Integrated Maritime Services (IMS), SEG and Automated Behaviour Monitoring (ABM)

IMS/SEG/ABMs training for MS

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IMS

Sources for the comprehensive "maritime picture"

T-AIS + S-AIS + LRIT + VMS positions

Mandatory Reporting Systems

Vessel – comprehensive overview (track, port calls EU, inspections) - 1

Vessel – comprehensive overview (track, port calls EU, inspections) - 2

Vessel Voyages #MAERSK ROSYTH | Vessel Tracks | Inspection on MAERSK ROSYTH

Port of Call, ATA Port Of Call, A... — Number of voyages: 10

PORT OF CALL	ATA PORT OF CALL	ATD PORT OF CALL	ANCHORAGE	ETA TO PORT OF CALL	ETD FROM PORT OF CALL
GBMLF (Milford Haven)	2020-01-04 00:13:00	2020-01-10 15:23:00	N/A	2020-01-03 22:40:00	2020-01-10 13:30:00
NLVLI (Vlissingen)	2019-12-30 13:05:00	2020-01-02 07:05:00	N	2019-12-30 13:05:00	2020-01-02 07:05:00
NLBOR (Borssele)	N/A	N/A	N/A	2019-12-27 11:00:00	N/A
ZZCAN (cancel)	N/A	N/A	N/A	2019-12-25 03:00:00	2019-12-26 23:00:00
NLAMS (Amsterdam)	2019-12-24 02:07:47	2019-12-25 14:57:39	N	2019-12-21 21:00:00	2019-12-25 14:45:00
RUVYS (Vysotsk)	N/A	N/A	N/A	2019-12-14 22:00:00	N/A
EEMUG (Muuga)	2019-12-12 16:25:00	2019-12-13 21:10:00	N	2019-12-12 09:00:00	2019-12-13 20:00:00
NLVLI (Vlissingen)	2019-11-21 22:30:00	2019-11-24 18:30:00	N	2019-11-21 22:30:00	2019-11-24 18:30:00

Result - > Global coverage/ awareness

Recent SEG changes

- TTT changes
- Favourites
- Pre-set modes
- New ABMS

Specific SEG functionalities

- Imports – list CSV
- Favourites
- Re-usage in ABM configurations
- Filtering

Vessels of Interest (Watch Lists)

Group/ Common function and export (PDF+)

European Maritime Safety Agency

MARITIME PICTURE

European Maritime Safety Agency

DISCLAIMER

All data, including vessel positions, vessel identifiers, geographic references, maritime boundaries, fisheries and other specific maritime attributes and operational areas, are for information purposes only and do not constitute endorsement by any of the Parties involved in the provision of IMS services. The Parties involved cannot be held responsible or liable jointly or severally with regard to quality, accuracy or completeness of data provided.

European Maritime Safety Agency

Vessel Tracks

Flag	MMSI	IMO	IR	Name	IRCS	Speed	Heading	Latitude	Longitude	Timestamp	Source	Navigational Status
Spain (ES)	224045330	2850590	ESP000025119	PERLES DOS	N/A	2.3 m/s	6.3°	38.469429°	000.21975°	2021-05-20 11:32:17Z	T-AIS	Restricted manoeuverability
Spain (ES)	224095660	8797996	ESP000025931	P BOMBA	N/A	1.6 m/s	44.6°	38.361328°	000.322649°	2021-05-20 11:32:30Z	T-AIS	Engaged in Fishing
Spain (ES)	224182180	N/A	ESP000026740	IAIO PACURRI	N/A	1.6 m/s	222.9°	38.459049°	000.291659°	2021-05-20 11:34:33Z	T-AIS	Engaged in Fishing

ABM recap

Automated Behaviour Monitoring

Automated Behaviour Monitoring (ABM) tool is a computer, rule-based system analysing vessel positions for the detection and alerting of abnormal and/or user specific vessel behaviours.

To support Integrated Maritime Service users in their maritime surveillance functions.

When specific, user-defined criteria are met, operators are alerted: in the graphical interface (and IMS Mobile App) and by means of e-mail notificaons.

Getting started with ABMs

New NRT ABMs

NO.	Situation	Name of the ABM	Status	VTMIS Dir. context
27	Vessels entering a radius (bubble) around other, selected ship(s)	ZoneAroundShipEnhanced	Operational Note: Defining zone using a radius parameter/value. Multiple vessels of interest can be selected in one ABM of 'Enhanced type'	Ships posing potential risk - monitoring
28	Vessel has specific navigational status in AIS transmmission	NavigationalStatus	Operational	Reporting to the coastal stations e.g. engine breakdown
29	Vessel crosses a defined line (e.g. a reporting line)	LineCrossing	Operational	MRS reporting or VTS reporting obligations
30	Vessel enters the area	AreaEntering	Operational	Departure and Arrival notifications verifications/ check/ obligations

Recent developments

Historical ABMs – Cloud based

Benefit from the investment made and the experience gained from the High Performance Integrated Maritime Services (HP-IMS) Long Term Storage (LTS) pilot project.

Implement essential historical capabilities of the Automated Behaviour Monitoring (ABM), including automatic detection of the port calls, at the global scale.

Use Cases Description (H-ABMs)

Anomalous vessel behaviour specific situations in the past, based on historical position reports:

- Entry to an area (In area);
- Drifting;
- At sea encounter;
- Speed anomaly;
- Not reporting;
- Zone around ship;
- Port Calls* (separate service supported by ‘Interoperability’)

Vessel entered area of interest	Vessel was drifting	Vessels were approaching each other	Vessel changed of speed in area of interest	Vessel stopped reporting

Example of the use cases H-ABMs

June 2019

Vessels of Belize flag that drifted in a defined area north of Egyptian coast over a period of 2 weeks in June 2019.

Sep. 2019

Ships which had encounters at sea in a defined area north of Madeira Island over a period of 1 week in September 2019.

Mar. 2019

Vessels that were potentially switching off transponders in the area West of Malta during 2 weeks in March 2019.

Feb. 2019

Ships that entered a zone of 1 NM around a vessel MMSI 261342890 (outside ports) in a period of 2 weeks in February 2019.

May 2019

Fishing vessels that had a speed below 3 knots or above 8 knots in the area Off France, outside ports, during a 5 days period in May 2019.

Oct. 2019

Panama flag vessels that entered an area in the north of Libyan coast over a period of 2 weeks in October 2019.

Example – Carnival Legend in 2018 (Australia and New Zeeland)

Example – Rogalica 2018

At Sea Encounter - Feb 21. South Baltic

Vessels:

Overview:

Main Vessel	Navigation Status	
Yes	7	
IMO	**MMSI**	**IR**
28[illegible]	[illegible]	N.A.
Type	**Breadth**	**Length**
315	6	21
Name	**Flag State**	**Call Sign**
W[illegible]	PL	[illegible]31

Last Port Call:

Port:	Arrival Time:	Departure Time:
N.A.	N.A.	N.A.

Location (Google Maps):

Timestamp	Latitude	Longitude	Heading	Speed
2021-02-01 11:23:24 GMT	54.95425	18.683125		3

Overview:

Main Vessel	Navigation Status	
No	7	
IMO	**MMSI**	**IR**
2[illegible]	261004340	N.A.
Type	**Breadth**	**Length**
315	6	25
Name	**Flag State**	**Call Sign**
[illegible]	PL	[illegible]

Last Port Call:

Port:	Arrival Time:	Departure Time:
N.A.	N.A.	N.A.

Location (Google Maps):

Timestamp	Latitude	Longitude	Heading	Speed
2021-02-01 11:26:01 GMT	54.954494	18.676687		2.7

Event 2

H-ABMs

- Pre-operational validation(s)
- Usage by other services
- SEG implementation
- Examples
- PDF aggregated report
- Example of port calls detected

Training materials

Reference videos/ materials:
http://www.emsa.europa.eu/ecosystem/seg-training-videos.html

Approximate Distance Calculator (ADC)

- **SECA Area Average Distance and Speed**
- **OUT-SECA Area Average Distance and Speed**
- **Overall values**

- **Objective:**
- Support for the estimation of the fuel consumption
- Support to PSC

Notes: Activate ‘Areas’ layer to display simplified SECA area polygon + Change the ‘Track’ symbology

ADC in SEG 1.11

Q&A

Questions?

AOB?

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EMSA

European Maritime Safety Agency