

# 7th ABM Workshop

13 - 15 Dec 2021

Poll results

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## 1. What shall be the operational objectives of the AI and ML?

029

Reduce the workload by automatizing certain analysis



93 %

Display - The related data shall be presented in a user-friendly and aggregated form' supporting ad-hoc analysis



69 %

Others



14 %

## Operational objective of the AI and ML (ENTER OBJECTIVE IN FREE TEXT)

020

(1/2)

- discovery of new modus operadi
- To distribute workload to include machines in support of coast guard tasks
- Support human decision in operational tasks
- This is a good way to avoid the accumulation of information in front of the operator and to achieve important evaluation of important information.
- Risk assessment and analyses
- Automatically surveillance without false positives, how?, with learn lessons
- As mentioned reduce the workload and having a real time situational awareness.
- Identifying potential targets for inspection/investigation
- Monitor vessels of Interest and highlight vessels which might require investigation, the AI should filter, monitor and then alert as required
- able to generate patterns for vessel behaviours, expected routes
- 😊
- Reduce the operators' workload

## Operational objective of the AI and ML (ENTER OBJECTIVE IN FREE TEXT) (2/2)

020

- Reduction in the workload and optimization of all available services.
- automatization of the overload on information to be able to respond more effectively.
- detect navigational risks
- To identify cases of previously unknown behaviour of interest - to find the unknown cases.
- I'm unable to give intelligent advise, due to lack of knowledge
- Analysis of big data
- Out of normal/pattern detection; heat maps
- combine huge amounts of data to generate new insights/information

**(Scenario 1) User selects a vessel and wants to get a labelling for the inconsistency between the destination declared and detected (or predicted)**

(1/2)

0 2 7

AIS position message



AIS Static and voyage related data



SSN Data



Detected Port Calls



Met ocean data



**(Scenario 1) User selects a vessel and wants to get a labelling for the inconsistency between the destination declared and detected (or predicted)**

(2/2)

0 2 7

ETA from SafeSeaNet



Traffic Density Maps (TDMS)



Others





## (Scenario 1) - what are the other data sets can be used for this scenario?

017

(1/2)

- bunker arrangements/ none to my knowledge
- PSC reports,
- Manual position reports?
- In Holland Dirkzwager (commercial provider, which uses available data from us)
- cargo; crew information; companies; last ports of call and next port of call
- Comparison to usual ports visited by the vessel to see if the route is unusual for the vessel
- PSC reports
- Cargo information, ABM alerts, last port of calls
- Pre arrival reports. Port arrival information. Given 24hrs prior
- Maybe historical calls and check on trends
- EO correlated Data, combined with previous information for the vessel port calls
- AIS data
- port call information
- AIS data are the most important
- Pre Arrival Reports
- Thetis EU last 10 port calls

**(Scenario 1) - what are the other data sets can be used for this scenario?**

(2/2)

0 1 7

- number of previous alerts for this vessel

**(Scenario 2) User selects a vessel and a time criterion and wants to obtain a list and tracks of vessels that were following similar (trading/routing) patterns**

(1/2)

026

AIS position message



AIS Static and voyage related data



SSN Data



Detected Port Calls



SSN Port Calls



**(Scenario 2) User selects a vessel and a time criterion and wants to obtain a list and tracks of vessels that were following similar (trading/routing) patterns**  
(2/2)

0 2 6

Incidents

 15 %

## (Scenario 2) - what are the other data sets can be used for this scenario?

0 1 3

- possible dark activity IHS/seaweb
- routening data
- areas without AIS and areas where the vessel stopped transmitting
- Routing Information; actual/from the past
- AIS data of tracks that are saved locally and can be analyzed via Greenplum
- SAR and response assets (distance to)
- Traffic density
- metocean and weather data, crew composition, ship operator/s,
- VTS data
- Generic ABMs running worldwide, to be used as a reference dataset to see if vessels triggered similar alerts.
- -
- Time spent in ports
- Traffic Density Maps

**(Scenario 3) User selects a vessel and wants to get an information if the ships conducts unsustainable/ not viable economic activity.**

(1/2)

0 2 4

AIS position message



AIS Static and voyage related data



SSN Data



Detected Port Calls



SSN Port Calls



**(Scenario 3) User selects a vessel and wants to get an information if the ships conducts unsustainable/ not viable economic activity.**

(2/2)

0 2 4

Public Data



Other



## (Scenario 3) - what are the other data sets can be used for this scenario?

0 1 2

- Ownership information: one-ship companies who leave vessels abandoned for long periods; frequent ownership changes. Vessel by type: presence in a port that cannot load that type of vessel.
- RPAS pictures
- tracking of the ship and gathering information through open source intelligence
- Equasis / PSc/ Incident reports
- SIGINT
- direct observation by Maritime Patrol Aircraft or other vessels
- VDR on ship when inspecting the ship
- Radar images CTV on structures at sea
- seaweb or IHS indicating dark activity
- Port distance calculator
- Historic owners of the ship
- -



**(Scenario 4) User selects a area & wants to obtain aggregated list of vessels with detected anomalous or specific situations focusing on potential incidents.**

(1/2)

AIS position message



AIS Static and voyage related data



SSN Data



Detected Port Calls



ABMs



**(Scenario 4) User selects a area & wants to obtain aggregated list of vessels with detected anomalous or specific situations focusing on potential incidents.**

(2/2)

0 2 3

Incident reports/ public or SSN



## (Scenario 4) - what are the other data sets can be used for this scenario?

0 1 6

- non-SOLAS vessels patterns, historic near misses, news portals,...
- inspection history
- Thetis
- navigational information
- VDS
- speed / gear / activity information (fishery)
- Hazmat; incidents (all)
- Thetis inspection history
- Radar overlay
- News
- Sitreps (SSN)
- Inspections - flagging vessels with known deficiencies that could lead to an accident in certain conditions.
- meteo data
- EMCIP
- Hazmat-Details
- Flag and companies

## Scenario 1 - Presentation / Display preferences

022

Flag in SEG



Separate Dashboard / analytics



Other



## Scenario 2 - Presentation / Display preferences

0 2 3

Flag in SEG



Separate Dashboard / analytics



Other



## Scenario 3 - Presentation / Display preferences

022

Flag in SEG



59 %

Separate Dashboard / analytics



36 %

Other



5 %

## Scenario 4 - Presentation / Display preferences

019

Flag in SEG



Separate Dashboard / analytics



Other



**Potential, future dashboards preferences  
(VTMIS scenarios) - mark one of the scenarios  
only**

0 2 3

AIS compliance scenarios (invalid MMSI, invalid position reports)



Lack of SSN Port+ vs. entry to a MS EEZ



Lack of SSN Port+ (comparison ETA reported vs. Port ATA) vs.  
Destination ETA reported for EU port in AIS destination





## Potential, future dashboards preferences - free text - think about one scenario.

0 1 3

- To analyse ship data, which only passing the EEZ, without calling a port. e.g. from South America to Russia Black activities
- signal lost (dark activity)
- lost anchors
- Owners/agents details
- autonomous ships for future comparisons between conventional vs autonomous ships
- Vessels transmitting invalid IMO or MMSI number in message 5
- Deviation from the previous route to the destination in AIS
- Invalid AIS / VMS signals (fishery monitoring use)
- Is there also a possibility for a dashboard for Hazmat, Cargo, Port and De-bunker information
- Check for vessels who cancel portplus oftenly
- invalid combination of flag, mmsi and callsign indicated port security levels in SSN vs real port security levels
- Detected Port Calls vs Reported to SSN
- -