

7th ABM and Advanced Analytics Workshop

EMSA-FRONTEx SERVICE LEVEL AGREEMENT

ABM SYSTEM-TO-SYSTEM: ANOMALY DETECTION SERVICE

EMSA Department 3 / Frontex Information Fusion Centre

FRONTEx

 **EMSA**

Areas

- InArea
- OutArea
- FromAreaToArea
- TimeAndPeriodOfDay
- AtSeaEncounter
- LineCrossing
- ZoneAroundShip
- ZoneAroundShipEnhanced

Distances

- DistanceToArea
- DistanceToShore
- HeadingOffShore
- HeadingToShore

Reporting Parameters

- OverReporting
- NotReporting
- SpoofingPositionInError
- UnderReporting

Navigation Status

- Anchorage
- Drifting
- SpeedAnomalyOverPeriod
- SuddenChangeOfHeading
- SuddenChangeOfSpeed
- NavigationalStatus

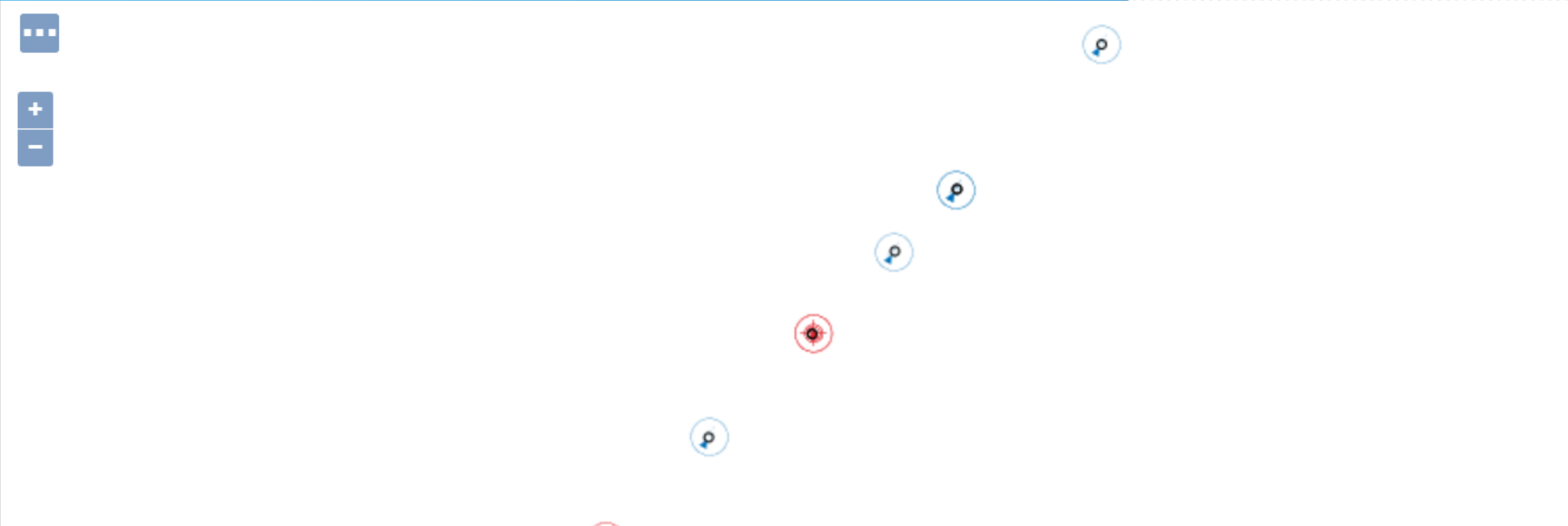
Port

- DesignatedPortOfArrival
- DesignatedPortOfDeparture
- SuddenChangeOfSpeedOutsidePort
- AnchorageOutsidePort
- SpeedAnomalyOverPeriodOutsidePort
- AtPortAtSea



Automated Behaviour Monitoring

Frontex system-to-system: Anomaly Detection Service



VESSEL_ANOMALY

fid	ALERT_ID	FRONTEX_USERNAME	START_TIME	END_TIME	LATITUDE	LONGITUDE	LATITUDE_DMS	LONGITUDE_DMS
1635405156653	1635405156653	FTX019	28/10/21 05:16	28/10/21 05:26	-9.006	-9.006	36 58'12.0"N	9 0'21.6"W

Automated Behaviour Monitoring

Frontex system-to-system: Anomaly Detection Service

Table 2.1 Black Flag Vessels with alerts reported by ABM Area of Interest

Vessel name	Vessel MMSI	x	Vessel IMO	Vessel Type	Flag	N° Alerts
				Bulk Carrier	BZ	3
				Bulk Carrier	BZ	11
				Bulk Carrier	BZ	9
				Bulk Carrier	MD	7
				Bulk Carrier	SL	41
				General Cargo	BZ	8
				General Cargo	BZ	5
				General Cargo	BZ	11
				General Cargo	MD	13
				General Cargo	MD	1
				General Cargo	MD	41
				General Cargo	SL	9
				Livestock Carrier	SL	15
				Livestock Carrier	TG	11
				Livestock Carrier	TG	8
				N/A	KM	2
				N/A	KM	6
				Ro-ro Cargo	TG	1
				Vehicle Carrier	TG	12

Table 2.4 N° Vessels in the VRS with ABM Alerts

Vessel Flag	N° of Vessels	N° Alerts
Panama (PA)	12	124
Antigua and Barbuda (AG)	9	84
Norway (NO)	2	9
Palau (PW)	2	1130
Vanuatu (VU)	2	46
Dominica (DM)	1	1
Jamaica (JM)	1	5
N/A	1	9
Russian Federation (RU)	1	1
Saint Vincent and the Grenadines (VC)	1	4
Total	32	1413

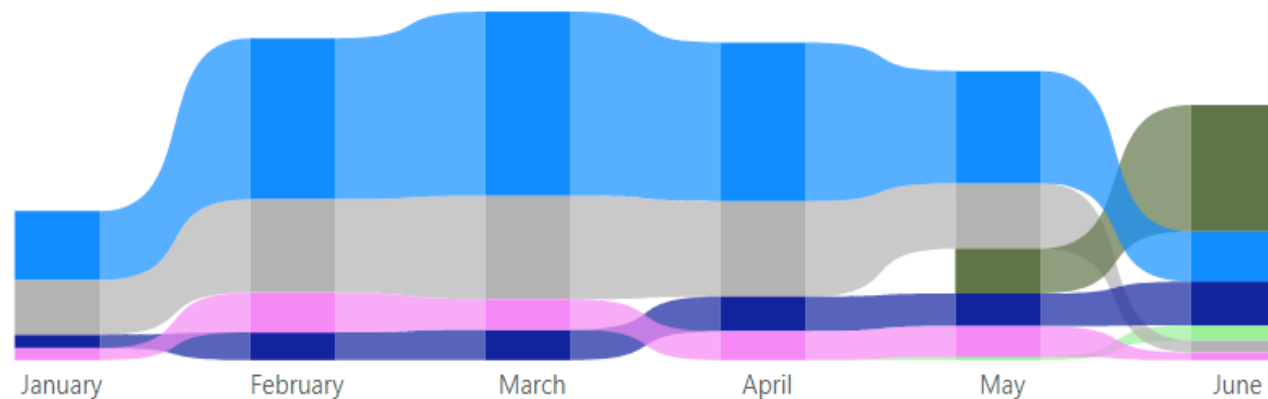
Table 2.2 N° of alerts by Area of Interest

Operation	N° Alerts
	29454
	2
	1716
	57
	1964
	387
	24885
	2
Total	58465

Table 2.3 Alerts by Surveillance Type

Surveillance type	N° Alerts
	50341
	2150
	1716
	1587
	1392
	1158
	110
	11
	1
Total	58465

Surveillance type



Automated Behaviour Monitoring

Frontex system-to-system: Anomaly Detection Service



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EMSA-Frontex SLA

Analyze Sheet

Narrate Storytelling

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Anomaly Detection S...

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Selections

EMSA

Anomaly Detection Service: Configured anomalies and alerts statistics - Data

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Vessel Monitoring and Tracking

Anomaly Detection Service

Vessel Detection Service

Satellite Imagery

✓ Data

Usage

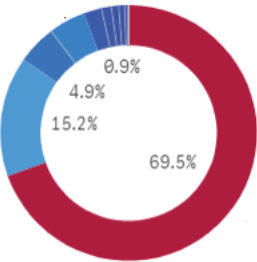


Total Alerts
1,132,382

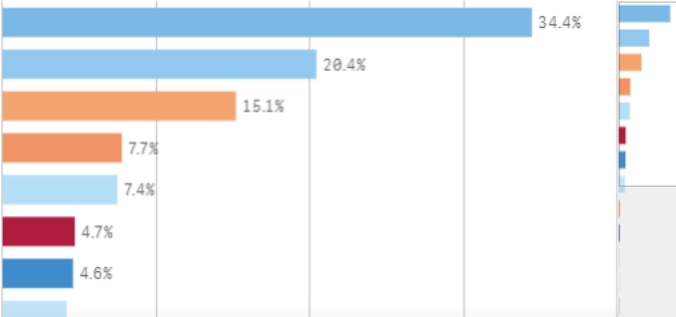
Avg Alerts per Day
3,019.7

Total ABMs
144

Alerts per User



% Alerts per ABM Type



ABMs per Type and Status

ABM Type 🔍	ABM Name 🔍	ABM ID 🔍	ABM Status 🔍				
			Blocked	Pending	Running	Stopped	Terminated
⊕ Anchorage			-	-	5	7	15
⊕ AnchorageOutsidePort			-	-	-	1	-
⊕ AreaEntering			-	-	6	-	-
⊕ AtPortAtSea			-	-	-	-	3
⊕ AtSeaEncounter			-	1	13	13	42
⊕ ChangeOfPort			-	-	-	-	1

Date

Month

Year

ABM Type

ABM Name

ABM Status

User

📖 User Manual