

2.Update on ABMs

ABM and Advanced Analytics WS7

Lisbon, 14.12.2021

The ABM implementation provides two types of capabilities:

1. **‘Near real-time’ algorithms (NRT- ABMs)**, detecting specific or anomalous behaviours and alerting users within around fifteen minutes.
2. **‘Historical’ ABMs (H-ABMs)**, where algorithms use archived position reports or form a database of specific, detected situations and events (e.g. detecting port calls globally). Not time-critical.



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.



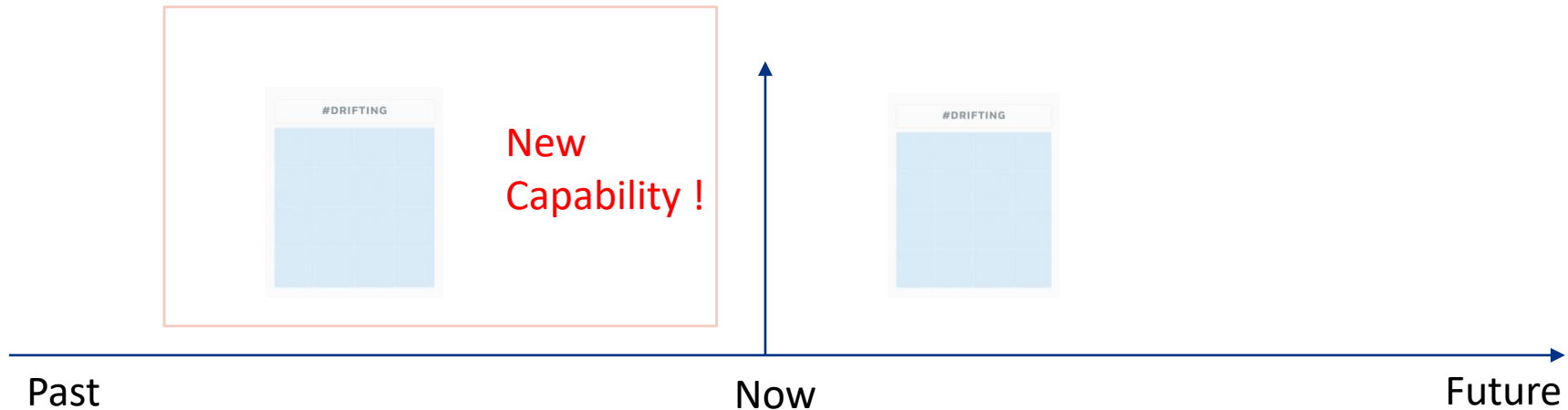
To support Integrated Maritime Service users in their maritime surveillance functions.



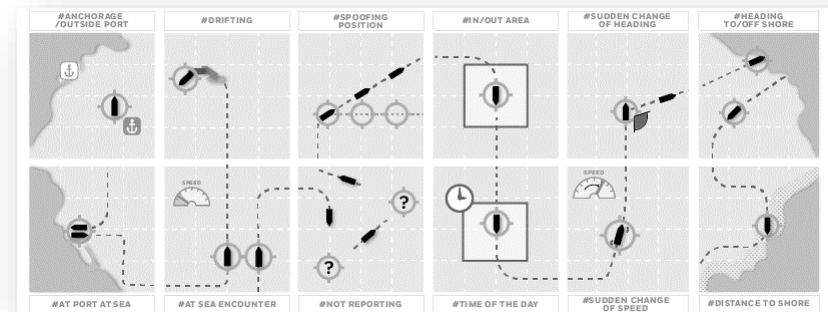
When specific, user-defined criteria are met, operators are alerted: in the graphical interface (and IMS Mobile App) and by means of e-mail notifications.



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

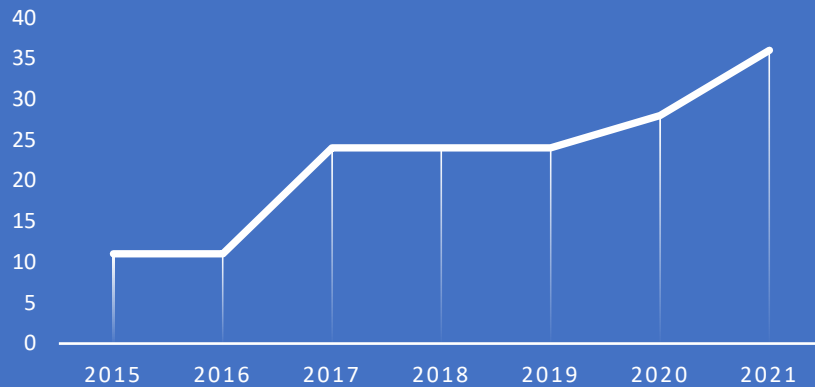


- **360 ABM admin accounts** granted to **21 Member States**, **1 candidate country**, **5 EU Bodies** and **EMSA**.
- **NRT ABMs - 700 running** (actively used) **ABM algorithms**; **+1,500 other ABMs** were used over last year (now either stopped or terminated).
- **H-ABMs Pre-operational** – used by power users **(+300 launched)**. Detected Port Calls are available.
- **29 NRT** and **7 Historical algorithms**.
- Distributed via **over 300 distribution lists** to more than **800 users**.
- Daily, over **8,000 alerts** are provided to ABM users.
- **PL and FX** use **NRT ABM s2s services** (ES- Navy works on s2s connection).

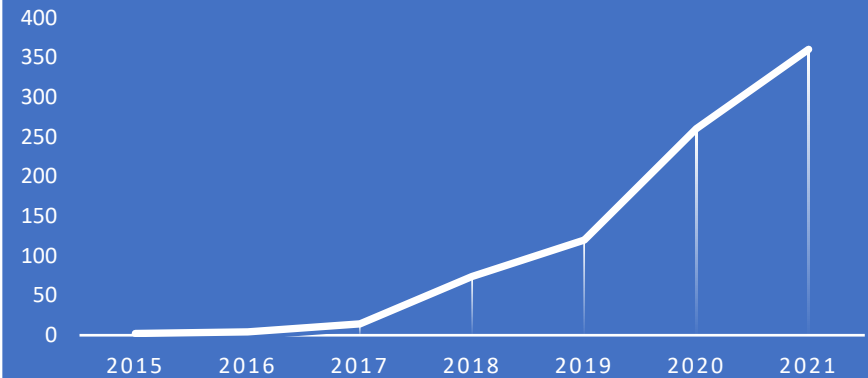


ABM evolution over the years

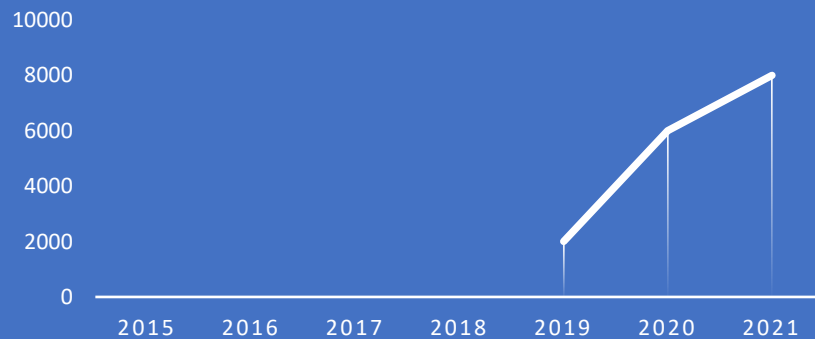
NUMBER OF ABM ALGORITHMS



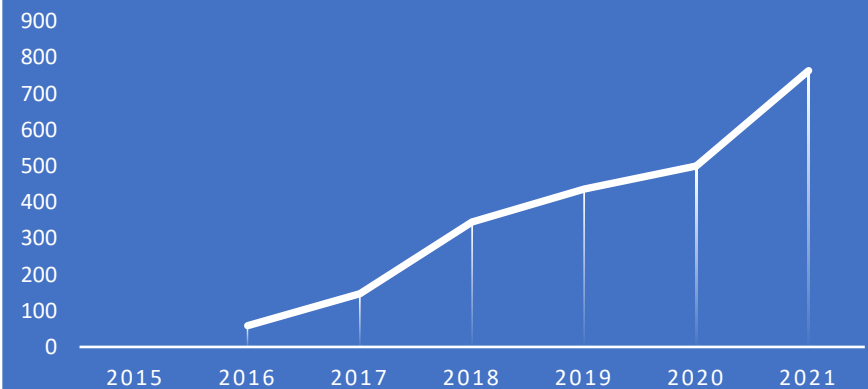
NUMBER OF ABM ADMINS



NUMBER OF ALERTS DAILY AVERAGE

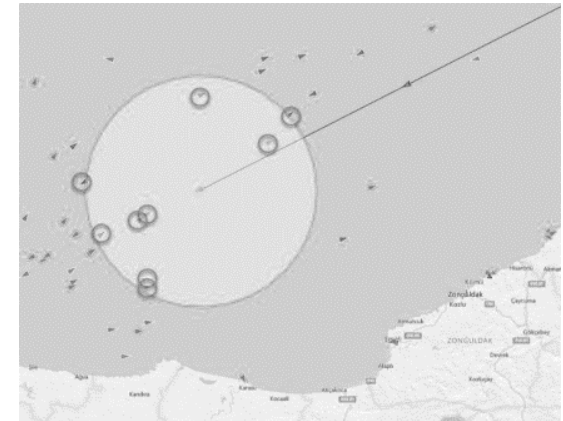


RUNNING ABMS



- **New NRT ABM algorithms**

- 'Zone Around the Ship/ Enhanced'
- 'Uncorrelated VDS in Area'
- 'Navigational status change'
- 'Line crossing'



- **Detection of Port Calls:** Implementation in the Cloud-based infrastructure (H-ABMs)

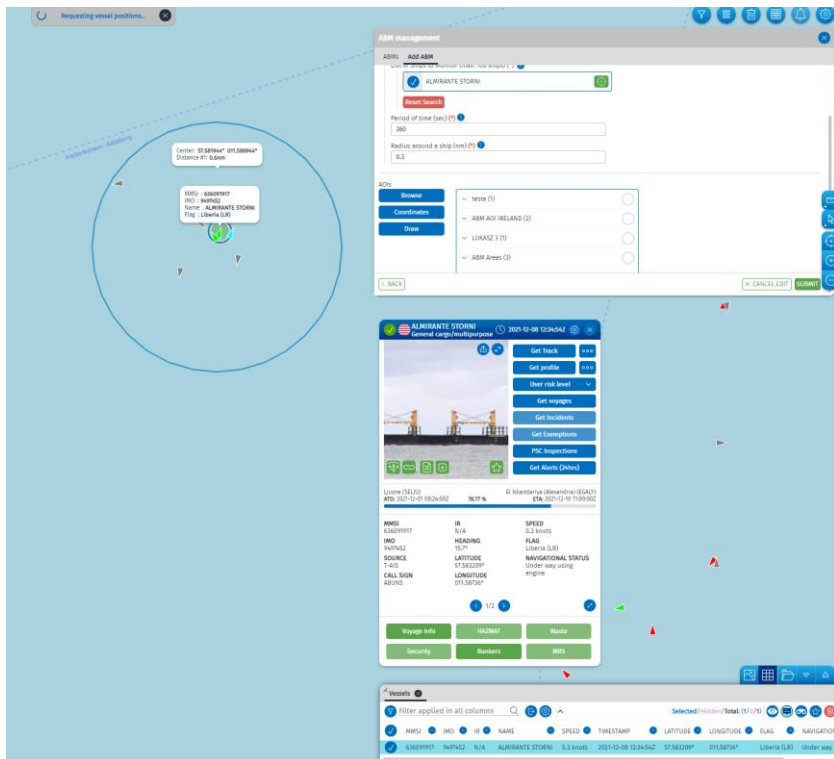


- **Technical adaptations in the STAR ABM module**

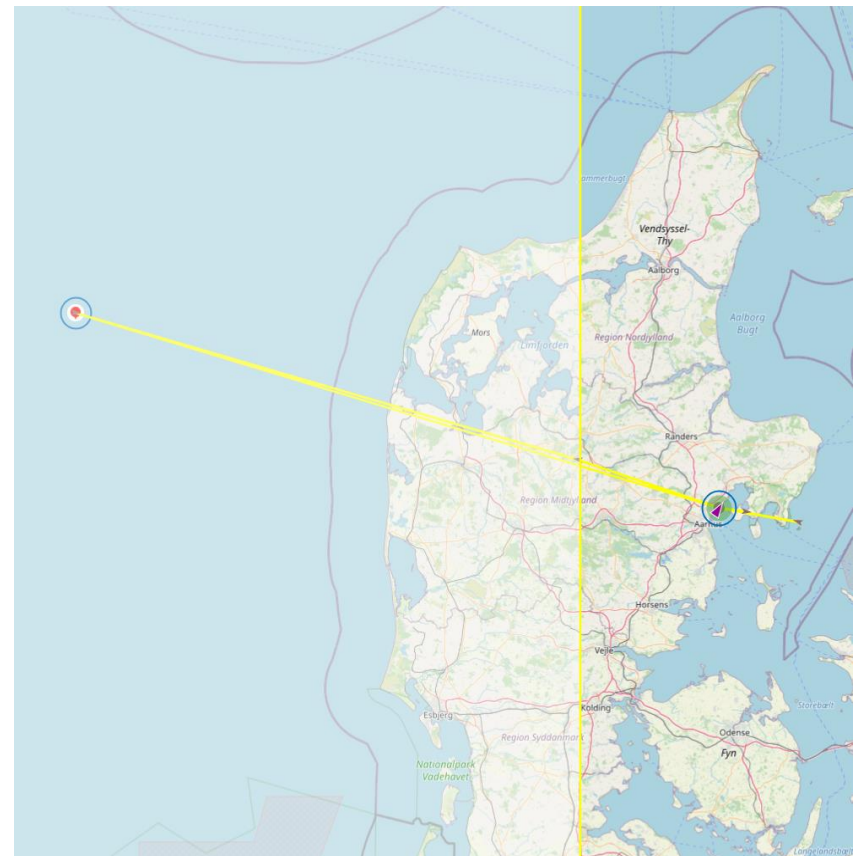
- **Pending** - Use of the 'SafeSeaNet enrichment' in the filtering of vessels of interest

Highlights – new NRT algorithms

Enhanced zone around the ship (example)



Spoofing (example)



- **Combined ABM algorithms**

- DriftingThenHeadingToShore
- OutAreaThenDrifting
- OutAreaThenEncounterAtSea
- ZoneAroundShipThenDrifting
- UncorrelatedVDSThenZoneAroundShip

- **Historical ABMs – configuration in SEG**

- **New NRT ABMs are needed – some changes are needed (active VOI list; display changes)**

To improve:

- Releases/ updates/ bugs detections
- Clear release notes
- Stability- with monitoring and quick incident
- EMAIL report – type and GT
- Manual for ABM usage



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European Maritime Safety Agency