

ABM WS7.4 - New technologies developments in ABM

ABM and Advanced analytics WS7

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IMS Cloud solutions (HP IMS)

**S2S access options – NRT ABMs, H-ABMs with Port
Call detection**

Enhanced Central Ship Database

Perimeter: HP- IMS (cloud based solution) includes the following a test and prod environment for:

- **Raw AIS Archive;**
 - AIS data (T and S) store are sent by the data provider
- **Long Term Storage**
 - AIS, VMS and LRIT information
 - Positions associated to the Ship ID from Star Tracking OVR
- **H-ABM including Port Calls detection**
 - Historical ABMs
 - Detected port call: combining ports areas and ship positions in a detection algorithm to detect potential port call

- **LTS will be used by SEG for Vessel Tracks and Area Centric queries (under specific conditions);**
- **Developments envisaged (but not yet confirmed):**
 1. MRS positions
 2. AIS CLASS A Ship static and voyage related data (Message 5) and queries
 3. Etc..

Status:

- 7 different H-ABMs algorithm developed (in the cloud) and available
- Pre-operational – used by power users (+300 H-ABMs launched).
- Requires EMSA support for configuration.
- Results in PDF/JSON/CSV are sent to the users. There is no visualisation in EMSA graphical interfaces yet.
- Detected Port calls require monitoring of the quality of worldwide port areas

The service is in pre-operational stage and can be used via s2s or with EMSA support.

Which vessels drifted in the Area of Interest? (checking days after)

Ref. News: **VISBY (Malta)** Dec 5 --
Passenger ro/ro Visby (IMO No: 9223784, Class: DNV, 29746 gt, built 2003), en route from Roslare, Ireland to Dunkirk, Germany, with 109 people on board, was **not under command due** to an oil leak on port engine drive shaft, in position lat 50 04 14N, long 003 54 04W, at 1322 hrs, UTC, today. Consequently, the engine had to be stopped to effect repairs which was completed, and the vessel was underway to its destination.

Event Number 1 of 2
Source T-AIS
Start Time 2021-12-05 12:52:26 GMT
ID 000000000362_00001_00000_1638978766
Status DRIFTING
End Time 2021-12-05 12:52:26 GMT

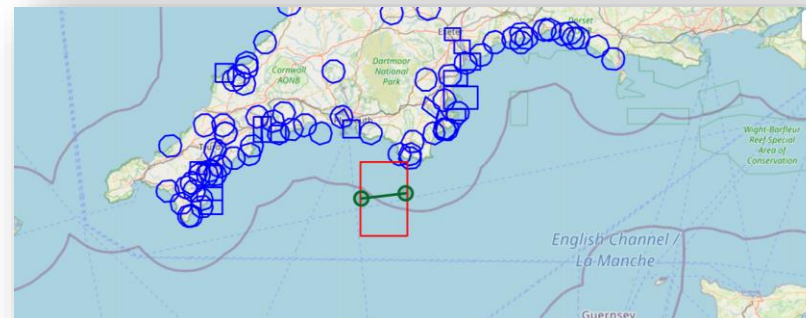
Vessels:

Overview:

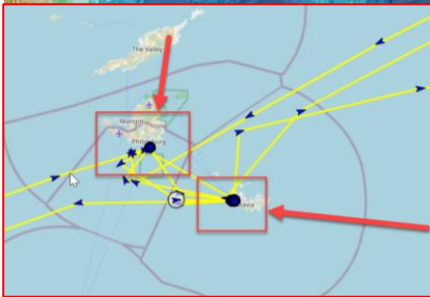
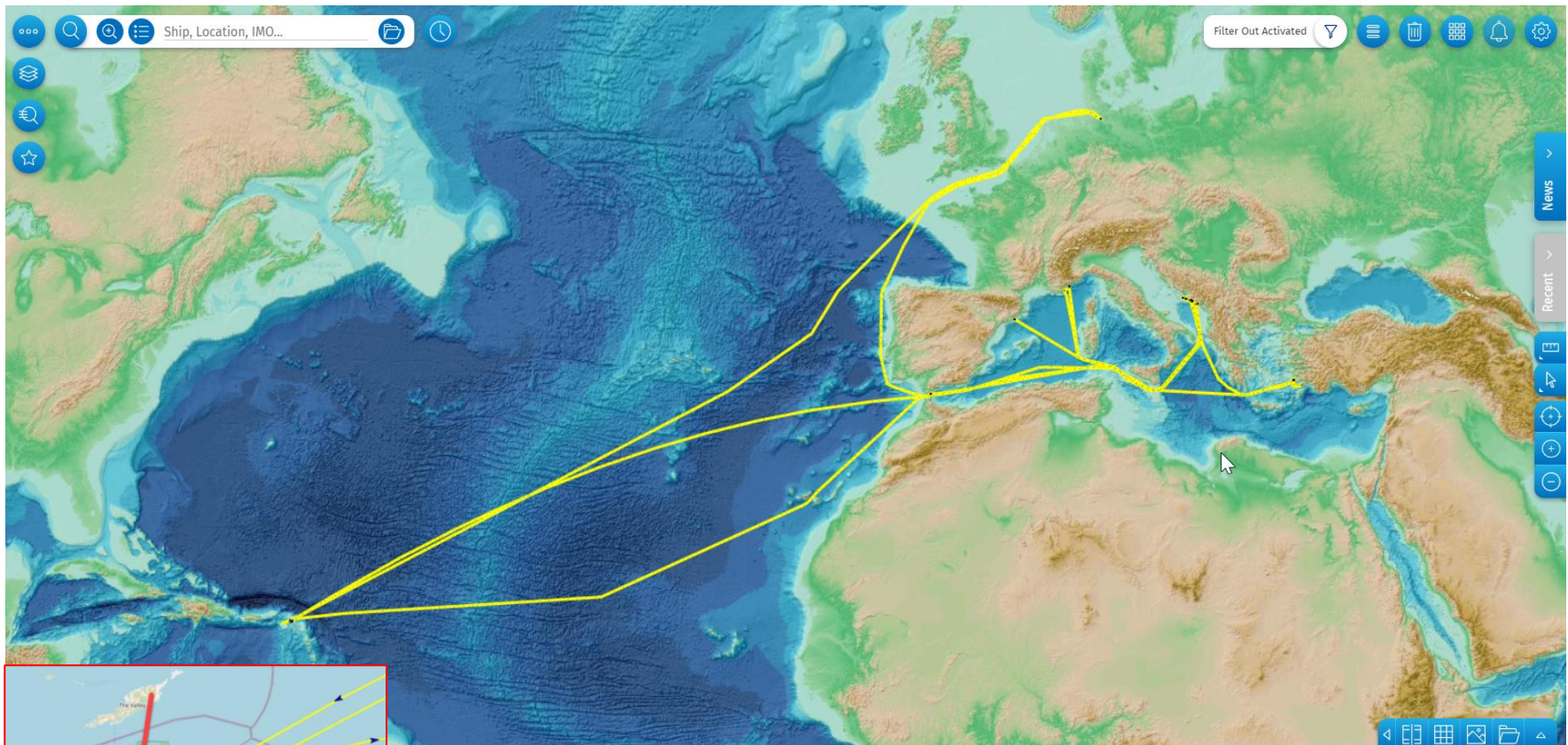
Main Vessel	Navigation Status	
Yes	0	
IMO	MMSI	IR
N.A.	229455000	N.A.
Type	Breadth	Length
N.A.	N.A.	N.A.
Name	Flag State	Call Sign
N.A.	None	N.A.
Last Port Call:	Arrival Time:	Departure Time:
Port: FRGRV	2021-12-02 23:28:39 GMT	2021-12-07 18:21:03 GMT

Location ([Google Maps](#)):

Timestamp	Latitude	Longitude	Heading	Speed
2021-12-05 12:52:26 GMT	50.06015	-3.9159334	55	0.4



Port Calls – recreational crafts/ non – EU and EU calls



Port	Arrival	Departure	Status
BLGUS	2020-06-10T12:17:40Z	2020-06-17T22:00:53Z	anchored
BLSBH	2020-06-10T12:17:40Z	2020-06-17T22:00:53Z	anchored
SXPHI	2020-06-08T21:22:57Z	2020-06-10T10:55:11Z	alongside
SXGES	2020-06-08T21:22:57Z	2020-06-10T10:55:11Z	alongside
SXGES	2020-06-08T20:35:20Z	2020-06-08T21:03:00Z	passing

H-ABM including Port Calls detection – future plans

Next steps:

- to integrate with SEG as soon as possible

SEG ver. 2.XX (TBC)

- ABM admins will be able to configure limited number of H-ABM algorithms per day
- All users will be able to see results of the H-ABMs - Port Call detection

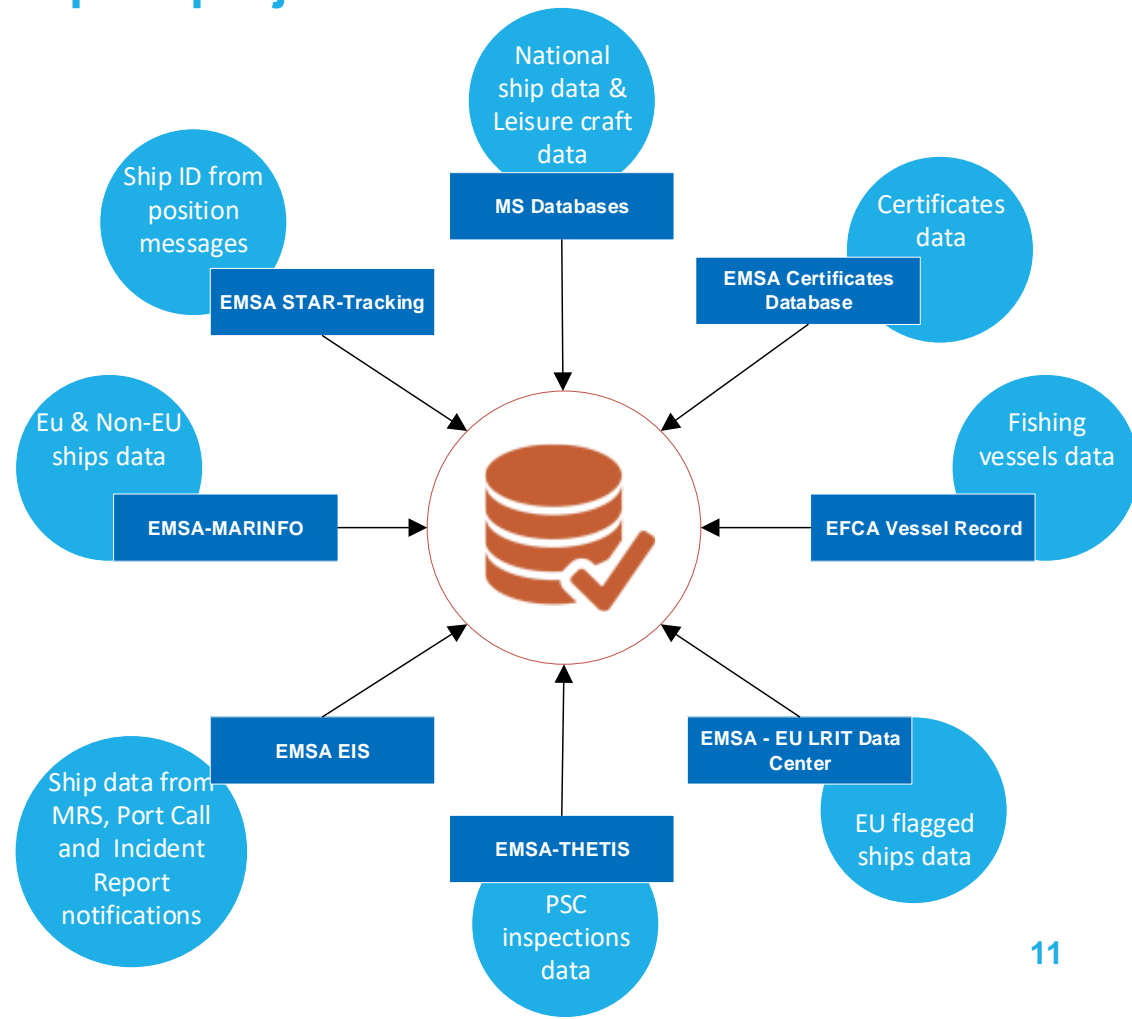
	<u>Use case</u>	<u>Comments</u>	<u>Template</u>	<u>Documentation</u>
1	Get the last 40 port calls for the vessel of interest (e.g. cargo ship)	Selection of a ship of interest	SwaggerPortCalls	HISTORICAL ABMS AND PORT OF CALLS DETECTION webservices
2	Get the last two months port calls for the group of vessels of interest (e.g. recreational crafts arriving from 3rd countries)	Selection of a group of ships of interest	SwaggerPortCalls	HISTORICAL ABMS AND PORT OF CALLS DETECTION webservices
3	Configure own ABM algorithm in an area of interest (e.g. to detect vessels drifting)	National interface may interface/connect and provide the configuration to the user in the national application	SurveillanceInstance, SurveillanceTemplate,	STAR ABM ICD
4	Get Near Real Time (NRT) ABM alerts generated for specific vessel behaviours	For the ABMs created by the user	Alerts	STAR ABM ICD
5	Get all Near Real Time (NRT) alerts for a given vessel.	For the ABMs created by the user	AlertsForShip	STAR ABM ICD
6	Configure own Historical ABM - H-ABM - algorithm in an area of interest (e.g. to get the list of vessels drifting in the area in Jan 2018)	-	SwaggerSurveillance	HISTORICAL ABMS AND PORT OF CALLS DETECTION webservices
7	Get the H-ABM alerts – all detected situations in the area of interest (e.g. the list of vessels drifting in the area in Jan 2018)	<i>For the ABMs created by the user</i>	SwaggerSurveillance	HISTORICAL ABMS AND PORT OF CALLS DETECTION webservices

1. STAR ABM ICD
2. HISTORICAL ABMS AND PORT OF CALLS DETECTION webservice + swaggerSurveillance (OpenAPI) + swaggerSurveillance (OpenAPI).

Collects ship information from SSN Ecosystem, EU databases, National databases, ROs, commercial data providers

11 Member States involved in the pilot project

- Uses Master Data Management platform Tibco EBX
- Dynamic management of data model and processes
- To be connected with all EMSA sources, MS databases and Certificates database
- Will serve as reference for all EMSA maritime applications




First release under development

Data sources:

- Ship data from **IHS**
- Ship data from **SSN** - PortPlus notifications, MRS notifications, Incident Reports
- **THETIS** ship database
- Data on EU flagged ships from **EU LRIT Data Centre**
- Fishing vessels data from **EU Fleet Register**
- Ship updates by **EMSA** data stewards

To be deployed in December and tested by participating MS

Use of reference databases to support MS authorities and EU agencies

 **Central Ship Database**

Business Perspective ◀ Light

Workflows

☐ 450 Inbox

☐ Active workflows

☐ Completed workflow

Data

☒ Ships

☐ Effective Date Mana...

☐ List data

☐ Metadata

Services

☐ Import via Data Exchange

☐ Export via Data Exchange

Reference list

☒ CCD Reference

☐ Ship Types

☐ Status

☐ Dimensions for fish...

☐ Technical details

☐ Technical details for ...

☐ Reference List for fis...

Configuration

Actions ▾

1 - 50 of 124,169

View ▾

◀ ▶ ↺

	CSDID	IMO number	MMSI	Ship name	IR number	External marking	Ship flag	Ship Type IHS	Service Indicator	Gross Ton
<input type="checkbox"/>	CSD000000009	5014290	Show details defined	INTERWAVE	[not defined]	[not defined]	Panama (PAN)	General Cargo Ship (A31A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000014	5019549	[not defined]	ANTARCTICA	[not defined]	[not defined]	[not defined]	General Cargo Ship (A31A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000022	5019800	246337000	ANTIGUA	[not defined]	[not defined]	Netherlands (NLD)	Passenger (Cruise) Ship (A...	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000032	4538548	[not defined]	ISLA ESPANOLA	[not defined]	[not defined]	Ecuador (ECU)	Patrol Vessel (B34H)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000033	4603408	219018865	SEA MASTER	[not defined]	[not defined]	Denmark (DNK)	Platform Supply Ship (B2...	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000034	4734142	557009200	RSIPV GIZO	[not defined]	[not defined]	Solomon Islands (SLB)	Patrol Vessel (B34H)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000035	4908913	419001044	C-449	[not defined]	[not defined]	India (IND)	Patrol Vessel (B34H)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000041	5037759	272581000	BERILL	[not defined]	[not defined]	Ukraine (UKR)	General Cargo Ship (A31A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000064	5076949	366929710	COHO	[not defined]	[not defined]	United States of America ...	Passenger/Ro-Ro Cargo S...	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000102	5115850	[not defined]	FJORDBUEN	[not defined]	[not defined]	Norway (NOR)	General Cargo Ship (A31A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000104	5126512	211262590	TRAVETANK	[not defined]	[not defined]	Germany (DEU)	Oil Products Tanker (A13B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000122	5112779	230090740	FART	[not defined]	[not defined]	Finland (FIN)	Tug (B32A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000147	5171191	367728260	DEBORAH QUINN	[not defined]	[not defined]	United States of America ...	Tug (B32A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000179	5169772	[not defined]	SUNNAN 1	[not defined]	[not defined]	Chile (CHL)	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000188	5203750	725000346	LAS NIEVES	[not defined]	[not defined]	Chile (CHL)	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000192	5247469	[not defined]	NARWAL	[not defined]	[not defined]	Germany (DEU)	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000206	5227976	[not defined]	ARGONAUTE	[not defined]	[not defined]	[not defined]	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000215	5204625	[not defined]	LE CONGOLAIS	[not defined]	[not defined]	Congo - Brazzaville (COG)	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000228	5153383	244890162	WILLEM BARENTSZ	[not defined]	[not defined]	Netherlands (NLD)	Passenger Ship (A37B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000233	5215959	367562380	ADAM F KRAUSE	[not defined]	[not defined]	United States of America ...	Tug (B32A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000258	6511180	[not defined]	LOCUMBA 5	[not defined]	[not defined]	Peru (PER)	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000262	6507397	601481000	STRIKER	[not defined]	[not defined]	South Africa (ZAF)	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000265	5349621	[not defined]	SIN PUNG	[not defined]	[not defined]	[not defined]	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000270	5409586	316005974	TRANS-ST-LAURENT	[not defined]	[not defined]	Canada (CAN)	Passenger/Ro-Ro Cargo S...	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000278	6413481	[not defined]	PATAO	[not defined]	[not defined]	[not defined]	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000283	5407150	[not defined]	ASO VII	[not defined]	[not defined]	[not defined]	Tug (B32A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000287	6507402	[not defined]	QUITEXE	[not defined]	[not defined]	Angola (AGO)	Tug (B32A)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000292	6512990	422080600	FANOOS LIAN	[not defined]	[not defined]	Iran Islamic Republic of (I...	Fishing Vessel (B11B)	In Service/Commission (S)	↗
<input type="checkbox"/>	CSD000000303	6605503	511100427	ZEUS	[not defined]	[not defined]	Dominican Republic (DOM)	Tug (B32A)	In Service/Commission (S)	↗

Future developments

➤ Integration with participating MS systems

MS systems to receive CSD data

➤ Integration with SSN

SSN to use CSD as reference

➤ Additional data sources

- Ship data from **ship certificates** issued by EU ROs
- Data from **national databases**: national flags, leisure crafts
- Ship identification data from **AIS messages**



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European Maritime Safety Agency