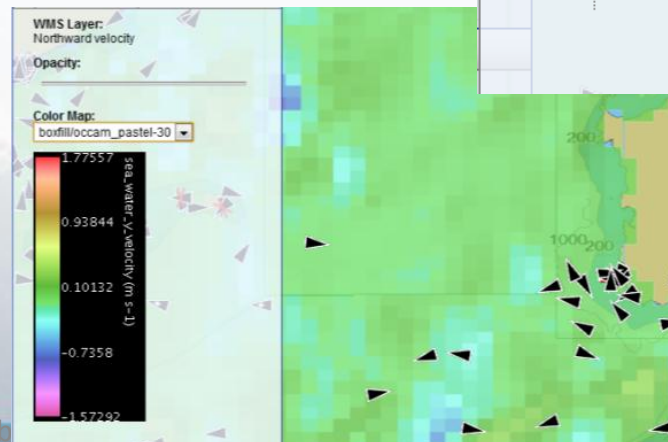
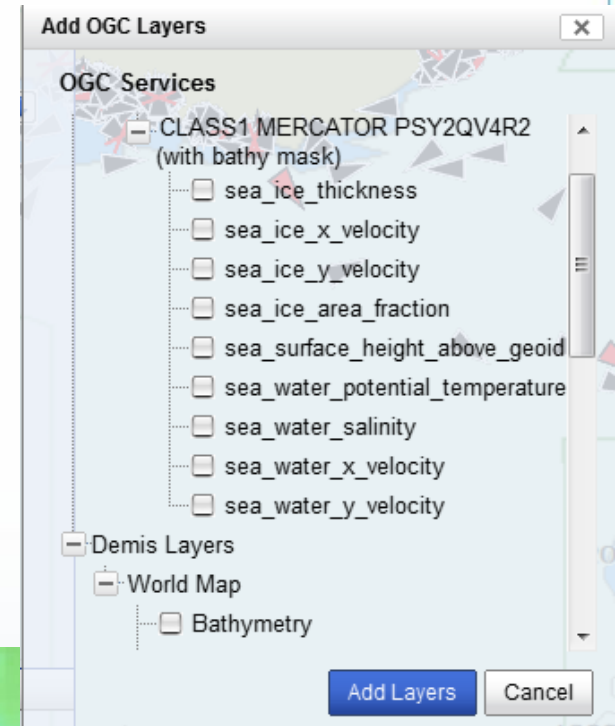
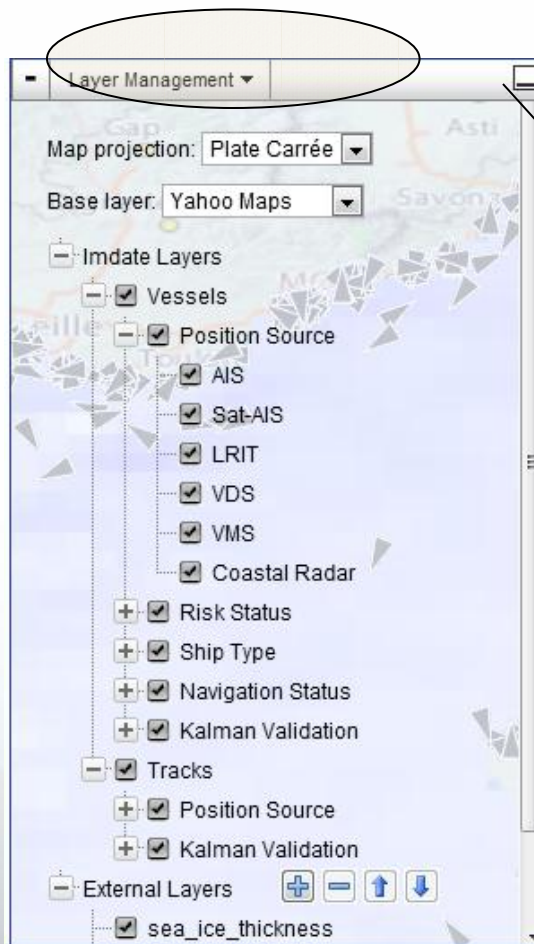


Correlation between satellite detected vessels and ship position reports



A graphical interface may provide “time slider” visualization for correlation inspection

Visualisation of external information





THANK YOU !

European Maritime Safety Agency

**EMSA IMDatE Team
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