



An Enhanced Common Information Sharing Environment for Border Command, Control and Coordination Systems

Grant Agreement Number: 833881

D.3.1 e-CISE Data Model description

Deliverable Identifier:	D.3.1
Deliverable Due Date:	2020/03/31
Deliverable Submission Date:	2020/04/21
Deliverable Version:	v.1.2.6
Author(s) and Organisation:	Spyros Antonopoulos (SATWAYS), Manolis Tsogas (SATWAYS), Marios Moutzouris (SATWAYS), Antonis Kostaridis (SATWAYS), Aggelos Aggelis (SATWAYS), Leonidas Perlepes (SATWAYS)
Work Package:	WP3 Overall Design, Architecture & Interoperability Framework
Task:	Task 3.1 Enhanced CISE (e-CISE) Data Model for Border Monitoring & Control
Dissemination Level:	PU: Public



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 833881.

Document Control Page

Deliverable Number:	D3.1	
Deliverable Title:	e-CISE Data Model description	
Deliverable Version:	v.1.2.6	
Work Package Number:	WP3	
Work Package Title:	WP3 Overall Design, Architecture & Interoperability Framework	
Submission Date:	2020/04/21	
Dissemination Level:	<input checked="" type="checkbox"/> PU: Public <input type="checkbox"/> CO: Confidential, only for members of the Consortium (including the Commission Services) <input type="checkbox"/> RE: RESTREINT UE (Commission Decision 2015/444/EC)	
Status:	<input checked="" type="checkbox"/> Draft <input checked="" type="checkbox"/> Consortium reviewed <input checked="" type="checkbox"/> Peer reviewed <input checked="" type="checkbox"/> Management Support Team reviewed <input checked="" type="checkbox"/> Project Coordinator accepted	
Author(s):	Spyros Antonopoulos	SATWAYS
	Manolis Tsogas	SATWAYS
	Marios Moutzouris	SATWAYS
	Antonis Kostaridis	SATWAYS
	Aggelos Aggelis	SATWAYS
	Leonidas Perlepes	SATWAYS
Contributor(s):	Fernando Labarga Ávalos	GMV
	Juan Manuel Grenner Noguerón	GMV
	Óscar Sotodosos Arias	GMV
	Giuseppe Vella	ENGINEERING
	Giovanni Barone	ENGINEERING
	Simone Brocchetti	ENGINEERING
	João Pastor	INOVAWORKS
	Matteo Scuro	CMCC
	Roberto Leuzzi	CODIN
	Costas Rizogiannis	KEMEA
	Anestis Nikas	HCG
	Ioannis Petropoulos	HELPOL
	Nexhat Kapidani	MSD
Peer Reviewer(s):	David Berger	JRC
	João Pastor	INOVAWORKS
	Simone Brocchetti, Giuseppe Vella, Giovanni Barone	ENGINEERING
Security Assessment:	<input checked="" type="checkbox"/> Passed <input type="checkbox"/> Rejected Comments: -	

Funding Authority:	European Commission
Funding Program:	Horizon 2020 Secure Societies Work Programme 2018 – 2020
Topic:	SU-BES03-2018 Demonstration of applied solutions to enhance border and external security, Subtopic [2018]: Open
Rights:	ANDROMEDA Consortium

Version History

Version	Date	Edited by	Description
v.0.1	2019/11/01	Spyros Antonopoulos	1 st draft
v.0.2	2020/01/09	Spyros Antonopoulos	2 nd draft. Ready for contribution
v.1.0	2020/01/31	Spyros Antonopoulos	3 rd draft. Final Table of content
v.1.1.0	2020/02/07	Spyros Antonopoulos	Changes from CISE to e-CISE documented
v.1.1.1	2020/02/17	Spyros Antonopoulos	Content updates after partners contributions
v.1.1.3	2020/02/18	Spyros Antonopoulos	All new e-CISE entities documented
v.1.2.1	2020/03/05	Spyros Antonopoulos	Updated with CISE Workshop's Technical & End Users feedback
v.1.2.2	2020/03/09	Spyros Antonopoulos	Final draft. Ready for internal review
v.1.2.3	2020/03/17	Spyros Antonopoulos	Peer-Review of ENGINEERING
v.1.2.4	2020/03/18	Spyros Antonopoulos	Peer-Review of INOVAWORKS
v.1.2.5	2020/04/17	Spyros Antonopoulos	Peer-Review of JRC
v.1.2.6	2020/04/21	Alkis Astyakopoulos	Internal approval review by the MST
v.1.2.6	2020/04/21	Athina Foka	v.1.2.6 submitted

Executive Summary

This document describes the Enhanced CISE (e-CISE) which is the Common Information Sharing Environment used for information exchange between Border Command, Control & Coordination Systems. E-CISE aims to unlock the full capabilities of the CISE Model by enhancing the Maritime vocabulary of CISE and by extending its scope to the Land Surveillance and Operational Information Exchange.

The e-CISE Data Model is built on top of the latest version of the CISE Data Model used in EUCISE2020 Project [2]. The e-CISE Data Model provides enrichments to the vocabulary of the CISE Data Model regarding the Maritime & Land domains by introducing new entities associations, capabilities and richer set of types in several enumerations. Among others, e-CISE is providing a richer set of Vessel types, AIS & Radar Sensor definitions, Maritime & Land Anomaly with a broader set of anomaly types and rules, new classification and detection capabilities of entities.

It also defines the vocabulary required to support all functional blocks and architecture of the ANDROMEDA Borders Command and Control Systems. Regarding Land Border Surveillance several new entities are introduced. To mention a few of the most important ones, Operation, Mission, Task entities to define all Border Surveillance activities, Subject entity to define the main focus of those activities, Sensor entity to support legacy sensors of Andromeda (Camera, Radar, AIS), as well as Report entity representing the reporting process of surveillance activities.

The e-CISE Data Model also defines the data model used for information exchange of ANDROMEDA Data Fusion and Decision Support services. For the integration and interoperability of the Data Fusion Services, the e-CISE Rule entity is designed, acting as the configuration model of those systems. Finally, regarding Decision Support Tools, the entities Simulation Request & Simulation Response are defined acting as the exchange model between an ANDROMEDA C2 and the DST.

This document demonstrates the transition from CISE to e-CISE by documenting all changes in depth.

Disclaimer

The content of the publication herein is the sole responsibility of the publishers and it does not necessarily represent the views expressed by the European Commission or its services.

While the information contained in the documents is believed to be accurate, the authors(s) or any other participant in the ANDROMEDA consortium make no warranty of any kind with regard to this material including, but not limited to the implied warranties of merchantability and fitness for a particular purpose.

Neither the ANDROMEDA Consortium nor any of its members, their officers, employees or agents shall be responsible or liable in negligence or otherwise howsoever in respect of any inaccuracy or omission herein.

Without derogating from the generality of the foregoing neither the ANDROMEDA Consortium nor any of its members, their officers, employees or agents shall be liable for any direct or indirect or consequential loss or damage caused by or arising from any information advice or inaccuracy or omission herein.

Copyright message

©ANDROMEDA Consortium, 2019-2021. This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both. Reproduction is authorised provided the source is acknowledged.

Table of Contents

1. Introduction	22
1.1. Purpose of the document.....	22
1.2. Reference documents.....	22
1.3. Definitions	22
1.4. Structure of the document.....	23
1.5. List of Acronyms.....	23
2. Technical Specifications Traceability.....	25
3. e-CISE Data Model Design Considerations.....	27
3.1. Impacts of Andromeda on the CISE Data Model.....	27
4. High Level Design	28
4.1. e-CISE Data Model Overview	28
5. e-CISE Data Model	30
5.1. e-CISE As Is CISE Entities.....	30
5.1.1. Cargo Core Entity.....	30
5.1.2. Person Core Entity.....	30
5.2. e-CISE Enhanced CISE Entities.....	30
5.2.1. Entity Namespace	30
5.2.1.1. Entity Class.....	30
5.2.1.2. ClassificationType Enumeration.....	30
5.2.1.3. ConfirmationStatusType Enumeration.....	31
5.2.2. UniqueIdentifier Namespace	32
5.2.2.1. CorrelatedWith Association Class	32
5.2.2.2. CorrelationMetadata Class	32
5.2.2.3. FusionMetadata Class (subclass of CorrelationMetadata)	33
5.2.2.4. CorrelationSourceType Enumeration.....	33
5.2.3. Action Namespace	33
5.2.3.1. Action Class (subclass of Event)	33
5.2.4. Agent Namespace	33
5.2.4.1. Agent Class (subclass of Entity).....	33
5.2.4.2. Animal Class (subclass of Agent).....	34
5.2.4.3. AgentLocation Association Class	34
5.2.4.4. AgentRoleInObjectType Enumeration.....	34

5.2.4.5. AnimalType Enumeration	34
5.2.5. Anomaly Namespace	35
5.2.5.1. Anomaly Class (subclass of Event)	35
5.2.5.2. MaritimeAnomaly Class (subclass of Anomaly).....	35
5.2.5.3. LandAnomaly Class (subclass of Anomaly)	35
5.2.5.4. MaritimeAnomalyType Enumeration	36
5.2.5.5. LandAnomalyType Enumeration.....	38
5.2.6. Document Namespace	39
5.2.6.1. Document Class (subclass of Entity)	39
5.2.6.2. MediaDocument Class (subclass of AttachedDocument)	39
5.2.6.3. LocationDocumentType Enumeration	39
5.2.7. Event Namespace	40
5.2.7.1. Event Class	40
5.2.7.2. EventLocation Association Class	40
5.2.7.3. AgentEvent Association Class.....	40
5.2.7.4. AgentRoleInEventType Enumeration.....	40
5.2.7.5. LocationRoleInEventType Enumeration.....	41
5.2.7.6. AgentClassificationType Enumeration	41
5.2.8. Incident Namespace	42
5.2.8.1. Incident Class (subclass of Event)	42
5.2.8.2. MaritimePollutionIncident Class (subclass of MaritimeSafetyIncident)	42
5.2.8.3. LawInfringementIncident Class (subclass of Incident).....	42
5.2.8.4. SmugglingIncident Class (subclass of LawInfringementIncident)	43
5.2.8.5. IrregularMigrationIncident class (subclass of Incident).....	43
5.2.8.6. IncidentStatusType Enumeration.....	43
5.2.8.7. BorderFlowPathType Enumeration	44
5.2.8.8. SmuggledObject Datatype.....	44
5.2.8.9. SmugglingIncidentType Enumeration	45
5.2.8.10. CrisisIncidentType Enumeration	45
5.2.9. Risk Namespace	45
5.2.9.1. Risk Class (subclass of Entity)	45
5.2.9.2. RiskLevelType Enumeration.....	45
5.2.9.3. RiskProbabilityType Enumeration.....	46
5.2.9.4. RiskType Enumeration.....	46

5.2.10.	Location Namespace	46
5.2.10.1.	UML Model.....	47
5.2.10.2.	StationLocation Class (subclass of Location).....	47
5.2.10.3.	Area Class (subclass of Location).....	47
5.2.10.4.	Geometry Class.....	47
5.2.10.5.	PointGeometry Class (subclass of Geometry)	48
5.2.10.6.	CircularGeometry Class (subclass of Geometry).....	48
5.2.10.7.	BoundingBoxGeometry Class (subclass of Geometry).....	48
5.2.10.8.	WKTGeometry Class (subclass of Geometry).....	49
5.2.10.9.	XMLGeometry Class (subclass of Geometry).....	49
5.2.10.10.	MeteoOceanographicCondition Class (subclass of Entity)	49
5.2.10.11.	LocationZoneType Enumeration	50
5.2.10.12.	OperationalPurposeType Enumeration	51
5.2.10.13.	StationType Enumeration	51
5.2.11.	Period Namespace	51
5.2.11.1.	AllocationSlot class.....	51
5.2.11.2.	SlotReccurenceType Enumeration.....	52
5.2.12.	Metadata Namespace	52
5.2.12.1.	Metadata Class.....	52
5.2.12.2.	MediaType Enumeration	52
5.2.13.	Object Namespace	53
5.2.13.1.	Vehicle class (subclass of Object).....	53
5.2.13.2.	LandVehicle class (subclass of Vehicle).....	54
5.2.13.3.	Aircraft class (subclass of Vehicle).....	54
5.2.13.4.	ObjectLocation Association Class	55
5.2.13.5.	SourceType Enumeration	55
5.2.13.6.	PlannedOperationsType Enumeration.....	56
5.2.13.7.	LocationRoleType Enumeration	56
5.2.13.8.	LandVehicleType Enumeration	56
5.2.13.9.	AircraftType Enumeration.....	57
5.2.14.	Vessel Namespace	58
5.2.14.1.	Vessel class (subclass of Vehicle).....	58
5.2.14.2.	VesselType Enumeration.....	58
5.2.15.	Movement Namespace	59

5.2.15.1.	MovementType Enumeration	59
5.2.16.	OperationalAsset Namespace	59
5.2.16.1.	OperationalAsset class (subclass of Entity).....	59
5.2.16.2.	OperationalAssetType Enumeration	59
5.2.17.	Organization Namespace	60
5.2.17.1.	OrganizationPurposeType Enumeration.....	60
5.2.17.2.	OrganizationRoleType Enumeration.....	60
5.2.18.	e-CISE New Core Entities	61
5.3.1.	Sensor Namespace	61
5.3.1.1.	UML Diagram	61
5.3.1.2.	Sensor Class (subclass of Object)	61
5.3.1.3.	AisDevice Class (subclass of Sensor)	62
5.3.1.4.	Camera Class (subclass of Sensor)	62
5.3.1.5.	NetworkCamera Class (subclass of Camera)	63
5.3.1.6.	Radar Class (subclass of Sensor)	64
5.3.1.7.	RadarConfiguration Datatype	64
5.3.1.8.	LocationSensor Association Class	65
5.3.1.9.	SensorMetadata Class	65
5.3.1.10.	TrackingMetadata Class (subclass of SensorMetadata)	65
5.3.1.11.	DetectionMetadata Class (subclass of SensorMetadata)	65
5.3.1.12.	CameraDetectionMetadata Class (subclass of DetectionMetadata)	66
5.3.1.13.	VideoDetectionMetadata Class	66
5.3.1.14.	HostPlatform Association Class	67
5.3.1.15.	HostEntityType Enumeration	67
5.3.1.16.	SensorType Enumeration	67
5.3.1.17.	SensorStatusType Enumeration	68
5.3.1.18.	AisType Enumeration	69
5.3.1.19.	RadarBandType Enumeration.....	69
5.3.1.20.	CameraType Enumeration.....	70
5.3.1.21.	CameraScopeType Enumeration.....	70
5.3.1.22.	CameraOperationalModeType Enumeration	70
5.3.1.23.	ConnectionType Enumeration	71
5.3.1.24.	SensorRoleInLocationType Enumeration	71
5.3.2.	Operation Namespace	72

5.3.2.1.	UML Diagram	72
5.3.2.2.	Operation Class (subclass of Event)	73
5.3.2.3.	OperationType Enumeration	73
5.3.2.4.	OperationStatusType Enumeration	74
5.3.2.5.	OperationMission Association Class	74
5.3.2.6.	OperationTask Association Class	74
5.3.3.	Mission Namespace	75
5.3.3.1.	UML Diagram	75
5.3.3.2.	Mission Class (subclass of Event)	75
5.3.3.3.	MissionTask Association Class	76
5.3.3.4.	CollectionPlan Class (subclass of Entity).....	77
5.3.3.5.	InformationRequirement Class (subclass of Entity)	78
5.3.3.6.	ReconnaissanceRequirement Class.....	79
5.3.3.7.	CollectionPlanAgent Association Class.....	79
5.3.3.8.	InformationRequirementIndicator Association Class	80
5.3.3.9.	MissionType Enumeration	80
5.3.3.10.	MissionStatusType Enumeration	80
5.3.3.11.	CollectionPlanStatusType Enumeration.....	81
5.3.3.12.	CollectionPlanPublishedStatusType Enumeration.....	81
5.3.3.13.	AgentRoleInCollectionPlanType Enumeration	82
5.3.4.	Task Namespace	82
5.3.4.1.	UML Diagram	83
5.3.4.2.	Task Class (subclass of Event)	83
5.3.4.3.	TaskOperationalAsset Association Class	84
5.3.4.4.	TaskTask Association Class	85
5.3.4.5.	TaskMission Association Class	85
5.3.4.6.	TaskDomainType Enumeration.....	85
5.3.4.7.	TaskType Enumeration	85
5.3.4.8.	TaskResponseType Enumeration.....	87
5.3.4.9.	TaskStatusType Enumeration	87
5.3.4.10.	TaskAcknowledgementStatusType Enumeration	88
5.3.4.11.	TaskRoleInMissionType Enumeration.....	88
5.3.5.	Request For Information Namespace.....	88
5.3.5.1.	UML Diagram	89

5.3.5.2. RequestForInformation Class (subclass of Entity)	89
5.3.6. Report Namespace.....	90
5.3.6.1. UML Diagram	90
5.3.6.2. Report Class (subclass of AttachedDocument)	91
5.3.6.3. IntelligenceReport Class (subclass of Report).....	91
5.3.6.4. ReportAgent Association Class	91
5.3.6.5. ReportReport Association Class	92
5.3.6.6. AgentRoleInReportType Enumeration	92
5.3.6.7. ReportType Enumeration	92
5.3.6.8. IntelligenceReportType Enumeration	93
5.3.6.9. ReliabilityType Enumeration	93
5.3.6.10. CredibilityType Enumeration	93
5.3.6.11. ReportDisseminationLevelType Enumeration.....	94
5.3.6.12. ReportRoleInReportType Enumeration.....	94
5.3.7. Rule Core (DFS Namespace)	95
5.3.7.1. UML Diagram	95
5.3.7.2. Rule Class (subclass of Entity).....	95
5.3.7.3. ComplexRule Association Class.....	97
5.3.7.4. RuleType Enumeration	97
5.3.7.5. RuleDomainType Enumeration	100
5.3.7.6. RuleStatusType Enumeration	100
5.3.7.7. RuleExecutionModeType Enumeration	100
5.3.7.8. RuleRoleInRuleType Enumeration.....	101
5.3.8. Simulation Core (DST Namespace).....	101
5.3.8.1. UML Diagram	102
5.3.8.2. SimulationRequest Class (subclass of Entity)	102
5.3.8.3. OilSpillSimulationRequest Class (subclass of SimulationRequest)	103
5.3.8.4. ShipNavigationSimulationRequest Class (subclass of SimulationRequest)	104
5.3.8.5. DriftingSimulationRequest Class (subclass of SimulationRequest)	104
5.3.8.6. MeteoOceanographicConditionPredictionRequest Class (subclass of SimulationRequest) ...	105
5.3.8.7. SimulationResponse Class (subclass of Entity).....	105
5.3.9. Subject Core (Mission Namespace).....	105
5.3.9.1. UML Diagram	106

5.3.9.2.	Subject Class	106
5.3.9.3.	LocationSubject Association Class.....	107
5.3.9.4.	AgentSubject Association Class	107
5.3.9.5.	ObjectSubject Association Class	107
5.3.9.6.	SubjectType Enumeration	108
5.3.9.7.	SubjectIdentificationStatusType Enumeration	108
5.3.10.	Utilities Namespace	109
5.3.10.1.	KeyValueElement Datatype	109
5.3.10.2.	ValueDataType Enumeration	109
5.3.10.3.	PriorityType Enumeration	110
5.3.10.4.	StatusType Enumeration	110
5.3.10.5.	Percentage Simple Type.....	111
5.3.10.6.	Confidence Datatype	111
6.	Conclusions	112
7.	Annex A: XML SCHEMAS FOR THE e-CISE Data Model.....	113
8.	Annex B: The CISE Data Model Definition	114
8.1.	The CISE Data Model	114
8.1.1.	Entity Core Entity.....	114
8.1.1.1.	Entity UML Models.....	114
8.1.1.2.	Entity Vocabulary	114
8.1.2.	Action Core Entity.....	114
8.1.2.1.	Action UML Models.....	114
8.1.2.2.	Action Vocabulary	115
8.1.3.	Agent Core Entity.....	118
8.1.3.1.	Agent UML Models.....	118
8.1.3.2.	Agent Vocabulary	119
8.1.4.	Anomaly Core Entity	138
8.1.4.1.	Anomaly UML Models	138
8.1.4.2.	Anomaly Vocabulary	139
8.1.5.	Cargo Core Entity	140
8.1.5.1.	Cargo UML Models	140
8.1.5.2.	Cargo Vocabulary	141
8.1.6.	Document Core Entity	153
8.1.6.1.	Document UML Models	153

8.1.6.2. Document Vocabulary	154
8.1.7. Event Core Entity	167
8.1.7.1. Event UML Models	167
8.1.7.2. Event Vocabulary	167
8.1.8. Incident Core Entity	172
8.1.8.1. Incident UML Models.....	172
8.1.8.2. Incident Vocabulary	173
8.1.9. Location Core Entity.....	185
8.1.9.1. Location UML Models.....	185
8.1.9.2. Location Vocabulary	186
8.1.10. Metadata Core Entity	197
8.1.10.1. Metadata UML Models	197
8.1.10.2. Metadata Vocabulary	198
8.1.11. Movement Core Entity.....	201
8.1.11.1. Movement UML Models.....	201
8.1.11.2. Movement Vocabulary	202
8.1.12. Object Core Entity	203
8.1.12.1. Object UML Models	203
8.1.12.2. Object Vocabulary	204
8.1.13. OperationalAsset Core Entity.....	209
8.1.13.1. OperationalAsset UML Models.....	209
8.1.13.2. OperationalAsset Vocabulary	210
8.1.14. Organization Core Entity	218
8.1.14.1. Organization UML Models.....	218
8.1.14.2. Organization Vocabulary.....	219
8.1.15. Period Core Entity	226
8.1.15.1. Period UML Models	226
8.1.15.2. Period Vocabulary.....	226
8.1.16. Person Core Entity.....	228
8.1.16.1. Person UML Models	228
8.1.16.2. Person Vocabulary	228
8.1.17. Risk Core Entity	231
8.1.17.1. Risk UML Models	231
8.1.17.2. Risk Vocabulary.....	232

8.1.18.	UniqueIdentifier Core Entity	235
8.1.18.1.	UniqueIdentifier UML Models	235
8.1.18.2.	UniqueIdentifier Vocabulary	236
8.1.19.	Vessel Core Entity	237
8.1.19.1.	Vessel UML Models	237
8.1.19.2.	Vessel Vocabulary	238
9.	Annex C: e-CISE Data Model Technical Adoption.....	246
9.1.	e-CISE Adoption Guidelines.....	246
9.1.1.	Generic Adoption Guidelines	246
9.1.1.1.	Unique Identifier.....	246
9.1.1.2.	Fusion of Information	246
9.1.1.3.	Date Attributes of e-CISE Entities.....	248
9.1.1.4.	Geometry	248
9.1.1.5.	Units of measurement	248
9.1.2.	e-CISE Data Model Entities Adoption Guidelines	248
9.1.2.1.	Sensors	248
9.1.2.2.	Object Assessment	252
9.1.2.3.	Operations	263
9.1.2.4.	Missions	264
9.1.2.5.	Task.....	269
9.1.2.6.	Request For Information and Information Requirement	287
9.1.2.7.	Report.....	289
9.1.2.8.	Rule & Anomaly.....	290
9.1.2.9.	Incidents	299
9.1.2.10.	Simulations	301
10.	Annex D: Quality Review Report	305
10.1.	Reviewers.....	305
10.2.	Overall Peer Review Result	305
10.3.	Consolidated Comments of Quality Reviewers.....	305

Table of Figures

Figure 4-1: CISE Core Vocabulary Overview	28
Figure 4-2: e-CISE Core Vocabulary Overview.	29
Figure 5-1: UML Class Diagram of Location e-CISE Entity Namespace	47
Figure 5-2: UML Class Diagram of Sensor e-CISE Entity Namespace	61
Figure 5-3: UML Class Diagram of Operation e-CISE Entity Namespace	72
Figure 5-4: UML Class Diagram of Mission e-CISE Entity Namespace	75
Figure 5-5: UML Class Diagram of Task e-CISE Entity Namespace	83
Figure 5-6: UML Class Diagram of Request For Information e-CISE Entity.....	89
Figure 5-7: UML Class Diagram of Report e-CISE Entity Namespace	90
Figure 5-8: UML Class Diagram of Rule e-CISE Entity	95
Figure 5-9: UML Class Diagram of Simulation e-CISE Entity	102
Figure 5-10: UML Class Diagram of Subject e-CISE Entity	106
Figure 8-1 - CISE Entity model.....	114
Figure 8-2 - CISE Action model.....	115
Figure 8-3 - CISE Agent model.....	119
Figure 8-4 - CISE Anomaly model.....	139
Figure 8-5 - CISE Cargo model.....	141
Figure 8-6 - CISE Document model	154
Figure 8-7 - CISE Event model	167
Figure 8-8 - CISE Incident model	173
Figure 8-9 - CISE Location model	186
Figure 8-10 - CISE Metadata model.....	197
Figure 8-11 - CISE Movement model	202
Figure 8-12 - CISE Object model.....	204
Figure 8-13 - CISE Operational asset model.....	210
Figure 8-14 - CISE Organization model	219
Figure 8-15 - CISE Period model	226
Figure 8-16 - CISE Person model.....	228
Figure 8-17 - CISE Risk model	232
Figure 8-18 - CISE UniqueIdentifier model.....	235
Figure 8-19 - CISE Vessel model.....	238

Table of Tables

Table 1–1: List of Definitions	23
Table 1–2: List of Acronyms.....	24
Table 2–1: Technical Specifications Traceability	26
Table 5–1: Entity Class New Attributes.....	30
Table 5–2: ClassificationType Enumeration Values	31
Table 5–3: ConfirmationStatusType Enumeration Values	31
Table 5–4: CorrelatedWith Association Class New Attributes	32
Table 5–5: CorrelationMetadata Class Attributes	32
Table 5–6: FusionMetadata Class Attributes	33
Table 5–7: CorrelationSourceType Enumeration Values	33
Table 5–8: Action Class New Attributes	33
Table 5–9: Agent Class New Attributes.....	34
Table 5–10: Animal Class Attributes.....	34
Table 5–11: AgentLocation Class New Associations.....	34
Table 5–12: AgentRoleInObjectType Enumeration New Values	34
Table 5–13: AnimalType Enumeration Values	34
Table 5–14: Anomaly Class New Attributes	35
Table 5–15: Anomaly Class New Associations	35
Table 5–16: MaritimeAnomaly Class Attributes.....	35
Table 5–17: LandAnomaly Class Attributes	36
Table 5–18: MaritimeAnomalyType Enumeration Values	37
Table 5–19: LandAnomalyType Enumeration Values	39
Table 5–20: MediaDocument Class Attributes	39
Table 5–21: LocationDocumentType Enumeration New Values.....	39
Table 5–22: Event Class New Attributes	40
Table 5–23: EventLocation Class New Associations	40
Table 5–24: AgentEvent Association Class New Attributes.....	40
Table 5–25: AgentRoleInEventType New Enumeration Values	41
Table 5–26: LocationRoleInEventType New Enumeration Values	41
Table 5–27: AgentClassificationType Enumeration Values	41
Table 5–28: Incident Class New Attributes	42
Table 5–29: MaritimePollutionIncident Class New Attributes	42

Table 5–30: LawInfringementIncident Class New Attributes.....	43
Table 5–31: SmugglingIncident Class Attributes.....	43
Table 5–32: IrregularMigrationIncident Class New Attributes.....	43
Table 5–33: IncidentStatusType Enumeration Values.....	44
Table 5–34: BorderFlowPathType Enumeration Values	44
Table 5–35: SmuggledObject Datatype Attributes	45
Table 5–36: CrisisIncidentType New Enumeration Values.....	45
Table 5–37: Risk Class New Attributes	45
Table 5–38: RiskLevelType New Enumeration Values.....	46
Table 5–39: RiskProbabilityType New Enumeration Values	46
Table 5–40: RiskType New Enumeration Values	46
Table 5–41: StationLocation Class Attributes.....	47
Table 5–42: Area Class Attributes.....	47
Table 5–43: Geometry Class Attributes.....	48
Table 5–44: PointGeometry Class Attributes.....	48
Table 5–45: CircularGeometry Class Attributes	48
Table 5–46: BoundingBoxGeometry Class Attributes	48
Table 5–47: WKTGeometry Class Attributes	49
Table 5–48: XMLGeometry Class Attributes	49
Table 5–49: MeteoOceanographicCondition Class New Attributes.....	50
Table 5–50: LocationZoneType New Enumeration Values.....	50
Table 5–51: OperationalPurposeType New Enumeration Values	51
Table 5–52: StationType Enumeration Values.....	51
Table 5–53: AllocationSlot Class Attributes.....	51
Table 5–54: AllocationSlot Class Constraints.....	52
Table 5–55: SlotReccurenceType Enumeration Values.....	52
Table 5–56: Metadata Class New Attributes.....	52
Table 5–57: MediaType Enumeration Values.....	53
Table 5–58: Vehicle Class New Attributes	54
Table 5–59: LandVehicle Class New Attributes	54
Table 5–60: Aircraft Class New Attributes	55
Table 5–61: ObjectLocation Class New Associations	55
Table 5–62: SourceType New Enumeration Values.....	56
Table 5–63: PlannedOperationsType New Enumeration Values	56

Table 5–64: LocationRoleType New Enumeration Values.....	56
Table 5–65: LandVehicleType New Enumeration Values.....	57
Table 5–66: AircraftType Enumeration Values	57
Table 5–67: Vessel Class New Attributes.....	58
Table 5–68: VesselType New Enumeration Values	59
Table 5–69: MovementType New Enumeration Values.....	59
Table 5–70: OperationalAsset Class New Associations	59
Table 5–71: OperationalAssetType New Enumeration Values.....	60
Table 5–72: OrganizationPurposeType New Enumeration Values	60
Table 5–73: OrganizationRoleType New Enumeration Values	60
Table 5–74: Sensor Class Attributes.....	62
Table 5–75: Sensor Class Associations	62
Table 5–76: AisDevice Class Attributes	62
Table 5–77: Camera Class Attributes	63
Table 5–78: NetworkCamera Class Attributes.....	64
Table 5–79: Radar Class Attributes	64
Table 5–80: RadarConfiguration Datatype Attributes	64
Table 5–81: LocationSensor Association Class Attributes	65
Table 5–82: SensorMetadata Class Attributes.....	65
Table 5–83: TrackingMetadata Class Attributes	65
Table 5–84: DetectionMetadata Class Attributes	66
Table 5–85: CameraDetectionMetadata Class Attributes	66
Table 5–86: VideoDetectionMetadata Class Attributes.....	67
Table 5–87: HostPlatform Association Class Attributes.....	67
Table 5–88: HostEntityType Enumeration Values	67
Table 5–89: SensorType New Enumeration Values	68
Table 5–90: SensorStatusType Enumeration Values.....	68
Table 5–91: AisType Enumeration Values	69
Table 5–92: RadarBandType Enumeration Values	69
Table 5–93: CameraType Enumeration Values.....	70
Table 5–94: CameraScopeType Enumeration Values	70
Table 5–95: CameraOperationalModeType Enumeration Values.....	71
Table 5–96: ConnectionType Enumeration Values	71
Table 5–97: SensorRoleInLocationType Enumeration Values	71

Table 5–98: Operation Class Attributes	73
Table 5–99: Operation Class Associations	73
Table 5–100: Operation Class Constraints	73
Table 5–101: OperationType Enumeration Values	74
Table 5–102: OperationStatusType Enumeration Values	74
Table 5–103: OperationMission Association Class Attributes	74
Table 5–104: OperationTask Association Class Attributes	74
Table 5–105: Mission Class Attributes	76
Table 5–106: Mission Class Associations	76
Table 5–107: MissionTask Association Class Attributes	76
Table 5–108: CollectionPlan Class Attributes	77
Table 5–109: CollectionPlan Class Associations	77
Table 5–110: InformationRequirement Class Attributes	78
Table 5–111: InformationRequirement Class Associations	79
Table 5–112: ReconnaissanceRequirement Class Attributes	79
Table 5–113: CollectionPlanAgent Association Class Attributes	79
Table 5–114: InformationRequirementIndicator Association Class Attributes	80
Table 5–115: MissionType Enumeration New Values	80
Table 5–116: MissionStatusType Enumeration Values	81
Table 5–117: CollectionPlanStatusType Enumeration Values	81
Table 5–118: CollectionPlanPublishedStatusType Enumeration Values	81
Table 5–119: AgentRoleInCollectionPlanType Enumeration Values	82
Table 5–120: Task Class Attributes	84
Table 5–121: Task Class Associations	84
Table 5–122: TaskOperationalAsset Association Class Attributes	85
Table 5–123: TaskTask Association Class Attributes	85
Table 5–124: TaskMission Association Class Attributes	85
Table 5–125: TaskDomainType Enumeration Values	85
Table 5–126: TaskType Enumeration Values	86
Table 5–127: TaskResponseType Enumeration Values	87
Table 5–128: TaskStatusType Enumeration Values	87
Table 5–129: TaskAcknowledgementStatusType Enumeration Values	88
Table 5–130: TaskRoleInMissionType Enumeration Values	88
Table 5–131: RequestForInformation Class Attributes	90

Table 5–132: RequestForInformation Class Associations	90
Table 5–133: Report Class Attributes.....	91
Table 5–134: Report Class Associations.....	91
Table 5–135: IntelligenceReport Class Attributes.....	91
Table 5–136: ReportAgent Association Class Attributes	91
Table 5–137: ReportReport Association Class Attributes	92
Table 5–138: AgentRoleInReportType Enumeration Values	92
Table 5–139: ReportType Enumeration Values	92
Table 5–140: IntelligenceReportType Enumeration Values	93
Table 5–141: ReliabilityType Enumeration Values	93
Table 5–142: CredibilityType Enumeration Values	94
Table 5–143: ReportDisseminationLevelType Enumeration Values	94
Table 5–144: ReportRoleInReportType Enumeration Values	94
Table 5–145: Rule Class Attributes	96
Table 5–146: Rule Class Associations.....	96
Table 5–147: ComplexRule Association Class Attributes	97
Table 5–148: RuleType Enumeration Values	99
Table 5–149: RuleDomainType Enumeration Values	100
Table 5–150: RuleStatusType Enumeration Values	100
Table 5–151: RuleExecutionModeType Enumeration Values	100
Table 5–152: RuleRoleInRuleType Enumeration Values.....	101
Table 5–153: SimulationRequest Class Attributes	103
Table 5–154: OilSpillSimulationRequest Class Attributes	104
Table 5–155: ShipNavigationSimulationRequest Class Attributes	104
Table 5–156: DriftingSimulationRequest Class Attributes	104
Table 5–157: MeteoOceanographicConditionPredictionRequest Class Attributes	105
Table 5–158: SimulationResponse Class Attributes.....	105
Table 5–159: Subject Class Attributes.....	106
Table 5–160: Subject Class Associations.....	107
Table 5–161: LocationSubject Class Attributes	107
Table 5–162: AgentSubject Class Attributes	107
Table 5–163: ObjectSubject Class Attributes.....	108
Table 5–164: SubjectType Enumeration Values	108
Table 5–165: SubjectIdentificationStatusType Enumeration Values	108

Table 5–166: KeyValueElement Datatype Attributes	109
Table 5–167: ValueDataType Enumeration Values	109
Table 5–168: PriorityType Enumeration Values	110
Table 5–169: StatusType Enumeration Values	110
Table 5–170: Percentage Simple Type Constraints	111
Table 5–171: Confidence Datatype Attributes	111

1. Introduction

1.1. Purpose of the document

The purpose of this document is to describe the enrichments and modifications of the CISE Data Model to support Land Border Operations and the extensions of the model for Maritime Border Operations. In this document the reader will find detailed information about each new or enhanced entity. Finally, in this document the reader will find a technical guide for adopting the e-CISE Data Model.

1.2. Reference documents

- [1] Grant Agreement number: 833881 — ANDROMEDA — H2020-SU-SEC-2018-2019-2020/H2020-SU-SEC-2018
- [2] EUCISE2020: Technical Specifications, Deliverable 4.3, Revision 1, Annex B: EUCISE Data Model
- [3] Guidelines of the CISE Data Model, DG & JRC http://emsa.europa.eu/cise-documentation/cise-data-model-1.5.3/model_guidelines.html
- [4] OASIS: Common Alerting Protocol Version 1.2
- [5] IETF RFC 2046: Multipurpose Internet Mail Extensions (MIME) Part two: Media Types
- [6] Coastal Zone Mission Analysis Report, June 1999, U.S. Coastguard
- [7] Automatic Identification System Overview, <https://www.navcen.uscg.gov/?pageName=typesAIS>
- [8] EU-NATO-US frequency bands https://www.tau.ac.il/~tsirel/dump/Static/knowino.org/wiki/EU-NATO-US_frequency_bands.html
- [9] ANDROMEDA D2.2 User Requirements & Technical Specifications
- [10] NATO Joint Military Symbology https://en.wikipedia.org/wiki/NATO_Joint_Military_Symbology

1.3. Definitions

List of Definitions	
CISE	CISE is the Common Information Sharing Environment for the Maritime Domain. It will integrate existing surveillance systems and networks and give to all the relevant authorities (EU and national authorities responsible for different aspects of surveillance) concerned access to the information they need for their missions at sea. The CISE will make different systems interoperable so that data and other information can be exchanged easily using modern technologies.
EUCISE2020	European test bed for the maritime Common Information Sharing Environment in the 2020 perspective. EUCISE2020 is a Security Research project of the European Seventh Framework Program; it aims at achieving the pre-operational Information Sharing between the maritime authorities of the European States.
CoopP	CoopP: The Cooperation Project is paving the way for smooth data transmission and easy access, whenever relevant, between public authorities (including EU Agencies) in the execution of the defined maritime surveillance functionalities.
OASIS CAP	The Common Alerting Protocol (CAP) is a simple but general format for exchanging all-hazard emergency alerts and public warnings over all kinds of networks. CAP allows a

List of Definitions	
	consistent warning message to be disseminated simultaneously over many different warning systems, thus increasing warning effectiveness while simplifying the warning task. CAP also facilitates the detection of emerging patterns in local warnings of various kinds, such as might indicate an undetected hazard or hostile act. And CAP provides a template for effective warning messages based on best practices identified in academic research and real-world experience.
Base64	Base64 is an encoding and decoding technique used to convert binary data to an American Standard for Information Interchange (ASCII) text format, and vice versa. Base64 is also known as Base64 Content-Transfer-Encoding.

Table 1–1: List of Definitions

1.4. Structure of the document

In [Chapter 1](#) the reader gets acquainted with the structure and the contents of this deliverable, where an initial introduction and all the necessary references and explanations are provided.

In [Chapter 2](#) there is a demonstration of all the technical specifications of Andromeda that e-CISE Data model is supporting [9].

In [Chapter 3](#) the impact of Andromeda on the CISE Data Model is described.

In [Chapter 4](#) the reader will find, a High-Level design of the e-CISE Data Model.

In [Chapter 5](#) the e-CISE Data Model is documented. All modified entities of CISE Data Model and all new entities added, are listed and documented. For each new entity's namespace, the reader will find an appropriate UML class diagram, which is depicting attributes, associations and multiplicities.

In [Chapter 6](#) the reader will find the conclusions of the new e-CISE Data Model.

The deliverable concludes with Chapter 7 to Chapter 11 where all annexes are placed. In [Chapter 7](#) the reader can download the e-CISE Data Model XSD. In [Chapter 8](#) we are including the CISE Data Model definition [2]. Finally, in [Chapter 9](#) the technical adoption guide of e-CISE Data Model is presented.

1.5. List of Acronyms

List of Acronyms	
2D	Two Dimensional
3D	Three Dimensional
AIS	Automatic Identification System
C2	Command and Control
CISE	Common Information Sharing Environment
CoopP	Cooperation Project
DFS	Data Fusion Service
DST	Decision Support Tool
e-CISE	Enhanced Common Information Sharing Environment
EU	European Union
EUCISE	European test bed for the maritime Common Information Sharing Environment in the 2020 perspective
GML	Generalized Markup Language

List of Acronyms	
GPS	Global Positioning System
HTTP	Hyper Text Transfer Protocol
INTREP	Intelligence Report
INTSUM	Intelligence Summary
IP	Internet Protocol Address
IR	Information Requirement
KML	Keyhole Markup Language
LCS	Local Coordinate System
MST	Management Support Team
NATO	North Atlantic Treaty Organization
REST	Representational State Transfer
RFI	Request For Information
SOAP	Simple Object Access Protocol
UAV	Unmanned Aircraft Vehicle
UML	Unified Modeling Language
UTC	Coordinated Universal Time
WGS	World Geodetic System
WKT	Well-known text
WMS	Web Map Service
XML	Extensible Markup Language
XSD	XML Schema Definition

Table 1–2: List of Acronyms

2. Technical Specifications Traceability

In the below table, we demonstrate how the e-CISE Data Model matches the required technical specifications, specifically for information sharing of e-CISE Data Model which are described in this deliverable, as derived from the user requirements [9].

Technical Specification #	Entity	Attribute
TECH_06	All e-CISE Data Model entities	-
TECH_17	Task , TaskAcknowledgmentStatusType , TaskResponseType	-
TECH_18	Stream , AttachedDocument , MediaDocument	-
TECH_19	Entity	Notes
TECH_28	Vessel , LandVehicle , Aircraft	VesselType , LandVehicleType , AircraftType
TECH_42	All e-CISE Data Model entities, Sensor	-
TECH_56	Mission	MissionPlan
TECH_57	Sensor , SensorMetadata	Classification
TECH_59	Organization , UniqueIdentifier ,	CorrelatedBy
TECH_64	CollectionPlan , Mission	CollectionPlan
TECH_67	AttachedDocument , MediaDocument	
TECH_98	Operation , Mission , Task	
TECH_104	Mission , MissionStatusType	MissionPlan , IsMissionTemplate
TECH_110	Location , Period	Geometry
TECH_114	AttachedDocument , Stream	-
TECH_115	CISE Data Model entities	-
TECH_116	LandVehicle , Aircraft , Port , PortOrganization , Documents , Meteo-Oceanographic Data	-
TECH_117	Vehicle , LandVehicle , Mission , Report	-
TECH_119	LandVehicle	LicensePlate
TECH_125	Vehicle , Object , HostPlatform	LocationSensor

Technical Specification #	Entity	Attribute
TECH_128	LocationZoneType , LocationRoleType , Area	-
TECH_147	Sensor , Radar , Camera , AIS	-

Table 2–1: Technical Specifications Traceability

3. e-CISE Data Model Design Considerations

Andromeda's focus is on the extension of the CISE paradigm to the Land Border Sector and its enhancement and improvement for the Maritime sector. In addition, it will demonstrate the full potential of CISE by implementing the enhanced CISE Data Model in Maritime and Land Border C2s. [1]

3.1. Impacts of Andromeda on the CISE Data Model

Andromeda's universe consists of Sensors and Legacy Systems, C2 Systems, Advanced Data Fusion Services, Decision Support Tools and the Andromeda HUB. All of those systems must exchange with each other information, which is commonly understandable by all peers.

The impacts of Andromeda on the CISE Data Model are namely:

- Specification of Border Surveillance activities need, requires the definition of new core entities capable of supporting the whole range of activities related to Border surveillance and protection.
- Enhancement on CISE's Maritime Border vocabulary to support enhanced Maritime capabilities, sensors and assets of Andromeda.
- Enrichment of CISE Land Border vocabulary or new introductions, to describe land assets involved.
- Support of information exchange across the Data Fusion Service layer of Andromeda.
- Support of information exchange across the Decision Support Tools layer of Andromeda

4. High Level Design

4.1. e-CISE Data Model Overview

The e-CISE Data Model is based on the latest version of the CISE Data Model v1.5.3 demonstrated in the EUCISE2020 Project [2], which was initially based on the CISE Data Model version 1.0, as defined for the Cooperation Project.

The current CISE Data Model defines in its vocabulary the following Core and Auxiliary Entities as illustrated in Figure 4-1.



Figure 4-1: CISE Core Vocabulary Overview

In order to support all Andromeda Systems and Capabilities, the e-CISE Model:



- takes as reference the CISE Data Model as defined in EUCISE2020 Project [2].
- enriches the CISE Data Model capabilities to support Maritime Border Surveillance Operations.
- enlarges the scope of the Data Model to support Land Border Surveillance Operations.

Finally, the e-CISE Data Model is licensed as Attribution-ShareAlike (CC BY-SA). This license lets other remix, tweak, and build upon it even for commercial purposes, as long as they credit the Andromeda & EUCISE2020 Consortium, and license their new creations under the identical term. For additional information please refer to : <https://creativecommons.org/licenses/by-sa/4.0/legalcode>

In the following figure the transition from CISE to e-CISE is depicted. Please find with filled colors the newly introduced e-CISE Core and Auxiliary Entities.



Figure 4-2: e-CISE Core Vocabulary Overview.

5. e-CISE Data Model

5.1. e-CISE As Is CISE Entities

The following entities are the CISE Core Entities that remain unchanged in the e-CISE Data Model. Some of the CISE entities with minor changes are not listed in this Chapter, but documented in Chapter 5.2.

5.1.1. Cargo Core Entity

As defined in CISE Data Model a Cargo refers to a set of goods transported by a ship between two ports. As Andromeda is mainly focusing in the Land & Maritime Border Surveillance operations this entity remains unchanged. Detailed definition of Cargo Core Entity can be found at Annex B Chapter 8.1.5

5.1.2. Person Core Entity

The Person class, as defined in the CISE Data Model, is the subclass of the more general ‘Agent’ class that encompasses organizations, legal entities, groups or any entity that is able to carry out actions. Detailed definition of Person Core Entity can be found at Annex B Chapter 8.1.16.

5.2. e-CISE Enhanced CISE Entities

5.2.1. Entity Namespace

In the following sections all changes of the CISE Entity Core vocabulary, are documented. Please find the complete Entity Core vocabulary as defined by CISE at Annex B Chapter 8.1.1.

5.2.1.1. Entity Class

Entity class is the base class of nearly all e-CISE other entities as defined in CISE Data Model. The entity class of the CISE Data Model is enhanced with new attributes which are common to all e-CISE and CISE entities. Also, the [UniqueIdentifier](#) and [Metadata](#) are pushed-up to the Entity class for easiness.

5.2.1.1.1. Attributes

Name	Data Type	Description	Example
Identifier	UniqueIdentifier	The unique identifier relation of the entity	
Metadata	Metadata	The metadata accompanying the entity	
Narrative	String[]	Free text narrative description of this entity	
Notes	String[]	A set of notes related to this entity	

Table 5-1: Entity Class New Attributes

5.2.1.2. ClassificationType Enumeration

This enumeration represents the classification of an Object in terms of threat classification.

Source: NATO Joint Military Symbology [10]

5.2.1.2.1. Enumeration Values

Label	Description
Pending	Classification is pending
OwnAsset	Classified as own asset
AssumedFriend	Assumed friend
Hostile	Hostile classification
Neutral	Classified as neutral
Stolen	Classified as stolen
Counterfeit	Classified as counterfeit
Suspect	Classified as suspect
Friend	Classified as friend
Joker	Classified as Joker
Faker	Classified as Faker
Unknown	Unknown classification
Other	Other classification type not covered
NonSpecified	Classification not specified

Table 5–2: ClassificationType Enumeration Values

5.2.1.2.2. Enumeration Usage

The following attributes use this enumeration as data type

- Classification (ObjectSubject)
- ClassificationType (Vehicle)

5.2.1.3. ConfirmationStatusType Enumeration

This enumeration represents the confirmation status of a suspicious entity. ConfirmationStatus is expressing the status of confirmation while classifying the entity or confirming its location via detection or intelligence services.

5.2.1.3.1. Enumeration Values

Label	Description
Pending	The confirmation is pending
Failed	The confirmation of the entity has failed
Confirmed	Entity has been confirmed
VisuallyConfirmed	Entity has been visually confirmed
Unconfirmed	Entity remains unconfirmed
Other	Other confirmation status not covered
NonSpecified	Confirmation status not specified

Table 5–3: ConfirmationStatusType Enumeration Values

5.2.1.3.2. Enumeration Usage

The following attributes use this enumeration as data type

- ConfirmationStatus (Agent)
- ConfirmationStatus (Vehicle)
- ConfirmationStatus (Anomaly)
- ConfirmationStatus (Incident)

5.2.2. UniqueIdentifier Namespace

The Unique Identifier, as defined in the CISE Data Model, is a fundamental entity of the overall data model of the information sharing environment, since it will allow, as its name implies, to uniquely identify each and every single data object exchanged through the network. With this identifier it will also be possible for the legacy systems to keep track of the relationships between their data objects and those from the information sharing environment. As Andromeda e-CISE Data Model is based on CISE Data Model we have inherited the Unique Identifier principle and introduced minor changes with regards to fusion of entities. Detailed definition of Unique Identifier Core Entity can be found at Annex B Chapter 8.1.18.

5.2.2.1. CorrelatedWith Association Class

The CorrelatedWith CISE association class - as defined in 8.1.18.2.1 - is enhanced with new attributes providing more information related to the correlation method used. UniqueIdentifier attribute is used to encapsulate all different UniqueIdentifiers used as counterparts of the correlation process. For example, in case of Fusion correlation of a Vessel, the UniqueIdentifier would consist of the unique identifiers of all raw Vessel tracks, which were used to provide the information of the fused Vessel.

5.2.2.1.1. Attributes

Name	Data Type	Description	Example
UniqueIdentifier	UniqueIdentifier[]	The unique identifiers of the entities which were used as counterparts of the correlation process	
CorrelationSource	CorrelationSourceType	The method of information correlation	Fusion
CorrelationMetadata	CorrelationMetadata	Metadata accompanying the correlation process	

Table 5–4: CorrelatedWith Association Class New Attributes

5.2.2.2. CorrelationMetadata Class

5.2.2.2.1. Attributes

Name	Data Type	Description	Example
Alias	String	An alias name of the correlation process	
Properties	utils:KeyValueElement[]	Key-value properties of the method used during the correlation process	

Table 5–5: CorrelationMetadata Class Attributes

5.2.2.3. FusionMetadata Class (subclass of CorrelationMetadata)

5.2.2.3.1. Attributes

Name	Data Type	Description	Example
FusionId	String	Identifier as provided by the fusion service	Fusion_1

Table 5–6: FusionMetadata Class Attributes

5.2.2.4. CorrelationSourceType Enumeration

The following new enumerations have been added to demonstrate the method of information correlation.

5.2.2.4.1. Enumeration Values

Label	Description
Fusion	The entities are correlated as counterparts of the data fusion process
Other	Other type of correlation source not covered
NonSpecified	Correlation source not specified

Table 5–7: CorrelationSourceType Enumeration Values

5.2.3. Action Namespace

In the following sections all changes of the CISE Action Core vocabulary are documented. Please find the complete Action Core vocabulary as defined by CISE at Annex B Chapter 8.1.2.

5.2.3.1. Action Class (subclass of Event)

Action of CISE Data Model should be considered deprecated as now [Operation](#), [Mission](#) and [Task](#) entities are available to describe generic long-term operations with specific goals and objectives, missions with specific operational assets deployed and tasks with specific types and instructions. For compatibility reasons Action is not removed from e-CISE Data Model.

5.2.3.1.1. Attributes

Name	Data Type	Description	Example
Priority	utils:PriorityType	The priority level of this action	High

Table 5–8: Action Class New Attributes

5.2.4. Agent Namespace

The Agent, as defined by CISE at Annex B Chapter 8.1.3.2, is an operative entity that plays a role in any Event, owns, handles or operates Objects such as Cargo or Assets, creates and exploits Documents.

5.2.4.1. Agent Class (subclass of Entity)

Agent is enhanced in e-CISE by adding association with the Sensors involved with an Agent at a specific location (e.g. A Camera detecting a Person).

5.2.4.1.1. Attributes

Name	Data Type	Description	Example
ConfirmationStatus	ConfirmationStatusType	The confirmation of the agent during detection	VisuallyConfirmed

Table 5–9: Agent Class New Attributes

5.2.4.2. Animal Class (subclass of Agent)

Animal simplified entity is also created to represent for example dog units.

5.2.4.2.1. Attributes

Name	Data Type	Description	Example
AnimalType	AnimalType	Type of the animal	Dog

Table 5–10: Animal Class Attributes

5.2.4.3. AgentLocation Association Class

The AgentLocation CISE association class - as defined in 8.1.3.2.3 - is enhanced with a new attribute associating the Location of an Agent with Sensors.

5.2.4.3.1. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedSensorRel	LocationSensor	Association of the sensors involved with an Agent at a specific location	0..*

Table 5–11: AgentLocation Class New Associations

5.2.4.4. AgentRoleInObjectType Enumeration

The following new enumerations have been added.

5.2.4.4.1. Enumeration Values

Label	Description
Operator	The agent operates the related Object
Manufacturer	The agent is the manufacturer of the object

Table 5–12: AgentRoleInObjectType Enumeration New Values

5.2.4.5. AnimalType Enumeration

5.2.4.5.1. Enumeration Values

Label	Description
Dog	Animal is of type Dog
Other	Other type of animal not covered
NonSpecified	Animal type not specified

Table 5–13: AnimalType Enumeration Values

5.2.5. Anomaly Namespace

Anomaly Core entity is now decoupled to two new specialization sub-entities, MaritimeAnomaly and LandAnomaly, respectively related to the domain of the Anomaly, land or sea.

5.2.5.1. Anomaly Class (subclass of Event)

Anomaly Class is extended with the following attributes and associations. The Anomaly class, as defined by CISE can be found at Annex B Chapter 8.1.4.2.1.

5.2.5.1.1. Attributes

Name	Data Type	Description	Example
AnomalyConfidence	utils:Confidence	The confidence for instantiating this anomaly. Can be expressed in percentage or natural text language format.	
AnomalyPriority	utils:PriorityType	The priority of this anomaly	Very High
.PropertyType	utils:KeyValueElement[]	A generic key-value configuration to define Anomaly specific information like thresholds or values	
Explanation	String	The explanation of the anomaly instantiation	
ConfirmationStatus	ConfirmationStatusType	The status of confirmation of this anomaly	Confirmed

Table 5–14: Anomaly Class New Attributes

5.2.5.1.2. Association Roles

Name	Data Type	Description	Multiplicity
RuleRel	Rule	Relationship to the Rules used to instantiate the anomaly	0..*

Table 5–15: Anomaly Class New Associations

5.2.5.2. MaritimeAnomaly Class (subclass of Anomaly)

MaritimeAnomaly class is used to define any Anomaly triggered on the sea.

5.2.5.2.1. Attributes

Name	Data Type	Description	Example
MaritimeAnomalyType	MaritimeAnomalyType	The Maritime specific anomaly type	VesselsCrossing

Table 5–16: MaritimeAnomaly Class Attributes

5.2.5.3. LandAnomaly Class (subclass of Anomaly)

LandAnomaly class is used to define any Anomaly triggered on the Land.

5.2.5.3.1. Attributes

Name	Data Type	Description	Example
LandAnomalyType	LandAnomalyType	The Land specific anomaly type	HighSpeed

Table 5–17: *LandAnomaly Class Attributes*

5.2.5.4. MaritimeAnomalyType Enumeration

5.2.5.4.1. Enumeration Values

Label	Description
UnexpectedMovement	Unexpected movement
MovementsBetweenAreas	Vessel is moving from one area to another
VesselWithErraticMovements	Vessel is sailing with an erratic pattern
AisLowFrequency	Receiving AIS information with low frequency
AisHighFrequency	Receiving AIS information with high frequency
WithoutAisTransmission	Vessel is detected from sensor without receiving AIS info
AlongsideMovement	Vessels moving in group (constant distance, similar heading and speed)
VesselsApproaching	Vessel approaching another vessel
VesselsMovingAway	Vessel moving away from another vessel
VesselsCrossing	Two vessels crossing each other's routes
VesselApproachinglocation	Vessel is approaching a location
VesselMovingAwayLocation	Vessel is moving away from a location
VesselMovingAwayLine	Vessel is moving away from a border line
VesselCrossingLine	Vessel is crossing a line
VesselApproachingLine	Vessel is approaching a line
VesselCrossingArea	Vessel is crossing the outer boundaries of an area
VesselMovingAwayArea	Vessel is moving away from an area
VesselEnteringArea	Vessel is entering an area
VesselRevisitingArea	Vessel is entering an area that has visited before
VesselExitingArea	Vessel is exiting from an area
VesselApproachingArea	Vessel is approaching an area
VesselAppeared	Vessel has suddenly appeared
VesselDisappeared	Vessel is no longer detected by any sensor
LostRadarContact	Vessel is no longer detected from radar
LostCameraObject	Vessel is no longer detected from camera
LostAisSignal	Lost Ais signal of vessel
HighSpeed	Vessel is moving with high speed
LowSpeed	Vessel is moving with low speed
Loitering	Vessel is loitering
Drifting	Vessel is drifting
VesselAbnormalManeuvering	Vessel is making abnormal maneuvers
VesselStopped	Vessel has stopped

Label	Description
AbnormalSpeedChange	Abnormal speed change of vessel
AbnormalCourseChange	Abnormal course change of vessel
VesselVelocityNotConsistent	Velocity of vessel is not consistent with actual movement
VesselCourseNotConsistent	Course of vessel is not consistent with actual movement
NavigationalStatusNotConsistent	Navigational status of vessel is not consistent with actual movement
VesselPositionNotConsistent	Position updates of vessel are not consistent with actual movement
TimeIncompatibility	Time updates of vessel are incompatible (greater than a threshold)
SpaceIncompatibility	Position updates of vessel are incompatible (greater than a threshold)
Smuggling	Vessel is performing smuggling
VesselImminentCollision	Vessel is in collision course with another vessel
Splitting	Two tracks appear in the location of a single vessel
Merging	Two vessels merge in one track
DoNotAnswerOnVhfCh16	Vessel does not answer on vhf channel 16
UnauthorizedCountry	Unauthorized country
VesselDynamicVsStaticAttributesInconsistency	Generic vessel static attributes not consistent with dynamic values
VesselStaticAttributesInconsistency	Vessel static attributes inconsistent
ShiftingOfCargo	Shifting of vessel's cargo
VesselEnteringRoute	A vessel in entering a route or shipping lane
VesselDeviationFromRoute	A vessel in deviating from a route or shipping lane
DomainViolation	A vessel is entering the area defined around another vessel
IllegalDiving	Vessel engaged in Illegal diving activities
ComplexAlert	An alert created using multiple rules combined
SuspiciousVesselIdentity	A vessel detected having an ID from a database with suspicious vessels
AisParameterCloned	Two vessels having two or more AIS parameters the same
AisParameterChanged	A vessel detected changing a static AIS parameter
StainOfOilSighted	Stain of oil sighted
ObjectsInAreaAboveThreshold	The total number of vessels in the area are above a threshold
IncongruousVesselBehavior	The behavior pattern of a vessel is not coherent respect to the declared type coming from AIS flow
DivergentVesselBehavior	The behavior that is different respect to the others in a given area
AbnormalVesselBehavior	The case of an uncommon pattern
UnstableVesselBehavior	Vessel that is suddenly changes its behavior
Other	Any other maritime anomaly type not covered
NonSpecified	Maritime anomaly type not specified

Table 5–18: *MaritimeAnomalyType Enumeration Values*

5.2.5.4.2. Enumeration Usage

The following attributes use this enumeration as data type

- MaritimeAnomalyType (MaritimeAnomaly)

5.2.5.5. LandAnomalyType Enumeration

5.2.5.5.1. Enumeration Values

Label	Description
CourseChange	Abnormal course change of vehicle or person
SpeedChange	Abnormal speed change of vehicle or person
Collision	Collision detection between two or more vehicles
MovementsBetweenAreas	Detecting movement of person or vehicle between two areas
ObjectDisappeared	Person or vehicle disappearing from all sensors
ObjectAppeared	Detecting for first time a person or vehicle
ApproachingLine	Person or vehicle approaching a line
MovingAwayLine	Person or vehicle moving away from a line
CrossingLine	Person or vehicle crossing a line
ApproachingArea	Person or vehicle approaching an area
MovingAwayArea	Person or vehicle moving away from an area
RevisitingArea	Person or vehicle entering an area that has visited before
EnteringArea	Person or vehicle entering an area
ExitingArea	Person or vehicle exiting an area
CrossingArea	Person or vehicle crossing the boundaries of an area
Loitering	Person or vehicle casually moving without some pattern or in a predefined route
HighSpeed	Vehicle moving with high speed
LowSpeed	Vehicle moving with low speed
Splitting	Two tracks (persons or vehicles) appearing in the location of a single track
Merging	Two tracks (persons or vehicles) merging in a single track
DomainViolation	A person or a vehicle entering the area defined around another person or vehicle
AlongsideMovement	Two persons or vehicle moving in a group (constant distance and similar speed and heading)
CrossingRoutes	Two persons or vehicles crossing each other's routes
ObjectsApproaching	A person or vehicle approaching another person or vehicle
ObjectsMovingAway	A person or vehicle moving away from another person or vehicle
ApproachingLocation	A person or vehicle approaching a specific location
MovingAwayLocation	A person or vehicle moving away from a specific location
InconsistentInformation	Inconsistent information about a person or vehicle based on their dynamic behavior
TimeIncompatibility	Incompatibility in reported time for a tracked person or vehicle
SpaceIncompatibility	Incompatibility in reported position for a tracked person or vehicle
LostRadarContact	Tracked object from radar was lost

Label	Description
LostCameraObject	Tracked object from camera was lost
DeviationFromRoute	A person or vehicle is deviating from route (road)
EnteringRoute	A person or vehicle is entering a route (road)
ObjectsInAreaAboveThreshold	The total number of persons or vehicles in a specific area is above a threshold
DivergentBehavior	The behavior that is different respect to the others in a given area
AbnormalBehavior	The case of an uncommon pattern
UnstableBehavior	Person or land vehicle that is suddenly changes its behavior
Other	A land anomaly type that is not covered by these types
NonSpecified	Land anomaly type not specified

Table 5–19: *LandAnomalyType Enumeration Values*

5.2.5.5.2. Enumeration Usage

The following attributes use this enumeration as data type

- LandAnomalyType in LandAnomaly class.

5.2.6. Document Namespace

5.2.6.1. Document Class (subclass of Entity)

The Document is mostly maintained as defined by CISE at Annex B Chapter 8.1.6. The only changes are that the identifier & metadata are now moved upwards to the [Entity](#) class, and new values added in the following Enumerations.

5.2.6.2. MediaDocument Class (subclass of AttachedDocument)

MediaDocument will be used to represent and exchange media information such as video, image or audio.

5.2.6.2.1. Attributes

Name	Data Type	Description	Example
MediaType	MediaType	Media content types and subtypes defined in RFC 2046	video/mpeg

Table 5–20: *MediaDocument Class Attributes*

5.2.6.3. LocationDocumentType Enumeration

The following new enumerations have been added. Please find the definition and the rest CISE values at Annex B, Chapter 8.1.6.2.6.

5.2.6.3.1. Enumeration Values

Label	Description
GenericLandLocations	Generic land locations associated with this location document
PatrolRoutePlan	Indicating that this location document describes the Route plan of patrol units

Table 5–21: *LocationDocumentType Enumeration New Values*

5.2.7. Event Namespace

5.2.7.1. Event Class

As defined by CISE, Event class, is an entity which holds information about movements, anomalies, incidents, or actions which occur in the maritime domain. Event class is enhanced in e-CISE to support events in the land domain as well. Furthermore, the Event class holds information about operations, missions and tasks. Please find the complete Event Core vocabulary as defined by CISE at Annex B Chapter 8.1.7.

5.2.7.1.1. Attributes

Name	Data Type	Description	Example
IsAcknowledged	boolean	Indicates that an Event is acknowledged by an agent	true
RequiresAssistance	boolean	Indicates that this Event and in particular a Mission a Task or an Operation requires assistance, and joint bi-lateral co-operation	true

Table 5–22: Event Class New Attributes

5.2.7.2. EventLocation Association Class

The EventLocation CISE association class - as defined in 8.1.7.2.4 - is enhanced with a new attribute associating the Location of an Event with Sensors.

5.2.7.2.1. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedSensorRel	LocationSensor	Association of the sensors involved with an Event at a specific location	0..*

Table 5–23: EventLocation Class New Associations

5.2.7.3. AgentEvent Association Class

The AgentEvent CISE association class - as defined in 8.1.7.2.1 - is enhanced with a new attribute, classifying the role of the Agent associated with an Event.

5.2.7.3.1. Attributes

Name	Data Type	Description	Example
AgentClassification	AgentClassificationType	Classification of the agent involved in this event	Operational

Table 5–24: AgentEvent Association Class New Attributes

5.2.7.4. AgentRoleInEventType Enumeration

The following new enumerations have been added. Please find the definition and the rest CISE values at Annex B, Chapter 8.1.7.2.6.

5.2.7.4.1. Enumeration Values

Label	Description
Operator	The agent is the operator
Requestor	The agent is the requestor
Facilitator	The agent is a facilitator
Originator	The agent is the originator
Rescuer	The agent is the rescuer

Table 5–25: *AgentRoleInEventType New Enumeration Values*

5.2.7.5. LocationRoleInEventType Enumeration

The following new enumerations have been added. Please find the definition and the CISE values at Annex B, Chapter 8.1.7.2.9.

5.2.7.5.1. Enumeration Values

Label	Description
ExcludedPlace	To specify that a location is excluded related to the event
DangerousPlace	The location is classified as Dangerous with relation to the event
ObstaclePlace	The location is classified as Obstacle with relation to the event
AreaOfInterest	The location is classified as Area of Interest with relation to the event
SurveillancePlace	The location is classified as Surveillance location with relation to the event
SearchAndRescuePlace	The location is classified as Search and rescue location with relation to the event
WayPoint	The location is classified as Way Point with relation to the event
PatrollingArea	The location is classified as Patrolling Area location with relation to the event

Table 5–26: *LocationRoleInEventType New Enumeration Values*

5.2.7.6. AgentClassificationType Enumeration

5.2.7.6.1. Enumeration Values

Label	Description
Operational	Agent has operational role in the Event
Administrative	Agent has administrative role in the event
Other	Role of agent in the event not covered
NonSpecified	Agent ‘s role in the event not specified

Table 5–27: *AgentClassificationType Enumeration Values*

5.2.7.6.2. Enumeration Usage

The following attributes use this enumeration as data type

- AgentClassification in AgentEvent association Class.

5.2.8. Incident Namespace

As defined by CISE, Incident class, is an entity which refers to a particular happening, sometimes criminal but always noteworthy. Incident class is enhanced in e-CISE to support incidents of the land domain as well. Please find the complete Incident Core vocabulary as defined by CISE at Annex B Chapter 8.1.8.

5.2.8.1. Incident Class (subclass of Event)

Incident class is the base class of all CISE & e-CISE Incidents. The following attributes have been added to the CISE Incident class. Please find the complete definition of the CISE Incident class at Annex B Chapter 8.1.8.2.2.

5.2.8.1.1. Attributes

Name	Data Type	Description	Example
NumberOfInjuredPersons	int	Total number of persons injured during this incident on board	1
BorderFlowPath	BorderFlowPathType[]	The Flow path of the incident with respect to the border. Can have multiple values	AtExit
IsSuspiciousIncident	boolean	Flag indicating if this incident is suspicious or not.	True
IsSARInvolved	boolean	Flag indicating if Search and Rescue operations are involved	True
IncidentStatus	IncidentStatusType	The status of the incident	Ended
ConfirmationStatus	ConfirmationStatusType	The status of confirmation of the incident.	VisuallyConfirmed

Table 5–28: Incident Class New Attributes

5.2.8.2. MaritimePollutionIncident Class (subclass of MaritimeSafetyIncident)

The CISE PollutionIncident as defined in Section 8.1.8.2.6, is enhanced by the addition of PollutingSubstance attribute. PollutionIncident is also renamed to MaritimePollutionIncident in e-CISE.

5.2.8.2.1. Attributes

Name	Data Type	Description	Example
PollutingSubstance	String	The polluting substance during the pollution incident	Acetone

Table 5–29: MaritimePollutionIncident Class New Attributes

5.2.8.3. LawInfringementIncident Class (subclass of Incident)

The CISE LawInfringementIncident as defined in Section 8.1.8.2.4, is enhanced by the addition of the following attributes. Also, a new subclass of LawInfringementIncident is added, the SmugglingIncident. All LawInfringementIncidentType enumeration values related to Smuggling are moved to the SmugglingIncidentType and a generic Smuggling type is maintained in the LawInfringementIncidentType.

5.2.8.3.1. Attributes

Name	Data Type	Description	Example
BorderGuardsInvolved	boolean	Flag indicating if border guards were involved during the law infringement incident	true
ModusOperandi	String	Suspect's mode of operating	
NumberOfPerpetrators	int	Total number of perpetrators during the incident	2
NumberOfFacilitators	int	Total number of facilitators during the incident	1
AreWeaponsInvolved	boolean	Indicates if weapons are involved	false

Table 5–30: *LawInfringementIncident* Class New Attributes

5.2.8.4. SmugglingIncident Class (subclass of LawInfringementIncident)

The smuggling incident class is a sub-class of the Incident class and it is used to define incidents related to smuggling of objects.

5.2.8.4.1. Attributes

Name	Data Type	Description	Example
SmugglingIncidentType	SmugglingIncidentType[]	The types of the smuggling incident.	DrugSmuggling Marihuana
SmuggledObject	SmuggledObject[]	Reference to the Objects which were smuggled. Please check the detailed definition in class SmuggledObject	

Table 5–31: *SmugglingIncident* Class Attributes

5.2.8.5. IrregularMigrationIncident class (subclass of Incident)

The CISE IrregularMigrationIncident as defined in Section 8.1.8.2.3, is enhanced with the following attributes.

5.2.8.5.1. Attributes

Name	Data Type	Description	Example
BorderGuardsInvolved	boolean	Flag indicating if border guards were involved during the law infringement incident	true
ModusOperandi	String	Suspect's mode of operating	
NumberOfFacilitators	int	Total number of facilitators during the incident	1

Table 5–32: *IrregularMigrationIncident* Class New Attributes

5.2.8.6. IncidentStatusType Enumeration

The Incident status type enumeration classifies the status of the incident.

5.2.8.6.1. Enumeration Values

Label	Description
Pending	Incident is inputted in the system but not yet undertaken by an operator

Label	Description
ActiveWithoutResources	Incident is active, undertaken by an operator, but no operational assets are yet involved
Active	Active indicates an incident, undertaken by an operator, is dispatched to operational assets
UnderControl	Incident is under control and no more operational resources are needed to resolve it
Cancelled	Incident is cancelled, no more actions are required
Ended	Incident has ended
NonSpecified	Status of incident not specified

Table 5–33: *IncidentStatusType Enumeration Values*

5.2.8.6.2. Enumeration Usage

The following attributes use this enumeration as data type

- IncidentStatus in Incident class.

5.2.8.7. BorderFlowPathType Enumeration

The Border flow path type enumeration classifies the location flow of the Incident with respect to national borders.

5.2.8.7.1. Enumeration Values

Label	Description
AtEntry	Incident while entering borders
AtExit	Incident while exiting borders
Internal	Incident within borders
Unknown	Unknown locality of incident
NonSpecified	Locality of incident not specified

Table 5–34: *BorderFlowPathType Enumeration Values*

5.2.8.7.2. Enumeration Usage

The following attributes use this enumeration as data type

- BorderFlowPath in Incident class.

5.2.8.8. SmuggledObject Datatype

SmuggledObject data type is defining the objects that are involved in a smuggling incident. The Smuggled object's quantity could be expressed in either the number of pieces or weight in kilograms. The value of each smuggled object, if it can be estimated, is expressed in Euros.

5.2.8.8.1. Attributes

Name	Data Type	Description	Example
ObjectName	String	The name of the smuggled object	Marihuana

Name	Data Type	Description	Example
ObjectQuantity	double	Total number of pieces	5
ObjectWeight	double	The weight of the smuggled object in kilograms	3.1
ObjectValue	double	The estimated value of the smuggled object in Euros	3000
ObjectDescription	String	A free text description of the smuggled object	

Table 5–35: *SmuggledObject Datatype Attributes*

5.2.8.9. SmugglingIncidentType Enumeration

Smuggling Incident Types are derived from the LawInfringementIncident types. Please find the full description in the CISE Data Model description Annex B Chapter 8.1.8.2.10.

All Smuggling objects related types (e.g. DrugSmugglingMarijuana, GoodsSmugglingCounterfeitedProducts, SmugglingInWeaponsAndRelatedAccessoriesAmmunition) are moved to the SmugglingIncidentType enumeration, and a generic Smuggling is inserted in the [LawInfringementIncidentType](#).

5.2.8.10. CrisisIncidentType Enumeration

The following new enumerations have been added. Please find the rest CISE CrisisIncidentType Enumeration values at Annex B Chapter 8.1.8.2.8.

5.2.8.10.1. Enumeration Values

Label	Description
ManMadeDisasterLandAccident	Man-made disaster land accident

Table 5–36: *CrisisIncidentType New Enumeration Values*

5.2.9. Risk Namespace

5.2.9.1. Risk Class (subclass of Entity)

As defined by CISE, Risk class, is an entity which is used to represent a more or less probable situation involving exposure to danger concerning the maritime domain. Risk class is enhanced in e-CISE to support risks in the land domain as well. Please find the complete Risk Core vocabulary as defined by CISE at Annex B Chapter 8.1.17.

5.2.9.1.1. Attributes

Name	Data Type	Description	Example
RiskExplanation	String	Free text explanation of the facing risk	
RiskConfidence	utils:Confidence	The confidence for instantiating this risk. Can be expressed in percentage or natural text language format.	

Table 5–37: *Risk Class New Attributes*

5.2.9.2. RiskLevelType Enumeration

The following new Risk Level enumerations have been added. Please find the rest CISE Enumeration values at Annex B Chapter 8.1.17.2.2.

Label	Description
VeryHigh	Used to identify a Very High-level risk
VeryLow	Used to identify a Very Low-level risk

Table 5–38: RiskLevelType New Enumeration Values

5.2.9.3. RiskProbabilityType Enumeration

Please find the rest CISE Enumeration values at Annex B Chapter 8.1.17.2.3.

Label	Description
Typical	Typical risk probability

Table 5–39: RiskProbabilityType New Enumeration Values

5.2.9.4. RiskType Enumeration

The following new Risk Type enumerations have been added. Please find the rest CISE Enumeration values at Annex B Chapter 8.1.17.2.5.

Label	Description
Crisis	Crisis risk
IllegalDiving	Risk of illegal diving
Military	Military risk
Environmental	Environmental risk
BorderCrossing	Risk of border crossing events
LawInfringement	Risk of Law infringement operations
GenericMaritimeSafety	Generic Sea Area risks
GenericLandSafety	Generic Land Area risks

Table 5–40: RiskType New Enumeration Values

5.2.10. Location Namespace

Location in CISE is described by either using a place name, a geometry or an address. In e-CISE the Location core vocabulary is enhanced by the addition of StationLocation, the definition of an Area, and more well-defined Geometries. Please find the complete Location Core vocabulary as defined by CISE at Annex B Chapter 8.1.9.

5.2.10.1. UML Model

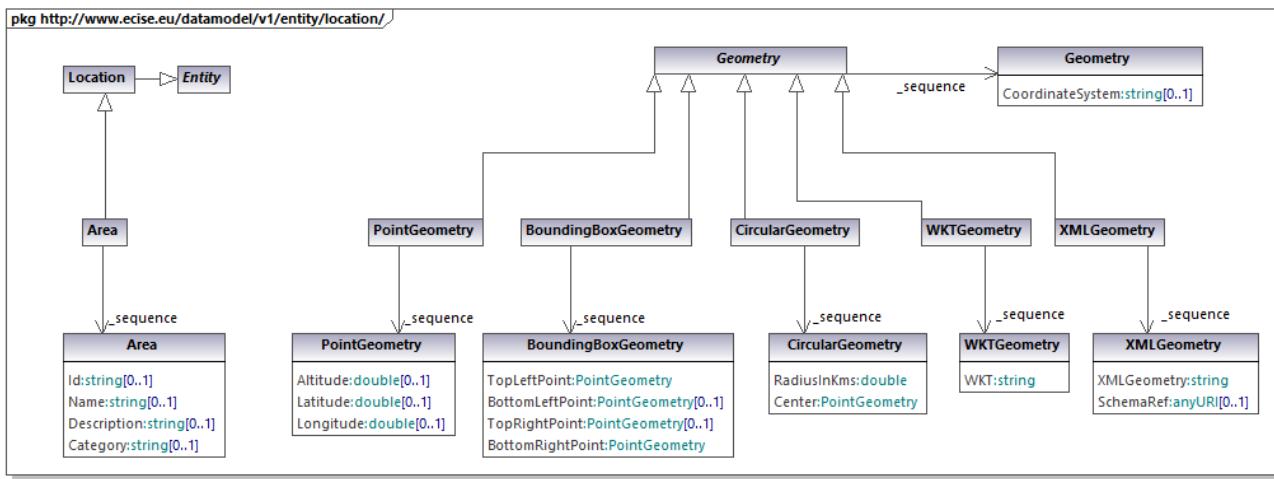


Figure 5-1: UML Class Diagram of Location e-CISE Entity Namespace

5.2.10.2. StationLocation Class (subclass of Location)

5.2.10.2.1. Attributes

Name	Data Type	Description	Example
LocationCode	String	The code of the station's location	
StationName	String	The name of the station	
StationType	StationType	The type of the station	GroundStation

Table 5-41: StationLocation Class Attributes

5.2.10.3. Area Class (subclass of Location)

The Area class, subclass of Location, is used in e-CISE to describe a custom generated geographic region.

5.2.10.3.1. Attributes

Name	Data Type	Description	Example
Id	String	An alias id of the area	51
Name	String	The name of the area	
Description	String	Description of the area. Source: OASISCAP [4]	
Category	String	The category of the area	SafeZones

Table 5-42: Area Class Attributes

5.2.10.4. Geometry Class

In e-CISE the Geometry class is abstract. Geometry contains the description of the coordinate system used in the geometry. To instantiate a Geometry one of the following Geometry's class subclasses must be used.

5.2.10.4.1. Attributes

Name	Data Type	Description	Example
CoordinateSystem	String	Free text description of the Coordinate System used	WGS84

Table 5–43: Geometry Class Attributes

5.2.10.5. PointGeometry Class (subclass of Geometry)

PointGeometry specifies a 2D/3D point in WGS84 or a custom coordinate system.

5.2.10.5.1. Attributes

Name	Data Type	Description	Example
Longitude	double	Geographic longitude expressed using the WGS84 system or a custom coordinate system if expressed by the associated entity.	25.846881
Latitude	double	Geographic latitude expressed using the WGS84 system or a custom coordinate system if expressed by the associated entity	39.255252
Altitude	double	Geographic altitude expressed using the WGS84 system or a custom coordinate system if expressed by the associated entity	

Table 5–44: PointGeometry Class Attributes

5.2.10.6. CircularGeometry Class (subclass of Geometry)

A CircularGeometry specifying a circular area.

5.2.10.6.1. Attributes

Name	Data Type	Description	Example
Center	PointGeometry	The center of the circle	
RadiusInKms	double	The radius of the circle in kilometres	100

Table 5–45: CircularGeometry Class Attributes

5.2.10.7. BoundingBoxGeometry Class (subclass of Geometry)

BoundingBoxGeometry demonstrates the geometry of a 2D or 3D bounding box either in WGS84 or in a custom coordinate system. When BoundingBox is used to define geometry on a video playback, the PointGeometry's longitude is expressing the horizontal axis (X) and latitude the vertical axis (Y).

5.2.10.7.1. Attributes

Name	Data Type	Description	Example
TopLeftPoint	PointGeometry	The top left point of the bounding box.	
TopRightPoint	PointGeometry	The top right point of the bounding box	
BottomLeftPoint	PointGeometry	The bottom left point of the bounding box	
BottomRightPoint	PointGeometry	The bottom right point of the bounding box	

Table 5–46: BoundingBoxGeometry Class Attributes

5.2.10.8. WKTGeometry Class (subclass of Geometry)

As defined by CISE, WKTGeometry is used to represent vector geometry objects on a map, when the above specializations are not capable of representing the geometry.

5.2.10.8.1. Attributes

Name	Data Type	Description	Example
WKT	String	Well known text (WKT) is a text mark-up language for representing vector geometry objects on a map	POINT (20,0)

Table 5–47: *WKTGeometry Class Attributes*

5.2.10.9. XMLGeometry Class (subclass of Geometry)

As defined by CISE, XMLGeometry is used to represent a geometry defined in an XML format. Various schemas like KML could be embedded.

5.2.10.9.1. Attributes

Name	Data Type	Description	Example
XMLGeometry	String	Geometry defined by an XML file such as KML	<pre><?xml version="1.0" encoding="UTF-8"?> <kml xmlns="http://www.opengis.net/kml/2.2"> <Placemark> <name>Simple placemark</name> <description>Attached to the ground. Intelligently places itself at the height of the underlying terrain. </description> <Point> <coordinates>- 23.33,34.22, 0</coordinates> </Point> </Placemark> </kml></pre>
SchemaRef	XSD:anyURI	The URI of the external schema defining the xml geometry	http://www.opengis.net/kml/2.2

Table 5–48: *XMLGeometry Class Attributes*

5.2.10.10. MeteoOceanographicCondition Class (subclass of Entity)

In e-CISE the MeteoOceanographicCondition has been enriched to support further capabilities of the Decision Support Tools services. Please find the complete MeteoOceanographicCondition CISE class definition at Annex B Chapter 8.1.9.2.3.

5.2.10.10.1. Attributes

Name	Data Type	Description	Example
WaterCurrentSpeed	double	Ocean speed (m/s)	1.5

Name	Data Type	Description	Example
WaterMeridionalComponent	double	Ocean current along meridional direction (m/s)	
WaterZonalComponent	double	Ocean current along zonal direction (m/s)	
WavePeriod	double	Indicates mean wave period in seconds	9.2
PeakWaveHeight	double	Indicates the Peak wave height in metres	5
PeakWavePeriod	double	Indicates peak -most energetic- wave period in seconds	18.4
WindBeaufortScale	int	Beaufort wind force scale	6
WindMeridionalComponent	double	Meridional wind component at 10 meters (m/s)	
WindZonalComponent	double	Zonal wind component at 10 meters (m/s)	
SeaSurfaceHeight	double	Sea level over the geoid (where geoid is a surface of constant geopotential with which mean sea level would coincide if the ocean were at rest)	-0.4
MixedLayer	double	It is the depth where the density increases of 0.01 kg/m ³ compared to density at 10 m depth	100
CurrentDirection	double	the direction towards which a current is flowing [degrees from North]	90
CurrentVelocity	double	the rate at which the water moves either horizontally or vertically [m/s]	0.8

Table 5–49: MeteoOceanographicCondition Class New Attributes

5.2.10.11. LocationZoneType Enumeration

The following new LocationZoneType enumerations have been added. Please find the rest CISE Enumeration values at Annex B Chapter 8.1.9.2.9.

Label	Description
AOI	Area of interest
AOR	Area of responsibility
AIR	Area of intelligence responsibility
AII	Area of intelligence interest
ArchaeologicalSite	Archaeological site, regulated by certain rules
RegulatedZone	Zone regulated by certain rules
AirportControlPoint	Airport control point
BlueBorder	Blue border any national boundary lines demarcated by water (i.e. maritime, lakes, rivers, streams)
DangerousArea	Classified as dangerous area
ProhibitedArea	Prohibited Area, no entry
CoastalArea	Coastal area
Fences	Area of a fence
Stations	Area of stations
CriticalInfrastructure	Area of critical infrastructure

Table 5–50: LocationZoneType New Enumeration Values

5.2.10.12. OperationalPurposeType Enumeration

The following new OperationalPurposeType enumerations have been added. Please find the rest CISE Enumeration values at Annex B Chapter 8.1.9.2.11.

Label	Description
PatrollingArea	Patrolling Area
OperationArea	To specify an Area or Location where an operation is planned or on-going

Table 5–51: OperationalPurposeType New Enumeration Values

5.2.10.13. StationType Enumeration

5.2.10.13.1. Enumeration Values

Value	Description
PatrollingStation	Station of patrols
GroundStation	Ground station
Other	Other station types not covered
NonSpecified	Station type not specified

Table 5–52: StationType Enumeration Values

5.2.10.13.2. Enumeration Usage

The following attributes use this enumeration as data type

- StationType in StationLocation class.

5.2.11. Period Namespace

Period as defined by CISE, is used to express a time interval. In e-CISE we are enhancing Period vocabulary with the following additional entities to enhance scheduling capabilities. Please find the complete Period Core vocabulary as defined by CISE at Annex B Chapter 8.1.15.

5.2.11.1. AllocationSlot class

5.2.11.1.1. Attributes

Name	Data Type	Description	Example
SlotReccurenceType	SlotReccurenceType	Defines the periodicity of the Slot Recurrence Configuration	
Hours	int	Hours within a day [0, 23]	
DaysOfWeek	int	Days within week [0, 6]	
DaysOfMonth	int	Days within month [1, 31]	
WeeksOfYear	int	Weeks within a year [1, 52]	
WeeksOfMonth	int	Weeks within a month [1, 5]	
MonthsOfYear	int	Months within a year [1, 12]	

Table 5–53: AllocationSlot Class Attributes

5.2.11.1.2. Constraints

Attribute	Constraints
Hours	[0, 23]
DaysOfWeek	[0, 6]
DaysOfMonth	[1, 31]
WeeksOfYear	[1, 52]
WeeksOfMonth	[1,5]
MonthsOfYear	[1,12]

Table 5–54: AllocationSlot Class Constraints

5.2.11.2. SlotReccurenceType Enumeration

5.2.11.2.1. Enumeration Values

Value	Description
Monthly	Every month
Weekly	Every week
Daily	Every day
Hourly	Every hour

Table 5–55: SlotReccurenceType Enumeration Values

5.2.11.2.2. Enumeration Usage

The following attributes use this enumeration as data type

- SlotReccurenceType in AllocationSlot class.

5.2.12. Metadata Namespace

Metadata as defined by CISE Data Model, provide information about the properties of the data, communicated through the system, excluding the content of the data. Each e-CISE entity might include, when being exchanged to another ANDROMEDA system, an optional set of Metadata.

5.2.12.1. Metadata Class

Please find the definition of the CISE Metadata class at Annex B Chapter 8.1.10.2.1.

5.2.12.1.1. Attributes

Name	Data Type	Description	Example
LastUpdateDate	XSD:DateTime	The last update timestamp of the class/entity described by the Metadata in UTC.	

Table 5–56: Metadata Class New Attributes

5.2.12.2. MediaType Enumeration

Source: IETF RFC 2046 [5]

5.2.12.2.1. Enumeration Values

Label	Source
x-world/x-3dmf	IETF RFC 2046
video/avi	IETF RFC 2046
video/mpeg	IETF RFC 2046
video/x-mpeg	IETF RFC 2046
video/ogg	IETF RFC 2046
video/webm	IETF RFC 2046
video/msvideo	IETF RFC 2046
video/quicktime	IETF RFC 2046
image/jpeg	IETF RFC 2046
image/png	IETF RFC 2046
image/bmp	IETF RFC 2046
audio/mpeg3	IETF RFC 2046
audio/mpeg	IETF RFC 2046
audio/aiff	IETF RFC 2046
OtherVideoFormat	Other video format not covered
OtherAudioFormat	Other audio format not covered
OtherImageFormat	Other image format not covered

Table 5–57: MediaType Enumeration Values

5.2.12.2.2. Enumeration Usage

The following attributes use this enumeration as data type

- FileMediaType in Metadata class.
- MediaType in Camera class.

5.2.13. Object Namespace

The Object Entity as defined by CISE, is an abstract entity that holds information about physical entities from the maritime domain like vehicles and cargo. In e-CISE we are enhancing the object vocabulary with land domain content and with the [Sensor](#) vocabulary. For the complete Object CISE vocabulary please review Annex B Chapter 8.1.12.

5.2.13.1. Vehicle class (subclass of Object)

As defined by CISE the Vehicle is a sub-class of Object used to determine types of physical moving objects related to maritime. In e-CISE we are extending Vehicle to determine Land Vehicles as well. Please find the CISE definition of Vehicle at Annex B Chapter 8.1.12.2.3.

5.2.13.1.1. Attributes

Name	Data Type	Description	Example
ClassificationType	ClassificationType	The classification type of the vehicle. Please check ClassificationType enumeration.	Friend

Name	Data Type	Description	Example
ClassificationConfidence	utils:Confidence	The confidence of the classification of the Vehicle. Can be expressed in percentage or natural text language format.	
ConfirmationStatus	ConfirmationStatusType	The confirmation of the vehicle during detection	Confirmed

Table 5–58: Vehicle Class New Attributes

5.2.13.2. LandVehicle class (subclass of Vehicle)

5.2.13.2.1. Attributes

Name	Data Type	Description	Example
LicensePlate	String	The license plate of the vehicle	IEM 2131
LandVehicleType	LandVehicleType	The type of the land vehicle	Car
Yaw	double	This is the angle between the vehicle's current compass direction and magnetic north, rotating about the vertical axis. If the front edge of the vehicle faces magnetic north, the yaw is 0 degrees; if the front edge faces south, the yaw is 180 degrees. Similarly, if the front edge faces east, the yaw is 90 degrees, and if the front edge faces west, the yaw is 270 degrees.	90
Pitch	double	This is the angle between the horizontal plane of the vehicle and a plane parallel to the ground, rotating about the lateral axis. If you place the vehicle parallel to the ground and tilt the frontal part of the vehicle towards the ground, the pitch angle becomes positive. Tilting in the opposite direction causes the pitch angle to become negative. The range of values is -180 degrees to 180 degrees.	90
Roll	double	This is the angle between the horizontal plane of the vehicle and a plane parallel to the ground, rotating about the longitudinal axis. If you place the vehicle parallel to the ground and tilt the left edge of the vehicle toward the ground, the roll angle becomes positive. Tilting in the opposite direction causes the roll angle to become negative. The range of values is -90 degrees to 90 degrees.	90

Table 5–59: LandVehicle Class New Attributes

5.2.13.3. Aircraft class (subclass of Vehicle)

5.2.13.3.1. Attributes

Name	Data Type	Description	Example
AircraftType	AircraftType	The type of the aircraft	UAV
Yaw	double	This is the angle between the aircraft's current compass direction and magnetic north, rotating about the vertical axis. If	40

Name	Data Type	Description	Example
		the front edge of the aircraft faces magnetic north, the yaw is 0 degrees; if the front edge faces south, the yaw is 180 degrees. Similarly, if the front edge faces east, the yaw is 90 degrees, and if the front edge faces west, the yaw is 270 degrees.	
Pitch	double	This is the angle between the horizontal plane of the aircraft and a plane parallel to the ground, rotating about the lateral axis. If you place the aircraft parallel to the ground and tilt the frontal part of the aircraft towards the ground, the pitch angle becomes positive. Tilting in the opposite direction causes the pitch angle to become negative. The range of values is -180 degrees to 180 degrees.	30
Roll	double	This is the angle between the horizontal plane of the aircraft and a plane parallel to the ground, rotating about the longitudinal axis. If you place the aircraft parallel to the ground and tilt the left edge of the aircraft toward the ground, the roll angle becomes positive. Tilting in the opposite direction causes the roll angle to become negative.	20

Table 5–60: Aircraft Class New Attributes

5.2.13.4. ObjectLocation Association Class

The ObjectLocation CISE association class - as defined in 8.1.12.2.2 - is enhanced with a new attribute associating the Location of an Object with Sensors.

5.2.13.4.1. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedSensorRel	LocationSensor	Association of the sensors involved with an Object at a specific location	0..*

Table 5–61: ObjectLocation Class New Associations

5.2.13.5. SourceType Enumeration

The following new enumeration values have been added in the SourceType. Please find the definition and the CISE values at Annex B, Chapter 8.1.12.2.10. SourceType can be expressed using multiple values. For example, we could define the placement of an object at a specific location using as SourceType the following values: [Observation, SeaPatrol].

5.2.13.5.1. Enumeration Values

Label	Description
Radar	The location of the object is identified by Radar
Camera	The location of the object is identified by Camera
AIS	The location of the object is identified by AIS
GroundSensor	The location of the object is identified by GroundSensor
AerialVehicle	The location of the object is identified by AerialVehicle
SeaPatrol	The location of the object is identified by Sea Patrol
LandPatrol	The location of the object is identified by Land Patrol

Label	Description
Satellite	The location of the object is identified by Satellite sensor
VesselMonitoringSystem	The location of the object is identified by Vessel Monitoring System
VesselDetectionSystem	The location of the object is identified by Vessel Detection System
OSINT	The location of the object is identified by publicly available sources of intelligence
HUMINT	The location of the object is identified by means of interpersonal contact
IMINT	The location of the object is identified by imagery intelligence
FusionServices	The location of the object is identified by Fusion Services
DecisionSupportSystems	The location of the object is identified by Decision Support Systems

Table 5–62: *SourceType* New Enumeration Values

5.2.13.6. PlannedOperationsType Enumeration

The following new values have been added. Please find the rest CISE Enumeration values at Annex B Chapter 8.1.12.2.7.

5.2.13.6.1. Enumeration Values

Label	Description
Patrolling	Patrolling at Location

Table 5–63: *PlannedOperationsType* New Enumeration Values

5.2.13.7. LocationRoleType Enumeration

The following new values have been added. Please find the rest CISE Enumeration values at Annex B Chapter 8.1.12.2.5.

5.2.13.7.1. Enumeration Values

Label	Description
LocationOfRegistry	Location of registry for the vehicle
LocationOfMaintenance	Location of maintenance for the vehicle
LocationOfDeparture	Location of departure for the vehicle
LocationOfArrival	Location of arrival for the vehicle
Other	Other location role not covered

Table 5–64: *LocationRoleType* New Enumeration Values

5.2.13.8. LandVehicleType Enumeration

5.2.13.8.1. Enumeration Values

Label	Description
UGV	Unmanned ground vehicle
Car	Car
Tank	Tank
Truck	Truck

Label	Description
FourWheelDrive	A Four-wheel drive vehicle
Ambulance	Ambulance
Motorcycle	Motorcycle
ArtilleryVehicle	Artillery vehicle
DesertPatrolVehicle	Desert patrol type vehicle
GenericPatrolVehicle	Generic patrol type vehicle
Tractor	Tractor
Wrecker	Wrecker
Humvee	Humvee
Firetruck	Firetruck
Van	Van
PickUp	PickUp
Other	Other land vehicle type not covered
NonSpecified	Land vehicle type not specified

Table 5–65: LandVehicleType New Enumeration Values

5.2.13.8.2. Enumeration Usage

The following attributes use this enumeration as data type

- LandVehicleType in LandVehicle class.

5.2.13.9. AircraftType Enumeration

5.2.13.9.1. Enumeration Values

Label	Description
Aircraft	Generic aircraft
Helicopter	Helicopter
UAV	Unmanned Aerial Vehicle
Drone	Drone
Aeroplane	Aeroplane
Zeppelin	Zeppelin
Balloon	Balloon
Other	Other aircraft type not covered
NonSpecified	Aircraft type not specified

Table 5–66: AircraftType Enumeration Values

5.2.13.9.2. Enumeration Usage

The following attributes use this enumeration as data type

- AircraftType in Aircraft class.

5.2.14. Vessel Namespace

The CISE Vessel namespace is enhanced with the introduction of more Vessel types and extra attributes. Please find the complete Vessel Core vocabulary as defined by CISE at Annex B Chapter 8.1.19.

5.2.14.1. Vessel class (subclass of Vehicle)

5.2.14.1.1. Attributes

Name	Data Type	Description	Example
AisTransponder	AisDevice	The transponder AIS device equipped on the vessel	
DesignPower	double	Vessel's designed power	
ObsRollPeriod	Period	Vessel's period of roll	
RateOfTurn	double	Vessel's rate of turn (ROTAIS)	

Table 5–67: Vessel Class New Attributes

5.2.14.2. VesselType Enumeration

The following VesselType enumeration values have been added. The rest of the CISE Enumeration values can be found at Annex B Chapter 8.1.19.2.10.

5.2.14.2.1. Enumeration Values

Label	Description
PortTender	Port tender ship
Law	law enforcement vessel
SearchAndRescue	Search and rescue activities boat
Barge	Barge ship
Tug	Tug boat
Medical	Medical vessel
Ferry	Ferry
RR_18	RR Resolution No. 18
Pilot	Pilot vessel
Diving	Diving vessel
Wig	Wig vessel
Sailing	Sailing vessel
Military	Military vessel
Underwater	Underwater vessel
AntiPollution	Anti-pollution specific vessel
Towing	Emergency tow vessel
Pleasure	Pleasure vessel
Spare	Spare vessel
Tanker	Tanker
OilTanker	Oil tanker
ContainerCarrier	container carrier
LNGCarrier	LNG carrier

Label	Description
InflatableBoat	Inflatable boat

Table 5–68: *VesselType New Enumeration Values*

5.2.15. Movement Namespace

The Movement Core Entity as defined by CISE, is used to define a vehicle's voyage. In e-CISE we are enhancing the movement vocabulary with more movement types. For the complete Movement CISE vocabulary please review Annex B Chapter 8.1.11.

5.2.15.1. MovementType Enumeration

The following new values have been added. Please find the rest of the CISE Enumeration values in the Annex B Chapter 8.1.11.2.2.

5.2.15.1.1. Enumeration Values

Label	Description
Placement	Movement with type Placement
Disposition	Movement with type Disposition refers to the disposal of a vessel by transferring it to other agencies or foreign authorities

Table 5–69: *MovementType New Enumeration Values*

5.2.16. OperationalAsset Namespace

The OperationalAsset Entity as defined by CISE, is used to define an object which is enabling operational Actions. In e-CISE we are enhancing the OperationalAsset vocabulary by incorporating the [Sensor](#) class, to describe a sensor used as an operational asset. For the complete OperationalAsset CISE vocabulary please review Annex B Chapter 8.1.13.

5.2.16.1. OperationalAsset class (subclass of Entity)

Please find the attributes and the association roles as defined by CISE at Annex B Chapter 8.1.13.2.1.

5.2.16.1.1. Association Roles

Name	Data Type	Description	Multiplicity
CorrespondentSensor	Sensor	Sensors involved as Operational Assets	0..*

Table 5–70: *OperationalAsset Class New Associations*

5.2.16.2. OperationalAssetType Enumeration

The following new values have been added. Please find the rest of the CISE Enumeration values int the Annex B Chapter 8.1.13.2.2.

5.2.16.2.1. Enumeration Values

Label	Description
Zeppelin	Zeppelin operational asset

Label	Description
SearchAndRescueVehicle	Search and Rescue vehicle

Table 5–71: OperationalAssetType New Enumeration Values

5.2.17. Organization Namespace

The Organization Core Entity as defined by CISE, is used to represent a structured and legally recognized association of humans and material resources. An organization may itself be involved as actor or subject in the various events and activities. In e-CISE we are enhancing the organization vocabulary with more Land Border specific organization information. For the complete Organization CISE vocabulary, this can be found in the Annex B Chapter 8.1.14.

5.2.17.1. OrganizationPurposeType Enumeration

The following new values have been added. Please find the rest CISE Enumeration values at Annex B Chapter 8.1.14.2.7.

5.2.17.1.1. Enumeration Values

Label	Description
LandEnvironment	Authorities responsible for: • Monitoring of compliance with regulations on the protection of the land environment; support of enforcement operations • Early warning/identification of incidents/accidents that may have an environmental impact on the land.
LandSafetyAndSecurity	Authorities responsible the safety and security on the land
SearchAndRescue	Authorities responsible for search and rescue operations

Table 5–72: OrganizationPurposeType New Enumeration Values

5.2.17.2. OrganizationRoleType Enumeration

The following new values have been added. Please find the rest CISE Enumeration values at Annex B Chapter 8.1.14.2.8.

5.2.17.2.1. Enumeration Values

Label	Description
BorderAuthority	Border authority
LawEnforcementAuthority	Law enforcement authority
FisheriesAuthority	Fishery monitoring authorities
LandSafetyAuthority	Land safety authorities
MaritimeSafetyAuthority	Maritime safety authorities

Table 5–73: OrganizationRoleType New Enumeration Values

5.3. e-CISE New Core Entities

5.3.1. Sensor Namespace

Sensor Core Entity is a sub-class of the Object class. A sensor refers to the means of the detection of an [Object](#), a [Person](#) or an [Event](#). A Sensor in e-CISE data model can be a [Camera](#), a [Radar](#) or an [AIS device](#). Sensor inherits all the attributes, associations and relationships of the Object and Entity classes. To review the inherited elements please refer to the Object CISE Data Model class definition in Annex B 8.1.12.2.1.

5.3.1.1. UML Diagram

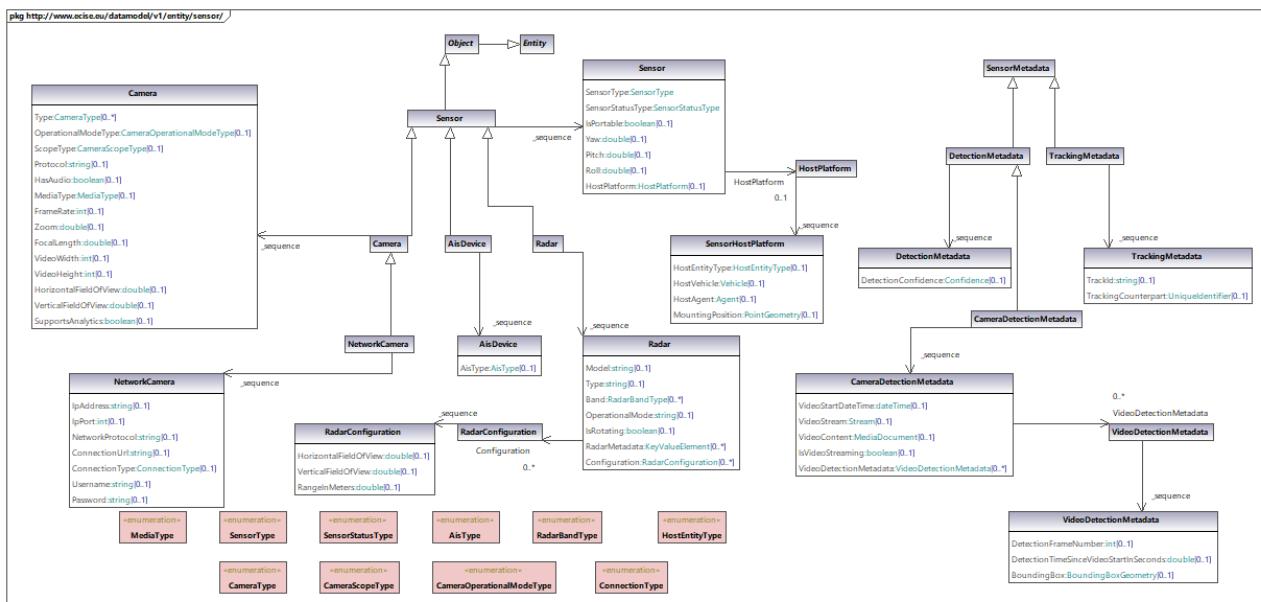


Figure 5-2: UML Class Diagram of Sensor e-CISE Entity Namespace

5.3.1.2. Sensor Class (subclass of Object)

5.3.1.2.1. Attributes

Name	Data Type	Description	Example
SensorType	SensorType	Indicates the type of the sensor	Camera
SensorStatus	SensorStatusType	Indicates the status of the sensor	Online
IsPortable	boolean	Flag that indicates the sensor device as portable. Can be either true or false.	True
Yaw	double	This is the angle between the sensor's current compass direction and magnetic north, rotating about the vertical axis. If the front edge of the device faces magnetic north, the yaw is 0 degrees; if the front edge faces south, the yaw is 180 degrees. Similarly, if the front edge faces east, the yaw is 90 degrees, and if the front edge faces west, the yaw is 270 degrees.	90
Pitch	double	This is the angle between the horizontal plane of the sensor and a plane parallel to the ground, rotating about the lateral axis. If you mount the sensor parallel to the ground and tilt	90

Name	Data Type	Description	Example
		the frontal part of the sensor towards the ground, the pitch angle becomes positive. Tilting in the opposite direction causes the pitch angle to become negative. The range of values is -180 degrees to 180 degrees.	
Roll	double	This is the angle between the horizontal plane of the sensor and a plane parallel to the ground, rotating about the longitudinal axis. If you hold the sensor parallel to the ground and tilt the left edge of the device toward the ground, the roll angle becomes positive. Tilting in the opposite direction causes the roll angle to become negative. The range of values is -90 degrees to 90 degrees.	45

Table 5–74: Sensor Class Attributes

In case of a sensor installed in a moving platform yaw, pitch and roll are defined with respect to the host platform (relative orientation). For a fixed platform or sensor, the longitudinal axis is defined as a line from south to north. The lateral axis is defined as a line from west to east. The vertical axis as a line from bottom to up. For a sensor onboard a moving platform, instead of north and south we use the front and back side of the platform respectively. Instead of west and east we use the left and right side of the platform respectively. Instead of bottom and up we use the bottom and upper side of the platform respectively. Finally, in case of a portable sensor the ground is defined as the horizontal plane of the host platform.

5.3.1.2.2. Association Roles

Name	Data Type	Description	Multiplicity
HostPlatform	HostPlatform	The Platform on which, the Sensor is mounted. Please check association class HostPlatform.	0..1

Table 5–75: Sensor Class Associations

5.3.1.3. AisDevice Class (subclass of Sensor)

AisDevice is a subclass of Sensor and its used to describe the AIS Transceivers which are used for Vessel information reporting and identification in Maritime Border Surveillance operations.

5.3.1.3.1. Attributes

Name	Data Type	Description	Example
AisType	AisType	Indicates the type of the AIS in IEC standards.	Class A

Table 5–76: AisDevice Class Attributes

5.3.1.4. Camera Class (subclass of Sensor)

Camera is a subclass of Sensor class. It's used to describe the camera's sensor specifications. A camera associated to the surveillance system can detect people, objects and events. A camera can be mounted on a fixed stationary position (e.g. a building) or on a moving entity like a land vehicle or a UAV.

5.3.1.4.1. Attributes

Name	Data Type	Description	Example
Type	CameraType[]	Different types of cameras	[Thermal, RGB]
OperationalModeType	CameraOperationalModeType	Camera's operational mode	Tracking
ScopeType	CameraScopeType	Camera's scope	Day
Protocol	String	Camera's protocol	RTSP
MediaType	MediaType	Camera's content types and subtypes defined in RFC 2046	video/mpeg
FrameRate	int	Camera's frames per second	30
FocalLength	double	The Focal length of the camera in millimetres (mm)	18
VideoWidth	int	The camera's video width in pixels	1920
VideoHeight	int	The camera's video height in pixels	1080
HorizontalFieldOfView	double	Horizontal Field of View describes the angle through which the camera can detect objects	39.6
VerticalFieldOfView	double	Vertical Field of View describes the angle through which the camera can detect objects	25.4
Zoom	double	Camera's zoom in millimetres (mm)	200
SupportsAnalytics	boolean	Integrated analytics inside the camera	True
HasAudio	boolean	Indicates if the camera offers audio together with the video stream	true

Table 5–77: Camera Class Attributes

5.3.1.5. NetworkCamera Class (subclass of Camera)

NetworkCamera is a specification of the Camera entity. A network camera provides IP address and offers external connectivity over specified network protocol.

5.3.1.5.1. Attributes

Name	Data Type	Description	Example
IpAddress	String	The IP Address of the network camera	10.40.1.44
IpPort	int	The port of the network camera	8080
NetworkProtocol	String	The protocol of the network camera.	http://
ConnectionUrl	String	The fully qualified network camera's URL It could refer to the URL of the direct video stream or the URL of the Camera's Video Management System.	http://10.40.1.44:8080/cgi-bin/avi.cgi?refresh=0

Name	Data Type	Description	Example
ConnectionType	ConnectionType	Connection type of the camera.	Direct
Username	String	The username of the camera's interface.	a_username
Password	String	The password of the camera's interface.	a_password

Table 5–78: NetworkCamera Class Attributes

5.3.1.6. Radar Class (subclass of Sensor)

Radar is a subclass of Sensor class and it's used to describe the Radar assets associated with a surveillance system. A Radar can either be coastal, mounted on a boat or land-based. A radar can have multiple configurations with different set of ranges and field of views, as well as different tracking area parameters defined in the radar's metadata.

5.3.1.6.1. Attributes

Name	Data Type	Description	Example
Model	String	The model of the radar	SIMRAD 25W Halo.
Type	String	The type o the radar	PulseCompression
Band	RadarBandType[]	The operating bands of the radar	[A BAND, B BAND]
OperationalMode	String	The operational mode of the radar in free text to support multiple radar models.	InsidePort, OpenSea, Coastal
IsRotating	boolean	Indicates if the radar's antenna is rotating.	True
Configuration	RadarConfiguration[]	Please check the description of the RadarConfiguration data type.	
RadarMetadata	utils:KeyValueElement[]	Key value mappings of radar's specific active configuration set.	ActiveTrackingAreas: [POLYGON ((30 10, 40 40, 30 10)), POLYGON((20 5, 33 15, 27 20, 20 5))]

Table 5–79: Radar Class Attributes

5.3.1.7. RadarConfiguration Datatype

5.3.1.7.1. Attributes

Name	Data Type	Description	Example
HorizontalFieldOfView	double	Horizontal Field of View describes the angle though which the radar can detect objects	120
VerticalFieldOfView	double	Vertical Field of View describes the angle though which the radar can detect objects	74
RangeInMeters	double	Range of radar in meters	1000

Table 5–80: RadarConfiguration Datatype Attributes

5.3.1.8. LocationSensor Association Class

An [Agent](#), [Object](#) or [Event](#) can be associated with zero or multiple Sensors, which are detecting or tracking an entity at a specific location and time. The association class can optionally include [SensorMetadata](#), which are generated by the involved Sensor.

5.3.1.8.1. Attributes

Name	Data Type	Description	Example
Sensor	Sensor	The sensor involved at location	Camera
SensorRole	SensorRoleInLocationType	The role of the sensor involved	Detecting
SensorMetadata	SensorMetadata	Metadata related to the role of the sensor	CameraDetectionMetadata

Table 5–81: LocationSensor Association Class Attributes

5.3.1.9. SensorMetadata Class

SensorMetadata class is used to enhance the information of the association of an Object, Agent, or Event with a sensor.

5.3.1.9.1. Attributes

Name	Data Type	Description	Example
Alias	String	An alias to describe the association of a sensor with an object, agent or event	TrackedCar
Properties	utils:KeyValueElement[]	Properties related to the sensor involved	
MonitoringPeriod	Period	The association period of the sensor during which the entity is being monitored.	

Table 5–82: SensorMetadata Class Attributes

5.3.1.10. TrackingMetadata Class (subclass of SensorMetadata)

TrackingMetadata class is used to enhance the information of an Object, Agent, or Event which is being tracked by a sensor.

5.3.1.10.1. Attributes

Name	Data Type	Description	Example
TrackId	String	The track id as identified by the means of tracking (e.g. A radar's assigned track id)	LandVehicle_1
TrackingCounterpart	UniqueIdentifier	The unique identifier of the entity which was used to update the track	

Table 5–83: TrackingMetadata Class Attributes

5.3.1.11. DetectionMetadata Class (subclass of SensorMetadata)

DetectionMetadata class is used to enhance the information of an Object, Agent, or Event detected by a sensor.

5.3.1.11.1. Attributes

Name	Data Type	Description	Example
DetectionConfidence	utils:Percentage	The confidence level of the detection, expressed as a percentage	100

Table 5–84: *DetectionMetadata Class Attributes*

5.3.1.12. CameraDetectionMetadata Class (subclass of DetectionMetadata)

CameraDetectionMetadata is a subclass of DetectionMetadata used to provide all information related to an object, person or event detection by a Camera sensor. CameraDetectionMetadata enables the capability to depict a detected object/agent -via a specified bounding box- on the Video playback.

5.3.1.12.1. Attributes

Name	Data Type	Description	Example
VideoStartTime	XSD:DateTime	Timestamp of Video start time in UTC.	February 17, 2020 13:52:18 (UTC)
VideoContent	MediaDocument	The video content in base64 format encapsulated in MediaDocument	
VideoStream	Stream	The streaming of video in case it's not expressed in base64 format	
IsVideoStreaming	boolean	Flag indicating the source of the data. If set to true, the video data are being streamed from the provided URI. Otherwise, the binary data are embedded and encoded in Base64 format.	false
VideoDetectionMetadata	VideoDetectionMetadata[]	List of metadata enabling the capability to locate the detected entity on the video	

Table 5–85: *CameraDetectionMetadata Class Attributes*

5.3.1.13. VideoDetectionMetadata Class

VideoDetectionMetadata is used to define a specific detection on the video. The bounding box of the detected object is specified together with DetectionFrameNumber or DetectionTimeSinceVideoStartInSeconds, which relate to the frame in which the detection occurred or the time of the detection in seconds since video started.

5.3.1.13.1. Attributes

Name	Data Type	Description	Example
BoundingBox	BoundingBoxGeometry	The BoundingBox covering the detected entity	
DetectionTimeSinceVideoStartInSeconds	double	The seconds after the video start timestamp,	22.15

Name	Data Type	Description	Example
		when the entity is detected.	
DetectionFrameNumber	int	The frame number during which the entity is detected.	301

Table 5–86: *VideoDetectionMetadata Class Attributes*

5.3.1.14. HostPlatform Association Class

This class allows the association between a mounted Sensor and the Mounting Platform. A sensor can be mounted on a Vehicle, a Person or a Fixed stationary location. The Mounting position specifies the location of the sensor relative to the local coordinate system (LCS). The center of the LCS is located in the GPS receiver device. The longitudinal axis of the LCS is parallel to the heading of the Host Platform, the lateral axis of the LCS is vertical to the longitudinal axis, and the vertical axis of the LCS is vertical to the plane defined by the longitudinal and lateral axes.

5.3.1.14.1. Attributes

Name	Data Type	Description	Example
HostEntityType	HostEntityType	The type of the Entity on which the sensor is mounted	Vehicle
HostVehicle	Vehicle	The Vehicle on which the sensor is mounted.	Car
HostAgent	Agent	The Agent which carries the sensor.	Person
MountingPosition	PointGeometry	The point geometry relative to the local coordinate system (LCS) expressed in meters.	(10,11.2, 33)

Table 5–87: *HostPlatform Association Class Attributes*

5.3.1.15. HostEntityType Enumeration

5.3.1.15.1. Enumeration Values

Label	Description
Vehicle	Indicates that the Sensor is mounted on a Vehicle host platform
Agent	Indicates that the Sensor is mounted on an Agent host platform, e.g. a Person holding the camera
Fixed	Indicates that the Sensor is mounted on a fixed Location, e.g. a Wall

Table 5–88: *HostEntityType Enumeration Values*

5.3.1.15.2. Enumeration Usage

The following attributes use this enumeration as data type

- HostEntityType (HostPlatform)

5.3.1.16. SensorType Enumeration

Sensor type of CISE is enhanced with the following enumeration values. To review the extra enumerations please refer to the CISE Data Model definition in Annex B 8.1.12.2.9.

5.3.1.16.1. Enumeration Values

Label	Description
Camera	A camera sensor
StillImagery	An image-photograph sensor
AerialImagery	An image aerial sensor
VHRSatellite	A Very High-Resolution satellite imagery sensor.
Video	A video sensor
Thermal	A temperature sensor
RadioFrequencySensor	A RF sensor
MetalDetectionSensor	A metal detection sensor
ChemicalDetectionSensor	A chemical detection sensor
RadiationDetectionSensor	A radiation detection sensor
DrugTestSensor	A drug detection sensor
SpeedSensor	A speed sensor
GeophoneSensor	A ground movements sensor
MeteoSensor	A meteorological sensor
VibrationSensor	A vibration sensor
PhoneCatchers	A telephone eavesdropping device
Laser	A laser sensor
PyroelectricSensor	A weak infrared irradiation detection sensor

Table 5–89: SensorType New Enumeration Values

5.3.1.16.2. Enumeration Usage

The following attributes use this enumeration as data type

- SensorType (Sensor)

5.3.1.17. SensorStatusType Enumeration

5.3.1.17.1. Enumeration Values

Label	Description
Online	Used to indicate that the sensor is online and transmitting
OnlineNotTransmitting	Used to indicate that the sensor is online but not transmitting
Offline	Used to indicate that the sensor is offline
Maintenance	Used to indicate that the sensor is offline and under maintenance
OutOfService	Used to indicate that the sensor is offline and out of service
NonSpecified	Sensor status not specified

Table 5–90: SensorStatusType Enumeration Values

5.3.1.17.2. Enumeration Usage

The following attributes use this enumeration as data type

- SensorStatus in Sensor class.

5.3.1.18. AisType Enumeration

AisType enumeration is used to define the type of the automatic identification system following the IEC Standards.

Source: ITU-R M.1371 AND IEC standards [7]

5.3.1.18.1. Enumeration Values

Label	Description	Source
ClassA	ClassA type	IEC 61993-2
ClassB	ClassB type	IEC 62287-1 and 62287-2
BaseStation	A shore-based AIS station	IEC 62320-1
ATON	Aids to Navigation	IEC 62320-2
SART	Search and Rescue Transceiver	IEC 61097-14
NonSpecified	AisType not specified	

Table 5–91: AisType Enumeration Values

5.3.1.18.2. Enumeration Usage

The following attributes use this enumeration as data type

- AisType (AisDevice)

5.3.1.19. RadarBandType Enumeration

Source: EU-NATO-US ECM [8]

5.3.1.19.1. Enumeration Values

Label	Description
A BAND	Frequency Range 0 to 0.25 GHz
B BAND	Frequency Range 0.25 to 0.50 GHz
C BAND	Frequency Range 0.50 to 1 GHz
D BAND	Frequency Range 1 to 2 GHz
E BAND	Frequency Range 2 to 3 GHz
F BAND	Frequency Range 3 to 4 GHz
G BAND	Frequency Range 4 to 6 GHz
H BAND	Frequency Range 6 to 8 GHz
I BAND	Frequency Range 8 to 10 GHz
J BAND	Frequency Range 10 to 20 GHz
K BAND	Frequency Range 20 to 40 GHz
L BAND	Frequency Range 40 to 60 GHz
M BAND	Frequency Range 60 to 100 GHz

Table 5–92: RadarBandType Enumeration Values

5.3.1.19.2. Enumeration Usage

The following attributes use this enumeration as data type

- RadarBandType (Radar)

5.3.1.20. CameraType Enumeration

5.3.1.20.1. Enumeration Values

Label	Description
Thermal	A thermal camera sensor
Infrared	An infrared camera sensor
RGB	An RGB camera sensor
Spectral	A spectral camera sensor
NonSpecified	Camera type non-specified

Table 5–93: CameraType Enumeration Values

5.3.1.20.2. Enumeration Usage

The following attributes use this enumeration as data type

- Type (Camera)

5.3.1.21. CameraScopeType Enumeration

5.3.1.21.1. Enumeration Values

Label	Description
Day	To indicate that camera is operating in Day scope
Night	To indicate that camera is operating in Night scope
DayNight	To indicate that camera is operating in both Day and Night scope
NonSpecified	Camera scope not specified

Table 5–94: CameraScopeType Enumeration Values

5.3.1.21.2. Enumeration Usage

The following attributes use this enumeration as data type

- ScopeType (Camera)

5.3.1.22. CameraOperationalModeType Enumeration

5.3.1.22.1. Enumeration Values

Label	Description
Automatic	Camera is operating automatically, following camera's surveillance patterns
Tracking	Camera tracks/follows a target
Static	Camera is in a fixed position with a fixed viewport

Label	Description
Dynamic	An agent operates the camera using PTZ
Other	Other operational modes not covered
NonSpecified	Operational mode of camera not specified

Table 5–95: CameraOperationalModeType Enumeration Values

5.3.1.22.2. Enumeration Usage

The following attributes use this enumeration as data type

- CameraOperationalModeType (Camera)

5.3.1.23. ConnectionType Enumeration

5.3.1.23.1. Enumeration Values

Label	Description
Direct	Connects directly to the camera video stream
VMS	Connects to the Video Management System
Other	Other type of connection not covered
NonSpecified	Connection

Table 5–96: ConnectionType Enumeration Values

5.3.1.23.2. Enumeration Usage

The following attributes use this enumeration as data type

- ConnectionType (NetworkCamera)

5.3.1.24. SensorRoleInLocationType Enumeration

SensorRoleInLocationType enumeration is used to demonstrate the role of a sensor at the location of an entity.

5.3.1.24.1. Enumeration Values

Label	Description
Tracking	Sensor is tracking an entity at a specific location
Detecting	Sensor is detecting an entity at a specific location
Other	Other sensor role in location type not covered
NonSpecified	Sensor role in location Type not specified

Table 5–97: SensorRoleInLocationType Enumeration Values

5.3.1.24.2. Enumeration Usage

The following attributes use this enumeration as data type

- SensorRole (LocationSensor)

5.3.2. Operation Namespace

Operation Core Entity is a sub-class of the Event class. Operation can be a joint-operation requiring large scale cross-border operational engagement of different authorities to co-operate under pre-determined objectives and expected results for an extended period of time. An Operation must be at least associated with one or more [Missions](#) or one or more [Tasks](#). Operation provides an abstract representation as a collection of missions and tasks that need to be performed to support the planning of long-term surveillance activities.

5.3.2.1. UML Diagram

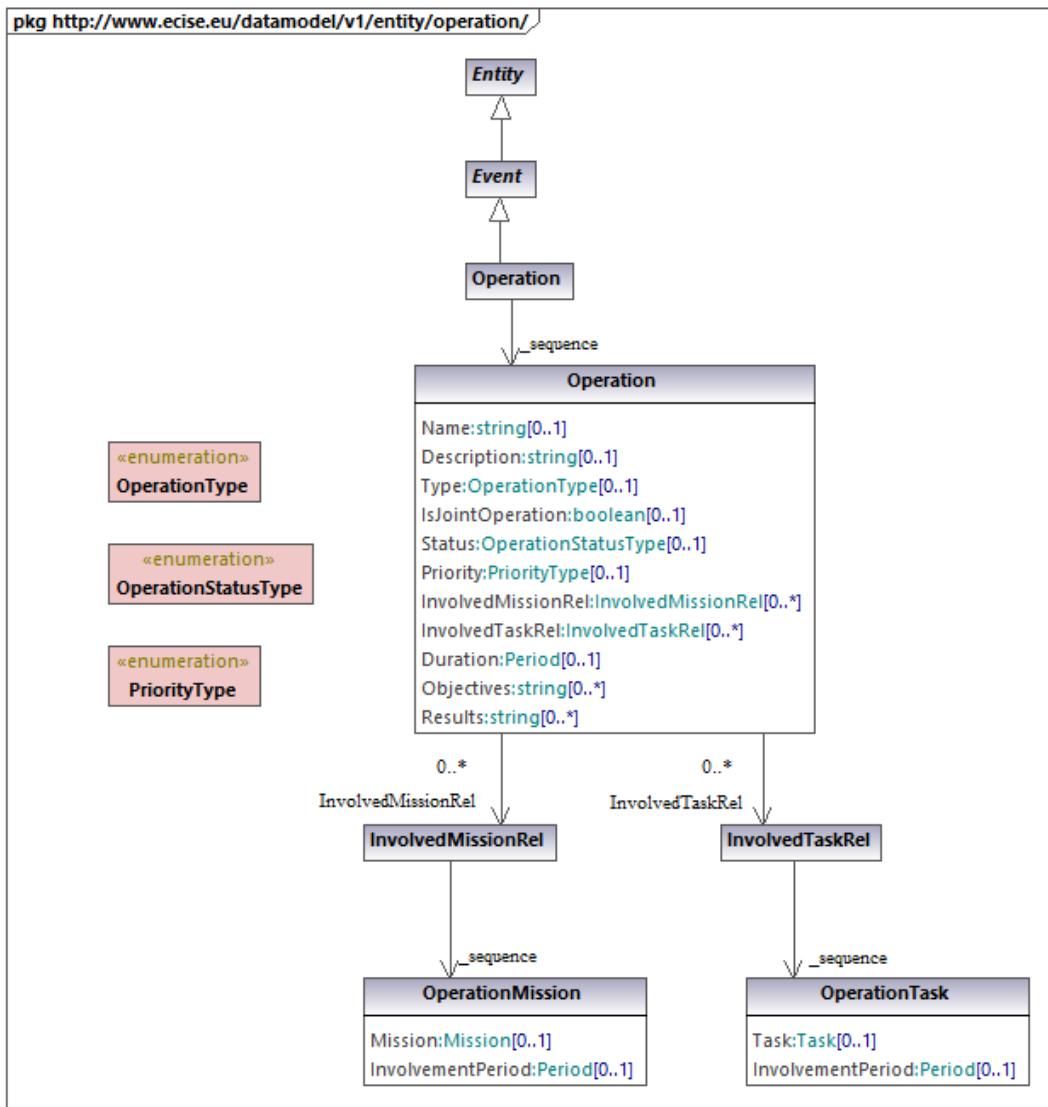


Figure 5-3: UML Class Diagram of Operation e-CISE Entity Namespace

5.3.2.2. Operation Class (subclass of Event)

5.3.2.2.1. Attributes

Name	Data Type	Description	Example
Name	String	The descriptive name of the Operation	
Description	String	An optional description of the Operation	
Type	OperationType	The type of the Operation	Training
IsJointOperation	boolean	Indicates that this operation is a joint Operation	true
Status	OperationStatusType	The execution status of this Operation	InProgress
Priority	utils:PriorityType	The priority of this Operation	VeryHigh
Duration	Period	The duration of the Operation	
Objectives	String[]	List of the Objectives of the Operation	
Results	String[]	List of the Results of the Operation	

Table 5–98: Operation Class Attributes

5.3.2.2.2. Association Roles

To well-define an Operation, it must be associated to at least one Mission or one Task. However multiple tasks as well as multiple missions could be associated with a specific Operation.

Name	Data Type	Description	Multiplicity
InvolvedMissionRel	OperationMission	The Missions involved in this Operation. Please check the association class OperationMission.	0..*
InvolvedTaskRel	OperationTask	The Tasks involved in this Operation. Please check the association class OperationTask.	0..*

Table 5–99: Operation Class Associations

5.3.2.2.3. Constraints

Name	Description
At Least one Mission or Task	An operation must have at least one Mission or Task associated.

Table 5–100: Operation Class Constraints

5.3.2.3. OperationType Enumeration

5.3.2.3.1. Enumeration Values

Label	Description
Security	Operation with respect to security
Engaging	An Operation with means of engagement
Protection	Operation of protecting assets or people
Training	Training Operation
EnvironmentProtection	Operation for the protection of the environment
Economical	Operation with economical aspects
Other	Other OperationType not covered
NonSpecified	OperationType not specified

Table 5–101: OperationType Enumeration Values

5.3.2.3.2. Enumeration Usage

The following attributes use this enumeration as data type

- OperationType (Operation)

5.3.2.4. OperationStatusType Enumeration

5.3.2.4.1. Enumeration Values

Label	Description
Paused	Operation is paused
Removed	Operation is removed
Created	Operation is just created
Planned	Operation is planned for the future
InProgress	Operation is in progress – executing
Ended	Operation has finished execution
Pending	Operation is pending
NonSpecified	OperationStatus not specified

Table 5–102: OperationStatusType Enumeration Values

5.3.2.4.2. Enumeration Usage

The following attributes use this enumeration as data type

- OperationStatus (Operation)

5.3.2.5. OperationMission Association Class

5.3.2.5.1. Attributes

Name	Data Type	Description	Example
Mission	Mission	A Mission involved in this Operation.	
InvolvementPeriod	Period	The duration of a Mission while involved in the Operation	

Table 5–103: OperationMission Association Class Attributes

5.3.2.6. OperationTask Association Class

5.3.2.6.1. Attributes

Name	Data Type	Description	Example
Task	Task	A Task involved in this Operation.	
InvolvementPeriod	Period	The duration of a Task while involved in the Operation	

Table 5–104: OperationTask Association Class Attributes

5.3.3. Mission Namespace

Mission Core Entity is a sub-class of the Event class. Mission is used to describe an agency's effort with specific outcomes or optionally multi-agency cooperation effort towards improving the situational awareness of an area. Mainly focused on Surveillance and Intelligence acquisition, a mission is strictly associated to a collection plan and a set of [Tasks](#) required for performing the mission. Furthermore, a mission is associated with [Operational Assets](#) and [Sensors](#) used to execute the mission. A mission is associated with one or more [Reports](#) providing intelligence (INTREP-INTSUM) or other types of [Documents](#).

5.3.3.1. UML Diagram

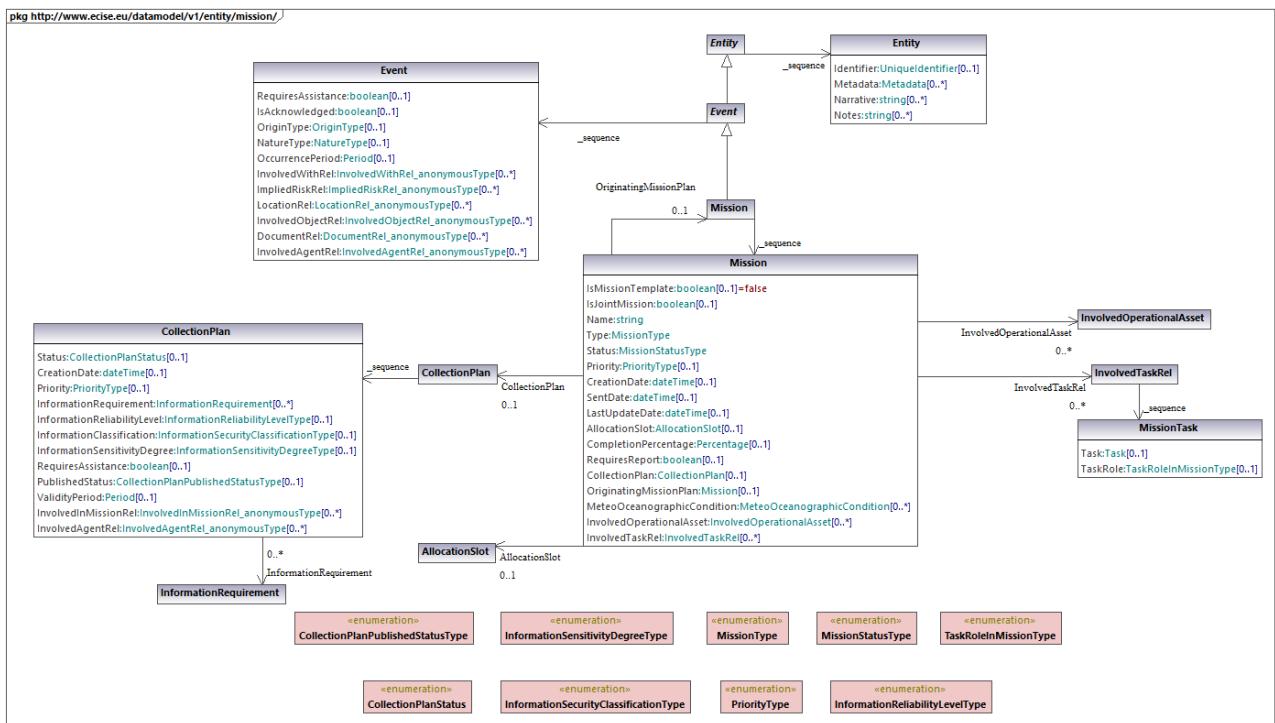


Figure 5-4: UML Class Diagram of Mission e-CISE Entity Namespace

5.3.3.2. Mission Class (subclass of Event)

5.3.3.2.1. Attributes

Name	Data Type	Description	Example
IsMissionTemplate	boolean	Flag indicating if it's a mission plan or an executing mission	true
IsJointMission	boolean	Indicates if it's a cross-border joint mission	true
Name	String	The name of the mission	Mission#1
Type	MissionType	The type of the mission	Training
Status	MissionStatusType	Status of mission	Planned
Priority	utils:PriorityType	The priority of the mission	High

Name	Data Type	Description	Example
CreationDate	XSD:DateTime	The UTC timestamp of creating the mission	
SentDate	XSD:DateTime	The UTC timestamp of dispatching the mission	
LastUpdateDate	XSD:DateTime	The UTC timestamp of updating the mission	
AllocationSlot	AllocationSlot	The allocation slot for this mission	
CompletionPercentage	utils:Percentage	The completion percentage of the executed mission	100%
RequiresReport	boolean	Flag indicating that a Mission Report is required during or upon mission completion.	true
OriginatingMissionPlan	Mission	The mission plan from which the mission was instantiated	Mission
CollectionPlan	CollectionPlan	The collection plan used to retrieve intelligence for the mission requirements	
MeteoOceanographicCondition	MeteoOceanographicCondition[]	The meteo oceanographic condition of the mission's Areas of interest.	

Table 5–105: Mission Class Attributes

5.3.3.2.2. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedOperationalAsset	OperationalAsset	The OperationalAssets involved in this mission	0..*
InvolvedTaskRel	MissionTask	The tasks involved in this mission. Please check the association class MissionTask.	0..*

Table 5–106: Mission Class Associations

5.3.3.3. MissionTask Association Class

5.3.3.3.1. Attributes

Name	Data Type	Description	Example
Task	Task	The task involved in the mission.	
TaskRole	TaskRoleInMissionType	The role of this task in the mission.	Primary

Table 5–107: MissionTask Association Class Attributes

5.3.3.4. CollectionPlan Class (subclass of Entity)

The Collection plan is the plan for collecting information and producing intelligence. A collection plan must meet the associated Information Requirements and identify geographical areas of interest, persons or objects formulated as Subjects. A collection plan is strongly associated with a Mission, and the Information Requirements of the Collection plan could be associated with a Task. To meet the collection plan intelligence requirements, a set of tasks must be defined, occupying all available resources to gather information and provide intelligence - through reporting - within a specified time window.

5.3.3.4.1. Attributes

Name	Data Type	Description	Example
Status	CollectionPlanStatusType	The status of the collection plan	Expired
CreationDate	XSD:DateTime	The UTC timestamp of the collection plan creation	
Priority	utils:PriorityType	The Priority of the collection plan	High
InformationRequirement	InformationRequirement[]	The information / intelligence requirements the collection plan must meet	
InformationReliabilityLevel	metadata:InformationReliabilityLevelType	The Information reliability level	Confident
InformationClassification	metadata:InformationSecurityClassificationType	The information security classification level	EUConfidential
InformationSensitivityDegree	metadata:InformationSensitivityDegreeType	The sensitivity of the related to the collection plan information	Red
RequiresAssistance	boolean	Indicates that this collection plan requires joint effort	True
PublishedStatus	CollectionPlanPublishedStatusType	The status of the collection's plan outcome.	Released
ValidityPeriod	Period	The period of validity in UTC timestamps	

Table 5–108: CollectionPlan Class Attributes

5.3.3.4.2. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedInMissionRel	Mission	The missions involved with this collection plan.	0..*
InvolvedAgentRel	CollectionPlanAgent	The agents [Persons – Organizations] associated with the collection plan. Please check the CollectionPlanAgent association class.	0..*

Table 5–109: CollectionPlan Class Associations

5.3.3.5. InformationRequirement Class (subclass of Entity)

Information Requirement is used to encapsulate all information relevant to the criteria and needs of the requestor for specific information related to a Subject (Person, Object, Location). In case reconnaissance is needed, additional reconnaissance requirements are included in the InformationRequirement. An Information Requirement can be part of a [CollectionPlan](#), or of a [RequestForInformation](#).

5.3.3.5.1. Attributes

Name	Data Type	Description	Example
ReconnaissanceRequirement	ReconnaissanceRequirement	The reconnaissance information requirements	
Originator	Agent	The originator of this information requirement.	
Subject	String	Free text description of the subject for this information requirement	
Background	String	Free text description of the background for this information requirements	
Justification	String	Free text description of the justification for this information requirements	
CreationDate	XSD:DateTime	The UTC timestamp of the creation of the information requirement.	
Comments	String	Free text description of the comments for this information requirement	
Required Information	String	Free text description of the required information for this information requirement	
Priority	utils:PriorityType	The Priority of the information requirements	

Table 5–110: InformationRequirement Class Attributes

5.3.3.5.2. Association Roles

Name	Data Type	Description	Multiplicity
AssociatedIndicatorRel	InformationRequirement Indicator	Indicators that address particular information requirements. Please check the association class InformationRequirementIndicator.	0..*
AssociatedSubjectRel	Subject	The subjects involved with this information requirement. Could be areas of interest, objects or persons, which could potentially be classified as Threats (if with evidence, are	0..*

Name	Data Type	Description	Multiplicity
		involved in one or more incidents as perpetrators)	
InvolvedInRequestForInformationRel	RequestForInformation	The Request for Information involved with this information requirement	0..*

Table 5–111: *InformationRequirement Class Associations*

5.3.3.6. ReconnaissanceRequirement Class

5.3.3.6.1. Attributes

Name	Data Type	Description	Example
VisualContactRequired	boolean	Indicates if visual contact is required	true
ImagesRequired	boolean	Indicates that photos must be taken	true
IRImagesRequired	boolean	Indicates that infrared images are required to meet the information requirements	false
VideoRequired	boolean	Indicates that videos must be recorded or streamed in real time	false
IRVideoRequired	boolean	Indicates that infrared video is required	true
ThermalOpticalRequired	boolean	Indicates that use of Thermal and optical sensors is required	true
RadarRequired	boolean	Indicates that Radar must be used	false
RFCommunicationRequired	boolean	Indicates that radio frequency communications must take place to meet the requirements	true
ReportRequired	boolean	Indicates that an accompanied report is required	true
RevisitTime	XSD:DateTime	The UTC timestamp of the revisit time	
Resolution	String	The resolution of the information requirements	

Table 5–112: *ReconnaissanceRequirement Class Attributes*

5.3.3.7. CollectionPlanAgent Association Class

5.3.3.7.1. Attributes

Name	Data Type	Description	Example
Agent	Agent	The associated agent	
AgentRole	AgentRoleInCollectionPlanType	The associated agent's role with this collection plan	Author
InvolvementPeriod	Period	The involvement period - date window expressed in UTC - of the association of the agent with the collection plan	

Table 5–113: *CollectionPlanAgent Association Class Attributes*

5.3.3.8. InformationRequirementIndicator Association Class

5.3.3.8.1. Attributes

Name	Data Type	Description	Example
Statement	String	The statement of the indicator	Are there any persons in the Area of Danger?
Observation	String	The observation of the indicator	No individuals detected in the area

Table 5–114: InformationRequirementIndicator Association Class Attributes

5.3.3.9. MissionType Enumeration

CISE MissionType enumeration is enhanced with the following enumerations. Please refer to the Annex B Chapter 8.1.2.2.5 for the missing enumeration values.

5.3.3.9.1. Enumeration Values

Label	Description
LandSurveillance	Land surveillance missions
MaritimeSurveillance	Sea surveillance missions
AirSurveillance	Air surveillance missions
LawEnforcement	Generic law enforcement missions
SearchAndRescue	Search and rescue missions
TransferPatrol	Patrol transportation missions
AirPatrols	Air patrolling mission
Training	A generic training mission
EnvironmentProtection	Missions related to the environment protection (e.g. oil spill detection)

Table 5–115: MissionType Enumeration New Values

5.3.3.9.2. Enumeration Usage

The following attributes use this enumeration as data type

- MissionType (Mission)

5.3.3.10. MissionStatusType Enumeration

MissionStatus describes the possible status of a Mission in terms of planning and execution.

5.3.3.10.1. Enumeration Values

Label	Description
Planned	The Mission is planned
Scheduled	The Mission is scheduled for execution
Acknowledged	The joint Mission is acknowledged by all authorities
Active	The Mission is active, executing
Inactive	The Mission is inactive
Paused	The Mission is paused
Pending	The Mission is pending acknowledgement

Label	Description
Accomplished	The Mission is accomplished
Aborted	The Mission is aborted
Rejected	The Mission is rejected
RejectedAskNew	The Mission is rejected but a request for an updated mission is occurring
NonSpecified	Mission status is not specified

Table 5–116: MissionStatusType Enumeration Values

5.3.3.10.2. Enumeration Usage

The following attributes use this enumeration as data type

- MissionStatus (Mission)

5.3.3.11. CollectionPlanStatusType Enumeration

5.3.3.11.1. Enumeration Values

Label	Description
BeforeCollection	Collection plan activities have not started yet
CollectionInProgress	Collection plan activities are in progress
Finished	Collection plan activities are finished
Cancelled	Collection plan is canceled
Expired	Collection plan has expired
NonSpecified	Not specified status for the Collection plan

Table 5–117: CollectionPlanStatusType Enumeration Values

5.3.3.11.2. Enumeration Usage

The following attributes use this enumeration as data type

- CollectionPlanStatus (CollectionPlan)

5.3.3.12. CollectionPlanPublishedStatusType Enumeration

5.3.3.12.1. Enumeration Values

Label	Description
Draft	The intelligence of the collection plan is draft version
Released	The intelligence of the collection plan is released and published
Current	The collection plan is under on-going mission
Expired	Publishing period of this collection plan has expired
Rejected	Publishing information of this collection plan is rejected
Other	Other status not covered
NonSpecified	Publish status of collection plan is not specified

Table 5–118: CollectionPlanPublishedStatusType Enumeration Values

5.3.3.12.2. Enumeration Usage

The following attributes use this enumeration as data type

- CollectionPlanPublishedStatus (CollectionPlan)

5.3.3.13. AgentRoleInCollectionPlanType Enumeration

5.3.3.13.1. Enumeration Values

Label	Description
Author	Is the author of the collection plan
CoAuthor	is the co-author of the collection plan
Participant	Participates in the definition of the collection plan
Requestor	The Requestor agent of the collection plan
Receiver	Agent receiving the collection plan
Other	Other agent role in the collection plan not covered
NonSpecified	Agent role in the collection plan not specified

Table 5–119: AgentRoleInCollectionPlanType Enumeration Values

5.3.3.13.2. Enumeration Usage

The following attributes use this enumeration as data type

- AgentRole (CollectionPlanAgent association class)

5.3.4. Task Namespace

Task Core Entity is a sub-class of the Event class. Task is used to describe an optionally multi-agency cooperation effort for accomplishing a specific task, assigned to operational assets with a set of special instructions to accomplish. A Task can be part of a [Mission](#) or an [Operation](#), and can be instantiated from an [Information Requirement](#) of a [Request For Information](#), from a task plan or standalone.

A task can be dispatched to operational assets which can acknowledge the task upon reception. A Task might be associated with [Subjects](#) (Locations, Objects, Persons) who could be victims or innocents, Targets in case of suspicious law violation activities or potentially Threats, when involved in incidents as actors violating the Law. Subjects are representing the main focus of the task, for example the person to be arrested, the person to be rescued, the vessel to be escorted. The personnel carrying out the task is not considered a Subject, but an involved agent with specific roles.

Optional outcome of a task are [Reports](#) or other types of [Documents](#) which improve intelligence by providing media, areas of interest, meteo-oceanographic conditions, persons and object information as well as documents related to events. A task can be associated with zero or multiple other tasks acting as predecessor tasks, and zero or multiple other tasks acting as successor tasks. With this approach, tasks involved in a mission or operation can be ordered to depict their sequential flow.

5.3.4.1. UML Diagram

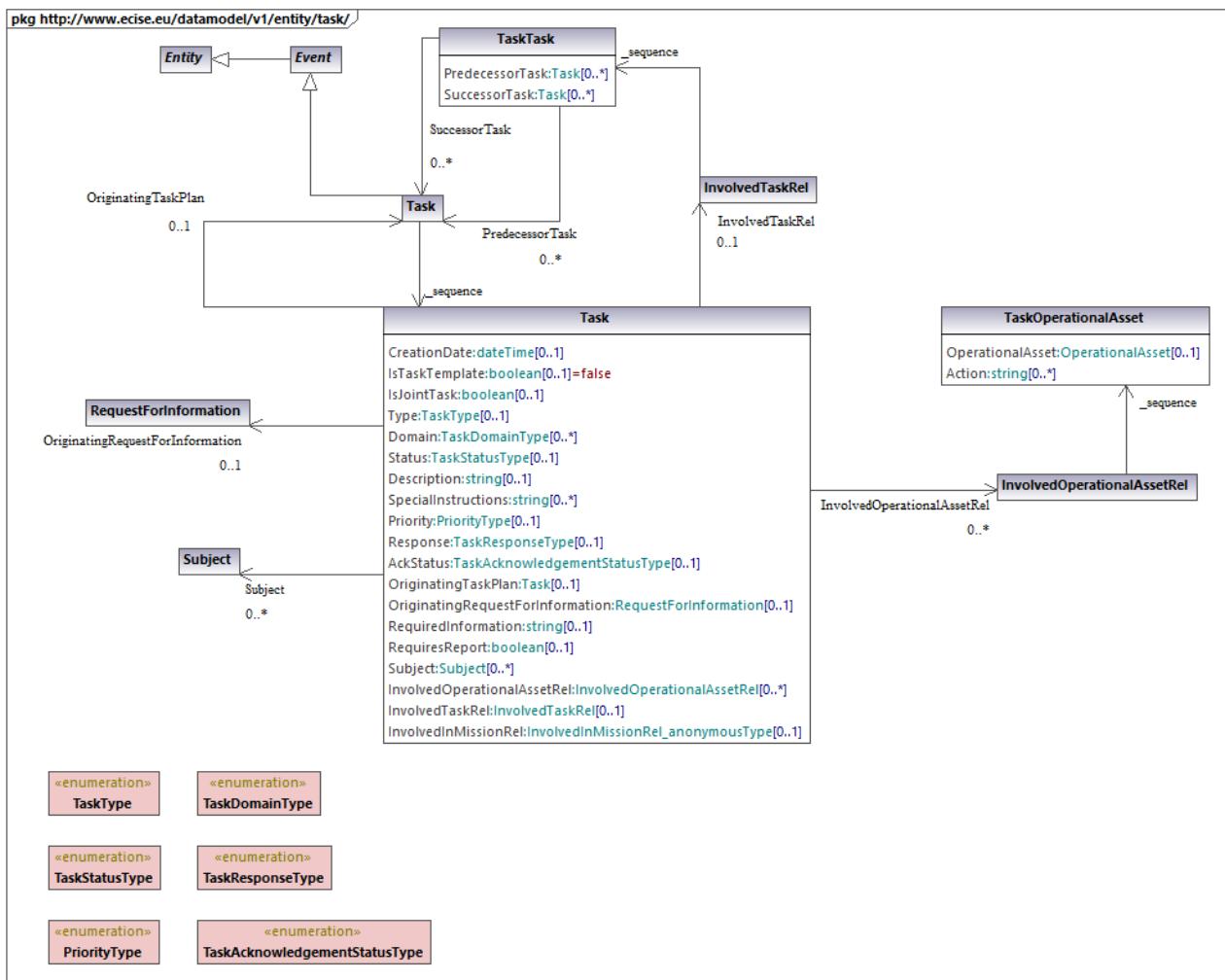


Figure 5-5: UML Class Diagram of Task e-CISE Entity Namespace

5.3.4.2. Task Class (subclass of Event)

5.3.4.2.1. Attributes

Name	Data Type	Description	Example
IsTaskTemplate	boolean	Flag indicating if it's a task plan or a task to be executed	false
CreationDate	XSD:DateTime	Creation date of the task in UTC timestamp	
IsJointTask	boolean	Indicates if it's a joint task	true
Type	TaskType	The type of the task	Locate
Domain	TaskDomainType[]	The domains of this Task	Maritime
Response	TaskResponseType	The response of the task Source OASIS-CAP	Avoid
Status	TaskStatusType	The status of the task	Assigned

Name	Data Type	Description	Example
AckStatus	TaskAcknowledgement StatusType	The acknowledgement status of the task upon reception	Acknowledged
Description	String	A free text description	
SpecialInstructions	String[]	A set of special instructions describing the steps of this task	
Priority	utils:PriorityType	The priority of this task	High
Subjects	Subject[]	The subjects (location, person, object) involved in this task. Could be innocents or threats.	
OriginatingTaskPlan	Task	Optionally link to the task template, from which the task was instantiated.	
OriginatingRequestForInformation	RequestForInformation	The Request for Information originating the creation of this Task	
RequiredInformation	String	Free text describing any additional information required from this task	
RequiresReport	boolean	Flag, indicating if the task - originated by an RFI - requires report.	True

Table 5–120: Task Class Attributes

5.3.4.2.2. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedOperationalAssetRel	TaskOperationalAsset	The operational assets assigned for this task. Please check the association class TaskOperationalAsset.	0..*
InvolvedTaskRel	TaskTask	The association of the task with other tasks. Please check the association class TaskTask.	0..*
InvolvedInMissionRel	TaskMission	The missions in which the Task is involved. Please check the association class TaskMission.	0..*

Table 5–121: Task Class Associations

5.3.4.3. TaskOperationalAsset Association Class

5.3.4.3.1. Attributes

Name	Data Type	Description	Example
OperationalAsset	OperationalAsset	The operational asset object enabling task's operation	UAV

Name	Data Type	Description	Example
Action	String[]	A set of actions for the operational asset	FlyToLocation, PerformSurveillance

Table 5–122: TaskOperationalAsset Association Class Attributes

5.3.4.4. TaskTask Association Class

5.3.4.4.1. Attributes

Name	Data Type	Description	Example
PredecessorTask	Task[]	A list of the predecessor tasks of this task	
SuccessorTask	Task[]	A list of the successor tasks of this task	

Table 5–123: TaskTask Association Class Attributes

5.3.4.5. TaskMission Association Class

5.3.4.5.1. Attributes

Name	Data Type	Description	Example
Mission	Mission	The mission this task belongs to	
Role	TaskRoleInMission	The role of this task in the mission	Primary

Table 5–124: TaskMission Association Class Attributes

5.3.4.6. TaskDomainType Enumeration

5.3.4.6.1. Enumeration Values

Label	Description
Maritime	a task relevant to the maritime domain
Land	a task relevant to the land domain
Air	a task relevant to the air domain
NonSpecified	Task domain is not specified

Table 5–125: TaskDomainType Enumeration Values

5.3.4.6.2. Enumeration Usage

The following attributes use this enumeration as data type

- Domain (Task)

5.3.4.7. TaskType Enumeration

The following operational task types cover most of the actions that can be undertaken during Maritime & Land operations. Some of the following types are only related to the Maritime domain [6], others only to Land and others could be applied to both domains.

5.3.4.7.1. Enumeration Values

Label	Description
Locate	Detect, classify, identify, and/or determine the position of targets in a predetermined area on, over, or under the water or the adjacent shoreline.
Transit	Move to a predetermined location.
Transport	Carry personnel, equipment, or material necessary to conduct or as a result of missions.
Transfer	Deploy, retrieve, or convey personnel, equipment, or materials at sea to conduct or as a result of missions.
Board	Board a vessel underway or at anchor. To render services or ensure compliance with European laws and regulations, the maritime authorities need to have the ability to board any-sized vessel whose crews may be cooperative, passive, or hostile, anywhere in the coastal zone or open sea.
Inspect	Investigate, search, or examine to determine compliance with law or existence of safety hazards.
TakeControl	Take charge or custody of personnel or property to tend, seize, arrest, or detain.
RemainOnStation	Remain on-scene for a specified period of time.
ContainDamage	Suppress fires sufficiently to rescue persons, remove water from and repair damaged vessels to adequately stabilize them.
MedicalServices	Provide medical assistance to stabilize victim(s).
Tow	Tow a vessel or object from its current location to another.
Escort	Accompany to ensure safety or compliance.
Incapacitate	Disable or destroy hostile or evasive targets or hazards.
Mark	Indicate the presence of hazards to navigation or the location of navigable channels or waterways.
PositioningServices	Provide coastal zone or open sea users the ability to determine their location.
Remove	Contain and remove oil, hazardous substances, or hazards to navigation from the water or shoreline.
IceBreak	Break ice to ensure safe passage and prevent flooding.
Sense	Monitor and collect data across the acoustic, satellite, radio, IR, visual, and UV spectra, and gain access to operational information sources.
Assess	Sort and analyze data from all sources to provide a coherent operational picture.
Decide	Determine the appropriate response
Act	Initiate the chosen response by communicating information.
Patrol	Unit patrolling an area
Intercept	Unit to intercept a target
Arrest	Unit shall arrest a target
Detain	Unit shall intercept and hold a target
Ambush	Unit to hide and wait for target
Training	Training Task
Debrief	Task or Mission debriefing task
Other	Other task sub-type not covered
NonSpecified	Task sub-type not specified

Table 5–126: TaskType Enumeration Values

5.3.4.7.2. Enumeration Usage

The following attributes use this enumeration as data type

- Type (Task)

5.3.4.8. TaskResponseType Enumeration

5.3.4.8.1. Enumeration Values

Source: OASIS CAP [4]

Label	Description	Source
Assess	Evaluate the information	OASIS-CAP
Avoid	Avoid the subject event as identified in the instruction.	OASIS-CAP
Evacuate	Relocate as instructed in the instruction.	OASIS-CAP
Execute	Execute a pre-planned activity identified in the instruction.	OASIS-CAP
Monitor	Attend to information sources as described in the instruction.	OASIS-CAP
Prepare	Make preparations as described in the instruction.	OASIS-CAP
Shelter	Take shelter in place or as described in the instruction.	OASIS-CAP
Other	Other Task Response type not covered	
NonSpecified	Task Response is not specified	

Table 5–127: TaskResponseType Enumeration Values

5.3.4.8.2. Enumeration Usage

The following attributes use this enumeration as data type

- TaskResponse (Task)

5.3.4.9. TaskStatusType Enumeration

5.3.4.9.1. Enumeration Values

Label	Description
Created	The task is created
Pending	The task is pending
Assigned	The task is assigned to units
Executing	The task is currently executing
Accomplished	The task is accomplished
Deleted	The task is deleted
Failed	The task has failed
Cancelled	The task is cancelled
Activated	The task is activated for execution
Deactivated	The task is de-activated, will not execute unless the status changes.
NonSpecified	Task status is not specified

Table 5–128: TaskStatusType Enumeration Values

5.3.4.9.2. Enumeration Usage

The following attributes use this enumeration as data type:

- TaskStatus (Task)

5.3.4.10. TaskAcknowledgementStatusType Enumeration

5.3.4.10.1. Enumeration Values

Label	Description
Acknowledged	The task is acknowledged
AcknowledgedWithUpdates	The task is updated from the task recipient
Pending	The task acknowledgement is still pending
Failed	The acknowledgement procedure has failed
FailedRequiresNew	The acknowledgement has failed but there is a requirement for a new task
Other	Any other acknowledgement status not covered
NonSpecified	Acknowledgement status not specified

Table 5–129: TaskAcknowledgementStatusType Enumeration Values

5.3.4.10.2. Enumeration Usage

The following attributes use this enumeration as data type:

- TaskAcknowledgementStatus (Task)

5.3.4.11. TaskRoleInMissionType Enumeration

5.3.4.11.1. Enumeration Values

Label	Description
Primary	This task has primary role in a mission
Secondary	This task has secondary role in a mission
Other	Any other role of task in a mission not covered
NonSpecified	Not specified task role in a mission

Table 5–130: TaskRoleInMissionType Enumeration Values

5.3.4.11.2. Enumeration Usage

The following attributes use this enumeration as data type

- Role in TaskMission association class.
- TaskRole in MissionTask association class.

5.3.5. Request For Information Namespace

The purpose of the Request for information (RFI), is to request the collecting of information to increase operational intelligence. The RFI could be instantiated from an Information Requirement (IR) or on its own.

The Request for Information could potentially trigger a Task creation to improve intelligence by meeting the IR. Output of a Request for Information are [Reports](#) or other types of [Documents](#).

5.3.5.1. UML Diagram

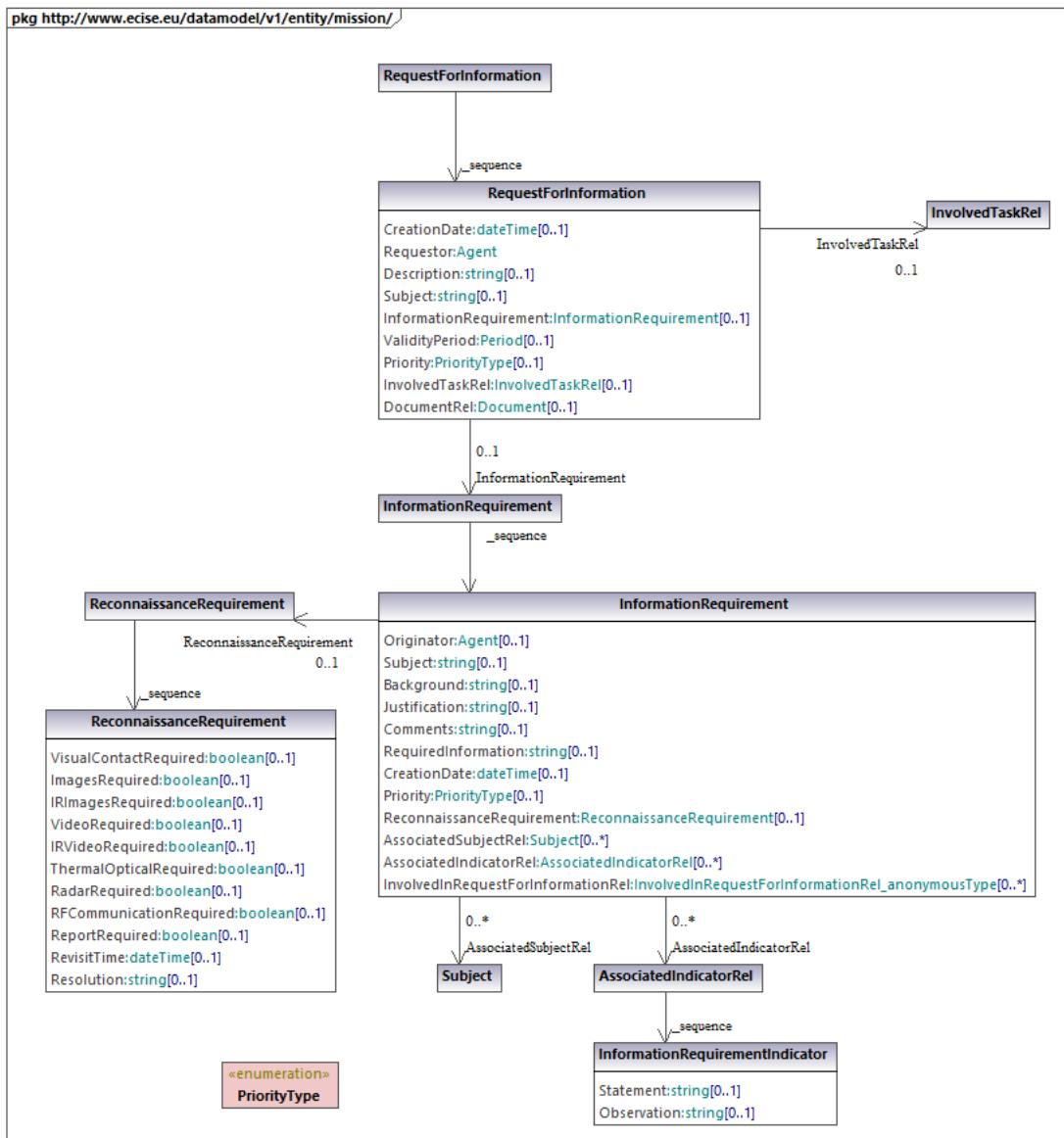


Figure 5-6: UML Class Diagram of Request For Information e-CISE Entity

5.3.5.2. RequestForInformation Class (subclass of Entity)

5.3.5.2.1. Attributes

Name	Data Type	Description	Example
CreationDate	XSD:DateTime	Creation date of the request for information in UTC timestamp	
Requestor	Agent	The person or organization generating the request for information	

Name	Data Type	Description	Example
Description	String	A free text description of the request for information	
Subject	String	A free text description of the subject of the request for information	
InformationRequirement	InformationRequirement	The information requirement for the request for information	
ValidityPeriod	Period	The period during which, the request for information is valid	
Priority	utils:PriorityType	The priority of the request for information	High

Table 5–131: RequestForInformation Class Attributes

5.3.5.2.2. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedTaskRel	Task	The association of the Request for Information with the task originated by this RFI	0..1
DocumentRel	Document	Documents related to this RFI	0..1

Table 5–132: RequestForInformation Class Associations

5.3.6. Report Namespace

Report Core Entity is a sub-class of the Attached Document class of CISE data model. To review the inherited elements please refer to the CISE Data Model definition at Annex B Chapter 8.1.6.2.1. An IntelligenceReport could be generated and published to provide intelligence for accomplishing operational activities. Every Mission can be accompanied during execution and upon completion with a set of reports providing intelligence and results if required. Upon mission completion an INTSUM report could be generated to report the whole mission. A standalone Task originated from a Request for Information, could also have associated Intelligence Reports.

5.3.6.1. UML Diagram

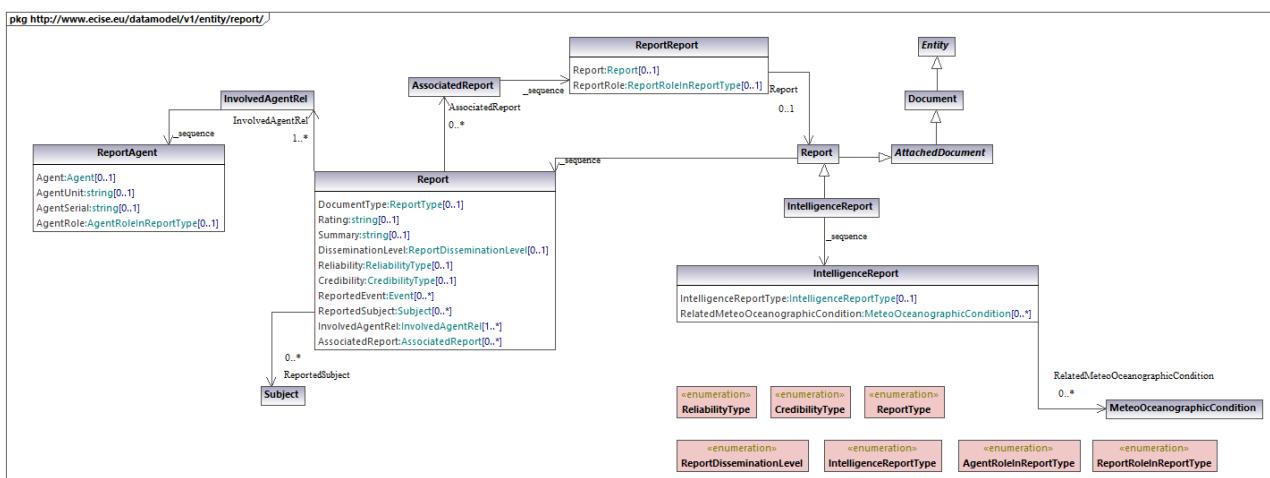


Figure 5-7: UML Class Diagram of Report e-CISE Entity Namespace

5.3.6.2. Report Class (subclass of AttachedDocument)

5.3.6.2.1. Attributes

Name	Data Type	Description	Example
DocumentType	ReportType	The report type	IntelligenceReport
Rating	String	A free-text rating of the report	
Summary	String	A free text description of the summary of this report	
Reliability	ReliabilityType	The reliability level of this report	CompletelyReliable
Credibility	CredibilityType	The credibility type of this report	ProbablyTrue
ReportedEvent	Event	The reported missions	
ReportedSubject	Subject[]	A set of subjects identified during the execution of a mission or task	
DisseminationLevel	ReportDisseminationLevelType	Type of dissemination level for this report	RestrictedToEU

Table 5–133: Report Class Attributes

5.3.6.2.2. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedAgentRel	ReportAgent	Agents involved with this report like the Author of the report. Please check the ReportAgent association class.	0..*
AssociatedReport	ReportReport	Associated reports accompanying this report. Please check the ReportReport association class.	0..*

Table 5–134: Report Class Associations

5.3.6.3. IntelligenceReport Class (subclass of Report)

5.3.6.3.1. Attributes

Name	Data Type	Description	Example
IntelligenceReportType	IntelligenceReportType	The type of the intelligence report	INTSUM
RelatedMeteoOceanographicCondition	MeteoOceanographicCondition[]	References to information related to Environmental Data	

Table 5–135: IntelligenceReport Class Attributes

5.3.6.4. ReportAgent Association Class

5.3.6.4.1. Attributes

Name	Data Type	Description	Example
Agent	Agent	The agent related to this report	
AgentRole	AgentRoleInReportType	The role of the agent in the report	Reporter
AgentUnit	String	The agent's unit	
AgentSerial	String	The agent's serial	

Table 5–136: ReportAgent Association Class Attributes

5.3.6.5. ReportReport Association Class

5.3.6.5.1. Attributes

Name	Data Type	Description	Example
Report	Report	The associated report	
ReportRole	ReportRoleInReportType	The role of the report with the associated report	Completing

Table 5–137: ReportReport Association Class Attributes

5.3.6.6. AgentRoleInReportType Enumeration

5.3.6.6.1. Enumeration Values

Label	Description
Author	The author of the report
CoAuthor	Co-author of the report
Participant	Participant in the report
Reporter	The reporter of the report
Requestor	The requestor of the report
Receiver	The receiver of the report
Other	Other agent role in report not covered
NonSpecified	Agent role in report not specified

Table 5–138: AgentRoleInReportType Enumeration Values

5.3.6.6.2. Enumeration Usage

The following attributes use this enumeration as data type

- AgentRole in ReportAgent association class.

5.3.6.7. ReportType Enumeration

5.3.6.7.1. Enumeration Values

Label	Description
IntelligenceReport	Intelligence Report type
Other	Other report types not covered
NonSpecified	Report type not specified

Table 5–139: ReportType Enumeration Values

5.3.6.7.2. Enumeration Usage

The following attributes use this enumeration as data type

- ReportType in Report class.

5.3.6.8. IntelligenceReportType Enumeration

5.3.6.8.1. Enumeration Values

Label	Description
INTREP	Intelligence report disseminating intelligence that could have a significant impact on operations and planning
INTSUM	Intelligence report to report a whole mission
Other	Other intelligence report types not covered
NonSpecified	Intelligence report type not specified

Table 5–140: IntelligenceReportType Enumeration Values

5.3.6.8.2. Enumeration Usage

The following attributes use this enumeration as data type

- IntelligenceReportType in IntelligenceReport class.

5.3.6.9. ReliabilityType Enumeration

5.3.6.9.1. Enumeration Values

Label	Description
CompletelyReliable	The report's information is completely reliable
UsuallyReliable	The report's information is usually reliable
FairlyReliable	The report's information is fairly reliable
NotUsuallyReliable	The report's information is not usually reliable
Unreliable	The report's information is unreliable
ReliabilityCannotBeJudged	The reliability of the report's information cannot be judged
Other	Other reliability type of the report's information not covered by the existing types
NonSpecified	Report's information reliability type not specified

Table 5–141: ReliabilityType Enumeration Values

5.3.6.9.2. Enumeration Usage

The following attributes use this enumeration as data type

- ReliabilityType in Report class.

5.3.6.10. CredibilityType Enumeration

5.3.6.10.1. Enumeration Values

Label	Description
ConfirmedByOtherSources	The report's information is confirmed by other sources as well
ProbablyTrue	The report's information is judged to be probably true
Doubtful	It's doubtful if the report's information is reliable

Label	Description
Improbable	The report's information is judged to be improbable
TruthCannotBeJudged	The report's information cannot be judged as truth
Other	Other report's credibility type not covered by the existing types
NonSpecified	Credibility type of the report not specified

Table 5–142: *CredibilityType Enumeration Values*

5.3.6.10.2. Enumeration Usage

The following attributes use this enumeration as data type

- CredibilityType in Report class.

5.3.6.11. ReportDisseminationLevelType Enumeration

5.3.6.11.1. Enumeration Values

Label	Description
Public	The report can be publicly disseminated
RestrictedToAndromedaNetwork	The report can be only circulated within Andromeda Network
RestrictedToEuciseNetwork	The report can be only circulated within Eucise Network
RestrictedToEU	The report can be strictly disseminated only to the European Union.
Other	Other dissemination level of the report not covered by the existing types
NonSpecified	Dissemination level of the report not specified

Table 5–143: *ReportDisseminationLevelType Enumeration Values*

5.3.6.11.2. Enumeration Usage

The following attributes use this enumeration as data type

- ReportDisseminationLevel in Report class.

5.3.6.12. ReportRoleInReportType Enumeration

5.3.6.12.1. Enumeration Values

Label	Description
Completing	The report is completing a related report
Enhancing	The report is enhancing a related report
Replacing	The report is replacing a related report
Fixing	The report is fixing or updating a related report
Contradicting	The report is contradicting a related report
Other	Other report role not covered
NonSpecified	Report role not specified

Table 5–144: *ReportRoleInReportType Enumeration Values*

5.3.6.12.2. Enumeration Usage

The following attributes use this enumeration as data type

- ReportRoleInReport in ReportReport association class.

5.3.7. Rule Core (DFS Namespace)

The Rule Core Entity is defined in the services/df namespace. The Rule core entity is used to properly configure the Andromeda's Data Fusion Services.

5.3.7.1. UML Diagram

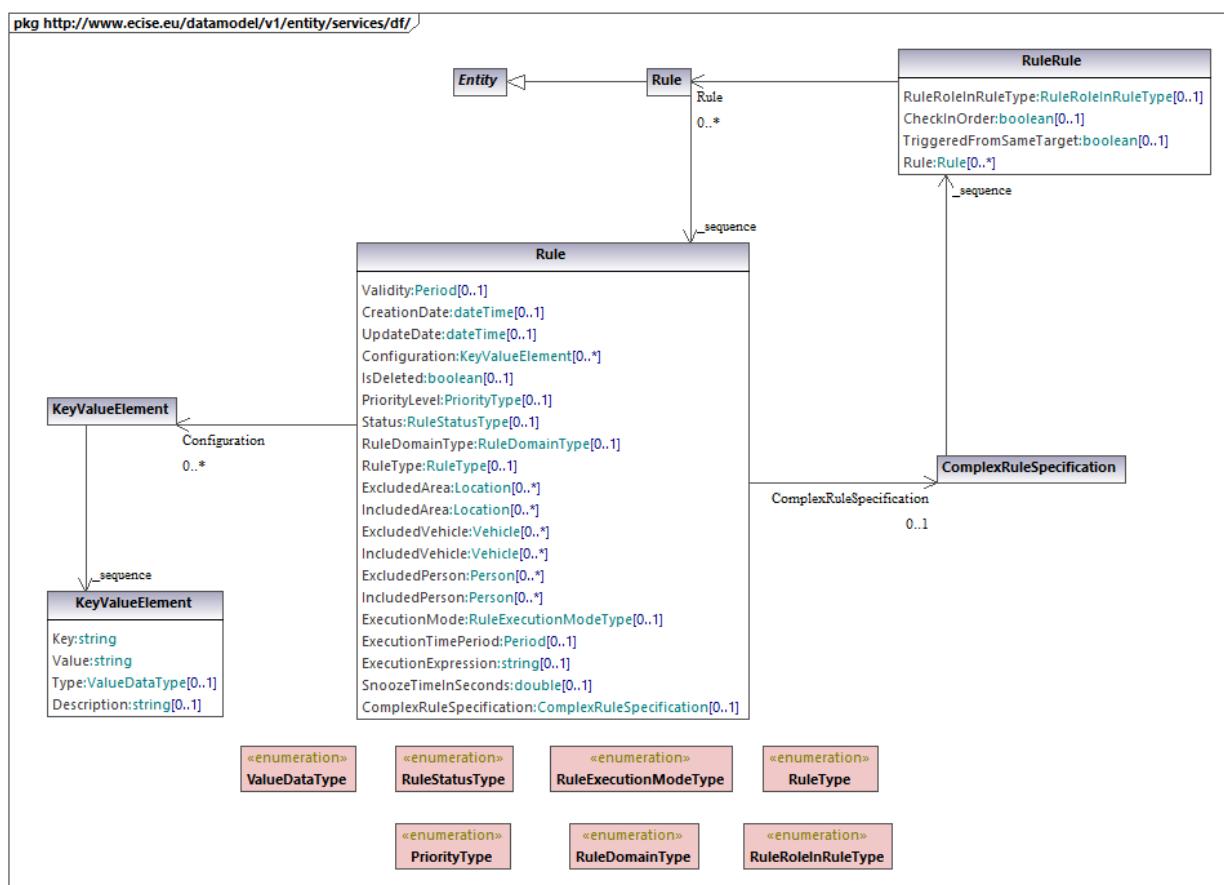


Figure 5-8: UML Class Diagram of Rule e-CISE Entity

5.3.7.2. Rule Class (subclass of Entity)

The Rule entity is used for configuring Rule based Andromeda Data Fusion services. Among other information, the type of the rule, the rule's execution modes, as well as specific rule's configuration can be embedded in the Rule entity. This entity can be used for both Land and Maritime rules. The operator can define [Areas](#), [Locations](#), [Persons](#) and [Vehicles](#) to be included or excluded when evaluating the Rule. Finally, a complex Rule could be specified by combining multiple Rules using the [ComplexRuleSpecification](#) capability.

5.3.7.2.1. Attributes

Name	Data Type	Description	Example
Validity	Period	The validity period of this rule, during which this rule could be used. (e.g. Some rule's configuration parameters could get outdated after this period)	
CreationDate	XSD:DateTime	UTC Date of rule creation	
UpdateDate	XSD:DateTime	Update date of the rule, in UTC format	
Configuration	utils:KeyValueElement[]	The configuration of the rule specific to each different data fusion service.	
IsDeleted	boolean	Flag indicating that the rule is deleted	True
PriorityLevel	utils:PriorityType	The priority level of the rule	High
Status	RuleStatusType	The status of the rule	Enabled
RuleType	RuleType	The type of the rule	Unexpected Movement
RuleDomainType	RuleDomainType	The domain of the rule	MaritimeDomain
ExcludedArea	Location[]	A set of excluded areas or locations	
IncludedArea	Location[]	A set of included areas or locations	
ExcludedVehicle	Vehicle[]	A set of excluded vehicles	
IncludedVehicle	Vehicle[]	A set of included vehicles	
ExcludedPerson	Person[]	A set of excluded persons	
IncludedPerson	Person[]	A set of included persons	
ExecutionMode	RuleExecutionModeType	The execution mode of the rule	Once
ExecutionTimePeriod	Period	The execution period of the rule. Can be expressed in date range or duration.	
ExecutionExpression	String	An expression specifying the execution schedule of the rule	0/1 0/5 0 ? * * *
SnoozeTimeInSeconds	double	The minimum elapsed time in seconds for generating a new alarm based on this rule	10

Table 5–145: Rule Class Attributes

5.3.7.2.2. Association Roles

Name	Data Type	Description	Multiplicity
ComplexRuleSpecification	ComplexRule	The complex rule definition. Please check association class ComplexRule	0..*

Table 5–146: Rule Class Associations

5.3.7.3. ComplexRule Association Class

5.3.7.3.1. Attributes

Name	Data Type	Description	Example
Rule	Rule[]	The sub-rules triggering the complex rule	
RuleRoleInRuleType	RuleRoleInRuleType	The Rule's role related to another rule	Conjunction
CheckInOrder	boolean	Flag showing if sub-rules will be triggered in order	False
TriggeredFromSameTarget	boolean	Flag showing if the sub-rules will be triggered for the same target (e.g. same vessel)	False

Table 5–147: ComplexRule Association Class Attributes

5.3.7.4. RuleType Enumeration

5.3.7.4.1. Enumeration Values

Label	Description
MovementsBetweenAreas	Rule for detecting a (vessel or vehicle or person) which is exiting a specific area and is moving towards a second area
ErraticMovements	Rule for detecting a (vessel or vehicle or person) which is making erratic movements
AisLowFrequency	Rule for detecting a vessel which is transmitting AIS information with low frequency (maritime only)
AisHighFrequency	Rule for detecting a vessel which is transmitting AIS information with high frequency (maritime only)
WithoutAisTransmission	Rule for detecting if a vessel is sailing without transmitting AIS information (maritime only)
AlongsideMovement	Rule for detecting two (vessels or vehicles or persons) moving alongside
ApproachingOther	Rule for detecting a (vessel or vehicle or person) approaching another (vessel or vehicle or person)
MovingAwayFromOther	Rule for detecting a (vessel or vehicle or person) moving away from another (vessel or vehicle or person)
RoutesCrossing	Rule for detecting two (vessels or vehicles or persons) having routes that cross each other
Approachinglocation	Rule for detecting if a (vessel or vehicle or person) is approaching a specific location
MovingAwayLocation	Rule for detecting if a (vessel or vehicle or person) is moving away from a specific location
MovingAwayLine	Rule for detecting if a (vessel or vehicle or person) is moving away from a line
CrossingLine	Rule for detecting if a (vessel or vehicle or person) is crossing a line
ApproachingLine	Rule for detecting if a (vessel or vehicle or person) is approaching a line

Label	Description
CrossingArea	Rule for detecting if a (vessel or vehicle or person) is crossing the boundaries of an area
MovingAwayArea	Rule for detecting if a (vessel or vehicle or person) is moving away from an area
EnteringArea	Rule for detecting if a (vessel or vehicle or person) is entering in an area
RevisitingArea	Rule for detecting if a (vessel or vehicle or person) is revisiting an area
ExitingArea	Rule for detecting if a (vessel or vehicle or person) is exiting an area
ApproachingArea	Rule for detecting if a (vessel or vehicle or person) is approaching an area
SuddenlyAppeared	Rule for detecting if a (vessel or vehicle or person) suddenly appeared (detected from at least one sensor)
SuddenlyDisappeared	Rule for detecting if a (vessel or vehicle or person) suddenly disappeared from all sensors
LostRadarContact	Rule for detecting if a (vessel or vehicle or person) was lost by the radar
LostCameraObject	Rule for detecting if a (vessel or vehicle or person) was lost by the camera
LostAisSignal	Rule for detecting if AIS transmission has stopped from a vessel (maritime only)
HighSpeed	Rule for detecting if a (vessel or vehicle or person) is moving with high speed
LowSpeed	Rule for detecting if a (vessel or vehicle or person) is moving with low speed
Loitering	Rule for detecting if a (vessel or vehicle or person) is loitering
Drifting	Rule for detecting if a vessel is drifting (maritime only)
AbnormalManeuvering	Rule for detecting if a (vessel or vehicle or person) makes abnormal manoeuvres
Stopping	Rule for detecting if a (vessel or vehicle or person) stops moving
AbnormalSpeedChange	Rule for detecting if speed is changing in an abnormal way
AbnormalCourseChange	Rule for detecting if course is changing in an abnormal way
VelocityNotConsistent	Rule for detecting if velocity is inconsistent with other kinematic data
CourseNotConsistent	Rule for detecting if course is inconsistent with other kinematic data
NavigationalStatusNotConsistent	Rule for detecting if navigational status is inconsistent with other kinematic data (maritime only)
PositionNotConsistent	Rule for detecting if position is inconsistent with other kinematic data
TimeIncompatibility	Rule for detecting incompatibility in time updates
SpaceIncompatibility	Rule for detecting incompatibility in position updates
Smuggling	Rule for detecting smuggling operations
ImminentCollision	Rule for detecting if there is an imminent collision between two (vessels or vehicles or persons)

Label	Description
Splitting	Rule for detecting a (vessel or vehicle or person) splitting in two or more tracks
Merging	Rule for detecting two or more (vessels or vehicles or persons) merging in a single track
DoNotAnswerOnVhfCh16	Rule for detecting a not answering on vhf channel 16 activity
InconsistentDynamicVsStaticAttributes	Rule for detecting inconsistencies of dynamic compared to static attributes
InconsistentStaticInformation	Rule for detecting inconsistent static information related to a (vessel or vehicle or person)
CargoLeaking	Rule for detecting cargo leaking in vessels (maritime only)
ShiftingOfCargo	Rule for detecting cargo shifting in vessels (maritime only)
EnteringRoute	Rule for detecting if a (vessel or vehicle or person) is entering a (shipping lane or road)
DeviationFromRoute	Rule for detecting if a (vessel or vehicle or person) is deviating from a (shipping lane or road)
DomainViolation	Rule for detecting if a (vessel or vehicle or person) is entering a circular area around another (vessel or vehicle or person)
IllegalDiving	Rule for detecting illegal diving is taking place (maritime only)
ComplexRule	complex Rule (combination of many Rules)
SuspiciousIdentity	Rule for detecting a (vessel or vehicle or person) marked as suspicious based on its identification number
AisParameterCloned	Rule for detecting same AIS parameters transmitted from different vessels (maritime only)
AisParameterChanged	Rule for detecting if an AIS parameter has changed (maritime only)
StainOfOilSighted	Rule for detecting stains of oil
ObjectsInAreaAboveThreshold	Rule for detecting if the number of (vessels or vehicles or persons) is above a threshold
DivergentBehavior	Rule for detecting that behaviour is different respect to the others in a given area
AbnormalBehavior	Rule for detecting uncommon behaviour patterns
UnstableBehavior	Rule for detecting that a vessel suddenly changes its behaviour
IncongruousVesselBehavior	Rule for detecting that a vessel is not coherent respect to the declared type coming from AIS flow

Table 5–148: RuleType Enumeration Values

5.3.7.4.2. Enumeration Usage

The following attributes use this enumeration as data type

- RuleType in Rule class.

5.3.7.5. RuleDomainType Enumeration

5.3.7.5.1. Enumeration Values

Label	Description
LandDomain	Rule is targeting the Land Area
MaritimeDomain	Rule is targeting the Sea

Table 5–149: RuleDomainType Enumeration Values

5.3.7.5.2. Enumeration Usage

The following attributes use this enumeration as data type

- RuleDomainType in Rule class.

5.3.7.6. RuleStatusType Enumeration

5.3.7.6.1. Enumeration Values

Label	Description
Enabled	This rule is currently enabled
Disabled	This rule is currently disabled
NonSpecified	The status of this rule is not specified

Table 5–150: RuleStatusType Enumeration Values

5.3.7.6.2. Enumeration Usage

The following attributes use this enumeration as data type

- Status in Rule class.

5.3.7.7. RuleExecutionModeType Enumeration

5.3.7.7.1. Enumeration Values

Label	Description
Infinite	This rule is meant to run forever
Once	This rule is meant to be executed once starting in a specific Date and running for a specific time period.
Scheduled	This rule execution mode is scheduled by provided expression (e.g. Cron expression)

Table 5–151: RuleExecutionModeType Enumeration Values

5.3.7.7.2. Enumeration Usage

The following attributes use this enumeration as data type

- ExecutionMode in Rule class.

5.3.7.8. RuleRoleInRuleType Enumeration

5.3.7.8.1. Enumeration Values

Label	Description
Conjunction	For complex rule all indicated rules must be triggered
Disjunction	For complex rule, one of indicated rules must be triggered
NonSpecified	Rule role in complex rule is not specified

Table 5–152: RuleRoleInRuleType Enumeration Values

5.3.7.8.2. Enumeration Usage

The following attributes use this enumeration as data type

- RuleType in RuleRule association class.

5.3.8. Simulation Core (DST Namespace)

Simulation Core Entity is defined in the services/dst namespace. Simulation is used to exchange information between an Andromeda C2 and the Decision Support Tools (DST). In particular SimulationRequest is used to instantiate a Request for a Simulation and SimulationResponse is used to represent the response of a simulation request. The SimulationResponse must be always correlated with the SimulationRequest instantiating a simulation in DST. The SimulationRequest can be specialized in the forms of OilSpillSimulationRequest, ShipNavigationSimulationRequest, DriftingSimulationRequest and MeteoOceanographicConditionPredictionRequest.

5.3.8.1. UML Diagram

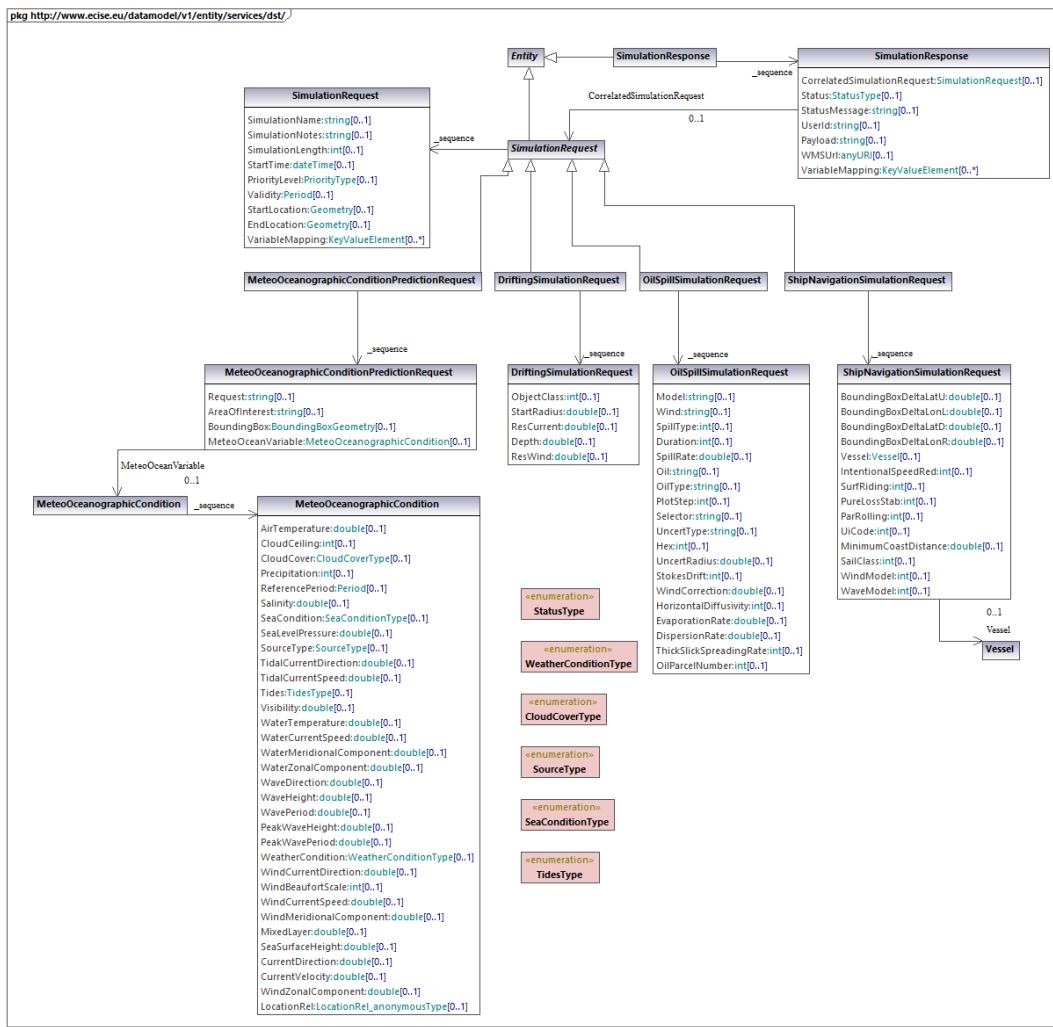


Figure 5-9: UML Class Diagram of Simulation e-CISE Entity

5.3.8.2. SimulationRequest Class (subclass of Entity)

5.3.8.2.1. Attributes

Name	Data Type	Description	Example
SimulationName	String	The name of the simulation	
SimulationNotes	String	Notes of the simulation	
SimulationLength	int	The length of the simulation [hours]	24
StartTime	XSD:DateTime	The start time of the simulation in UTC date (ISO 8601 format)	2019-11-04T11:00Z
PriorityLevel	utils:PriorityType	The priority level of the simulation request	High
Validity	Period	The date window during which this simulation request is valid	

Name	Data Type	Description	Example
StartLocation	Geometry	The Geometry of the Start Location	Latitude: 41.96951 Longitude: 6.91202
EndLocation	Geometry	The Geometry of the End Location	Latitude: 40.84894 Longitude: 4.27530
requiresWMSGetCapabilitiesResponse	boolean	Flag indicating if the XML of the GetCapabilities WMS request should be included in the SimulationResponse.	true
VariableMapping	utils:KeyValueElement[]	Generic configuration specific to each different decision support service	

Table 5–153: *SimulationRequest Class Attributes*

5.3.8.3. OilSpillSimulationRequest Class (subclass of SimulationRequest)

5.3.8.3.1. Attributes

Name	Data Type	Description	Example
Model	String	Static value for the oceanographic data model	MYO1h
Wind	String	Static value for the atmospheric data model	ECMWF025
SpillType	int	Type of Spill: Instantaneous or Continuous	1
Duration	int	Duration [hour] of a continuous spill	24
SpillRate	double	Total volume [ton] of released oil	1000
Oil	String	The specification of the type of the oil: Name or API	Name
OilType	String	The type of the oil	Aboozar
PlotStep	int	Output frequency [hours]	6
Selector	String	Uncertainties module: “witoil” the default value, “uncertainty” otherwise	witoil
UncertType	String	Type of uncertainty	position
Hex	int	0 for “Cross configuration”, 1 for “Hexagon configuration”	0
UncertRadius	double	Uncertainty distance R [mi]	1.8
StokesDrift	int	“1” means that the model takes into account the wave-induced velocity (Stokes drift) calculated by empirical formulas. “0” otherwise	0
WindCorrection	double	[%] If not zero, the direct influence of windage will be taken into consideration.	1.0
HorizontalDiffusivity	int	[m ² /s] Parameter affecting oil horizontal dispersion.	2
EvaporationRate	double	[m/s] Parameter affecting oil evaporation	0.000033
DispersionRate	double	[l/s] Parameter affecting oil dispersion due to breaking waves	0.000008

Name	Data Type	Description	Example
ThickSlickSpreadingRate	double	[l/s] Parameter affecting the viscous-gravity spreading of the oil slick.	150
OilParcelNumber	int	Parameter for defining the number of Lagrangian particles by which the oil slick is represented.	90000

Table 5–154: *OilSpillSimulationRequest Class Attributes*

5.3.8.4. ShipNavigationSimulationRequest Class (subclass of SimulationRequest)

5.3.8.4.1. Attributes

Name	Data Type	Description	Example
BoundingBoxDeltaLatU	double	Meridional extent of upper buffer zone	0.37
BoundingBoxDeltaLonL	double	Zonal extent of left buffer zone	1.14
BoundingBoxDeltaLatD	double	Meridional extent of lower buffer zone	1.02
BoundingBoxDeltaLonR	double	Zonal extent of right buffer zone	1.58
Vessel	Vessel	Vessel Type	
IntentionalSpeedRed	int	Allow for intentional ship speed reduction [0-1]	1
SurfRiding	int	Check for broaching-to and surf-riding conditions [0-1]	0
PureLossStab	int	Check for pure loss of stability [0-1]	1
ParRolling	int	Check for parametric rolling conditions [0-1]	1
UiCode	int	Static value for User Interface Code	1
MinimumCoastDistance	double	Minimum offshore distance [NM]	0
SailClass	int	Sailboat class	12
WindModel	int	Static value for Wind Model	12
WaveModel	int	Static value for Wave Model	1

Table 5–155: *ShipNavigationSimulationRequest Class Attributes*

5.3.8.5. DriftingSimulationRequest Class (subclass of SimulationRequest)

5.3.8.5.1. Attributes

Name	Data Type	Description	Example
ObjectClass	int	Class of drifting object	1
StartRadius	double	The radius of uncertainty for the Last Known Position [Km]	5.0
ResCurrent	double	Static value for Oceanographic Currents Model Resolution	6
Depth	double	Maximum depth of the sea current forecast data used for the drifting computations	1
ResWind	double	Static value for the Wind Model resolution	25

Table 5–156: *DriftingSimulationRequest Class Attributes*

5.3.8.6. MeteoOceanographicConditionPredictionRequest Class (subclass of SimulationRequest)

5.3.8.6.1. Attributes

Name	Data Type	Description	Example
Request	String	WMS request	GetCapabilities
AreaOfInterest	String	Area of interest	Med
BoundingBox	BoundingBoxGeometry	Area of interest defined by a bounding box	
MeteoOceanVariable	MeteoOceanographicCondition	Meteo Ocean Variable	Salinity

Table 5–157: MeteoOceanographicConditionPredictionRequest Class Attributes

5.3.8.7. SimulationResponse Class (subclass of Entity)

5.3.8.7.1. Attributes

Name	Data Type	Description	Example
CorrelatedSimulationRequest	SimulationRequest	The Simulation request instantiating this response	
Status	utils:StatusType	The Status of the response	SUCCESS
StatusMessage	String	Status explanation message	
UserId	String	The user-id for whom the simulation was executed	
Payload	String	The payload of the simulation response	Payload of the response. JSON.
WMSUrl	xs:anyURI	The URL of the WMS service related to the Simulation response	
WMSGetCapabilitiesResponse	String	The response of the GetCapabilities WMS request in XML format.	
VariableMapping	utils:KeyValueElement[]	Specific variables information	

Table 5–158: SimulationResponse Class Attributes

5.3.9. Subject Core (Mission Namespace)

The Subject Core Entity is defined in the mission namespace. A Subject is used to define Locations, Objects, Persons who potentially if involved in incidents as actors violating the Law, could be classified as Threats. Subjects are used as an input in several [Task](#) types and as reference in a Mission's report. Subjects could be considered Innocents or Victims in case of a MedicalService Task, Targets in case of Tasks detecting suspicious activity, or Threats in case of an Arrest Task.

5.3.9.1. UML Diagram

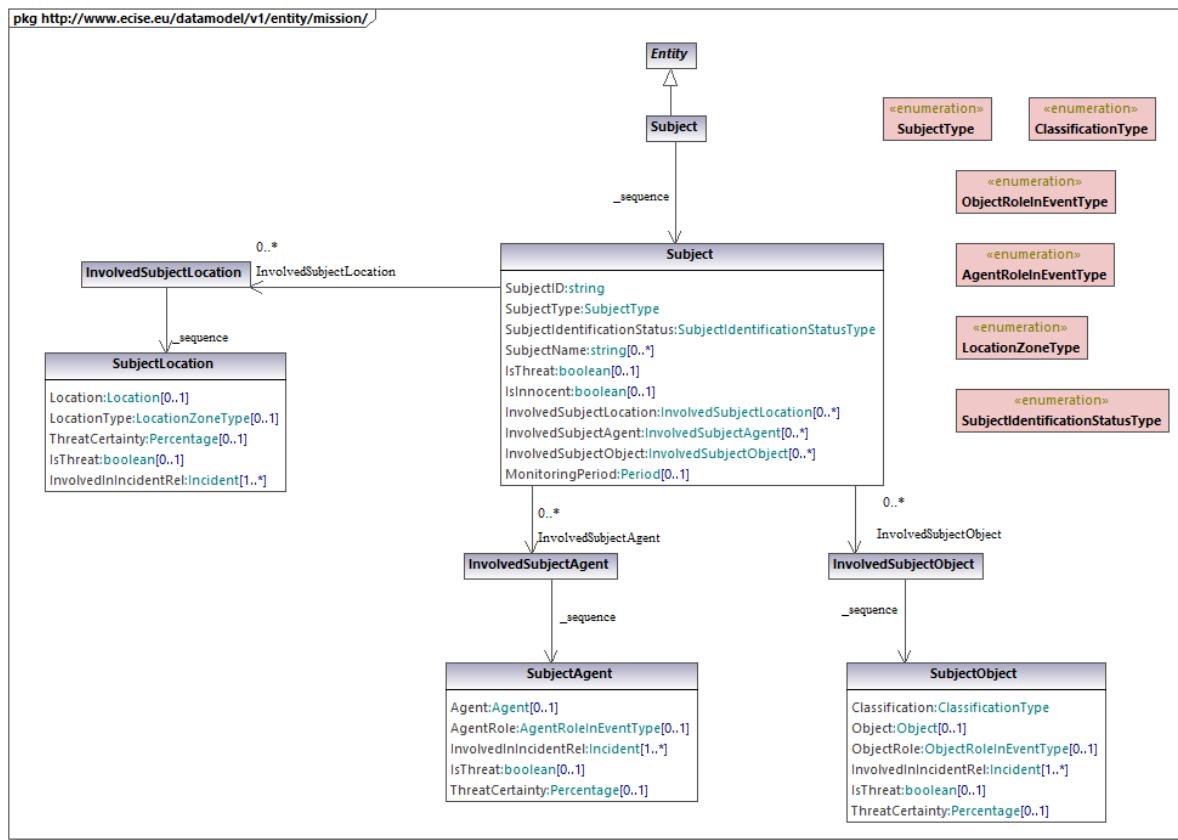


Figure 5-10: UML Class Diagram of Subject e-CISE Entity

5.3.9.2. Subject Class

5.3.9.2.1. Attributes

Name	Data Type	Description	Example
SubjectID	String	An alias id for identifying uniquely a subject	
SubjectType	SubjectType	The type of the subject	Object
SubjectIdentificationStatus	SubjectIdentificationStatusType	The identification status of the subject	Identified
SubjectName	String[]	The name of the subject	
MonitoringPeriod	Period	The date range or duration during which the subject is monitored	
IsThreat	boolean	Flag indicating that the subject is classified as a Threat	true
IsInnocent	boolean	Flag indicating that the subject is classified as Innocent	false

Table 5-159: Subject Class Attributes

5.3.9.2.2. Association Roles

Name	Data Type	Description	Multiplicity
InvolvedSubjectLocation	LocationSubject	The associated subject locations. Please check association class LocationSubject.	0..*
InvolvedSubjectAgent	AgentSubject	The associated subject agents. Please check association class AgentSubject.	0..*
InvolvedSubjectObject	ObjectSubject	The associated subject objects. Please check association class ObjectSubject.	0..*

Table 5–160: Subject Class Associations

5.3.9.3. LocationSubject Association Class

5.3.9.3.1. Attributes

Name	Data Type	Description	Example
Location	Location	The subject location or geometry	
LocationType	LocationZoneType	The type of the location	DangerousArea
ThreatCertainty	utils:Percentage	The percentage of threat certainty. With value 0 indicating innocent subject.	70
IsThreat	boolean	Flag indicating that this location is a threat	True
InvolvedInIncidentRel	Incident[]	Associated incidents involved within this location	

Table 5–161: LocationSubject Class Attributes

5.3.9.4. AgentSubject Association Class

5.3.9.4.1. Attributes

Name	Data Type	Description	Example
Agent	Agent	The Agent subject	Person
AgentRole	AgentRoleInEventType	The role of this agent	Victim
IsThreat	boolean	Flag indicating if agent is a threat	False
ThreatCertainty	utils:Percentage	The percentage of threat certainty. With value 0 indicating innocent subject.	0
InvolvedInIncidentRel	Incident[]	Associated incidents in which the agent was involved.	

Table 5–162: AgentSubject Class Attributes

5.3.9.5. ObjectSubject Association Class

5.3.9.5.1. Attributes

Name	Data Type	Description	Example
Classification	ClassificationType	The classification type of the subject object	Hostile
Object	Object	The Object subject	Vessel
ObjectRole	ObjectRoleInEventType	The role of this object	

Name	Data Type	Description	Example
IsThreat	boolean	Flag indicating if this object is a threat	true
ThreatCertainty	utils:Percentage	The percentage of threat certainty. With value 0 indicating innocent subject.	80
InvolvedInIncidentRel	Incident[]	Associated incidents in which this object was involved. If it's classified as a threat at least one incident must be provided	

Table 5–163: *ObjectSubject Class Attributes*

5.3.9.6. SubjectType Enumeration

5.3.9.6.1. Enumeration Values

Label	Description
Agent	The subject is an agent [Person, Organization]
Object	The subject is an object [Aircraft, Vessel, LandVehicle]
Location	The subject is a location
Mixed	Mixed subject types, the subject is an Agent an Object and a Location
NonSpecified	The subject type is not specified

Table 5–164: *SubjectType Enumeration Values*

5.3.9.6.2. Enumeration Usage

The following attributes use this enumeration as data type

- SubjectType in Subject class.

5.3.9.7. SubjectIdentificationStatusType Enumeration

5.3.9.7.1. Enumeration Values

Label	Description
Identified	The subject is identified
Pending	The subject's identification is pending
Aborted	The subject's identification is aborted
Unidentified	The subject is unidentified
Other	Other subject identification status not covered
NonSpecified	Subject identification status is not specified

Table 5–165: *SubjectIdentificationStatusType Enumeration Values*

5.3.9.7.2. Enumeration Usage

The following attributes use this enumeration as data type

- SubjectIdentificationStatus in Subject class.

5.3.10. Utilities Namespace

Utilities Core Entity is defined in the utilities namespace. Utilities are widely used in all other documented entities to provide common data type definitions.

5.3.10.1. KeyValueElement Datatype

KeyValueElement is used as a Map collection, mapping a Key with a Value together with value's data type. This enables the use of unstructured data for communicating specific technical configurations

5.3.10.1.1. Attributes

Name	Data Type	Description	Example
Key	String	The key of the mapping	DistanceFromBorderInMetersAnomalyThreshold
Value	String	The value of the mapping	100
Type	ValueDataType	The data type of the value	Double
Description	String	Description about the key/value set provided	This field denotes the speed threshold in Km/h

Table 5–166: KeyValueElement Datatype Attributes

5.3.10.2. ValueDataType Enumeration

5.3.10.2.1. Enumeration Values

Label	Description
Long	Long value data type
Double	Double value data type
Integer	Integer value data type
Float	Float value data type
Number	Numeric value data type
String	String value data type
DateTime	DateTime value data type in UTC format
Boolean	Boolean value data type [True, False]
WKT	WKT Geometry value data type

Table 5–167: ValueDataType Enumeration Values

5.3.10.2.2. Enumeration Usage

The following attributes use this enumeration as data type

- ValueDataType in KeyValueElement class.

5.3.10.3. PriorityType Enumeration

5.3.10.3.1. Enumeration Values

Label	Description
VeryHigh	Very high priority
High	High priority
Medium	Medium priority
Low	Low priority
VeryLow	Very low priority
NonSpecified	Priority unspecified

Table 5–168: PriorityType Enumeration Values

5.3.10.3.2. Enumeration Usage

The following attributes use this enumeration as data type

- PriorityType in Anomaly class.
- PriorityType in Operation class.
- PriorityType in CollectionPlan class.
- PriorityType in InformationRequirement class.
- PriorityType in Mission class.
- PriorityType in Rule class.
- PriorityType in PredictionRequest class.
- PriorityType in Task class.

5.3.10.4. StatusType Enumeration

5.3.10.4.1. Enumeration Values

Label	Description
SUCCESS	success
WARNING	warning
ERROR	error
PENDING	pending
NonSpecified	Priority unspecified

Table 5–169: StatusType Enumeration Values

5.3.10.4.2. Enumeration Usage

The following attributes use this enumeration as data type

- Status in SimulationResponse class.

5.3.10.5. Percentage Simple Type

5.3.10.5.1. Constraints

Name	Description	Example
Value of Percentage	The value of a percentage data type must be from 0 to 100	50

Table 5–170: Percentage Simple Type Constraints

5.3.10.6. Confidence Datatype

Confidence data type is used to encapsulate information demonstrating confidence.

5.3.10.6.1. Attributes

Name	Data Type	Description	Example
Percentage	utils:Percentage	The percentage of confidence. In most cases this is derived artificial intelligence means.	90
Level	metadata:Information ReliabilityLevelType	The level of confidence expressed in natural text language	VeryHigh

Table 5–171: Confidence Datatype Attributes

6. Conclusions

E-CISE Data Model is one of the most significant core aspects of the Andromeda Project, as all information exchanged between Andromeda Systems is expressed using e-CISE models. Having this in mind, e-CISE developments were aiming to:

- Define Maritime CISE Model Enhancements and contributing to the CISE2020 roadmap.
- Extend the scope of the CISE Model in order to support Land Border Operational Information Exchange.
- Extend the scope of the CISE Model in order to support the information exchange between Andromeda C2 Systems and Advanced Services (Data Fusion Services & Decision Support Services).

The outcome of this initiative is the e-CISE Data Model, which is fully based on the CISE Data Model, not only by re-using, when sufficient, the already defined CISE entities, but also by applying the same Data Model design principles of CISE Data Model.

To summarize the outcome of e-CISE is as follows:

- A fully functional CISE Data Model supporting Land & Maritime Border Operational Information Exchange.
- A data model capable of integrating Data Fusion and Decision Support services.
- A data model easily understandable for individuals familiar with CISE.
- A data model which is backwards compatible with CISE Data Model, meaning that converting from e-CISE to CISE and vice versa is straightforward.
- A data model which could be furtherly enhanced to support Information Exchange in other Operational sectors.

7. Annex A: XML SCHEMAS FOR THE e-CISE Data Model

Please download the e-CISE Data Model XSD from the Andromeda website by using the following link.

<https://www.andromeda-project.eu/downloads/ecise-data-model.zip>

8. Annex B: The CISE Data Model Definition

8.1. The CISE Data Model

8.1.1. Entity Core Entity

8.1.1.1. Entity UML Models

The following figure depicts the diagram of the classes that belong to the Entity Core Entity:

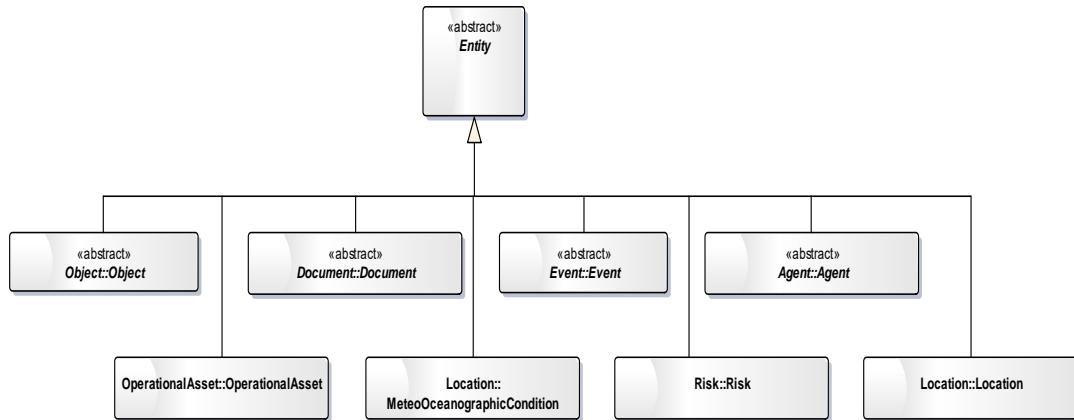


Figure 8-1 - CISE Entity model

8.1.1.2. Entity Vocabulary

8.1.1.2.1. Entity Class

Abstract class representing an entity of the CISE data model.

8.1.2. Action Core Entity

8.1.2.1. Action UML Models

The following figure depicts the diagram of the classes that belong to the Action Core Entity:

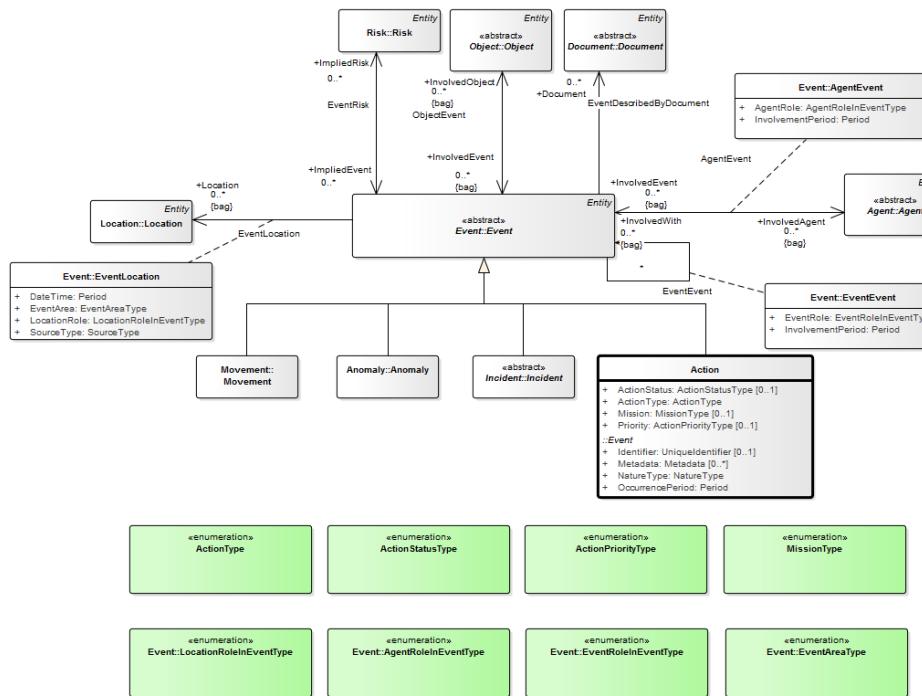


Figure 8-2 - CISE Action model

8.1.2.2. Action Vocabulary

8.1.2.2.1. Action Class

It is a subclass of Event. The Action entity may be linked to Incident, Anomaly and can also be expressed taking into account other entities as location, object, etc.

Name	Type	Description
ActionStatus	ActionStatusType	Defines the current status of the action. An action can be Canceled, Completed, InProgress...
ActionType	ActionType	Many different action types can be described
Mission	MissionType	The mission associated with the action.
Priority	ActionPriorityType	The Action priority

8.1.2.2.2. ActionPriorityType Class

This enumeration presents the different priorities which can be assigned to an Action.

Name	Type	Description
HIGH		Used to identify a high priority Action
MEDIUM		Used to identify a medium priority Action
LOW		Used to identify a low priority Action
OTHER		Action status not included above
NON_SPECIFIED		Action status non-specified

8.1.2.2.3. ActionStatusType Class

In order to define the statuses associated to an action, we suggest reusing the work already done during the "Tactical Situation Object" project. Among many artifacts, a list of action statuses has been defined. This enumeration presents the possible statuses of an Action.

Name	Type	Description
ABORTED		Action aborted
CANCELLED		Action canceled
COMPLETED		Action completed
IN_PROGRESS		Action InProgress (2 additional digits - such as IPR50 - may provide the percentage of completeness of the action)
NOT_STARTED		Action is not started
PAUSED		Action is paused
OTHER		Action status not included above
NON_SPECIFIED		Action status non-specified

8.1.2.2.4. ActionType Class

This enumeration presents the possible types of Actions.

Name	Type	Description
INSPECTION		An inspection action as defined in the EUROSUR system
CONFIRMATION		A confirmation action
RESCUE		A rescue action as defined in the EUROSUR system

DETERRENCE	An action intended to dissuade an adversary from undertaking an action not yet started
ASSISTANCE	An assistance action.
ACKNOWLEDGMENT	An action resulting in an acknowledgement
EXERCISE	An action defined as an exercise
SEARCH	A search action.
DETECTION	A detection action
TRACKING	A tracking action
INTERCEPTION	An interception action
OTHER	Action type not included above
NON_SPECIFIED	Action type non-specified

8.1.2.2.5. MissionType Class

In order to define the type of mission associated to an action. We suggest reusing the work already done during the "tactical situation object" project. Among many artifacts, a list of mission type has been defined.

During the scope of the Cooperation project, we chose to limit the enumeration list to the first level defined by the tactical situation object project. Sub-levels are also defined and their adoption could be considered in future developments of the data model (see "Disaster and emergency management - Shared situation awareness - Part 2: Codes for the message structure.").

Name	Type	Description
C_2		Command & Control
CBRN		Activities related to chemical, bacteriological, radioactive and nuclear substances
FF		Fire Fighting missions
FSTT		Fire Services Technical Intervention
GEN		Generic activities
INT		Intelligence
MAC		Multi-agency Cooperation
MIL		Military activities
NET		Network and telecommunication activities

Name	Type	Description
OPR		Use Operational Resources
POL		Police activities
REC		Reconstruction/rehabilitation activities
RSC		Rescue activities
SAV		Save and Rescue Endangered Life
SCS		Support Community Safety
SOC		Social and media/communication activities
OTHER		Mission type not included above
NON_SPECIFIED		Mission type non-specified

8.1.3. Agent Core Entity

8.1.3.1. Agent UML Models

The following figure depicts the diagram of the classes that belong to the Agent Core Entity:

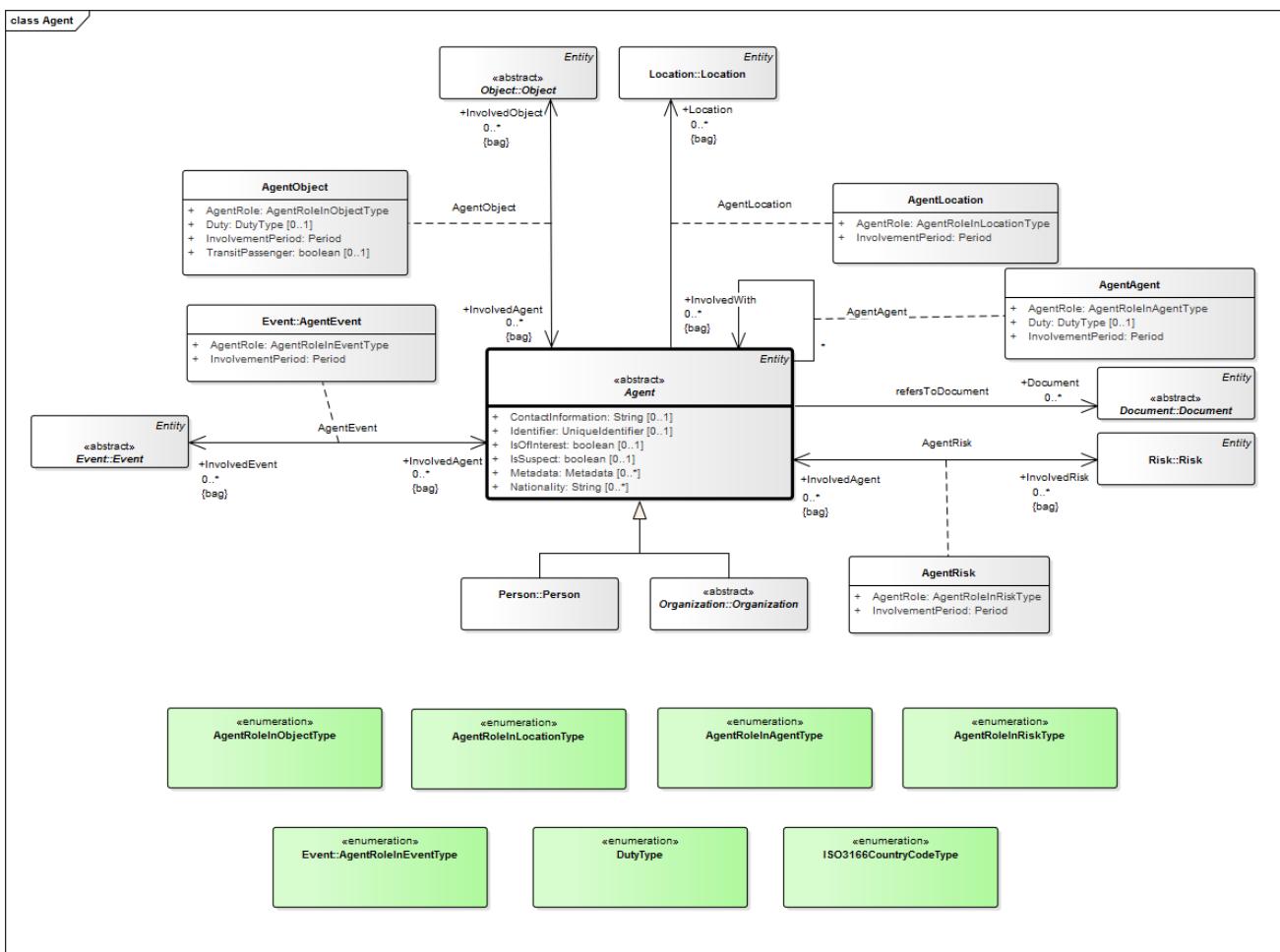


Figure 8-3 - CISE Agent model

8.1.3.2. Agent Vocabulary

8.1.3.2.1. Agent Class

The Agent is one of the core entities of the overall data model of the information sharing environment. By definition, an Agent is an operative entity that plays a role in any Event, owns, handles or operates Objects such as Cargo or Assets, creates and exploits Documents etc. It is an entity which holds information about individual persons or organizations which are involved as actors or targets in the various events and activities. Agent can have relationship with other agents, objects and locations. Agent can also be related to risks in different roles. Agent is an abstract entity which has two sub-entities Person and Organization.

Name	Type	Description
ContactInformation	String	<p>vCard [IETF RFC6350] is a data format for representing and exchanging information about individuals and other entities. It is a text-based format (as opposed to a binary format). xCard [IETF RFC6351] is an XML representation for vCard. All available attributes are described in the vCard document [IETF RFC6350] and listed below:</p> <ul style="list-style-type: none"> • General Properties (BEGIN, END, SOURCE, KIND, XML) • Identification Properties (FN, N, NICKNAME, PHOTO, BDAY, ANNIVERSARY, GENDER) • Delivery Addressing Properties (ADR) • Communications Properties (TEL, EMAIL, IMPP, LANG) • Geographical Properties (TZ, GEO) • Organizational Properties (TITLE, ROLE, LOGO, ORG, MEMBER, RELATED) • Explanatory Properties (CATEGORIES, NOTE, PRODID, REV, SOUND, UID, CLIENTPIDMAP, URL, VERSION) • Security Properties (KEY) • Calendar Properties (FBURL, CALADRURI, CALURI)

Name	Type	Description
Identifier	UniqueIdentifier	Identifier of the agent. Each UniqueIdentifier can be correlated with other UniqueIdentifiers, either manually, by operators, or automatically, by systems, so that duplicate objects in the network can be identified and brought together for a better understanding of the information being shared.
IsOfInterest	boolean	Attribute is flagging an interest to follow more closely any activities related to the Agent. Value of the attribute can be either true or false (true = 1 and false = 0)
IsSuspect	boolean	Attribute is flagging a possible suspicion of illegal activities related to the Agent. Value of the attribute can be either true or false (true = 1 and false = 0)
Metadata	Metadata	see: Core Vocabulary Specification for "Metadata"
Nationality	String	Three-letter country codes to represent countries, dependent territories, and special areas of geographical interest

8.1.3.2.2. AgentAgent Class

This class allows the association between two Agents (or one of their sub-classes: person, organization). It is not mandatory to associate an Agent with another Agent but one Agent can be associated to multiple other Agents. The association further describes the role of the Agent in relation to the other Agent. Crew members have also a special relationship with the Organization inside the vessel company which is described by attribute Duty. This attribute carries information about the responsibilities and position of the person in the vessel. The duration of the relationship between the Agents is described by an association with class Period.

Name	Type	Description
------	------	-------------

AgentRole	AgentRoleInAgentType	Enumerated - Describes the relationship between Agents.
Duty	DutyType	Attribute carries information about the positions and responsibilities of individual crew members.
InvolvementPeriod	Period	Defines the duration of the relationship between the Agents.

8.1.3.2.3. AgentLocation Class

This class allows the association between Agent (or one of its sub-classes: person, organization) and Location. It is not mandatory to associate an Agent with a Location but one Agent can be associated to multiple different Locations. The association further describes the role of the Agent in relation to the Location. The duration of the relationship between the Agent and the Location is described by an association with class Period.

Name	Type	Description
AgentRole	AgentRoleInLocationType	Enumerated. Describes the relationship between Agent and Location.
InvolvementPeriod	Period	Defines the duration of the relationship between the Agent and the Location.

8.1.3.2.4. AgentObject Class

This class allows the association between Agent (or one of its sub-classes: person, organization) and Object (or one of its sub-classes: Vehicle (Vessel, Aircraft, Landvehicle), CargoPackage). It is not mandatory to associate an Agent with an Object but one Agent can be associated to multiple different Objects. The association further describes the role of the Agent in relation to the Object. The special relationship between Passengers and Craft is described by Boolean type attribute TransitPassenger which carries information about the status of the passenger (Transit passenger or not) and by two associations with class Location. Crew members have also a special relationship to Craft which is described by attribute Duty. This attribute carries information about the responsibilities and position of the person in the vessel. The duration of the relationship between the Agent and the Object is described by an association with class Period.

Name	Type	Description
AgentRole	AgentRoleInObjectType	Enumerated - Describes the relationship between the Agent and the Object.
Duty	DutyType	Attribute carries information about the positions and responsibilities of individual crew members.

InvolvementPeriod	Period	The period of involvement
TransitPassenger	boolean	Attribute is carrying information about the voyage details of an individual passenger. Is he/her a transit passenger or not. Value of the attribute can be either true or false (true = 1 and false = 0)

8.1.3.2.5. AgentRisk Class

This class allows the association between Agent (or one of its sub-classes) and Risk. It is not mandatory to associate an Agent with a Risk but one Agent can be associated to multiple different Risks. The association further describes the role of the Agent in relation to the Risk.

Name	Type	Description
AgentRole	AgentRoleInRiskType	Enumerated - Describes the relationship between Agent and Risk.
InvolvementPeriod	Period	The period of Involvement

8.1.3.2.6. AgentRoleInAgentType Class

This enumeration presents the relationship between two Agents.

Name	Type	Description
LEADS		Agent who leads the other Agent(s)
WORKS_FOR		Agent who works for the other Agent(s)
MANAGES_SECURITY_CS0		Person who manages the security of an organization
ENCOMPASSES		Agent who encompasses the other Agent(s)
OWNS		Person who owns the organization.
OTHER		Any other role/relationship not mentioned above
NON_SPECIFIED		Role not specified

8.1.3.2.7. AgentRoleInLocationType Class

This enumeration presents the relationship between Agent and Location.

Name	Type	Description
OWNS		Owns the location
IS_LOCATED_IN		Is the (permanent) location of the agent
COUNTRY_OF_BIRTH		Is the country where the agent was birth
PLACE_OF_BIRTH		Is the place where the agent was birth
COUNTRY_OF_DEATH		Is the country where the agent died
PLACE_OF_DEATH		Is the place where the agent died
EMBARKATION_PORT		Port in which the agent embarked
DISEMBARKATION_PORT		Port in which the agent disembarked
COUNTRY_OF_RESIDENCE		The country in which the agent normally resides
OTHER		Any other relationship not mentioned above
NON_SPECIFIED		Relationship not specified

8.1.3.2.8. AgentRoleInObjectType Class

This enumeration presents the relationship between Agent and Object.

Name	Type	Description
OWNER		Owns the object
SHIP_AGENT		Is the agent of the object
PASSENGER		Is a passenger of the object
CREW_MEMBER		Is a member of the crew of the object
CAPTAIN_MASTER		Is the master of the object
SHIP_OPERATING_COMPANY		Is the master of the object
COMPANY_SECURITY_OFFICER		Is the security officer of the company
EMPLOYEE		Is an employee of the object
VESSEL_BUILDER		The Vessel Builder

Name	Type	Description
VESSEL_CHARTERER		The Vessel Charterer
VESSEL_REGISTERED_OWNER		The Vessel Registered Owner
VESSEL_COMPANY		The Vessel Company
SHIPPING_AGENT		Shipping agent of the goods
DECLARANT		Declarant of the goods
CARRIER_AGENT		Carrier agent of the goods
SHIPPING_LINE		Shipping line for the goods
CUSTOMS_BROKER		Customs broker of the goods
DGP_CONTACT_POINT		DGP (dangerous and polluting goods) contact point
OTHER		Any other role not mentioned above
NON_SPECIFIED		Role not specified

8.1.3.2.9. AgentRoleInRiskType Class

This enumeration presents the role of Agent in relation to Risk.

Name	Type	Description
CAUSE		Agent is the cause of the risk
INVOLVED		Agent is somehow involved in the risk
REPORTS		Agent is reporting of the risk
OTHER		Any other relation not mentioned above
NON_SPECIFIED		Relation not specified

8.1.3.2.10. DutyType Class

This enumeration presents the role of Agent in relation to Risk.

Name	Type	Description
ABLE_SEAMAN		Able Seaman
AGENT		Agent

Name	Type	Description
ASST_FOOD_BEV_MNGR		Assistant Food and Beverage Manager
BAR_MANAGER		Bar Manager
BAR_SERVICE		Bar Service
BOSUN		Bosun
CADET		Cadet
CAPTAIN		Captain
CARGO_TECHNICIAN		Cargo Technician
CASINO_STAFF		Casino Staff
CHIEF_COOK		Chief Cook
CHIEF ELECTRICIAN		Chief Electrician
CHIEF_HOUSEKEEPER		Chief Housekeeper
CHIEF_ENGINEER		Chief Engineer
CHIEF_MASTER		Chief Master
CHIEF_MATE		Chief Mate
CHIEF_OFFICER		Chief Officer
CHIEF_PURSER		Chief Purser
CHIEF_STEWARD		Chief Steward
CLASS_SURVEYOR		Class Surveyor
CSO		Company Security Officer
COOK		Cook
CRANE_OPERATOR		Crane Operator
CREW_MEMBER		Crew Member
CRUISE_DIRECTOR		Cruise Director
CRUISE_STAFF		Cruise Staff
DECK_APPRENTICE		Deck Apprentice
DECK_FITTER		Deck Filter
DECK_OFFICER		Deck Officer
DECKHAND		Deckhand, Deck Crew
DOCTOR		Doctor

Name	Type	Description
DONKEYMAN		Donkeyman
ELECTRICAL_ENGINEER		Electrical Engineer
ELECTRICAL_OFFICER		Electrical Officer
ELECTRICIAN		Electrician
ENGINEER_CADET		Engineer Cadet, Engine Apprentice
ENGINEERING_CREW		Engineering Crew, Engine Crew
ENGINE_FITTER		Engine Fitter
ENTERTAINMENT		Entertainment
FACILITIES_CREW		Facilities Crew
FACILITIES_MANAGER		Facilities Manager
FIRST_ASST_ENGINEER		First Assistant Engineer
FIRST_ENGINEER		First Engineer
FIRST_MATE		First Mate
FIRST_OFFICER		First Officer
FITTER		Fitter
FOURTH_OFFICER		Fourth Officer
FOOD_BEV_MNGR		Food and Beverage Manager, Catering Officer
FOOD_SERVICE		Food Service, Catering Crew
FOURTH_ASST_ENGINEER		Fourth Assistant Engineer, Fourth Engineer
GREASER		Greaser
HOSPITALITY		Hospitality
HOTEL_DIRECTOR		Hotel Director
HOTEL_STAFF		Hotel Staff
HOUSEKEEPING_STAFF		Housekeeping Staff
INFORMATION TECHNOLOGY		Information Technology
JUNIOR_ENGINEER		Junior Engineer
LAUNDRY_MASTER		Laundry Master

Name	Type	Description
LIFEBOATMAN		Lifeboatman
MAITRED		Maitred
MARINE_CREW		Marine Crew
MARKETING_REVENUE_MNGR		Marketing Revenue Manager
MASTER		Master
MASTER_FIRST_CLASS_PILOT		Master First Class Pilot
MATE_FIRST_CLASS_PILOT		Mate First Class Pilot
MECHANIC		Mechanic
MEDICAL_STAFF		Medical Staff
MESSMAN		Messman
MOTORMAN		Motorman
OILER		Oiler
OPERATOR		Operator
ORDINARY_SEAMAN		Ordinary Seaman
OWNER		Owner
PAINTER		Painter
PORTER		Porter
PROVISION		Provision
PROVISION_MASTER		Provision Master
PUMPMAN		Pumpman, Pump Man
QMED		QMED
RADIO_OFFICER		Radio Officer
REEFERMAN		Reeferman
REPAIR_MAN		Repair Man
RIDDING_CREW		Ridding Crew
SAFETY_AND_SECURITY		Safety And Security
SECOND_ASST_ENGINEER		Second Assistant Engineer, Second Engineer
SECOND_MATE		Second Mate

Name	Type	Description
SECOND_OFFICER		Second Officer
SSO		Ship Security Officer
STAFF_CAPTAIN		Staff Captain
STEWARD		Steward
SUPERINTENDENT		Superintendent
TANKERMAN		Tankerman
THIRD_ASST_ENGINEER		Third Assistant Engineer, Third Engineer
THIRD_MATE		Third Mate
THIRD_OFFICER		Third Officer
THIRD_PARTY		Third Party
TRUCK_MECHANIC		Truck Mechanic
TUNNELMAN		Tunnelman
UTILITY_PERSON		Utility Person
VETTING_INSPECTOR		Vetting inspector
WELDER		Welder
WIPER		Wiper
YARD_PERSONELL		Yard Personnel
OTHER		Any other duty not mentioned above
NON_SPECIFIED		Duty not specified

8.1.3.2.11. ISO3166CountryCodeType Class

Contains the Codes Of Nationality according to ISO3166 Standard

Name	Type	Description
AC		Ascension Island
AD		Andorra
AE		United Arab Emirates
AF		Afghanistan
AG		Antigua and Barbuda
AI		Anguilla

Name	Type	Description
AL		Albania
AM		Armenia
AO		Angola
AQ		Antarctica
AR		Argentina
AS		American Samoa
AT		Austria
AU		Australia
AW		Aruba
AX		Åland Islands
AZ		Azerbaijan
BA		Bosnia and Herzegovina
BB		Barbados
BD		Bangladesh
BE		Belgium
BF		Burkina Faso
BG		Bulgaria
BH		Bahrain
BI		Burundi
BJ		Benin
BL		Saint-Barthélemy
BM		Bermuda
BN		Brunei Darussalam
BO		Plurinational State of Bolivia
BQ		Bonaire, Sint Eustatius and Saba
BR		Brazil
BS		Bahamas
BT		Bhutan
BV		Bouvet Island
BW		Botswana

Name	Type	Description
BY		Belarus
BZ		Belize
CA		Canada
CC		Cocos (Keeling) Islands
CD		The Democratic Republic of the Congo
CF		Central African Republic
CG		Congo
CH		Switzerland
CI		Côte d'Ivoire
CK		Cook Islands
CL		Chile
CM		Cameroon
CN		China
CO		Colombia
CP		Clipperton Island
CR		Costa Rica
CU		Cuba
CV		Cape Verde
CW		Curaçao
CX		Christmas Island
CY		Cyprus
CZ		Czech Republic
DE		Germany
DG		Diego Garcia
DJ		Djibouti
DK		Denmark
DM		Dominica
DO		Dominican Republic
DZ		Algeria

Name	Type	Description
EA		Ceuta, Melilla
EC		Ecuador
EE		Estonia
EG		Egypt
EH		Western Sahara
ER		Eritrea
ES		Spain
ET		Ethiopia
EU		European Union
FI		Finland
FJ		Fiji
FK		Falkland Islands (Malvinas)
FM		Federated States of Micronesia
FO		Faroe Islands
FR		France
FX		France, Metropolitan
GA		Gabon
GB		United Kingdom
GD		Grenada
GE		Georgia
GF		French Guiana
GG		Guernsey
GH		Ghana
GI		Gibraltar
GL		Greenland
GM		Gambia
GN		Guinea
GP		Guadeloupe
GQ		Equatorial Guinea
GR		Greece

Name	Type	Description
GS		South Georgia and the South Sandwich Islands
GT		Guatemala
GU		Guam
GW		Guinea-Bissau
GY		Guyana
HK		Hong Kong
HM		Heard Island and McDonald Islands
HN		Honduras
HR		Croatia
HT		Haiti
HU		Hungary
IC		Canary Islands
ID		Indonesia
IE		Ireland
IL		Israel
IM		Isle of Man
IN		India
IO		British Indian Ocean Territory
IQ		Iraq
IR		Islamic Republic of Iran
IS		Iceland
IT		Italy
JE		Jersey
JM		Jamaica
JO		Jordan
JP		Japan
KE		Kenya
KG		Kyrgyzstan

Name	Type	Description
KH		Cambodia
KI		Kiribati
KM		Comoros
KN		Saint Kitts and Nevis
KP		Democratic People's Republic of Korea
KR		Republic of Korea
KW		Kuwait
KY		Cayman Islands
KZ		Kazakhstan
LA	Lao People's Democratic Republic	Democratic Republic
LB		Lebanon
LC		Saint Lucia
LI		Liechtenstein
LK		Sri Lanka
LR		Liberia
LS		Lesotho
LT		Lithuania
LU		Luxembourg
LV		Latvia
LY		Libya
MA		Morocco
MC		Monaco
MD		Republic of Moldova
ME		Montenegro
MF		Saint Martin (French part)
MG		Madagascar
MH		Marshall Islands
MK		The former Yugoslav Republic of Macedonia

Name	Type	Description
ML		Mali
MM		Myanmar
MN		Mongolia
MO		Macao
MP		Northern Mariana Islands
MQ		Martinique
MR		Mauritania
MS		Montserrat
MT		Malta
MU		Mauritius
MV		Maldives
MW		Malawi
MX		Mexico
MY		Malaysia
MZ		Mozambique
NA		Namibia
NC		New Caledonia
NE		Niger
NF		Norfolk Island
NG		Nigeria
NI		Nicaragua
NL		Netherlands
NO		Norway
NP		Nepal
NR		Nauru
NU		Niue
NZ		New Zealand
OM		Oman
PA		Panama
PE		Peru

Name	Type	Description
PF		French Polynesia
PG		Papua New Guinea
PH		Philippines
PK		Pakistan
PL		Poland
PM		Saint Pierre and Miquelon
PN		Pitcairn
PR		Puerto Rico
PS		State of Palestine
PT		Portugal
PW		Palau
PY		Paraguay
QA		Qatar
RE		Réunion
RO		Romania
RS		Serbia
RU		Russian Federation
RW		Rwanda
SA		Saudi Arabia
SB		Solomon Islands
SC		Seychelles
SD		Sudan
SE		Sweden
SG		Singapore
SH		Saint Helena, Ascension and Tristan da Cunha
SI		Slovenia
SJ		Svalbard and Jan Mayen
SK		Slovakia
SL		Sierra Leone

Name	Type	Description
SM		San Marino
SN		Senegal
SO		Somalia
SR		Suriname
SS		South Sudan
ST		Sao Tome and Principe
SU		USSR
SV		El Salvador
SX		Sint Maarten (Dutch part)
SY		Syrian Arab Republic
SZ		Swaziland
TA		Tristan da Cunha
TC		Turks and Caicos Islands
TD		Chad
TF		French Southern Territories
TG		Togo
TH		Thailand
TJ		Tajikistan
TK		Tokelau
TL		Timor-Leste
TM		Turkmenistan
TN		Tunisia
TO		Tonga
TR		Turkey
TT		Trinidad and Tobago
TV		Tuvalu
TW		Taiwan, Province of China
TZ		United Republic of Tanzania
UA		Ukraine
UG		Uganda

Name	Type	Description
UK		United Kingdom
UM		United States Minor Outlying Islands
US		United States
UY		Uruguay
UZ		Uzbekistan
VA		Holy See (Vatican City State)
VC		Saint Vincent and the Grenadines
VE		Bolivarian Republic of Venezuela
VG		Virgin Islands, British
VI		Virgin Islands, U.S.
VN		Viet Nam
VU		Vanuatu
WF		Wallis and Futuna
WS		Samoa
YE		Yemen
YT		Mayotte
ZA		South Africa
ZM		Zambia
ZW		Zimbabwe
NON_SPECIFIED		Non specified

8.1.4. Anomaly Core Entity

8.1.4.1. Anomaly UML Models

The following figure depicts the diagram of the classes that belong to the Anomaly Core Entity:

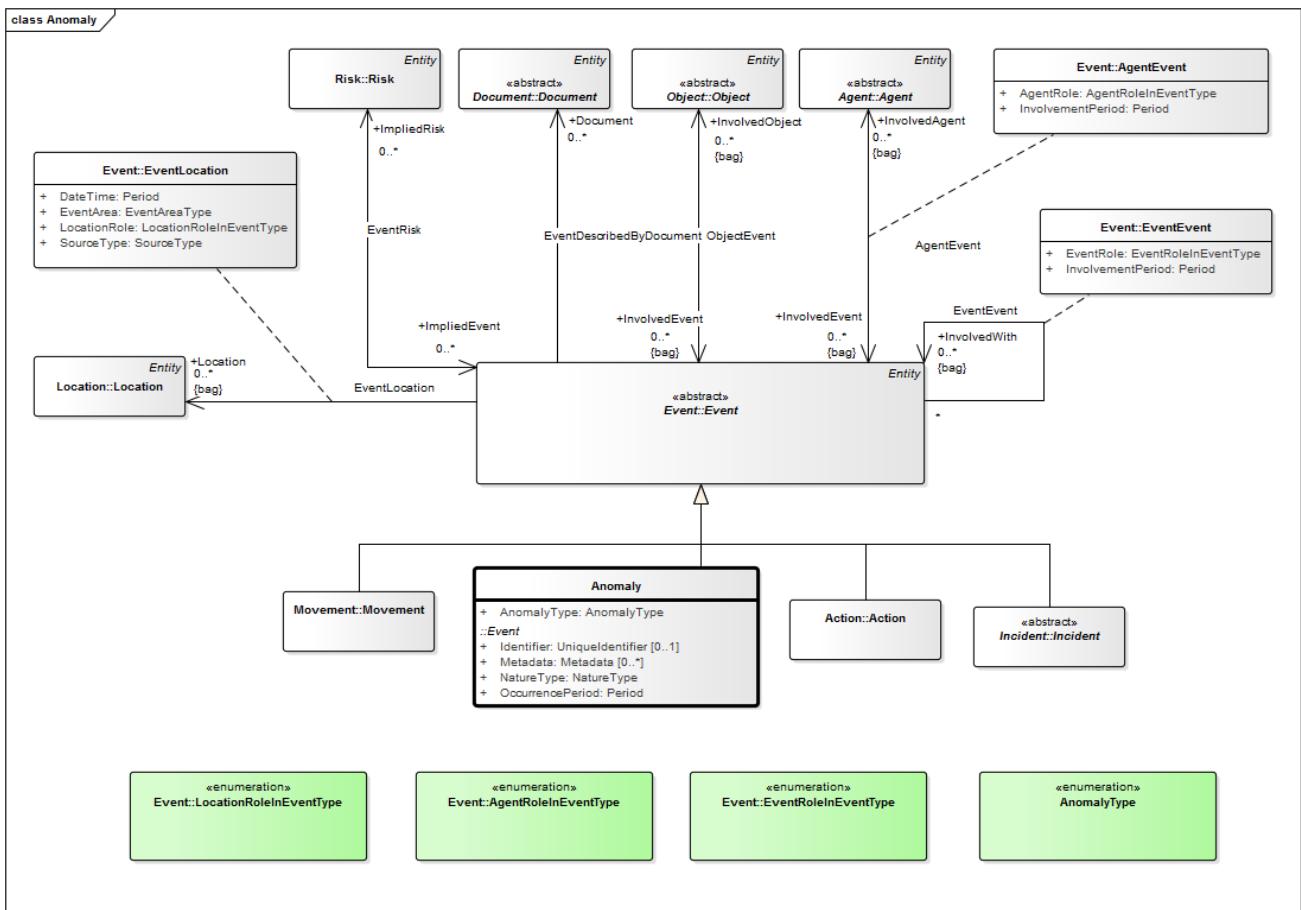


Figure 8-4 - CISE Anomaly model

8.1.4.2. Anomaly Vocabulary

8.1.4.2.1. Anomaly Class

The class Anomaly is a sub-class of the class Event. An anomaly is used to characterize an unusual event which deserves to be noted or reported. Anomaly has the same associations and relationships than its parent-class Event. Thus it can have relationship with Document, Risk, Event, Object, Period, Location, and Agent.

Name	Type	Description
AnomalyType	AnomalyType	The type of the reported anomaly

8.1.4.2.2. AnomalyType Class

This enumeration presents the different types of anomalies.

Name	Type	Description
UNEXPECTED_MOVEMENT		Unexpected movement
CARGO_LEAKING		Cargo leaking
SHIFTING_OF_CARGO		Shifting of cargo

VESSEL_OUT_OF_TRAFFIC_LANES	Vessel out of traffic lanes
VESSEL_WITH_ERRATIC_MOVEMENTS	Vessel with erratic movements
STAIN_OF_OIL_SIGHTED	Stain of oil sighted
DETECION_OF_CHANGES_IN_AIS_PARAMETERS	Detection of changes in AIS parameters
PERFORMING_AIS_SPOOFING	Performing AIS spoofing
WITHOUT_AIS_TRANSMISSION	Without AIS transmission
DO_NOT_ANSWER_ON_VHF_CH_16	Do not answer on VHF Ch 16
OTHER	Any other anomaly type not mentioned above
NON_SPECIFIED	Anomaly type not specified

8.1.5. Cargo Core Entity

8.1.5.1. Cargo UML Models

The following figure depicts the diagram of the classes that belong to the Cargo Core Entity:

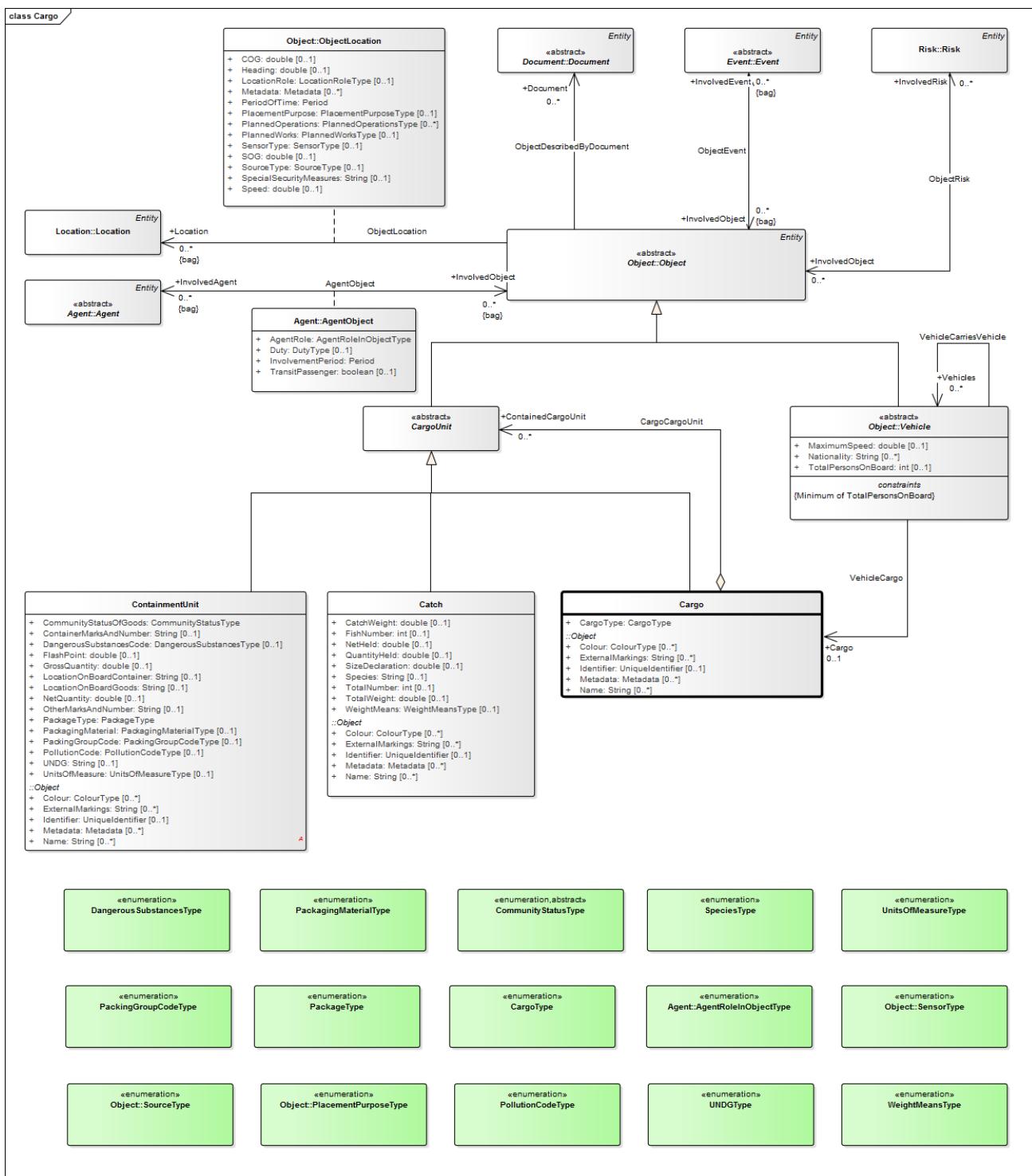


Figure 8-5 - CISE Cargo model

8.1.5.2. Cargo Vocabulary

8.1.5.2.1. Cargo Class

A Cargo refers to a set of goods transported by a ship between two ports.

Name	Type	Description
CargoType	CargoType	This enumeration is used to described the type of cargo associated with the entity

8.1.5.2.2. CargoUnit Class

CargoUnit is an entity which holds information about units of goods when transported by ships. The subclasses of CargoUnit can represent either the whole cargo in a vehicle or a part of it.

8.1.5.2.3. Catch Class

A Catch refers to a set of distinct species catch in the see/ocean by a fishing vessel. Catch has the same associations and relationships than its parent-class Object. Thus it can have relationship with Document, Risk, Event, Location, and Agent.

Name	Type	Description
CatchWeight	double	Depending on context this item to be either <ul style="list-style-type: none"> 1. Total weight of fish (in kilograms) in catch period 2. Total weight of fish (in kilograms) on board (aggregate) or 3. Total weight of fish (in kilograms) landed 4. Total weight of fish discarded or used as a live
FishNumber	int	Number of fish (when catch have to be registered in numbers of fish i.e. salmon, tuna)
NetHeld	double	Estimate of number of live fish held in nets i.e. not in hold
QuantityHeld	double	Estimate of quantity of live fish held in nets i.e. not in hold
SizeDeclaration	double	ERS/SizeDeclaration
Species	String	This attribute specifies the species that were in the catch using a three-letter code, according to "the Commission Implementing Regulation (EU) No 404/2011 of 8 April 2011 laying down detailed rules for the implementation of

		Council Regulation (EC) No 1224/2009 establishing a Community control system for ensuring compliance with the rules of the Common Fisheries Policy". http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:32011R0404
TotalNumber	int	see ERS::TotalNumber
TotalWeight	double	see ERS::TotalWeight
WeightMeans	WeightMeansType	Means of weight measuring

8.1.5.2.4. ContainmentUnit Class

Containment unit is an entity which holds information about units of goods when transported by ships contained in containers or bulk.

Name	Type	Description
CommunityStatusOfGoods	CommunityStatusType	This enumeration reflects the different customs status of cargo units on board a ship
ContainerMarksAndNumber	String	Marks and number of the containers, this shall be the identification code as defined in ISO 6346
DangerousSubstancesCode	DangerousSubstancesType	This enumeration defines the general categories of Hazardous cargo, according to the International Maritime Dangerous Goods (IMDG) code
FlashPoint	double	Flash point in degrees centigrade. The temperature in degrees Celsius at which a liquid will give off enough flammable vapour to be ignited. according IMDG Code DG Class 3
GrossQuantity	double	Gross quantity of the cargo unit (includes package)
LocationOnBoardContainer	String	Location of container on board. Represented with one upper case letter (type of location code), a colon (:) and the location code (numerical or other depending of

Name	Type	Description
		the type of cargo). See representation of CargoLocationType in ISO 28005
LocationOnBoardGoods	String	Location of goods on board
NetQuantity	double	Net quantity of the cargo unit (excludes package)
OtherMarksAndNumber	String	Marks and number of the cargo item if not covered by ISO 6346
PackageType	PackageType	This enumeration is used to described the type of package used to carry the cargo unit
PackagingMaterial	PackagingMaterialType	This enumeration is used to described the type of material of the package used to carry the cargo unit
PackingGroupCode	PackingGroupCodeType	This enumeration defines the danger code, according to the level of danger
PollutionCode	PollutionCodeType	This enumeration defines the pollution code, according to the MARPOL
UNDG	String	Attribute describing the content of the ContainmentUnit with a four-letter code conformant to the Enumeration for the United Nations Dangerous Goods.
UnitsOfMeasure	UnitsOfMeasureType	This enumeration defines the units of measurement for both GrossQuantity and NetQuantity

8.1.5.2.5. CargoType Class

This enumeration presents the possible types of cargo.

Name	Type	Description
NO_CARGO_UNIT_LIQUID_B		
ULK_GOODS		includes i) liquids ii) liquified gases iii) molten or slurried solids, suitable for continuous mechanical handling for transport by pipeline or loose in a hold, tank or other

Name	Type	Description
NO_CARGO_UNIT_SOLID_BU		compartment integral to a means of transport
LK_GOODS		includes i) fine powders ii) granular particles iii) large, lumpy, dry solids, suitable for continuous mechanical handling, for transport by fixed installations (other than pipeline) or loose in a hold or other compartment integral to a means of transport
LARGE_FREIGHT_CONTAINERS		Goods loaded in/on a freight container 20ft. (6m) or more in external length; includes lift van, swap/swop body, flat, moveable tank or similar articles of transport equipment
OTHER_FREIGHT_CONTAINERS		Goods loaded in/on a freight container less than 20 ft.(6m) in external length; includes i) rigid Intermediate Bulk Containers (IBCs) ii) aircraft Unit Load Devices (ULDs); excludes i) air mode pallets ii) sea or land mode box-, tank-, post, rack-pallets not exceeding 1.25 m ² deck area
PALLETIZED		Goods loaded on a deck; includes i) disposable one-way pallets ii) sea or land mode box-, tank-, post-, rack-pallets not exceeding 1.25 m ² deck area iii) slip-sheets iv) air mode pallets v) bricks, ingots, etc. suitably assembled for fork-lift truck handling
PRE_SLUNG		Goods (one or more items) supplied with a sling (or slings) or various materials (natural/artificial fibre, steel wire, etc.) and of various designs (loop, ring, cloverleaf, etc.); includes i) packaged timber ii) Flexible Intermediate Bulk Containers (FIBCs)

Name	Type	Description
MOBILE_SELF_PROPELLED_UNITS		Includes i) road motor vehicles (lorries, buses, cars) and accompanying trailers, semi-trailers, caravans engaged in goods/passenger transport ii) motorised road, agricultural, industrial, etc. vehicles moving in trade iii) live animals on the hoof•
OTHER_MOBILE_UNITS		non-self-propelled vehicles and equipment on wheels; includes i) unaccompanied trailers, semi-trailers railwagons, ship-borne barges engaged in goods transport ii) caravans and other road, agricultural, industrial, etc. vehicles iii) ship-borne port-to-port trailers
RESERVED		reserved.
OTHER_CARGO_TYPES		all cargo not elsewhere enumerated (i.e. the residual types of cargo carried in transport: break-bulk or general cargo, e.g. boxes, drums, bags, etc. and loose, unpacked items such as pipes, rods, etc.)
OTHER		other.
NON_SPECIFIED		non-specified.

8.1.5.2.6. CommunityStatusType Class

This enumeration reflects the different customs status of cargo units on board a ship.

Name	Type	Description
COMMUNITY_GOODS		(equivalent to 'T2L') for goods whose community status can be demonstrated
COMUNITY_GOODS_FROM_N ON_FISCAL_TERRITORIES		(equivalent to 'T2LF') for goods whose community status can be demonstrated, consigned to or originating in a part of the Community customs territory where the provisions of Directive 77/388/EEC do not apply

COMMUNITY_GOODS_BEING_EXPORTED	For goods under the export procedure
OTHER_GOODS	For all other goods
NON_SPECIFIED	non-specified

8.1.5.2.7. DangerousSubstancesType Class

This enumeration presents the general categories of Hazardous cargo, according to the International Maritime Dangerous Goods (IMDG) code. For additional information about IBC, IGC and INF (IBC - Intermediate Bulk Container, IGC - International Gas Carrier and INF - Irradiated Nuclear Fuel) contact the International Maritime Organization (IMO).

Name	Type	Description
CLASS_1_EXPLOSIVES		class 1 explosives. Should be stored away from the crew's quarters and the ship's boats and immediately under the hold's hatches
CLASS_21_FLAMMABLE_GASES		class 2.1 flammable gases. Should be stored away from crew's quarters and any source of heat.
CLASS_22_TOXIC_GASES		class 2.2 toxic gases. Should be stored away from any source of heat, the crew's quarters and foodstuffs.
CLASS_23_NON_FLAMMABLE_COMPRESSED_GASES		class 2.3 non-flammable compressed gases. Store on or under the deck in a cool, well-ventilated place. Containers filled with this kind of gas will expand if heated and there is a high risk of an explosion.
CLASS_31_PETROL		class 3.1 petrol. Combustion at less than 18°C. Should always be stored above the deck.
CLASS_32_FUEL_OIL		class 3.2 fuel oil. Combustion at between 18°C and 23°C. Should be stored above or below the deck.
CLASS_33_FUEL_OIL		class 3.3 fuel oil. Combustion at between 23°C and

Name	Type	Description
CLASS_41_FLAMMABLE_SOLID		61°C. Should be stored below the deck.
CLASS_42_SPONTANEOUSLY_COMBUSTIBLE		class 4.1 flammable solid. Should be stored on top or below the deck. Should be kept away from living quarters.
CLASS_43_DANGEROUS_WHEN_WET		class 4.2 spontaneously combustible. Should be stored in well ventilated areas and air should be able to circulate between the stored materials.
CLASS_51_OXIDIZING_AGENT		class 4.3 dangerous when wet. Solids which are inflammable when wet or when in contact with water. Should be stored in well ventilated, dry areas and always away from any contact with water.
CLASS_52_ORGANIX_PEROXIDES		class 5.1 oxidizing agent. The substances in this category can create an inflammable environment when brought into contact with oxygen. For this reason they should not be stored next to combustible materials.
CLASS_61_TOXIC_SUBSTANCES		class 5.2 organix peroxide. The substances in this class can be inflammable or explosive. They should be stored above deck, covered and in a dry, cool areas.
CLASS_62_INFECTIONOUS_BILOGICAL_SUBSTANCES		class 6.1 toxic substances. Toxic substances are those which can enter the human body through the mouth and cause death. For this reasons they should be stored away from foodstuffs, drinks, living quarters and materials which increase humidity, such as tobacco.
		class 6.2 infectious biological substances. These substances contain microbes which can cause illness. They should be stored away from

Name	Type	Description
CLASS_7_RADIOACTIVE_MATERIALS		foodstuffs, drinks and living quarters. In case of danger the nearest health authority should be notified.
CLASS_8_CORROSIVES		class 7 radioactive materials. Radioactive Materials - These materials should be transported in specially sealed containers. The seals must always be completely undamaged. They should preferably be stored above deck and away from living quarters, foodstuffs, unprocessed films, pharmaceuticals and chemical substances. They are divided into three groups according to their level of radioactivity.
CLASS_9_MISCELLANEOUS_DANGEROUS_SUBSTANCES		class 8 corrosives. The substances in this class are solids or liquids possessing, in their original state, the common property of being able, more or less severely to damage living tissue. The escape of such a substance from its packaging may also cause damage to other cargo or the ship.
MHB_MATERIALS_HAZARDOUS_ONLY_IN_BULK		class 9 miscellaneous dangerous substances. Substances and articles not covered by other classes which experience has shown, or may show, to be of such a dangerous character that the provisions of SOLAS should apply. These include substances that are transported or offered for transport at temperatures equal to or exceeding 1000 C and in a liquid state, and solids that are transported at temperatures equal or exceeding 2400 C;
		MHB materials hazardous only in bulk. MHB (materials hazardous only in bulk) cargoes are materials which possess chemical hazards when

Name	Type	Description
		transported in bulk that do not meet the criteria for inclusion in the IMDG classes. They are Combustible solids, Self-heating solids, Solids that evolve into flammable gas when wet, Solids that evolve toxic gas when wet, Toxic solids, Corrosive solids. See also IMSBC code.
OTHER		Any other dangerous substance type not mentioned above
NON_SPECIFIED		Type not specified

8.1.5.2.8. PackageType Class

This enumeration presents the possible types of package used in CargoUnit.

Name	Type	Description
BULK		bulk
LOOSED_UNPACKED_EXCLUDING_BULK		loosed unpacked excluding bulk
RIGID_BOX_TYPE_PRISMATIC		rigid box type prismatic
C		
RIGID_DRUM_TYPE_CYLINDRICAL		rigid drum type cylindrical
RIGID_BULB_TYPE_SPHERICAL		rigid bulb type spherical
AL		
RIGID_OTHER		rigid other
FLEXIBLE_BAG_TYPE		flexible bag type
FOR_FUTURE_USE		for future use
RESERVED		reserved
OTHER_SPECIAL_PACKAGES		other special packages
OTHER		Any other package type not mentioned above
NON_SPECIFIED		Package type not specified

8.1.5.2.9. PackagingMaterialType Class

This enumeration presents the possible types of packaging material used in CargoUnits.

Name	Type	Description
NONE		none
PLASTICS		plastics
PAPER_AND_FIBREBOARD		paper and fibreboard
WOOD		wood
FOR_FUTURE_USE		for future use
METAL		metal
GLASS_PORCELAIN_CERAMI C_STONEWARE		glass porcelain ceramic stoneware
TEXTILE		textile
RESERVED		reserved
UNKNOWN_OR_NOT_OTHER WISE_ENUMERATED		unknown or not otherwise enumerated
OTHER		Any other package material not mentioned above.
NON_SPECIFIED		Material type not specified.

8.1.5.2.10. PackingGroupCodeType Class

This enumeration defines the danger code, according to the level of danger from the IMDG (International Maritime Dangerous Goods).

Name	Type	Description
GROUP_I_GREAT_DANGER		Great danger
GROUP_II_MEDIUM_DANGER		Medium danger
GROUP_III_MINOR_DANGER		Minor danger
NONE		No danger
OTHER		Any other code not mentioned above
NON_SPECIFIED		Code not specified

8.1.5.2.11. PollutionCodeType Class

This enumeration defines the pollution code, according to the MARPOL.

Name	Type	Description
CATEGORY_X		Noxious Liquid Substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present a major hazard to either marine resources or human health and, therefore, justify the prohibition of the discharge into the marine environment
CATEGORY_Y		Noxious Liquid Substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present a hazard to either marine resources or human health or cause harm to amenities or other legitimate uses of the sea and therefore justify a limitation on the quality and quantity of the discharge into the marine environment
CATEGORY_Z		Noxious Liquid Substances which, if discharged into the sea from tank cleaning or deballasting operations, are deemed to present a minor hazard to either marine resources or human health and therefore justify less stringent restrictions on the quality and quantity of the discharge into the marine environment
OTHER_SUBSTANCES		substances which have been evaluated and found to fall outside Category X, Y or Z because they are considered to present no harm to marine resources, human health, amenities or other legitimate uses of the sea when discharged into the sea from tank cleaning or deballasting operations. The discharge of bilge or ballast water or other residues or mixtures containing these substances are not subject to any requirements of MARPOL Annex II

NON_SPECIFIED non-specified.

8.1.5.2.12. SpeciesType Class

This enumeration presents the possible types of species.

8.1.5.2.13. UNDGType Class

This enumeration defines United Nations Dangerous Goods list.

8.1.5.2.14. UnitsOfMeasureType Class

This enumeration presents the considered units of measure for CargoUnits, according to the United Nations codes for units of measure used in international trade.

Name	Type	Description
KILOGRAM		kilogram
METRIC_TONNE		Metric tonne
OTHER		Any other unit not mentioned above
NON_SPECIFIED		Unit not specified

8.1.5.2.15. WeightMeansType Class

This enumeration presents the different means of weight for fisheries

Name	Type	Description
EST		Estimation
WGH		weighing on board

8.1.6. Document Core Entity

8.1.6.1. Document UML Models

The following figure depicts the diagram of the classes that belong to the Document Core Entity:

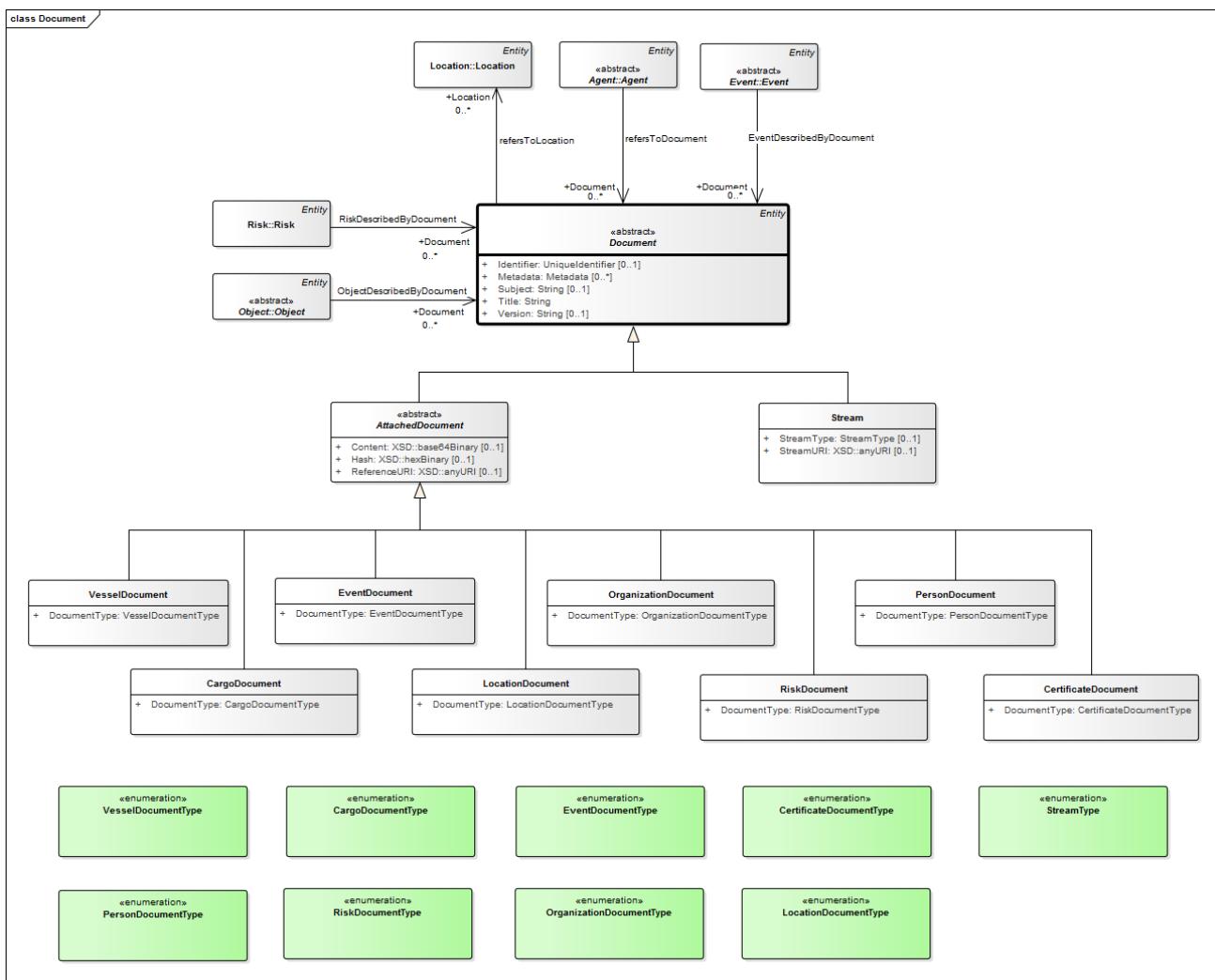


Figure 8-6 - CISE Document model

8.1.6.2. Document Vocabulary

8.1.6.2.1. AttachedDocument Class

Name	Type	Description
Content	xs:base64Binary	Content of the document
Hash	xs:hexBinary	Integrity check
ReferenceURI	xs:anyURI	Uniform resource identifier (URI) is a string of characters used to identify a name of a web resource.

8.1.6.2.2. CargoDocument Class

This sub-class allows the identification and exchange of Cargo related documents and material in electronic format.

Name	Type	Description
DocumentType	CargoDocumentType	Electronic material related to vessels cargo or individual cargo items.

8.1.6.2.3. CertificateDocument Class

This sub-class allows the identification and exchange of Certificate related documents and material in electronic format.

Name	Type	Description
DocumentType	CertificateDocumentType	Documents related to Certificate

8.1.6.2.4. Document Class

The Document is one of the fundamental entities of the overall data model of the information sharing environment. A Document allows tracing and exchanging information in a persistent manner in almost any possible electronic format; this information is expected to provide details on and express specific associations between other Entity Classes such as Agents, Objects, Events, Risks, Locations etc.

Name	Type	Description
Identifier	UniqueIdentifier	Identifier of the document.
		Each UniqueIdentifier can be correlated with other UniqueIdentifiers, either manually, by operators, or automatically, by systems, so that duplicate objects in the network can be identified and brought together for a better understanding of the information being shared.
Metadata	Metadata	Class Metadata will be used to carry more specific information about documents.
Subject	String	The topic of the content of the resource. Typically, a Subject will be expressed as keywords or key phrases or classification codes that describe the topic of the resource. Recommended best practice is to select a value from a controlled

		vocabulary or formal classification scheme
Title	String	A name given to the resource, e.g. the official name of the publication in English language
Version	String	Indicates the version number of the document/resource.

8.1.6.2.5. EventDocument Class

This sub-class allows the identification and exchange of Event related documents and material in electronic format.

Name	Type	Description
DocumentType	EventDocumentType	Electronic material related to individual events (or more specifically one of its sub-classes: movement, anomaly, incident or action).

8.1.6.2.6. LocationDocument Class

This sub-class allows the identification and exchange of Location related documents and material in electronic format.

Name	Type	Description
DocumentType	LocationDocumentType	Electronic material related to specified Location.

8.1.6.2.7. OrganizationDocument Class

This sub-class allows the identification and exchange of Organization related documents and material in electronic format.

Name	Type	Description
DocumentType	OrganizationDocumentType	Electronic material related to individual identified Organization or one of its sub-classes.

8.1.6.2.8. PersonDocument Class

This sub-class allows the identification and exchange of Person related documents and material in electronic format.

Name	Type	Description
DocumentType	PersonDocumentType	Electronic material related to individual Persons.

8.1.6.2.9. RiskDocument Class

This sub-class allows the identification and exchange of Risk related documents and material in electronic format.

Name	Type	Description
DocumentType	RiskDocumentType	Electronic material related to individual risks.

8.1.6.2.10. Stream Class

Stream of information.

Name	Type	Description
StreamType	StreamType	Type of the stream. Each stream type is linked to a specific standard.
StreamURI	xs:anyURI	Endpoint of the stream, from which the information can be downloaded.

8.1.6.2.11. VesselDocument Class

This sub-class allows the identification and exchange of Vessel related documents and material in electronic format.

Name	Type	Description
DocumentType	VesselDocumentType	Electronic material related to individual vessels.

8.1.6.2.12. CargoDocumentType Class

This enumeration presents the possible types of documents related to cargo.

Name	Type	Description
CARGO_MANIFEST		Basic information about the cargo. Would include also links to further information: bill of lading, cargo bill, liner way bill
VAT_EXCEPTION		VAT exception.

ENTRY_SUMMARY_DECLARATION	entry summary declaration.
IMOFAL_FORM_2_CARGO DECLARATION	IMOFAL form2 cargo declaration.
IMOFAL_FORM_3_SHIPS_STORES DECLARATION	IMOFAL form3 ships stores declaration.
IMOFAL_FORM_4_CREWS_EFFECTS DECLARATION	IMOFAL form4 crews effects declaration.
NOTIFICATION_OF_DANGEROUS_GOODS	notification of dangerous goods.
IMOFAL_FORM_7_DANGEROUS_GOODS	IMOFAL form7 dangerous goods.
SINGLE_ADMINISTRATIVE_DOCUMENT	single administrative document.
CATCH_CERTIFICATE	catch certificate.
FISHING_LOGBOOK	fishing logbook.
OTHER	other.
NON_SPECIFIED	non-specified.

8.1.6.2.13. CertificateDocumentType Class

Certificate Document

Name	Type	Description
TONNAGE_CERTIFICATE		tonnage certificate.
LOAD_LINE_CERTIFICATE		load line certificate.
MINIMUM_SAFE_MANNING_DOCUMENT		minimum safe manning document.
OIL POLLUTION_PREVENTION_CERTIFICATE		oil pollution prevention certificate.
SEWAGE_POLLUTION_PREVENTION_CERTIFICATE		sewage pollution prevention certificate.
VDR_COMPLIANCE_CERTIFICATE		VDR compliance certificate.
ISM_COMPLIANCE_DOCUMENT		ISM compliance document.

Name	Type	Description
SAFETY_MANAGEMENT_CERTIFICATE		safety management certificate.
ISS_CERTIFICATE		ISS certificate.
PSS_CERTIFICATE		PSS certificate.
STPS_SA_CERTIFICATE		STPS sa certificate.
STPS_SP_CERTIFICATE		STPS sp certificate.
CSS_CONSTRUCTION_CERTIFICATE		CSS construction certificate.
CSS_EQUIPMENT_CERTIFICATE		CSS equipment certificate.
CSS_RADIO_CERTIFICATE		CSS radio certificate.
CSS_CERTIFICATE		CSS certificate.
GRAIN_AUTHORIZATION_DOCUMENT		grain authorization document.
CIVIL LIABILITY CERTIFICATE		civil liability certificate.
ENHANCED_SURVEY_DOCUMENT		enhanced survey document.
NLS_CERTIFICATE		NLS certificate.
BULK_CHEMICALS_CARRIAGE_CERTIFICATE		bulk chemicals carriage certificate.
INT_BULK_CHEMICALS_CARRIAGE_CERTIFICATE		int bulk chemicals carriage certificate.
BULK_LIQUID_GAS_CERTIFICATE		bulk liquid gas certificate.
INT_BULK_LIQUID_GAS_CERTIFICATE		int bulk liquid gas certificate.
HSC_SAFETY_CERTIFICATE		HSC safety certificate.
HSC_OPERATION_PERMIT		HSC operation permit.
IMDG_CERTIFICATE		IMDG certificate.
INF_CERTIFICATE		INF certificate.
REGISTRY_CERTIFICATE		registry certificate.
HULL_CLASS_CERTIFICATE		hull class certificate.

Name	Type	Description
ENGINE_CLASS_CERTIFICATE		engine class certificate.
PAND_I_CERTIFICATE		pand I certificate.
ILO_133_CERTIFICATE		ILO133 certificate.
ILO_92_CERTIFICATE		ILO92 certificate.
ITF_BLUE_CARD		ITF blue card.
DECLARATION_OF_HEALTH		declaration of health.
GAS_FREE_CERTIFICATE		gas free certificate.
DE_RAT_CERTIFICATE		de rat certificate.
CERTIFICATE		certificate.
OTHER		other.
NON_SPECIFIED		non-specified.

8.1.6.2.14. EventDocumentType Class

This enumeration presents the possible types of documents related to different events (movements, actions, anomalies, incidents).

Name	Type	Description
REGIONAL_MONITORS		Observation reports from different EU regions related to issues reported via EUROSUR (e.g. irregular migration, related cross-border crime, crisis, other).
INCIDENT_REPORT		Documents containing the detailed report of incidents reported via SSN (e.g. waste, situations, pollution, containers or packages drifting at sea, failed vessel notifications, VTS rules infringements, banned ships, insurance failures, anomaly reports by pilots or ports).
ENVIRONMENTAL INCIDENT_DOCUMENT		Documents and reports that describe environmental incidents (e.g. oil pollution)
EVACUATION_ORDERS		Detailed orders related to evacuation situations.

Name	Type	Description
ACCIDENT_REPORT		Detailed reports of accidents in sea.
HAZARDS_MAPPING_AND_TRACKING_HUMANITARIAN_ASSISTANCE		hazards mapping and tracking humanitarian assistance.
ORGANIZED_CRIME_DOCUMENTS		organized crime documents.
TERRORIST_THREAD_DOCUMENTS		terrorist thread documents.
SHIP_HIJACKING_SUSPICION_REPORT		ship hijacking suspicion report.
CREW_HOSTAGING_SUSPICION_REPORT		crew hostage suspicion report.
WEAPONS_ONBOARD_SUSPICION_REPORT		weapons onboard suspicion report.
INITIAL_PIRACY_ATTACK_REPORT		Initial report about piracy attack as defined in IMO MSC Circular 1333.
FOLLOW_UP_PIRACY_ATTACK_REPORT		Follow-up report about piracy attack as defined in IMO MSC Circular 1333.
OTHER		Any other document related to events not mentioned above
NON_SPECIFIED		Type of document not specified.

8.1.6.2.15. LocationDocumentType Class

This enumeration presents the possible types of documents related to a location.

Name	Type	Description
PORT_LAW		port law.
PORT_REGULATIONS		port regulations.
PORT_SERVICES		port services.
PORT_FACILITIES		port facilities.
PORT_DUES		port dues.
PORT_INFRASTRUCTURES		port infrastructures.

Name	Type	Description
PORT_PLANNING_AND_DEVELOPMENT		port planning and development.
OPERATIONAL_INFRASTRUCTURES		operational infrastructures.
MARITIME_ACCESS		maritime access.
MARINE_SERVICES_AND_FACILITIES		marine services and facilities.
HARBORMASTER		harbormaster.
HYDROGRAPHIC_MAP		hydrographic map.
MARITIME_INFRASTRUCTURES		maritime infrastructures.
METEOROLOGICAL_MAPS		meteorological maps.
OCEANOGRAPHIC_MAPS_PER_SEASON		oceanographic maps per season.
LEGAL_MAPS		legal maps.
MARINE_RESOURCES		marine resources.
MARINE_RESOURCES_POTENTIAL		marine resources potential.
REMNENT_POLLUTION		remnant pollution.
SEABED_HAZARDS		seabed hazards.
NATURA_2000 AREAS		natura2000 areas.
AREAS_MARPOL		areas MARPOL.
LOCATION_OF AREAS_WITH_RICH_ARCHAEOLOGICAL_HERITAGE		location of areas with rich archaeological heritage.
LOCATION_OF_PSSA PARTICULAR_SENSITIVE AREAS		location of PSSA particularly sensitive areas.
LOCATION_OF_OTHER_TYPE_S_OF_MARINE_PROTECTED AREAS		location of other types of marine protected areas.

Name	Type	Description
LOCATION_OF_SENSITIVE_AREAS_FOR_CETACEANS_AND_TYPE_OF_RESTRICTIONS_FOR_MARITIME_OPERATION_S_ACCORDING_NATIONAL_LAWS		location of sensitive areas for cetaceans and type of restrictions for maritime operations according national laws.
CHANGE_FREQUENCY_OF_OBSERVATIONS_OF_ENDANGERED_AND_PROTECTED_SPECIES		change frequency of observations of endangered and protected species.
LOCATIONS_OF_MIGRATORY_PATHS_OR_ROUTES		locations of migratory paths or routes.
SEA_STATE_WIND_AND_CURRENT_INFORMATION		sea state wind and current information.
SEA_SURFACE_TEMPERATURE_INFORMATION		sea surface temperature information.
AIR_TEMPERATURE_INFORMATION		air temperature information.
VISIBILITY_INFORMATION		visibility information.
WAVE_HEIGHT_INFORMATION		wave height information.
GLOBAL_REGION_TIDES_INFORMATION		global region tides information.
ICE_INFORMATION		ice information.
CURRENTSM_SALINITY_TEMPERATURE_OPACITY_AT_DIFFERENT_DEPTH		currentsm salinity temperature opacity at different depth.
CHEMICAL_CONCENTRATIONS_IN_WATER_COLUMN		chemical concentrations in water column.
ELABORATED_SECTORAL_INFORMATION		elaborated sectoral information.
EMERGING AREAS RICH IN NUTRIENTS AND PARTICULAR MARINE CURRENTS		emerging areas rich in nutrients and particular marine currents.
REAL_TIME_CLOSURE_OF_FISHING.Areas		real time closure of fishing areas.
INFORMATION_ABOUT_PAST_PIRACY_INCIDENTS		information about past piracy incidents.

Name	Type	Description
MAPS_OF_PIRACY INCIDENT DISTRIBUTION		maps of piracy incident distribution.
MAPS_OF_SHIP_TRAFFIC DISTRIBUTION_PER_SHIP_TYPE AND_PER_SEASON		maps of ship traffic distribution per ship type and per season.
SHORE_BASES_OF_PIRATES AND THEIR_CURRENT_ACTIVITY_LEVEL		shore bases of pirates and their current activity level.
ACTUAL_LOCATIONS_OF_MERCHANT_AND_FISHING_SHIPS		actual locations of merchant and fishing ships.
ACTUAL_LOCATIONS_OF_NAVAL_PATROL_SHIPS		actual locations of naval patrol ships.
PIRATE_SHIPS_ATACKS_LOCATIONS		pirate ships attacks locations.
LOCATIONS_OF_BASES_OF_PATROL_ASSETS		locations of bases of patrol assets.
MAPS_OF_PAST_NON_PIRACY_INCIDENTS_DISTRIBUTION NOT_ONLY_ON_SEA_BUT ALSO_ON_THE_SHORES		maps of past non-piracy incidents distribution not only on sea but also on the shores.
OTHER		other.
NON_SPECIFIED		non-specified.

8.1.6.2.16. OrganizationDocumentType Class

This enumeration presents the possible types of documents that can be related to organizations.

Name	Type	Description
HARBOUR_SECURITY_DOCUMENT		Documents that related to a specific harbour and deal with security issues.
ISPS_CODE		Documents that are related to an organization and deal with IMO ISPS Code.
MAP		Any type of map related to the organization.
OTHER		Any other type of document not specified above.

NON_SPECIFIED	Type of the document not specified.
---------------	-------------------------------------

8.1.6.2.17. PersonDocumentType Class

This enumeration presents the possible types of documents that can be related to individual persons.

Name	Type	Description
TRAVEL_DOCUMENT		Document that enables the entry and exit from one country to another (e.g. Passport).
NATIONAL_ID		National identification document.
DRIVERS_LICENSE		Document proving the right to drive a car.
SEAFARERS_ID_DOCUMENT		Special identification document for seafarers (e.g. SeamansBook)
CREW_CERTIFICATES		Certificate of ability to hold a certain post in vessel.
RESIDENCE_PERMIT		Document proving that a person has right to stay in the country (e.g. MigrationCard, CruiseShipIDCard (passangers))
WORK_PERMIT		Document proving that a person has right to work in the country (e.g. WorkCard, BlueCard)
WORK_CERTIFICATE		Document proving the past employment of a person (e.g. EmploymentRecordBook)
HEALTH_CERTIFICATE		Document stating the health status of the person.
BIRTH_CERTIFICATE		The official birth certificate of a person
DEATH_CERTIFICATE		The official death certificate of a person
CRIMINAL_RECORD		Persons criminal record
PHOTOGRAPH		Photograph of a person.
OTHER		Any other document not mentioned above

NON_SPECIFIED	Type of the document not specified
---------------	------------------------------------

8.1.6.2.18. RiskDocumentType Class

This enumeration presents the possible types of documents related to risks.

Name	Type	Description
BRIEFING_NOTES		briefing notes.
ROUTE_DESCRIPTION		route description.
FACILITATIONANALYSIS		facilitationanalysis.
MIGRANT_PROFILE		migrant profile.
KEY_DEVELOPMENTS		key developments.
RISK_RATINGS		risk ratings.
HAZMAT_NOTIFICATION		HAZMAT notification.
RISK_ASSESSMENT		risk assessment.
ORGANISED_CRIME_DOCUMENTS		organised crime documents.
TERRORIST_THREAT_DOCUMENTS		terrorist threat documents.
SHIP_HIJACKING_SUSPICION_REPORT		ship hijacking suspicion report.
CREW_HOSTAGING_SUSPICION_REPORT		crew hostage suspicion report.
WEAPONS_ON_BOARD_SUSPICION_REPORT		weapons on board suspicion report.
OTHER		other.
NON_SPECIFIED		non-specified.

8.1.6.2.19. StreamType Class

Types of streams. Each type is associated to a specific standard.

Name	Type	Description
VIDEO		Video stream in format MPEG4 H264
IMAGE_MAP		Image map in format WMS

VECTORIAL_MAP	Vectorial map in format WFS
RADAR	VTS exchange format IVEF
AIS	Stream format in ITU-RM1371

8.1.6.2.20. VesselDocumentType Class

This enumeration presents the possible types of electronic material that can be related to individual vessels.

8.1.7. Event Core Entity

8.1.7.1. Event UML Models

The following figure depicts the diagram of the classes that belong to the Event Core Entity:

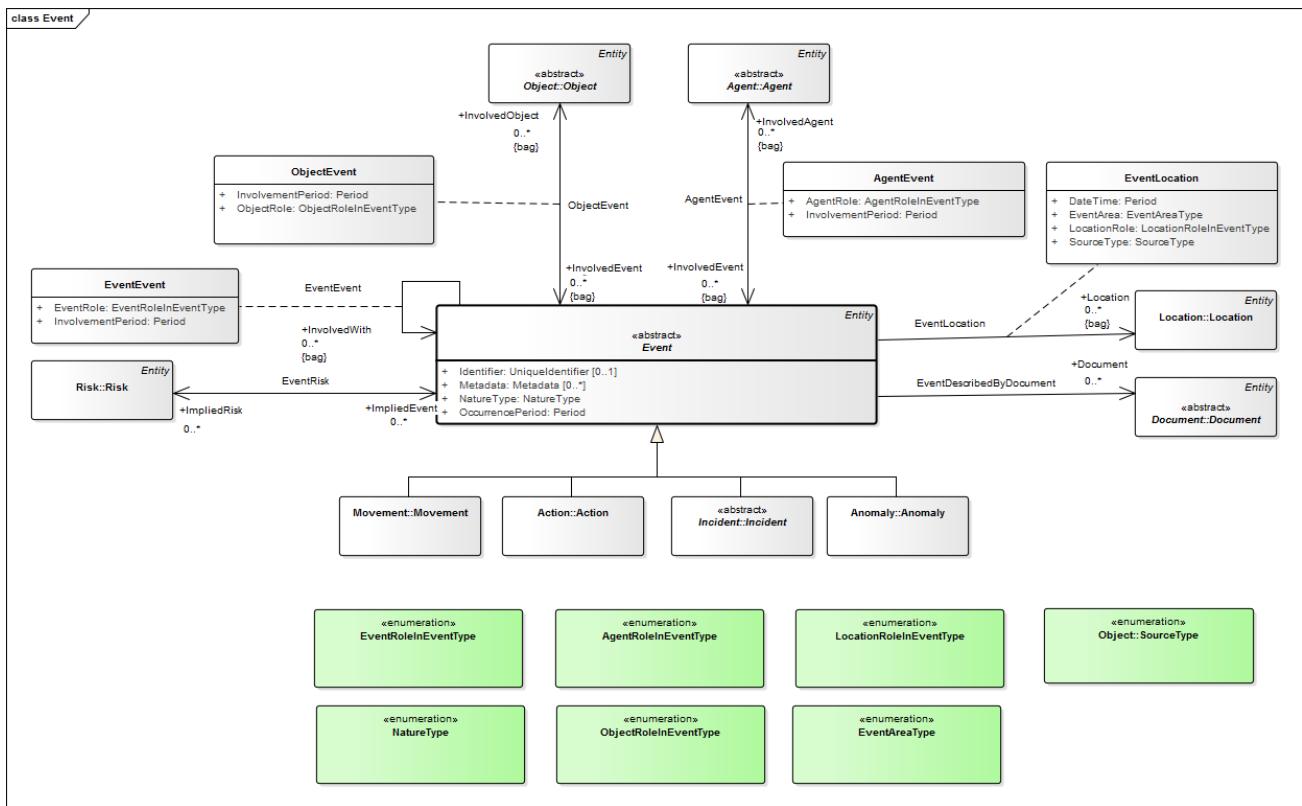


Figure 8-7 - CISE Event model

8.1.7.2. Event Vocabulary

8.1.7.2.1. AgentEvent Class

This class allows the association between Agent (or one of its sub-classes: person, organization) and Event (or one of its sub-classes: movement, incident, anomaly, action). It is not mandatory to associate an Agent with an Event but one Agent can be associated to multiple different Events. The association further describes the role of the Agent in the Event.

Name	Type	Description

AgentRole	AgentRoleInEventType	Enumerated. Describes the role of Agent in the Event
InvolvementPeriod	Period	The Period of Involvement

8.1.7.2.2. Event Class

The Event is one of the core entities of the overall data model of the information sharing environment. It is an entity which holds information about movements, anomalies, incidents or actions which occur in the maritime domain. Event can have relationships with other events, objects, agents, documents, periods and locations. Event can also be related to risks in different roles. Event is an abstract entity which has four sub-entities: Movement, Anomaly, Incident and Action.

Name	Type	Description
Identifier	UniqueIdentifier	Identifier of the event.
Metadata	Metadata	see: Core Vocabularies Specification for "Metadata"
NatureType	NatureType	Enumerated. Is used to define nature of the event. An event can be observed, declared, estimated or simulated.
OccurrencePeriod	Period	An Event occurs during a period of time.

8.1.7.2.3. EventEvent Class

Events (movements, incidents, anomalies, actions) can be involved in zero to multiple events (movements, incidents, anomalies, actions) in many different roles.

Name	Type	Description
EventRole	EventRoleInEventType	Enumerated. Describes the relationship between two Events
InvolvementPeriod	Period	The Period of Involvement

8.1.7.2.4. EventLocation Class

This class allows the association between Location and Event (or one of its sub-classes: Movement, Anomaly, Incident and Action). It is not mandatory to associate a Location with an Event but one Location can be associated to multiple different Events. The association further describes the role of the Location in relation to the Event.

Name	Type	Description
DateTime	Period	The date and time at which the Location starts to be associated to the Event.
EventArea	EventAreaType	
LocationRole	LocationRoleInEventType	Enumerated. Describes the relationship between the Event and the Location.
SourceType	SourceType	

8.1.7.2.5. ObjectEvent Class

This class allows the association between Object (or one of its sub-classes: vehicle, cargo) and Event (or one of its sub-classes: Movement, Anomaly, Incident, Action). It is not mandatory to associate an Object with an Event but one Object can be associated to multiple different Events. The association further describes the role of the Object in relation to the Event.

Name	Type	Description
InvolvementPeriod	Period	The Period of Involvement
ObjectRole	ObjectRoleInEventType	Enumerated. Describes the relationship between the Event and the Object.

8.1.7.2.6. AgentRoleInEventType Class

This enumeration presents the possible roles that an Agent can have in relation to Event

Name	Type	Description
COORDINATOR		Coordinates the Event
PARTICIPANT		Participates the Event
OBSERVER		Observes the Event
CAUSE		Causes/has caused the Event
REPORTER		Reports about the Event
VICTIM		Victim of the Event

INFORMED	Is informed about the Event
PERPETRATOR	Is the perpetrator/actor of the Event
OTHER	Any other role not mentioned above
NON_SPECIFIED	Role not specified

8.1.7.2.7. EventAreaType Class

In order to define the possible types a Location can have when in relation to an Event; we suggest reusing the work already done during the "tactical situation object" project. Among many artifacts, a list of area type has been defined. During the scope of the Cooperation project, we chose to limit the enumeration list to the first level defined by the tactical situation object project. Sub-levels are also defined and their adoption could be considered in future developments of the data model (see "Disaster and emergency management - Shared situation awareness - Part 2: Codes for the message structure.").

Name	Type	Description
AIR		Aerial area
CMB		Combat-related area
DGR		Polluted/dangerous area
FLAME		Area in combustion
GEN		General purpose area
PLUME		Trails of hazardous emissions from an incident influenced by\nthe wind and other weather conditions that are laden with\nparticulates and gaseous pollutants
SMOKE		Cloud of fine particles resulting from a combustion suspended\nin a gas of hot vapour which potentially can impact on people
VULN		Area where people will be at risk
OTHER		Any other role not mentioned above
NON_SPECIFIED		Role not specified

8.1.7.2.8. EventRoleInEventType Class

This enumeration presents the role an Event can have in respect to another Event.

Name	Type	Description
------	------	-------------

CAUSES	Event which is the cause of other Event(s)
RESPONDS	Event which responds to other Event(s)
PREVENTS	Event which prevents other Event(s)
ENCOMPASSES	Event which encompasses the other Event(s)
REQUIRES	Event which requires other Event(s)
OTHER	Any other role not mentioned above
NON_SPECIFIED	Role not specified

8.1.7.2.9. LocationRoleInEventType Class

This enumeration presents the possible roles that a Location can have in relation to an Event.

Name	Type	Description
START_PLACE		The Location is the start place of the Event
END_PLACE		The Location is the end place of the Event
LAST_PLACE		The Location is the last place known of the Event
NEXT_PLACE		The Location is the next place of the Event
OTHER		Any other role not mentioned above
NON_SPECIFIED		Role not specified

8.1.7.2.10. NatureType Class

This enumeration presents the different natures of an Event.

Name	Type	Description
OBSERVED		The Event is observed
DECLARED		The Event is declared
ESTIMATED		This Event is estimated

SIMULATED	The Event is simulated
OTHER	Any other type not mentioned above
NON_SPECIFIED	Type not specified

8.1.7.2.11. ObjectRoleInEventType Class

This enumeration presents the possible roles that an Object can have in relation to an Event

Name	Type	Description
COORDINATOR		Coordinates the Event
PARTICIPANT		Participates the Event
OBSERVER		Observes the Event
CAUSE		Causes/has caused the Event
REPORTER		Reports about the Event
VICTIM		Victim of the Event
MEAN		A mean used during the Event
OTHER		Any other role not mentioned above
NON_SPECIFIED		Role not specified

8.1.8. Incident Core Entity

8.1.8.1. Incident UML Models

The following figure depicts the diagram of the classes that belong to the Incident Core Entity:

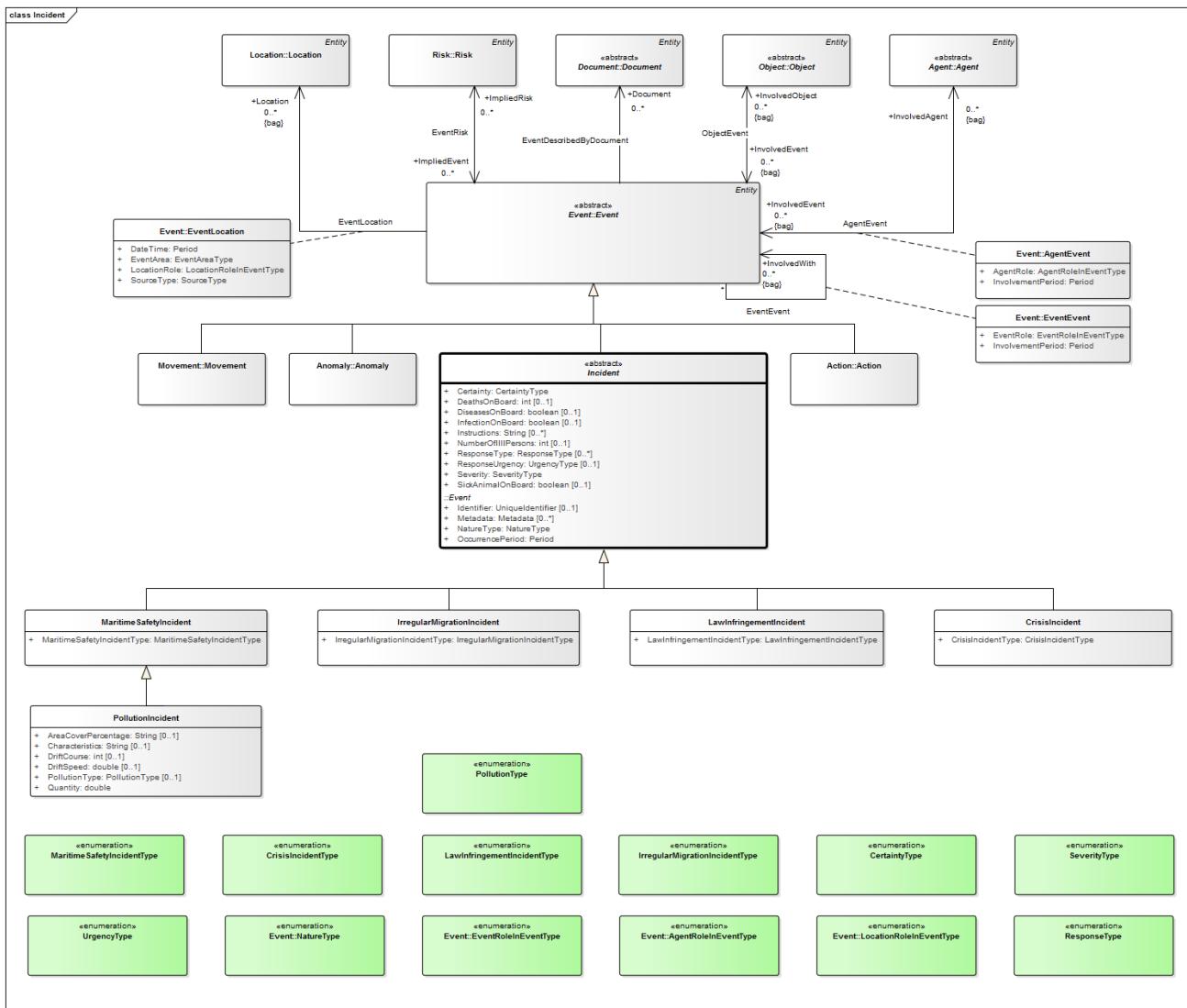


Figure 8-8 - CISE Incident model

8.1.8.2. Incident Vocabulary

8.1.8.2.1. CrisisIncident Class

The CrisisIncident class is a sub-class of Incident and is used to determine types of incidents related to crisis situations as defined by the EUROSUR project.

Name	Type	Description
CrisisIncidentType	CrisisIncidentType	The type of crisis incident

8.1.8.2.2. Incident Class

The class Incident is a sub-class of the abstract class Event. An incident refers to a particular happening, sometimes criminal but always noteworthy. Incident can have the same associations and relationships than the parent-class Event. Thus it can have relationship with other agents, objects, documents and locations or it can be related to risks. An incident can also be associated with other(s) incident(s) (an incident can cause

others for example). Incident has four sub-classes: MaritimeSafetyIncident, IrregularMigrationIncident, LawInfringementIncident and CrisisIncident.

Name	Type	Description
Certainty	CertaintyType	The code denoting the certainty of the incident as described by the OASIS Common Alerting Protocol (OASIS-CAP)
DeathsOnBoard	int	The number of deaths on board as defined by the draft NSW datasets.
DiseasesOnBoard	boolean	Indicates the presence of diseases on board as defined by the draft NSW datasets.
InfectionOnBoard	boolean	Indicates the presence of infection on board as defined by the draft NSW datasets.
Instructions	String	The text describing the recommended action to be taken by recipients of the alert message
NumberOfIllPersons	int	The number of ill persons on board as defined by the draft NSW datasets.
ResponseType	ResponseType	The code denoting the type of action recommended for the target audience
ResponseUrgency	UrgencyType	The code denoting the urgency of the incident as described by the OASIS Common Alerting Protocol (OASIS-CAP)
Severity	SeverityType	The code denoting the severity of the incident as described by the OASIS Common Alerting Protocol (OASIS-CAP)
SickAnimalOnBoard	boolean	Indicates the presence of sick animals on board as defined by the draft NSW datasets.

8.1.8.2.3. IrregularMigrationIncident Class

The IrregularMigrationIncident class is a sub-class of Incident and is used to determine types of incidents related to irregular migration as defined by the EUROSUR project.

Name	Type	Description
IrregularMigrationIncidentType	IrregularMigrationIncidentType	The type of irregular migration incident

8.1.8.2.4. LawInfringementIncident Class

The LawInfringementIncident class is a sub-class of Incident and is used to determine types of incidents related to law infringement as defined by the EUROSUR project.

Name	Type	Description
LawInfringementIncidentType	LawInfringementIncidentType	The type of law infringement incident

8.1.8.2.5. MaritimeSafetyIncident Class

The MaritimeSafetyIncident class is a sub-class of Incident and is used to determine types of incidents related to maritime safety as defined by the SafeSeaNet project.

Name	Type	Description
MaritimeSafetyIncidentType	MaritimeSafetyIncidentType	The type of maritime safety incident.

8.1.8.2.6. PollutionIncident Class

The PollutionIncident is a type of Maritime Safety Incident and is used to exchange specific information about pollution. The position and extend of the pollution can be described by the entity Location.

Name	Type	Description
AreaCoverPercentag e	String	Observer's assessment of the percentage of the boxed dimensioned area (length x width), covered with pollution. In percentage. (The polluted area can be described by the entity Location.)
Characteristics	String	Gives type of pollution (e.g. type of oil with viscosity and pour point, packaged or bulk chemical, sewage). For chemicals, the proper name or United Nations number, if known, should be given. Appearance, e.g. liquid, floating solid, liquid oil, semi-liquid sludge, tarry lumps, weathered oil, discolouration of sea, visible vapour should also be given as well as any markings on drums, containers.
DriftCourse	int	Indicates drift course in degrees.
DriftSpeed	double	Indicates drift speed of pollution knots. In cases of air pollution (gas cloud), drift speed should be indicated in m/sec
PollutionType	PollutionType	The pollution type observed.

Quantity	double	Maximum quantity of oil pollution in cubic metres.
----------	--------	--

8.1.8.2.7. CertaintyType Class

This enumeration presents the certainty of an incident as defined by the OASIS common alerting protocol.

Name	Type	Description
OBSERVED		Determined to have occurred or to be ongoing
LIKELY		Likely ($p > \sim 50\%$)
POSSIBLE		Possible but not likely ($p \leq \sim 50\%$)
UNLIKELY		Not expected to occur ($p \sim 0$)
UNKNOWN		Certainty unknown
OTHER		Any other certainty not mentioned above
NON_SPECIFIED		Certainty not specified

8.1.8.2.8. CrisisIncidentType Class

This enumeration presents the incident types related to crisis situations.

Name	Type	Description
NATURAL_DISASTER_TSUNAMI		natural disaster tsunami.
NATURAL_DISASTER_EARTHQUAKE		natural disaster earthquake.
NATURAL_DISASTER_HEAT_WAVE		natural disaster heat wave.
NATURAL_DISASTER_WILD_FIRE		natural disaster wild fire.
NATURAL_DISASTER_FLOOD		natural disaster flood.
NATURAL_DISASTER_VOLCANIC_ERUPTION		natural disaster volcanic eruption.
NATURAL_DISASTER_STORM		natural disaster storm.
NATURAL_DISASTER_SNOW_STORM		natural disaster snow storm.

Name	Type	Description
NATURAL_DISASTER_TROPICAL_STORM		natural disaster tropical storm.
NATURAL_DISASTER_LIGHTNING_STRIKE		natural disaster lightning strike.
NATURAL_DISASTER_LANDSLIDE		natural disaster landslide.
NATURAL_DISASTER_AVALANCHE		natural disaster avalanche.
NATURAL_DISASTER_OUTBREAK_OF_INFECTIOUS_DISEASE_AND_OTHER_BIO_HAZARD		natural disaster outbreak of infectious disease and other bio hazard.
NATURAL_DISASTER_OTHER		natural disaster other.
MAN_MADE_DISASTER_MAN MADE_FIRE		man made disaster man made fire.
MAN_MADE_DISASTER_MAN MADE_EXPLOSION		man made disaster man made explosion.
MAN_MADE_DISASTER_MARITIME_ACCIDENT		man made disaster maritime accident.
MAN_MADE_DISASTER_AIRCRAFT_ACCIDENT		man made disaster aircraft accident.
MAN_MADE_DISASTER_RADIATION		man made disaster radiation.
MAN_MADE_DISASTER_OIL_POLLUTION		man made disaster oil pollution.
MAN_MADE_DISASTER_WASTE_POLLUTION		man made disaster waste pollution.
MAN_MADE_DISASTER_ANY_OTHER_MAN_MADE_DISASTER		man made disaster any other man made disaster.
VIOLENCE_ASSASSINATION		violence assassination.
MAN_MADE_DISASTER_TERRORIST_ATTACK		man made disaster terrorist attack.
VIOLENCE_BOMBING		violence bombing.
VIOLENCE_DISORDER_PROTEST_MUTINY		violence disorder protest mutiny.

Name	Type	Description
VIOLENCE_AIR_MISSILE_ATTACK		violence air missile attack.
VIOLENCE_BIO_CHEMICAL_ATTACK		violence bio chemical attack.
VIOLENCE_HEAVY_WEAPON_S_FIRE		violence heavy weapons fire.
VIOLENCE_SHOOTING		violence shooting.
VIOLENCE_STABBING		violence stabbing.
VIOLENCE_PHYSICAL_ATTACK		violence physical attack.
VIOLENCE_EXECUTION		violence execution.
VIOLENCE_VANDALISM		violence vandalism.
VIOLENCE_ROBBERY		violence robbery.
VIOLENCE_KIDNAPPING_HOSTAGE_TAKING		violence kidnapping hostage taking.
MINES_EXPLOSIVES		mines explosives.
ARMED_CONFLICT		armed conflict.
HUMANITARIAN_CRISIS		humanitarian crisis.
OTHER		Any other response not mentioned above
NON_SPECIFIED		Response not specified

8.1.8.2.9. IrregularMigrationIncidentType Class

This enumeration presents the irregular migration incident types.

Name	Type	Description
IRREGULAR_BORDER_ENTRY		Irregular border entry
EVENT_REFUSED_BORDER_ENTRY		Refused border entry
IRREGULAR_ENTRY_ATTEMPT		Irregular entry attempt
IRREGULAR_BORDER_EXIT		Irregular border exit
REFUSED_BORDER_ENTRY		Refused border entry

IRREGULAR_EXIT_ATTEMPT	Irregular exit attempt
IRREGULAR_STAY	Irregular stay
FACILITATOR_INTERCEPTIO N	Facilitator interception
FACILITATOR_DISCLOSURE	Facilitator disclosure
INTERCEPTION_IN_THIRD_C OUNTRY_TERRITORY	Event::Interception in third country territory
OTHER	Any other incident not mentioned above
NON_SPECIFIED	Incident not specified

8.1.8.2.10. LawInfringementIncidentType Class

This enumeration presents the law infringement incident types.

Name	Type	Description
HUMAN_TRAFFICKING_EXPL OITATION_OF_PROSTITUTIO N_OF_OTHERS		human trafficking exploitation of prostitution of others.
HUMAN_TRAFFICKING_OTH ER_FORMS_OF_SEXUAL_EXP LOITATION		human trafficking other forms of sexual exploitation.
HUMAN_TRAFFICKING_FORC ED_LABOUR_OR_SERVICES		human trafficking forced labour or services.
HUMAN_TRAFFICKING_SLAV ERY_OR_PRACTICES_SIMILA R_TO_SLAVERY		human trafficking slavery or practices similar to slavery.
HUMAN_TRAFFICKING_SERV ITUDE		human trafficking servitude.
HUMAN_TRAFFICKING_EXPL OITATION_OF_ACTIVITIES_A SSOCIATED_WITH_BEGGING _OR_OF_UNLAWFUL_ACTIVI TIES		human trafficking exploitation of activities associated with begging or of unlawful activities.
HUMAN_TRAFFICKING_REM OVAL_OF_ORGANS		human trafficking removal of organs.
HUMAN_TRAFFICKING_OTH ER		human trafficking other.

Name	Type	Description
DRUG_SMUGGLING_MARIHUA ANA		drug smuggling marihuana.
DRUG_SMUGGLING_COCAIN E		drug smuggling cocaine.
DRUG_SMUGGLING_HASHIS H		drug smuggling hashish.
DRUG_SMUGGLING_CANNA BIS		drug smuggling cannabis.
DRUG_SMUGGLING HEROIN		drug smuggling heroin.
DRUG_SMUGGLING_AMPHET AMINE		drug smuggling amphetamine.
DRUG_SMUGGLING_METAM PHETAMINE		drug smuggling metamphetamine.
DRUG_SMUGGLING_ECSTAS Y		drug smuggling ecstasy.
DRUG_SMUGGLING_OPIUM		drug smuggling opium.
DRUG_SMUGGLING_HALLUC INOGENS		drug smuggling hallucinogens.
DRUG_SMUGGLING_OTHER_ DRUGS		drug smuggling other drugs.
GOODS_SMUGGLING_GOODS _CARRIED_WITH_NO_REQUI RED_PERMITS		goods smuggling goods carried with no required permits.
GOODS_SMUGGLING_EXCISE _GOODS		goods smuggling excise goods.
GOODS_SMUGGLING_COUNT ERFEITED_PRODUCTS		goods smuggling counterfeited products.
GOODS_SMUGGLING_NATUR AL_RESOURCES_MINERALS		goods smuggling natural resources minerals.
GOODS_SMUGGLING_THREA TENED_SPECIES		goods smuggling threatened species.
GOODS_SMUGGLING_CULTU RAL_HERITAGE_GOODS		goods smuggling cultural heritage goods.
SMUGGLING_IN_WASTE_AN D_OTHER_HAZARDOUS_MAT ERIAL_WASTE		smuggling in waste and other hazardous material waste.

Name	Type	Description
SMUGGLING_IN_WASTE_AN D_OTHER_HAZARDOUS_MATERIAL_CHEMICAL		smuggling in waste and other hazardous material chemical.
SMUGGLING_IN_WASTE_AN D_OTHER_HAZARDOUS_MATERIAL_BIOHAZARD		smuggling in waste and other hazardous material biohazard.
SMUGGLING_IN_WASTE_AN D_OTHER_HAZARDOUS_MATERIAL_RADIO_ACTIVE		smuggling in waste and other hazardous material radio active.
SMUGGLING_IN_WASTE_AN D_OTHER_HAZARDOUS_MATERIAL_NUCLEAR		smuggling in waste and other hazardous material nuclear.
SMUGGLING_IN_WASTE_AN D_OTHER_HAZARDOUS_MATERIAL_OTHER_DANGEROUS_SUBSTANCES		smuggling in waste and other hazardous material other dangerous substances.
SMUGGLING_IN_WEAPON_AND_RELATED_ACCESSORIES_ARMS_WEAPONS		smuggling in weapon and related accessories arms weapons.
SMUGGLING_IN_WEAPON_AND_RELATED_ACCESSORIES_WEAPON_OF_MASS_DESTRUCTION		smuggling in weapon and related accessories weapons of mass destruction.
SMUGGLING_IN_WEAPON_AND_RELATED_ACCESSORIES_AMMUNITION		smuggling in weapon and related accessories ammunition.
SMUGGLING_IN_WEAPON_AND_RELATED_ACCESSORIES_EXPLOSIVES		smuggling in weapon and related accessories explosives.
SMUGGLING_IN_OTHER_MATERIAL		smuggling in other material.
OTHER RELATED CROSS BORDER CRIMINAL ACTIVITY_STOLEN VEHICLE		other related cross border criminal activity stolen vehicle.
OTHER RELATED CROSS BORDER CRIMINAL ACTIVITY_DOCUMENT_FALSIFICATION_FRAUD		other related cross border criminal activity document falsification fraud.

Name	Type	Description
OTHER_RELATED_CROSS_BORDER_CRIMINAL_ACTIVITY_OTHER		other related cross border criminal activity other.
LAW_INFRINGEMENT_BY_VESSELS		law infringement by vessels.
ILLEGAL_FLIGHT_OF_AN_AIRCRAFT		illegal flight of an aircraft.
LAW_INFRINGEMENT_BY_VEHICLES		law infringement by vehicles.
OTHER_ADMINISTRATIVE_OFFENSE		other administrative offense.
OTHER		Any other response not mentioned above
NON_SPECIFIED		Response not specified

8.1.8.2.11. MaritimeSafetyIncidentType Class

This enumeration presents the maritime safety incident types.

Name	Type	Description
POLLUTION		Pollution
WASTE		Waste
LOST_FOUND_CONTAINERS		Lost or Found Containers
VTS_RULES_INFRINGEMENT		VTS Rules Infringement
BANNED_SHIP		Banned Ship
INSURANCE_FAILURE		Insurance Failure
RESULT_INSPECTION		Result Inspection
PILOT_OR_PORT_REPORT		Pilot Or Port Report
FIRE		Fire
COLLISION		Collision
MEDICO		Medico
GROUNDING		Grounding
FLOODING		Flooding
LIST		List

CAPSIZING	Capsizing
ENGINE_FAILURE	Engine Failure
STRUCTURAL_FAILURE	Structural failure
STEERING_GEAR_FAILURE	Steering gear failure
ELECTRICAL_GENERATING_SYSTEM_FAILURE	Electrical generating system failure
NAVIGATION_EQUIPMENT_FAILURE	Navigation equipment failure
COMMUNICATION_EQUIPMENT_FAILURE	Communication equipment failure
INCIDENT_NATURE_ABANDON_SHIP	Abandon ship
INCIDENT_NATURE_SINKING	Sinking
DETAINED_SHIP	DetainedShip
OTHER	Any other incident not mentioned above
NON_SPECIFIED	Incident not specified

8.1.8.2.12. PollutionType Class

This enumeration presents the pollution incident types.

Name	Type	Description
OIL		Oil
CHEM		Chemical
FISH		Fish Oil or Waste
VEG		Vegetable Oil or Waste
OTH		Other
UNK		Unknown

8.1.8.2.13. ResponseType Class

This enumeration presents the incident's response types as defined by the OASIS common alerting protocol.

Name	Type	Description
SHELTER		Take shelter in place or per <instruction>

Name	Type	Description
EVACUATE		Relocate as instructed in the <instruction>
PREPARE		Make preparations per the <instruction>
EXECUTE		Execute a pre-planned activity identified in <instruction>
AVOID		Avoid the subject event as per the <instruction>
MONITOR		Attend to information sources as described in <instruction>
ASSESS		Evaluate the information in this message. (This value SHOULD NOT be used in public warning applications.)
ALL_CLEAR		The subject event no longer poses a threat or concern and any follow on action is described in <instruction>
NONE		No action recommended
OTHER		Any other response not mentioned above
NON_SPECIFIED		Response not specified

8.1.8.2.14. SeverityType Class

This enumeration presents the severity of an incident as defined by the OASIS common alerting protocol.

Name	Type	Description
EXTREME		Extraordinary threat to life or property
SEVERE		Significant threat to life or property
MODERATE		Possible threat to life or property
MINOR		Minimal threat to life or property
UNKNOWN		Severity unknown
OTHER		Any other severity not mentioned above

NON_SPECIFIED	Severity not specified
---------------	------------------------

8.1.8.2.15. UrgencyType Class

This enumeration presents the urgency of an incident response as defined by the OASIS common alerting protocol.

Name	Type	Description
IMMEDIATE		Responsive action should be taken immediately
EXPECTED		Responsive action should be taken soon (within next hour)
FUTURE		Responsive action should be taken in the near future
PAST		Responsive action is no longer required
UNKNOWN		Urgency not known
OTHER		Any other urgency not mentioned above
NON_SPECIFIED		Urgency not specified

8.1.9. Location Core Entity

8.1.9.1. Location UML Models

The following figure depicts the diagram of the classes that belong to the Location Core Entity:

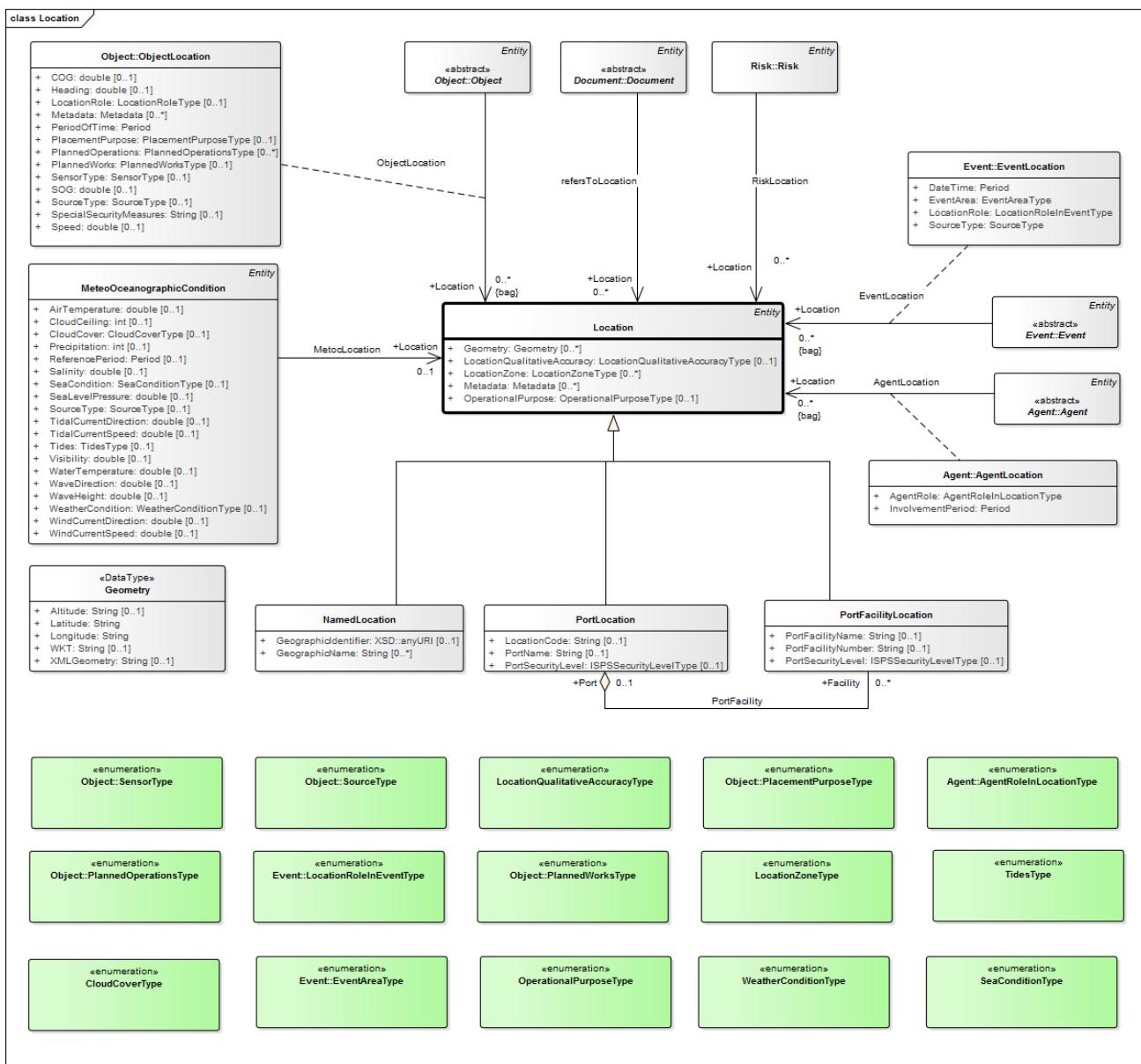


Figure 8-9 - CISE Location model

8.1.9.2. Location Vocabulary

8.1.9.2.1. Geometry Class

This class allows the definition of Georeferenced areas.

Name	Type	Description
Altitude	String	Geographic Altitude, expressed using the WGS84 reference.
Latitude	String	Geographic Latitude, expressed using the WGS84 reference.

Name	Type	Description
Longitude	String	Geographic Longitude, expressed using the WGS84 reference.
WKT	String	Well-known text (WKT) is a text markup language for representing vector geometry objects on a map
XMLGeometry	String	Geometry defined by an XML file such as KML

8.1.9.2.2. Location Class

Locations can be described in three principal ways: by using a place name, geometry or an address. The specific context will determine which method of describing a location is most appropriate. ISO 19112 defines a location as "an identifiable geographic place". With this in mind, "Eiffel Tower", "Madrid" and "California" are all locations and this is a common way of representing locations in public sector data, i.e. simply by using a recognized name. Such identifiers are common although they can be highly ambiguous as many places share the same or similar names.

In addition to a simple (string) label or name for a Location, the identifier property allows defining a Location by a Uniform Resource Identifier (URI), such as a GeoNames or DBpedia URI.

No cardinality constraints are placed on any property of the Location class so as to maximize flexibility.

Name	Type	Description
Geometry	Geometry	A Geometry Object which represents a Georeference
LocationQualitativeAccuracy	LocationQualitativeAccuracyType	Describes the qualitative accuracy of location: high/medium/low
LocationZone	LocationZoneType	Provides the types of location. Enumerated
Metadata	Metadata	Provides a placeholder for Metadata
OperationalPurpose	OperationalPurposeType	Provides the types of operational purpose. Enumerated

8.1.9.2.3. MeteoOceanographicCondition Class

This class allows the description of the meteorological oceanographic condition of a given Location.

Name	Type	Description
AirTemperature	double	Air temperature is a measure of how hot or cold the air is. It is the

Name	Type	Description
		most commonly measured weather parameter.
CloudCeiling	int	Ceiling is a measurement of the cloud base height relative to the ground (in meters).
CloudCover	CloudCoverType	Cloud cover (also known as cloudiness, cloudage or cloud amount) refers to the fraction of the sky obscured by clouds when observed from a particular location.
Precipitation	int	
ReferencePeriod	Period	Period of reference
Salinity	double	Salinity is the saltiness or dissolved salt content of the sea (in g per Kg of water).
SeaCondition	SeaConditionType	In oceanography, a sea state is the general condition of the free surface on a large body of water—with respect to wind waves and swell—at a certain location and moment.
SeaLevelPressure	double	Atmospheric pressure at sea level (in HPa).
SourceType	SourceType	Indicate if the oceanographic condition was observed or estimated. Enumerated.
TidalCurrentDirection	double	Indicates current direction in degrees and knots. The direction always indicates the direction in which the current is flowing
TidalCurrentSpeed	double	Indicates current speed in tenths of knots.
Tides	TidesType	Tides are the rise and fall of sea levels caused by the combined effects of gravitational forces exerted by the Moon, Sun, and rotation of the Earth.
Visibility	double	Visibility should be indicated in nautical miles.

Name	Type	Description
WaterTemperature	double	Water temperature.
WaveDirection	double	Indicates wave direction in degrees.
WaveHeight	double	Indicates the wave height in metres.
WeatherCondition	WeatherConditionType	Type of weather condition. Enumerated.
WindCurrentDirection	double	Indicates wind direction in degrees. The direction always indicates from where the wind is blowing.
WindCurrentSpeed	double	Indicates wind speed in m/sec.

8.1.9.2.4. NamedLocation Class

Location with a given name.

Name	Type	Description
GeographicIdentifier	xs:anyURI	<p>A URI that identifies the location.</p> <p>GeoNames.org provides stable, widely recognized identifiers for more than 10 million geographical names that can be used as links to further information. For example, http://sws.geonames.org/593116/ identifies the Lithuanian capital Vilnius. Unfortunately these URIs cannot easily be automatically deduced since the URI scheme uses simple numeric codes. Finding a GeoNames identifier for a Location is almost always a manual process. Where such identifiers are known or can be found, however, it is recommended that they be used.</p> <p>The use of a URIs has added advantages:</p>

Name	Type	Description
		<p>1.it can be used by automated systems to look up additional data (linked data);</p> <p>2. a triple store may store only one copy of the URI, whereas if a string is used, a copy of that string is always stored for each and every person in the database. Thus, in large data sets, the saving on memory capacity and the improvement in transmission efficiency can be substantial</p>
GeographicName	String	<p>A geographic name is a proper noun applied to a spatial object. The following are all valid geographic names for the Greek capital:</p> <ul style="list-style-type: none"> • Ana (the Greek endonym written in the Greek script) • Athina (the standard Romanisation of the endonym) • Athens (the English language exonym) <p>The country codes defined in ISO 3166 may be used as geographic names and these are generally preferred over either the long form or short form of a country's name (as they are less error prone). The Publications Office of the European Union recommends the use of ISO 3166-1 codes for countries in all cases except two:</p> <ul style="list-style-type: none"> • use 'UK' in preference to the ISO 3166 code GB for the United Kingdom; • use 'EL' in preference to the ISO 3166 code GR for Greece.

Name	Type	Description
		Where a country has changed its name or no longer exists (such as Czechoslovakia, Yugoslavia etc.) use the ISO 3166-3 code [ISO 3166-3].

8.1.9.2.5. PortFacilityLocation Class

Location of one of the facilities contained in a port.

Name	Type	Description
PortFacilityName	String	
PortFacilityNumber	String	Port facility identified by its IMO port facility number. Port facility number is used identify each port facility within each port. Where the whole port is being classified as a single port facility, this number is 0000. The port facility number is not duplicated inside one port but the same number can be reused in different ports. When used in connection with the port code forms an unique identification for each port facility
PortSecurityLevel	ISPSSecurityLevelType	

8.1.9.2.6. PortLocation Class

Location describing the position/area of a port.

Name	Type	Description
LocationCode	String	A location is defined as any named geographical place, recognized by a competent national body, either with permanent facilities used for goods movement associated with trade, and used for these purposes, or proposed by the government concerned or by a competent national or

Name	Type	Description
		<p>international organization for inclusion in the UN/LOCODE. A port is any location with permanent facilities at which vessels can load or discharge cargo moving in maritime traffic. An anchoring area is any location official recommended for anchoring. There are areas dedicated for different type of vessels or general. Such areas are announced in notifications or in sea charts.</p>
		<p>A code is data transformation or data representation in different forms according to pre-establish rules. (Definition adapted from ISO 5127-1:1983)</p>
		<p>A code element is result of applying a code to an element in a set of elements to be coded. In UN/LOCODE, one code element represents the name of a port, or a location, i.e. anchoring area, and in addition possible subsidiary location, i.e. an ISPS-area or -terminal. (Definition adapted from ISO 2382-4/1987) A five-character code element is provided for each location included UN/LOCODE and consists of:</p> <ul style="list-style-type: none"> a) two letters identifying the country, according to the ISO 3166 two-letter Code for the representation of names of countries, and UN/ECE/FAL recommendation No. 3, and b) three characters identifying the location within the country. <p>e.g. A vessel call for Norway, Oslo in the five-character code elements is: "NOOSL"</p>

Name	Type	Description
		the official Locode list of SSN is obtained from the UNECE (http://www.unece.org/),
PortName	String	
PortSecurityLevel	ISPSSecurityLevelType	Enumerated. Port's security level according to ISPS standard

8.1.9.2.7. CloudCoverType Class

Cloud cover is estimated in terms of how many eighths of the sky are covered in cloud, ranging from 0 oktas (completely clear sky) through to 8 oktas (completely overcast).

Name	Type	Description
CLEAR_SKY		Sky completely clear
OKTA_1		1 okta.
OKTA_2		2 oktas.
OCTA_3		3 oktas.
OKTA_4		4 oktas.
		Sky half cloudy
OKTA_5		5 oktas.
OKTA_6		6 oktas.
OKTA_7		7 oktas.
OKTA_8		8 oktas.
		Sky completely cloudy
SKY_OBSCURED		Sky obstructed from view

8.1.9.2.8. LocationQualitativeAccuracyType Class

This enumeration presents the location qualitative accuracy types.

Name	Type	Description
HIGH		High qualitative accuracy
MEDIUM		Medium qualitative accuracy
LOW		Low qualitative accuracy

OTHER	Qualitative accuracy not listed here
NON_SPECIFIED	The qualitative accuracy is not declared

8.1.9.2.9. LocationZoneType

This enumeration presents the location zone types.

Name	Type	Description
HIGH_SEAS		High seas
TERRITORIAL_WATERS		Territorial waters
COAST_LINE		Coast line
CONTIGUOUS_ZONE		Contiguous zone
PORT		Port
CONTROL_POINT		Control point
GREEN_BORDER		Green border
INLAND		Inland
EXCLUSIVE_ECONOMIC_ARE_A		Exclusive Economic Area
THIRD_COUNTRY		Third country
INW		Inland waterway. A body of water, such as a river, canal or lake. It may be navigable if it is deep and wide enough for a vessel to pass and there are no obstructions.
NAT		Natural / rural environment
OTHER		Location type not listed here
NON_SPECIFIED		The location type is not declared

8.1.9.2.10. MetocType

This enumeration presents the Metoc types.

Name	Type	Description
OBSERVED		By observation
DECLARED		By declaration

ESTIMATED	By estimation
SIMULATED	By simulation
OTHER	METOC type not listed here
NON_SPECIFIED	The METOC type is not declared

8.1.9.2.11. OperationalPurposeType

This enumeration presents the operational purpose types.

Name	Type	Description
SEARCH_AREA		Search area
SURVEILLANCE_AREA		Surveillance area
OTHER		Operational purpose not listed here
NON_SPECIFIED		The operational purpose is not declared

8.1.9.2.12. SeaConditionType

This enumeration presents the sea condition types.

Name	Type	Description
CALM_GLASSY		calm (glassy). 0 metres (0 ft)
CALM_RIPPLED		calm (rippled). Waves from 0 to 0.1 metres (0.00 to 0.33 ft)
SMOOTH_WAVELETS		smooth (wavelets). Waves from 0.1 to 0.5 metres (3.9 in to 1 ft 7.7 in)
SLIGHT		slight. Waves from 0.5 to 1.25 metres (1 ft 8 in to 4 ft 1 in)
MODERATE		moderate. Waves from 1.25 to 2.5 metres (4 ft 1 in to 8 ft 2 in)
ROUGH		rough.

Name	Type	Description
VERY_ROUGH		Waves from 2.5 to 4 metres (8 ft 2 in to 13 ft 1 in) very rough.
HIGH		Waves from 4 to 6 metres (13 to 20 ft) high.
VERY_HIGH		Waves from 6 to 9 metres (20 to 30 ft) very high.
PHENOMENAL		Waves from 9 to 14 metres (30 to 46 ft) phenomenal.
		Waves over 14 metres (46 ft)

8.1.9.2.13. TidesType

This enumeration presents the tides types.

Name	Type	Description
LOW		low tides
HIGH		high tides

8.1.9.2.14. WeatherConditionType

This enumeration presents the weather condition types.

Name	Type	Description
HUM		Humid conditions
ICY		Icy conditions
TDS		Thunderstorm conditions
WIN		Windy conditions
DRZLE		Drizzle. Fairly uniform precipitation composed exclusively of fine drops very close together. Drizzle appears to float while following air currents although, unlike fog droplets, it falls to the ground. It usually falls

Name	Type	Description
FOG		from low stratus clouds and is frequently accompanied by low visibility and fog.
OTHER		Fog/mist. A visible aggregate of minute water particles (droplets) which are based on the Earth's surface, extends vertically, and reduces horizontal visibility to less than 5/8 mile (1,000 meters). Unlike drizzle, FOG does not fall to the ground.
NON_SPECIFIED		Weather Condition type not listed here
		Weather Condition type is not declared

8.1.10. Metadata Core Entity

8.1.10.1. Metadata UML Models

The following figure depicts the diagram of the classes that belong to the Metadata Core Entity:



Figure 8-10 - CISE Metadata model

8.1.10.2. Metadata Vocabulary

8.1.10.2.1. Metadata Class

The class provides information about the properties of the data communicated through the system, excluding the content of the data.

Name	Type	Description
Abstract	String	A short account of the resource.
Comments	String	Additional comments on the resource.
CreationDate	xs:DateTime	The date and time the information was created.
Creator	Agent	An entity primarily responsible for making the resource.
Description	String	A detailed account of the resource.
Designation	String	Refers to the class/entity which is described by the metadata.
FileMediaType	FileMediaType	Content types and subtypes as defined in RFC 2046 (Main types include: application, audio, example, image, message, model, multipart, text, video)
FileSchema	xs:anyURI	
FileURI	xs:anyURI	
InformationReliabilityLevel	InformationReliabilityLevelType	
InformationSecurityClassification	InformationSecurityClassificationType	
InformationSensitivityDegree	InformationSensitivityDegreeType	This enumeration presents the possible values for information sensitivity degree. The Traffic Light Protocol (TLP) of US-CERT is applied (http://www.us-cert.gov/tlp).
Language	String	Alpha-3 codes which represent the names of language of the resource. For the languages which are defined with two codes, the 'terminological' code (ISO 639-2/T) is used instead of the 'bibliographic' one (see http://www.iso.org/iso/catalogue_detail?csnumbe=r=4767).
PublicationDate	xs:DateTime	The date and time the information was published

Publisher	Agent	An entity responsible for making the resource available.
ValidityPeriod	Period	Validity for a specific Period of time

8.1.10.2.2. FileMediaType Class

Content types and subtypes as defined in RFC 2046 (Main types include: application, audio, example, image, message, model, multipart, text, video)

Name	Type	Description
X_WORLD_X_3_DMF		x-world/x-3dmf.
VIDEO_AVI		video/avi.
IMAGE_JPEG		image/jpeg.

8.1.10.2.3. InformationReliabilityLevelType Class

This enumeration provides a quantitative evaluation of the reliability level of the information that is provided.

Name	Type	Description
VERY_HIGH_CONFIDENCE		Information and material whose owner is extremely confident of
HIGH_CONFIDENCE		Information and material whose owner is very confident of
CONFIDENT		Information and material whose owner is confident of
LOW_CONFIDENCE		Information and material whose owner is not confident of
VERY_LOW_CONFIDENCE		Information and material whose owner is very unconfident of
NON_SPECIFIED		Information and material whose reliability is not specified

8.1.10.2.4. InformationSecurityClassificationType Class

This enumeration presents the possible values for information security classification. The enumeration is based in the security rules for protecting EU classified information (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:141:0017:0065:EN:PDF>).

Name	Type	Description
EU_TOP_SECRET		Information and material the unauthorized disclosure of which could cause exceptionally grave

Name	Type	Description
EU_SECRET		prejudice to the essential interests of the European Union or of one or more of the Member States
EU_CONFIDENTIAL		Information and material the unauthorized disclosure of which could seriously harm the essential interests of the European Union or of one or more of the Member States
EU_RESTRICTED		Information and material the unauthorized disclosure of which could harm the essential interests of the European Union or of one or more of the Member States
NON_CLASSIFIED		Information and material the unauthorized disclosure of which could be disadvantageous to the interests of the European Union or of one or more of the Member States
NON_SPECIFIED		It can be used for information and material whose classification level is still pending
		It can be used for information and material whose classification level is not specified

8.1.10.2.5. InformationSensitivityDegreeType Class

This enumeration presents the possible values for information sensitivity degree. The Traffic Light Protocol (TLP) of US-CERT is applied (<http://www.us-cert.gov/tlp>).

Name	Type	Description
RED		TLP: RED when information cannot be effectively acted upon by additional parties, and could lead to impacts on a party's privacy, reputation, or operations if misused.
AMBER		TLP: AMBER when information requires support to be effectively acted upon, but carries risks to privacy, reputation, or operations

Name	Type	Description
GREEN		if shared outside of the organizations involved.
WHITE		TLP: WHITE when information carries minimal or no foreseeable risk of misuse, in accordance with applicable rules and procedures for public release.
NON_SPECIFIED		It can be used for information and material whose classification level is not specified

8.1.11. Movement Core Entity

8.1.11.1. Movement UML Models

The following figure depicts the diagram of the classes that belong to the Movement Core Entity:

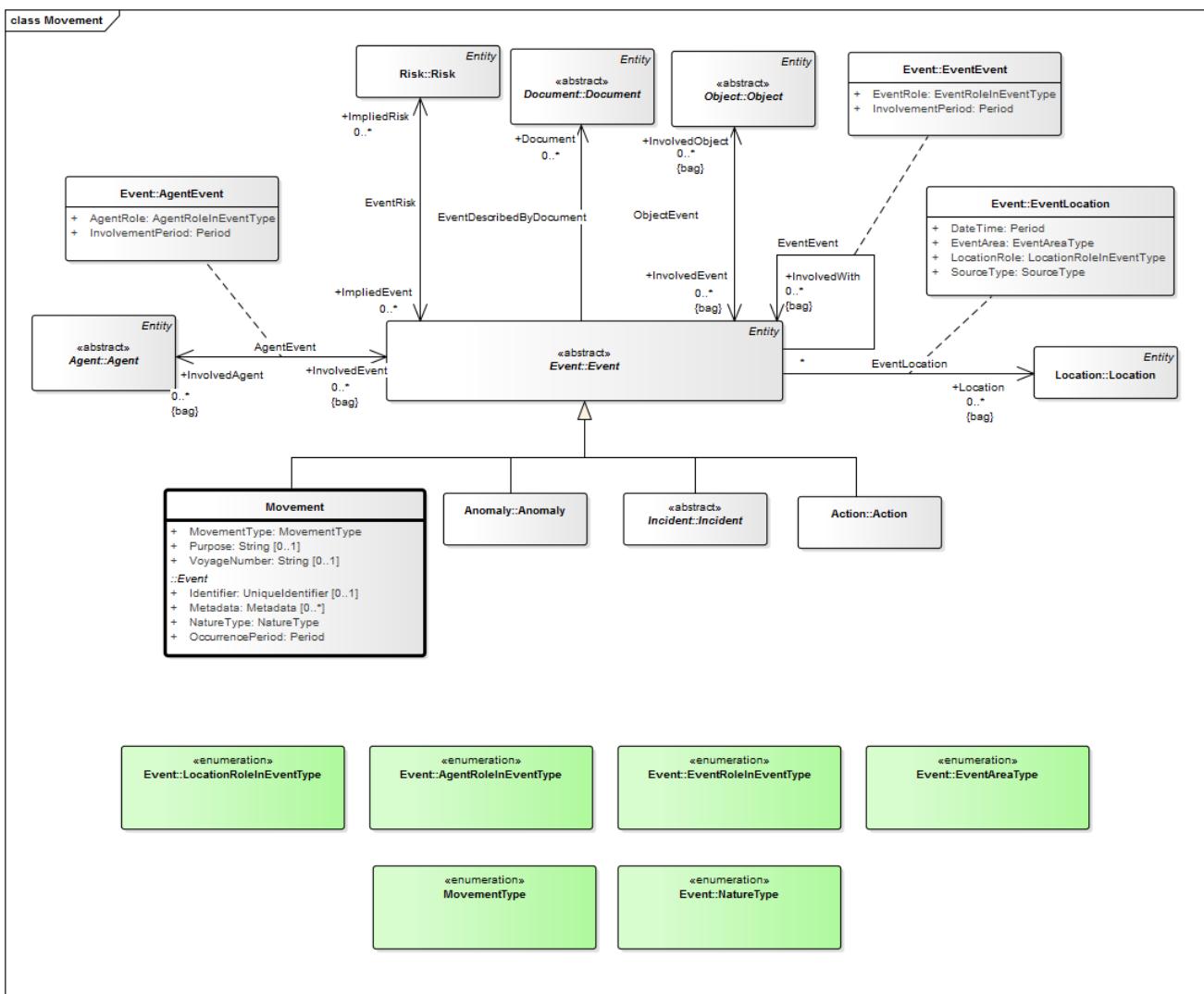


Figure 8-11 - CISE Movement model

8.1.11.2. Movement Vocabulary

8.1.11.2.1. Movement Class

It is a subclass of event. The Movement entity is linked to Voyage. Movement can be actual (e.g. current position, heading and speed), Historical data or planned in the future and can also be expressed taking into account other entities as location, object, etc.

Name	Type	Description
MovementType	MovementType	Many different movements types can be described
Purpose	String	The purpose of the movement
VoyageNumber	String	This is an operator-assigned reference code for a voyage and serves the purpose of the operator.

8.1.11.2.2. MovementType Class

This enumeration presents the possible types of processes used to perform the objects' correlation.

Name	Type	Description
ROUTE_PLAN		Expected locations/direction and movements that a vessels will follow during a voyage. It is known before departure
VOYAGE		Journey involving travel by sea
VOYAGE_LEG		Stage of a Voyage
SEARCH_PATTERN		Search pattern for a certain area
PATROL_ROUTE_PLAN		Patrol route plan for a certain area
OTHER		Movement type not included above
NON_SPECIFIED		Movement type non-specified

8.1.12. Object Core Entity

8.1.12.1. Object UML Models

The following figure depicts the diagram of the classes that belong to the Object Core Entity:

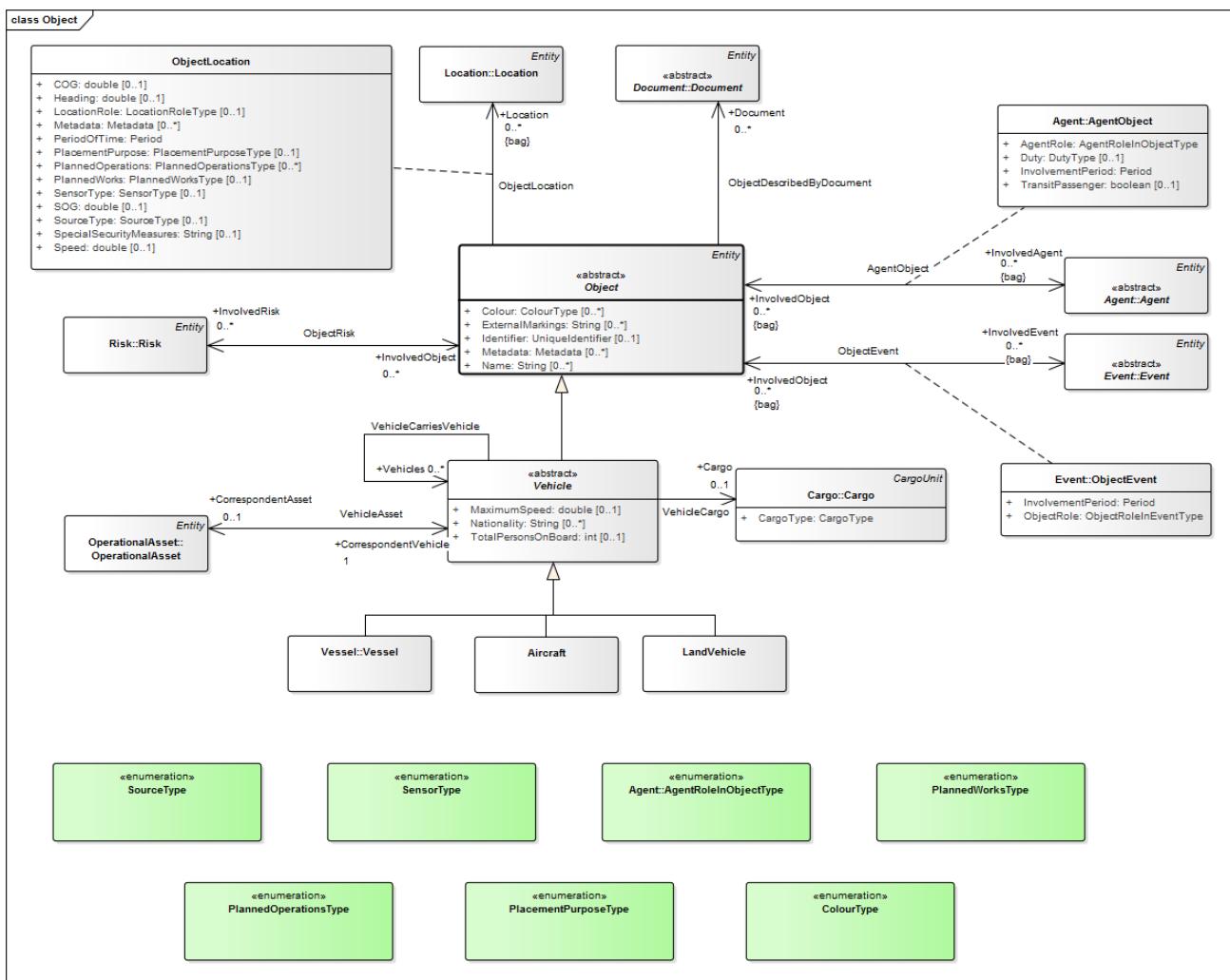


Figure 8-12 - CISE Object model

8.1.12.2. Object Vocabulary

8.1.12.2.1. Object Class

The Object entity is one of the core entities of the overall data model. It is an abstract entity (it cannot be used as such) that holds information about physical entities from the maritime domain like vehicles (vessels, aircrafts and land vehicles) and cargo. Object has relationships with Event, Agent, Document, Risk and Location. Object can also be associated with another Object.

Name	Type	Description
Colour	ColourType	Colour information about the object
ExternalMarkings	String	External markings of the object
Identifier	UniqueIdentifier	Each UniqueIdentifier can be correlated with other UniqueIdentifiers, either manually, by operators, or automatically, by systems, so that duplicate objects

Metadata	Metadata	in the network can be identified and brought together for a better understanding of the information being shared.
Name	String	Metadata related to the object
		Name of the object

8.1.12.2. ObjectLocation Class

This class allows the association between Object (or one of its sub-classes: Vehicle, CargoPackage) and Location. It is not mandatory to associate an Object with a Location but one or many Object can be associated to a Location through this class. The association further describes the role of the Object in relation to the Location and other useful data.

Name	Type	Description
COG	double	Course over ground in degrees
Heading	double	Heading of the object
LocationRole	LocationRoleType	Enumerated. Describes the relationship between the Object and the Location.
Metadata	Metadata	Metadata linked to the localisation of the object
PeriodOfTime	Period	Defines the duration of the relationship between the Object and the Location.
PlacementPurpose	PlacementPurposeType	Defines the reason why the object is at a location
PlannedOperations	PlannedOperationsType	Defines the planned operations for which the object is at the location
PlannedWorks	PlannedWorksType	Defines the planned works the object will undergo when at the location
SensorType	SensorType	Defines the sensor origin of the position
SOG	double	Speed on ground in knots
SourceType	SourceType	Defines how the location of the object has been determined

SpecialSecurityMeasures	String	Defines security measures to be apply when the object is at the location
Speed	double	Speed of the object in knots

8.1.12.2.3. Vehicle Class

The Vehicle is a sub-class of Object and is used to determine types of physical moving objects related to maritime. The class Vehicle inherits the attributes and relationships of Object. Vehicle has three sub-classes: Vessel, Aircraft and LandVehicle.

Name	Type	Description
MaximumSpeed	double	The vehicle's maximum speed measured in knots
Nationality	String	Two-letter country codes to represent countries, dependent territories, and special areas of geographical interest. Represent the flag for a Vessel.
TotalPersonsOnBoard	int	The total number of persons on board

8.1.12.2.4. ColourType Class

This enumeration presents the colour types.

Name	Type	Description
CYAN		cyan.
GREY		grey.
YELLOW		yellow.
WHITE		white.
BLACK		black.
PINK		pink.
GREEN		green.
BLUE		blue.
BROWN		brown.
ORANGE		orange.
VIOLET		violet.

RED red.

8.1.12.2.5. LocationRoleType Class

This enumeration presents the location role types.

Name	Type	Description
PORT_OF_EMBARKATION		Port of embarkation (for vessel)
PORT_OF_DISEMBARKATION		Port of disembarkation (for vessel)
PORT_OF_REGISTRY		Port of registry (for vessel)
LENGTHENED_PLACE		Lengthened place (for vessel)
PORT_OF_LOADING		Port of loading (for cargo)
PORT_OF_DISCHARGE		Port of discharge (for cargo)
NON_SPECIFIED		Non specified

8.1.12.2.6. PlacementPurposeType Class

This enumeration describes the reason of placement of an object to a location. An object can be at a location because it is in transit. A vessel (i.e. an object) can also be assigned to a location.

Name	Type	Description
IN_TRANSIT		The Object is at a Location during a transit
ASSIGNED		The Object is assigned to the Location
OTHER		Any other type not mentioned above
NON_SPECIFIED		Type not specified

8.1.12.2.7. PlannedOperationsType Class

This enumeration presents the possible planned operations for which an Object is at a Location.

Name	Type	Description
LOADING		The Object is at the Location to load cargo
UNLOADING		The Object is at the Location to unload cargo

OTHER	Any other operation not mentioned above
NON_SPECIFIED	Operation not specified

8.1.12.2.8. PlannedWorksType Class

This enumeration presents the possible planned works which can explain that an Object is at a Location.

Name	Type	Description
INSPECTION		The Object is at a Location for Inspection
MAINTENANCE_AND_REPAIR		The Object is at a Location for Maintenance and repair
OTHER		Any other works not mentioned above
NON_SPECIFIED		Works not specified

8.1.12.2.9. SensorType Class

This enumeration presents the Sensor at the origin of an association between an Object and a Location.

Name	Type	Description
SIGHTING		The Object is observed at the Location
UNDERWATER_SENSOR		Underwater sensor
MARITIME_RADAR		Maritime radar
SYNTHETIC_APERTURE_RADAR		Synthetic aperture radar
EOIR_OPTRONIC_SYSTEM		EO/IR Optronic system
MARITIME_MOVING_TARGET_IDENTIFICATION		Maritime moving target identification
SIGNAL_INTERCEPTION_SYSTEMS_COMINT		Signal interception systems COMINT
SIGNAL_INTERCEPTION_SYSTEMS_ELINT		Signal interception systems ELINT
ENVIRONMENTAL_SENSING_SYSTEMS		Environmental sensing systems
AUTOMATIC_IDENTIFICATION_SYSTEM		Automatic Identification System (AIS)

VESSEL_MONITORING_SYSTEM	Vessel monitoring system (VMS)
LONG_RANGE_IDENTIFICATION_TRACKING	Long range identification and tracking (LRIT)
AUTOMATIC_VEHICLE_LOCATION	Automatic vehicle location (AVL)
ACOUSTIC_SYSTEMS	Acoustic Systems ACINT
NON_TRADITIONAL_SOURCES	Non-traditional sources
OTHER	Any other sensor not mentioned above
NON_SPECIFIED	Sensor not specified

8.1.12.2.10. SourceType Class

This enumeration defines how the placement of an object to a location has been determined. The location of an object can be observed, declared, estimated or simulated.

Name	Type	Description
OBSERVATION		The location of the object is observed
DECLARATION		The location of the object is declared
ESTIMATION		The location of the object is estimated
SIMULATION		The location of the object is simulated
CORRELATION		The location of the object has been correlated
OTHER		Any other type not mentioned above
NON_SPECIFIED		Type not specified

8.1.13. OperationalAsset Core Entity

8.1.13.1. OperationalAsset UML Models

The following figure depicts the diagram of the classes that belong to the OperationalAsset Core Entity:

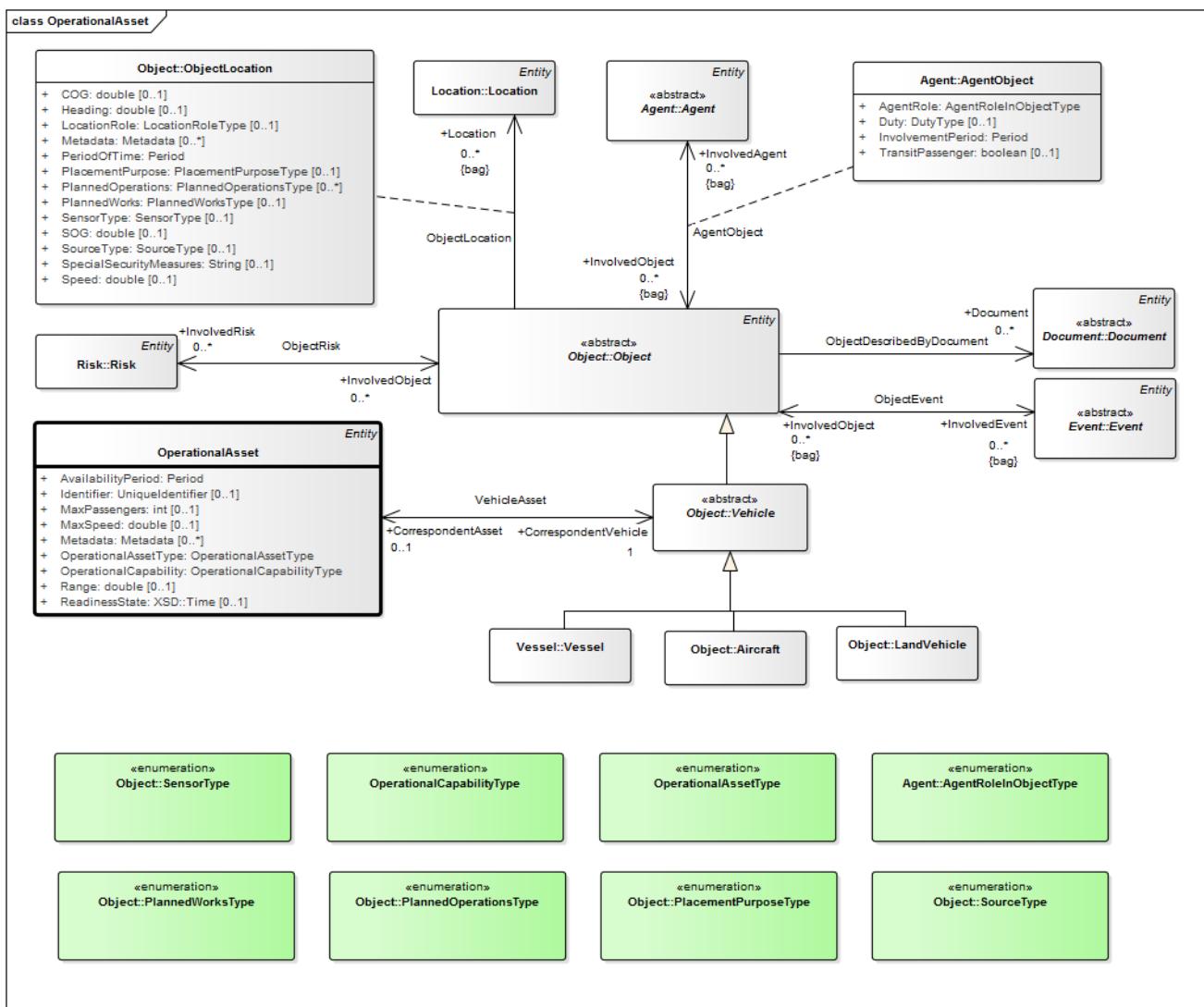


Figure 8-13 - CISE Operational asset model

8.1.13.2. OperationalAsset Vocabulary

8.1.13.2.1. OperationalAsset Class

An Operational Asset is an Object (in particular means of observation or transportation, but also including associated sensors, means of communication and means of intervention such as deterrence or neutralization of threats, fire fighting, pollution containment etc.) enabling operational Actions (most often at sea or on sea shores) of the Agents mandated by public Organizations in charge of Maritime Safety and Security.

Name	Type	Description
AvailabilityPeriod	Period	<p>Defines the time period of Agent involvement in the Event. Can be either defined by start and end dates/times or duration.</p> <ul style="list-style-type: none"> Format for date is: CCYY-MM-DD

Name	Type	Description
		<ul style="list-style-type: none"> • Format for time is: hh:mm:ss • Format for duration is: P[yY][mM][dD][T[hH][mM][s[.s]S]] <p>See also : Core Vocabulary Specification for "Period"</p>
Identifier	UniqueIdentifier	Identifier of the operational asset. Each UniqueIdentifier can be correlated with other UniqueIdentifiers, either manually, by operators, or automatically, by systems, so that duplicate objects in the network can be identified and brought together for a better understanding of the information being shared.
MaxPassengers	int	MaxPassengers of an OperationalAsset
MaxSpeed	double	Max. Speed of the Operational Asset measured in knots
Metadata	Metadata	see: Core Vocabulary Specification for "Metadata"
OperationalAssetType	OperationalAssetType	Asset type
OperationalCapability	OperationalCapabilityType	Defines the Asset Capability to perform as intended in an operation
Range	double	Range of the Operational Asset
ReadinessState	xs:Time	The lexical space of xsd:time is identical to the time part of xsd:dateTime (hh:mm:ss[Z](+ -)hh:mm]), and its value space is the set of points in time recurring daily.
		The period (one day) is fixed, and no calendars other than Gregorian are supported.

8.1.13.2.2. OperationalAssetType Class

This enumeration presents the possible types of operational assets.

Name	Type	Description
AIRCRAFT		An aircraft is a machine that is able to fly by gaining support from the air, or, in general, the atmosphere of a planet. It counters the force of gravity by using either static lift or by using the dynamic lift of an airfoil, or in a few cases the downward thrust from jet engines.
HELICOPTER		A helicopter is a type of rotorcraft in which lift and thrust are supplied by rotors
PATROL_BOAT		Operated by navies, coast guards and police. Function â€“ defense of coastal waters, rivers and estuaries, borders security and law enforcement. May have an anti-surface role
UAV		An unmanned aerial vehicle (UAV), also known as a drone, is an aircraft without a human pilot on board
SUBMARINE		A submarine is a watercraft capable of independent operation underwater
FRIGATE		Smaller than destroyers, one or two missions. Protect naval groups and merchant ships. Anti-submarine warfare. Fleet air defense. Anti-surface warships
SPEED_BOAT		A motorboat, speedboat, or powerboat is a boat which is powered by an engine
DRONE		Drone is the popular term for an unmanned aircraft. It is still a UAV however a drone is flown by software with pre-programmed behavior save for additional commands by the operators

TANK	A tank is a tracked, armoured fighting vehicle designed for front-line combat which combines operational mobility and tactical offensive and defensive capabilities
TRUCK	A truck (US, CA and AU) or lorry (UK and Ireland) is a motor vehicle designed to transport cargo. Also military use.
FOUR_WHEEL_DRIVE	Four-wheel drive, All-wheel drive, AWD, 4WD, or 4×4 is a four-wheeled vehicle with a drivetrain that allows all four wheels to receive torque from the engine
CARRIER	Vehicle for transport
AMBULANCE	Ambulance
MOTORCYCLE	Motorcycle
ARTILLERY_VEHICLE	Vehicle artillery equipped with an own propel system to move towards its target
DESERT_PATROL_VEHICLE	The Desert Patrol Vehicle (DPV), formerly called the Fast Attack Vehicle (FAV), is a high-speed, lightly armored sandrail-like vehicle first used in combat during the Gulf War in 1991
TRACTOR	A tractor is an engineering vehicle specifically designed to deliver a high tractive effort (or torque) at slow speeds
WRECKER	A vehicle used to tow away broken-down cars
TRAILER	A trailer is generally an unpowered vehicle pulled by a powered vehicle
HUMVEE	The High Mobility Multipurpose Wheeled Vehicle (HMMWV), commonly known as the Humvee, is a four-wheel drive military

	automobile produced by AM General
FIRETRACK	Vehicle used for Firefighting
VAN	A van is a kind of vehicle used for transporting goods or people
UUV	Unmanned underwater vehicles (UUV), sometimes known as underwater drones, are any vehicles that are able to operate underwater without a human occupant. These vehicles may be divided into two categories, Remotely operated underwater vehicles (ROVs) and Autonomous underwater vehicles (AUVs)
ROV	ROV controlled by a remote human operator
USV	USV operate independently of direct human input
SEA_PLATFORM	Platform that stand on the sea for different purposes
AEROPLANE	Aeroplane
DESTROYER	Fast warships providing multi-mission offensive and defensive capability, independently or in fleet support
CRUISER	Multi-mission warships capable of engaging multiple simultaneous targets and employed in force support or independent action
AIRCRAFT_CARRIER	An aircraft carrier is a warship with a full-length flight deck and facilities for carrying, arming, deploying and recovering aircraft, acting as a seagoing airbase
CORVETTE	Small frigates. Protect naval and merchant ships. Anti-submarine warfare. Fleet defence (anti-aircraft mission)

AUXILIARY_SHIPS	Re-supply Ship. Replenishment at Sea
LANDING_SHIPS	Smaller than assault ships
ASSAULT_SHIPS	Air Cushioned Vehicles
MINE_WARFARE_SHIPS	Mine Warfare Ships
STRATEGIC_FIXED_ASSETS	Strategic/fixed assets
BALLONS	Ballons
OTHER	Other

8.1.13.2.3. OperationalCapabilityType Class

This enumeration presents the possible types of operational capabilities.

Name	Type	Description
SEARCH_AND_RESCUE		Search for and provision of aid to people who are in distress or imminent danger
OIL_POLLUTION		Pollution due to release of a liquid petroleum hydrocarbon into the environment, especially marine areas, due to human activity
TELECOMMUNICATIONS_TL C		Can be accommodated within any of the listed OperationalCapability. It is the transmission of signals over long distances
PATROLLING		The act of moving about an area especially by an authorized and trained person or group, for purposes of observation, inspection, or security
PIRACY_ATTACK		Act of robbery or criminal violence at sea. The term can include acts committed on land, in the air, or in other major bodies of water or on a shore. It does not normally include crimes committed against persons traveling on the same vessel as the perpetrator (e.g. one passenger stealing from others on

Name	Type	Description
ILLEGAL_MIGRATION		the same vessel). The term has been used throughout history to refer to raids across land borders by non-state agents.
COUNTER_DRUG_SMUGGLING		Refers to the migration of people across national borders in a way that violates the immigration laws of the destined country. In concrete detection of Cayucos, mother ships and border monitoring
COUNTER_ILLEGAL_FISHING		Refers to a global illicit trade involving the cultivation, manufacture, distribution and sale of substances which are subject to drug prohibition laws
FIREFIGHTING		Illegal fishing is the fishing which takes place where vessels operate in violation of the fishery laws. It normally applies to the fisheries which are under the jurisdiction of the coastal state regulated by the regional organizations.
COORDINATION		Attempting to control and extinguish fires
SIMULATION		Operating principle. Command and control that involves multiple, diverse, networked teams that can involve national and coalition partners and non-military agencies, challenging the commander to deal with options along various dimensions.
		Operating principle. Imitation of the operation of a real-world process or system over time. The act of simulating something first requires that a model be developed; this model represents the key characteristics or behaviors/functions of the selected physical or abstract system or process. The model

Name	Type	Description
MOBILITY		represents the system itself, whereas the simulation represents the operation of the system over time
TRAINING		Operating principle. It allows disposing of the necessary means in order to allow strategic deployment and high mobility of assets and personnel required for the operations.
MAINTENANCE		Operating principle. In general, training is the acquisition of knowledge, skills, and competencies as a result of the teaching of vocational or practical skills and knowledge that relate to specific useful competencies.
SUSTAINABILITY		Operating principle. Operating principle. In general, all actions which have the objective of retaining or restoring an item in or to a state in which it can perform its required function. The actions include the combination of all technical and corresponding administrative, managerial, and supervision actions
INTELLIGENCE_SURVEILLANCE_RECONNAISSANCE		Operating principle. This capability is oriented to guarantee the sustainability of the assets deployed during a long period of time.
		Fall within the ISTAR concept, which is fundamentally obtaining information and intelligence to support the planning and conduct of operations. It is a practice that links several battlefield functions together to assist a combat force in employing its sensors and managing the information they gather.

Name	Type	Description
C_2_W_COMMAND_AND_CO NTROL_WARFARE		Electronic Warfare encompasses all that is command and control capability, also PSYOPS (includes deception- simulation)
OTHER		Other not included above\n-Source
NON_SPECIFIED		Non-specified

8.1.14. Organization Core Entity

8.1.14.1. Organization UML Models

The following figure depicts the diagram of the classes that belong to the Organization Core Entity:

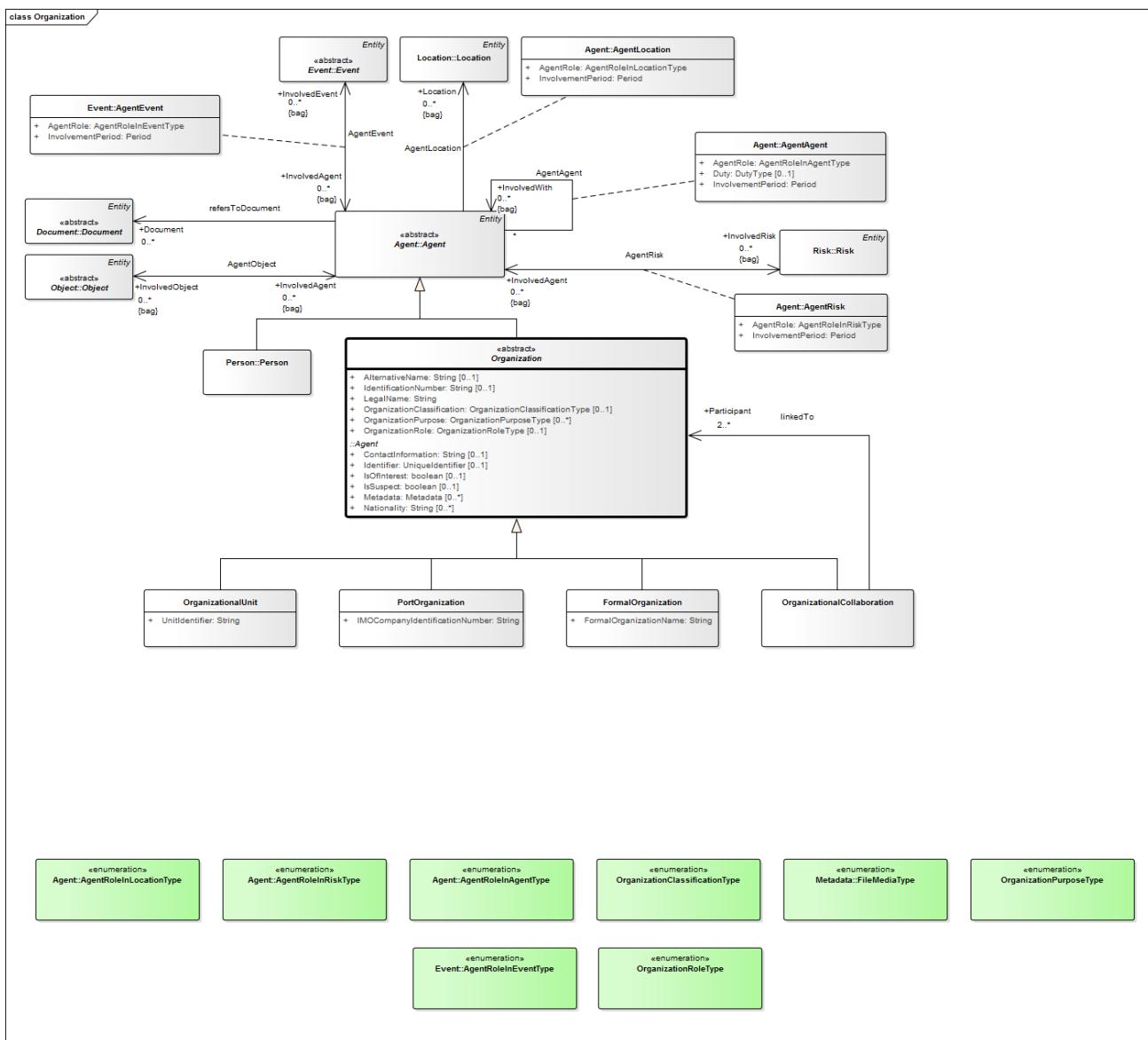


Figure 8-14 - CISE Organization model

8.1.14.2. Organization Vocabulary

8.1.14.2.1. FormalOrganization Class

A particular sub-class of organization **FormalOrganization** can be used to indicate organizations that are recognized in the world at large, in particular in legal jurisdictions, with associated rights and responsibilities. Examples include a corporation, charity, government or church.

Name	Type	Description
FormalOrganizationName	String	Name of the organization

8.1.14.2.2. Organization Class

The class Organization is a sub-class of an abstract class Agent. Organization represents a structured and legally recognized association of humans and material resources for some common purpose or reason for existence which goes beyond the set of people belonging to it. An organization may itself be involved as actor or target in the various events and activities. Organization can have the same associations and relationships than the parent-class Agent. Thus it can have relationship with other agents, objects and locations or it can be related to risks in different roles. Organization has four sub-classes: OrganizationalUnit, PortOrganization, FormalOrganization and OrganizationalCollaboration.

Name	Type	Description
AlternativeName	String	Any other name used. This attribute can be used for example for the official name of the organization in the native language.
IdentificationNumber	String	Business ID number of the organisation in international format.
LegalName	String	The official name of the organization. It is recommended to use the official English translation.
OrganizationClassification	OrganizationClassificationType	Enumerated. Formal classification of organization.
OrganizationPurpose	OrganizationPurposeType	Enumerated. Defines the purpose of the organization. The purpose is modeled using the CISE user community plus some additional options where those are not applicable. There can be more than one purpose connected to one organization.
OrganizationRole	OrganizationRoleType	Enumerated. Organization role as described by the different roles defined in SafeSeaNet system.

8.1.14.2.3. OrganizationalCollaboration Class

The sub-class OrganizationalCollaboration is defined to describe a collaboration between two or more Organizations such as a project. OrganizationalCollaboration meets the criteria for being an Organization in that it has an identity and defined purpose independent of its particular members but is neither a formally recognized legal entity nor a sub-unit within some larger organization. Might typically have a shorter lifetime than the Organizations within it, but not necessarily.

8.1.14.2.4. OrganizationalUnit Class

In some cases it is useful to refer to departments or organizational units such as the IT department which only have meaning within the context of the containing organization and would not be regarded as a legal entity in its own right. This situation is supported by a subclass of Organization called OrganizationalUnit.

Name	Type	Description
UnitIdentifier	String	Defines the name of the organizational unit

8.1.14.2.5. PortOrganization Class

A particular sub-class of organization has been defined to be used when modelling IMO recognized ports. PortOrganization carries some additional attributes that carry information relevant only to ports. Subclass of Organization.

Name	Type	Description
IMOCompanyIdentificationNumber	String	IMO unique company and registered owner identification number. Unique number given to company or registered owner of a vessel. The IMO Unique Company and Registered Owner Identification Number Scheme was introduced through the adoption by the Maritime Safety Committee (MSC), at its seventy-eighth session (12 to 21 May 2004), of resolution MSC.160(78). Its purpose is to assign a permanent number for identification purposes to each company and/or registered owner managing ships of 100 gross tonnage and above engaged on international voyages. Additionally, Administrations are invited to participate in the scheme to the extent they desire by assigning an IMO unique company and registered owner identification number to each company and/or registered owner managing ships of 100 gross tonnage and above not engaged on international voyages. The procedures for the implementation of resolution MSC.160(78) were initially

circulated by means of Circular letter No.2554, dated 24 June 2004.

8.1.14.2.6. OrganizationClassificationType Class

This enumeration presents the formal classification (status) of organization.

Name	Type	Description
GOVERNMENTAL		Governmental organization.
EUROPEAN		European agency.
MEMBER_STATE		Representing the government of a member state.
NON_GOVERNMENTAL		International organization, independent of governments.
CRIMINAL		Company involved in organized crime.
PRIVATE		Private sector company.
INTER_GOVERNMENTAL		International organization between governments.
OTHER		Any other not mentioned before
NON_SPECIFIED		Not declared

8.1.14.2.7. OrganizationPurposeType Class

This enumeration presents the general purpose of the organization.

Name	Type	Description
GENERAL_LAW_ENFORCEMENT		Authorities responsible for: Monitoring of compliance with applicable legislation in sea areas, where there is policing competence; support to enforcement and/or response operations
CUSTOMS		Authorities responsible for: Monitoring of compliance with customs regulations on the import, export and movement of goods; support of enforcement operations

	Early warning/identification of criminal trafficking of goods (narcotics, weapons, etc.); support of response operations
MARINE_ENVIRONMENT	Authorities responsible for: Monitoring of compliance with regulations on the protection of the marine environment; support of enforcement operations
	Early warning/identification of incidents/accidents that may have an environmental impact; support of pollution response operations
MARITIME_SAFETY_AND_SECURITY	Authorities responsible for: Monitoring of compliance with regulations on the safety and prevention of pollution caused by ships (construction, equipment, crew/passengers, cargo); support of enforcement operations
	Monitoring of compliance with regulations on the safety of navigation (vessel traffic safety); support of enforcement operations
	Monitoring of compliance with regulations on the security of ships; support of enforcement operations
	Supporting safe and efficient flow of vessel traffic; vessel traffic management
	Early warning/identification of ships/persons in distress; support of response operations (search and rescue, salvage, place of refuge)
	Early warning/identification of maritime security threats, within the scope of SOLAS Chapter XI-2; support of response operations
	Early warning/identification of threats/acts of piracy or armed robbery; support of response operations

DEFENCE	Authorities responsible for: Monitoring in support of general Defence tasks, such as: exercising national sovereignty at sea; combating terrorism and other hostile activities outside the EU; other Common Security and Defence Policy tasks, as defined in Articles 42 and 43 TEU.
FISHERIES_CONTROL	Authorities responsible for: Monitoring of compliance with regulations on fisheries; support of enforcement operations Early warning/identification of illegal fisheries or fish landings; support of response operations
BORDER_CONTROL	Authorities responsible for: Monitoring of compliance with regulations on immigration and border crossing; support of enforcement operations Early warning/identification of cases of illegal migration or trafficking in human beings; support of response operations
PROFITABLE	Not authority. Private or public organization/company which is expected to make profit.
NON_PROFITABLE	Nor authority. Private or public organization which is not expected to make profit.
OTHER	Any other not mentioned before
NON_SPECIFIED	Not declared

8.1.14.2.8. OrganizationRoleType Class

This enumeration presents the role of organization as described by different roles defined in SafeSeaNet system.

Name	Type	Description
PORT_AUTHORITY		SSN::Port authority. Port Authority means the competent

	authority or body designated by Member States for each port to receive and pass on information reported pursuant to the directive.
COASTAL_STATION	<p>SSN::Coastal station. Coastal Station means any of the following, designated by Member States pursuant to the directive:</p> <ul style="list-style-type: none"> A vessel traffic service (VTS) A shore-based installation responsible for a mandatory reporting system approved (adopted) by the IMO A body responsible for coordinating search and rescue operations or operations to tackle pollution at sea
POR T_STATE_CONTROL	SSN::Port state control. The competent authority for inspecting the foreign ships in national ports to verify that the condition of the ship and its equipment comply with the requirements of international regulations and that the ship is manned and operated in compliance with these rules.
NATIONAL_COMPETENT_AUTHORITY	SSN::National competent authority. Physical entity designated by Member States in charge of handling and exchanging the SafeSeaNet messages related to the maritime safety and the traffic monitoring directive. The single point of contact within the Member State is designated as NCA in the framework of SafeSeaNet.
INSPECTION_AUTHORITY	SSN::Incident::Inspection authority. Competent authority for incident inspections.
OTHER	Any other not mentioned before
NON_SPECIFIED	Not declared

8.1.15. Period Core Entity

8.1.15.1. Period UML Models

The following figure depicts the diagram of the classes that belong to the Period Core Entity:

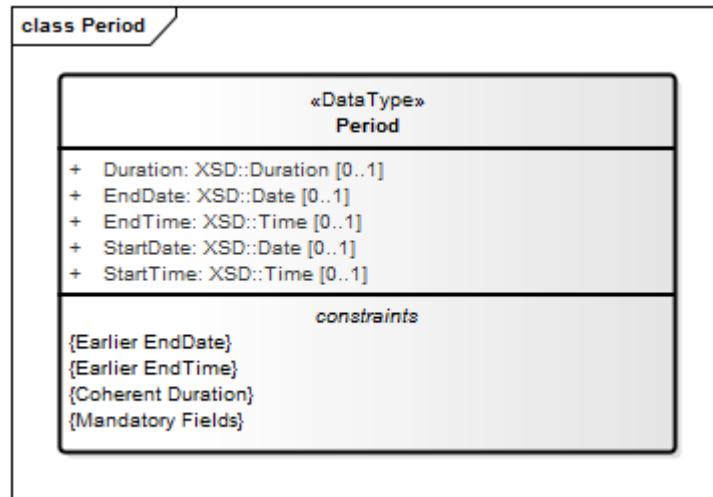


Figure 8-15 - CISE Period model

8.1.15.2. Period Vocabulary

8.1.15.2.1. Period Class

The class Period is used to define a time interval which can be expressed by:

- only a duration (i.e. one month),
- a duration and a start (resp. end) date [ex.: a period of ten days starting (resp. ending) on December 10th, 2002], in this case the period is assumed to start (resp. end) on December 10th at 0:00 (resp. 23:59).
- a duration and a start (resp. end) time [ex.: a period of ten days starting (resp. ending) at 10am],
- a duration and start (resp. end) date and time (ex.: a period of ten days starting (resp. ending) on December 10th, 2002, 10am),
- a start Date and an end Date (ex.: December 3rd, 2002 & January 24th 2010),
- a start Time and an end Time (ex.: 9am and 10pm),
- a start date and start time following by an end date and end time (ex.: December 3rd, 2002 at 10pm and January 24th, 2010 at 9am).

Name	Type	Description
Duration	xs:Duration	<p>The Duration attribute is used to define a time interval. It is from the standard XML schema Duration type (XSD:Duration).</p> <p>The time interval is specified in the following form "PnYnMnDTnHnMnS" where:</p> <ul style="list-style-type: none"> • P indicates the period (required) • nY indicates the number of years

Name	Type	Description
		<ul style="list-style-type: none"> •nM indicates the number of months •nD indicates the number of days •T indicates the start of a time section (required if you are going to specify hours, minutes, or seconds) •nH indicates the number of hours •nM indicates the number of minutes •nS indicates the number of seconds. <p>To specify a negative duration, enter a minus sign before the P.</p>
EndDate	xs:Date	The EndDate attribute is used to specify the end date of something located in time. It is from the standard XML Schema Date type (XSD:Date).
EndTime	xs:Time	The EndTime attribute is used to specify the end time of something located in time. It is from the standard XML Schema Time type (XSD:Time).
StartDate	xs:Date	<p>The StartDate attribute is used to specify a starting date. It is from the standard XML Schema Date type (XSD:Date).</p> <p>The start date is specified in the following form "YYYY-MM-DD" where:</p> <ul style="list-style-type: none"> •YYYY indicates the year •MM indicates the month •DD indicates the day <p>Note: All components are required!</p>
StartTime	xs:Time	<p>The StartTime attribute is used to specify a starting time. . It is from the standard XML Schema Time type (XSD:Time).</p> <p>The time is specified in the following form "hh:mm:ss" where:</p> <ul style="list-style-type: none"> •hh indicates the hour •mm indicates the minute •ss indicates the second <p>Note: All components are required!</p>

8.1.16. Person Core Entity

8.1.16.1. Person UML Models

The following figure depicts the diagram of the classes that belong to the Person Core Entity:

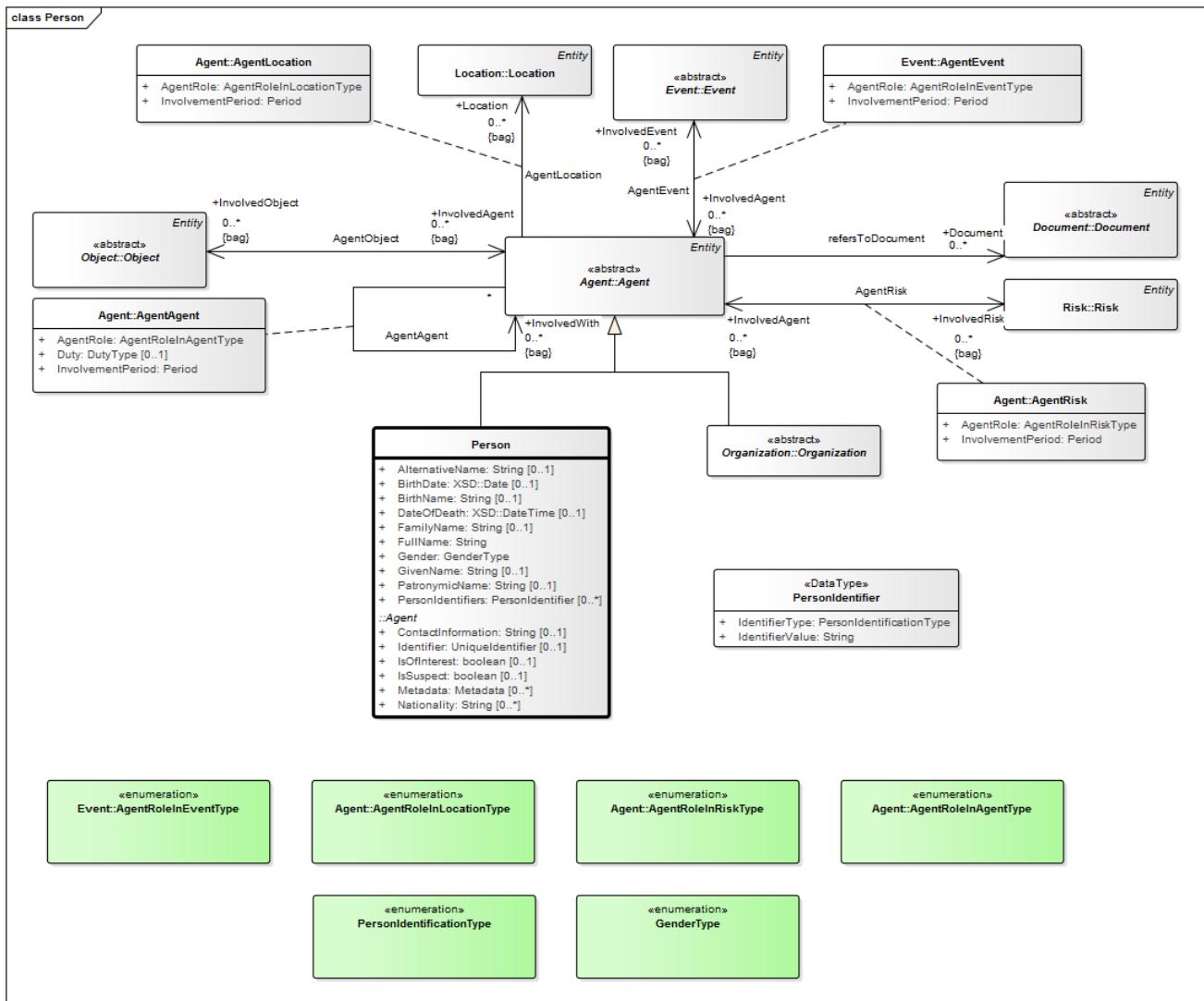


Figure 8-16 - CISE Person model

8.1.16.2. Person Vocabulary

8.1.16.2.1. Person Class

The Person Class is a sub class of the more general 'Agent' class that encompasses organizations, legal entities, groups etc. - any entity that is able to carry out actions. The data type properties of the Person class do not have any cardinality restrictions and as such all are optional. However, guidance is provided for the usage of each property in the following sections.

Name	Type	Description
AlternativeName	String	Any name by which an individual is known other than their full name. Many individuals use a short

Name	Type	Description
		form of their name, a 'middle' name as a 'first' name or a professional name. For example, the British politician and former UN High Representative for Bosnia and Herzegovina, Jeremy John Durham Ashdown, Baron Ashdown of Norton-sub-Hamdon, is usually referred to simply as 'Paddy Ashdown' or 'Lord Ashdown'.
BirthDate	xs:Date	A date that specifies the birth date of a person. Format yyyy-mm-dd
BirthName	String	All data associated with an individual are subject to change. Names can change for a variety of reasons, either formally or informally, and new information may come to light that means that a correction or clarification can be made to an existing record. Birth names tend to be persistent however and for this reason they are recorded by some public sector information systems. There is no granularity for birth name - the full name should be recorded in a single field.
DateOfDeath	xs:DateTime	A date that specifies the death date of a person. Format yyyy-mm-ddThh:mm:ss
FamilyName	String	A family name is usually shared by members of a family. This attribute also carries prefixes or suffixes which are part of the Family Name, e.g. "de Boer", "van de Putte", "von und zuOrlow". Multiple family names, such as are commonly found in Hispanic countries, are recorded in the single Family Name field so that, for example, Miguel de Cervantes Saavedra's Family Name would be recorded as "de Cervantes Saavedra".
FullName	String	Complete name of a person. The Full Name is the most reliable label for an individual and as such its use is strongly encouraged, irrespective of whether that name is broken down using the more granular elements. A name usually sticks with a person for a long time period. In some European countries a name may only be changed according to certain laws and life events, e.g. marriage. The name denominates a natural person even if he/she changes their address. Documents like birth certificate or diploma usually don't carry an address but always the name. Thus the name is one of the core attributes. However it is not sufficient to identify a person since there are combinations

Name	Type	Description
		of very common names like Smith in the UK, Meier in Germany, or Li in China.
Gender	GenderType	The gender of an individual. Eurostat SCL - Sex [SCLS] possible values: Female/Male/Other/Unknown/Not applicable.
GivenName	String	A given name, or multiple given names, are the denominator(s) that identify an individual within a family. These are given to a person by his or her parents at birth or may be legally recognised as 'given names' through a formal process. All given names are ordered in one field so that, for example, the Given Name for Johan Sebastian Bach is 'Johan Sebastian.'
PatronymicName	String	Patronymic names are important in some countries. Iceland does not have a concept of 'family name' in the way that many other European countries do, for example. Erik Magnusson and Erika Magnusdottir are siblings, both offspring of Magnus, irrespective of his patronymic name. In Bulgaria and Russia, patronymic names are in every day usage, for example, the Sergeyevich in 'Mikhail Sergeyevich Gorbachev'. Patronymic names refer to a father's given name, not the family name inherited from the mother and father as is the case in countries such as Spain and Portugal. Again referring to the example of Miguel de Cervantes Saavedra's, the patronymic name element would be unused.
PersonIdentifiers	PersonIdentifier	

8.1.16.2.2. PersonIdentifier Class

The PersonIdentifier class allows the identification of the Person by means of a document of given type and related id number, according to the different countries policy.

Name	Type	Description
IdentifierType	PersonIdentificationType	Type of document identifying the Person
IdentifierValue	String	Identification number of document

8.1.16.2.3. GenderType Class

The gender of an individual.

Name	Type	Description
FEMALE		Female
MALE		Male
OTHER		Other gender, not male neither female
UNKNOWN		Unknown
NOT_APPLICABLE		Not Applicable

8.1.16.2.4. PersonIdentificationType Class

This enumeration presents the person identification types.

Name	Type	Description
IDENTITY_CARD		Identity Card
SOCIAL_SECURITY_CARD		Social Security Card
PASSPORT		Passport
FISCAL_DOCUMENT		Fiscal Document
VISA		Visa International Service Association Card
CREW_MASTER_BOOK		Crew Master Book
OTHER		Other value not included in the list
NON_SPECIFIED		Not Specified

8.1.17. Risk Core Entity

8.1.17.1. Risk UML Models

The following figure depicts the diagram of the classes that belong to the Risk Core Entity:

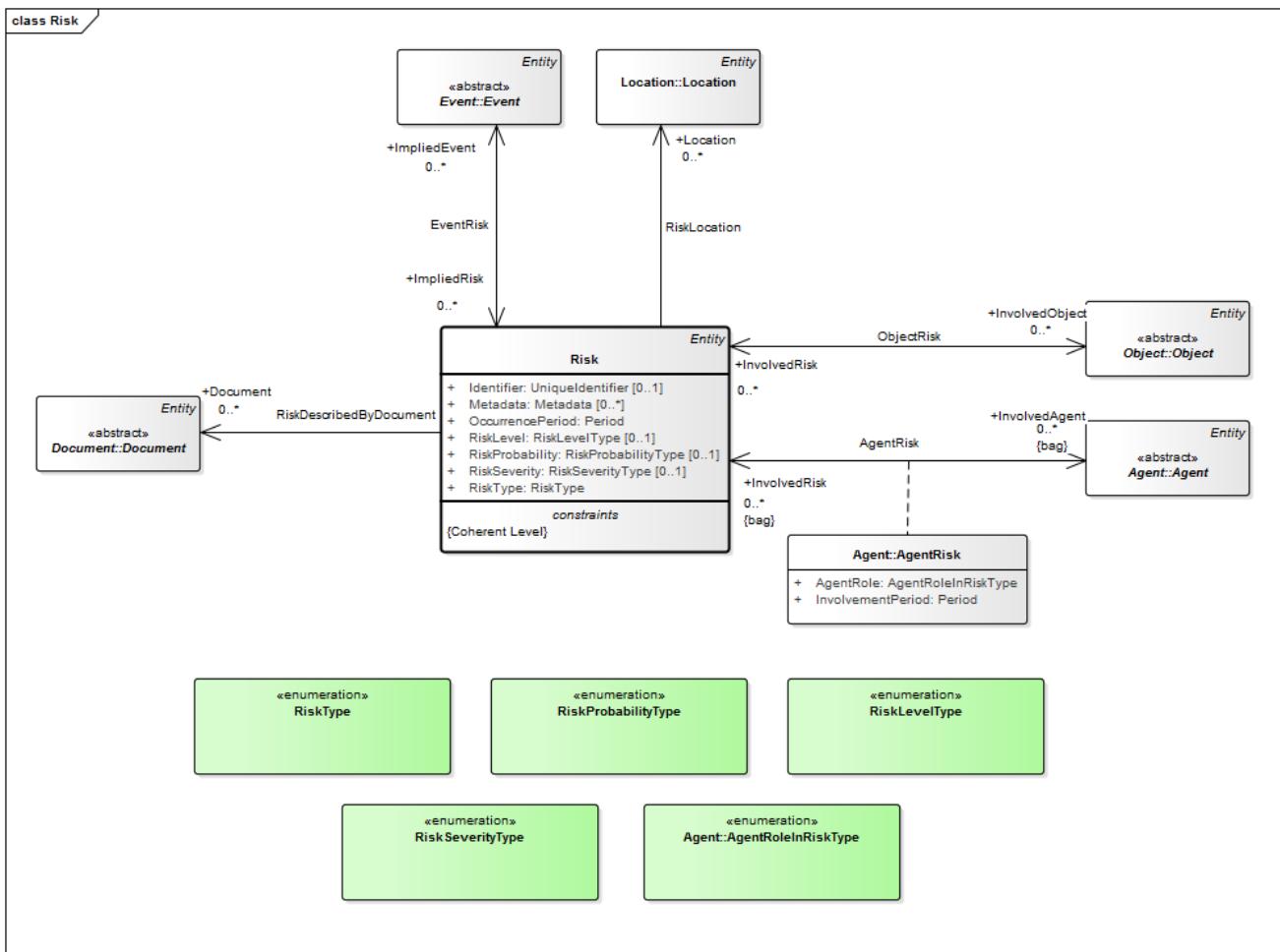


Figure 8-17 - CISE Risk model

8.1.17.2. Risk Vocabulary

8.1.17.2.1. Risk Class

The class `Risk` is used to represent a more or less probable situation involving exposure to danger concerning the maritime domain. The notion of risk is usually very subjective and, in a first step, we decided to keep the definition of the class simple in order to ease its adoption. Further work could be used to detail the risk definition and introduce metrics regarding probability and severity.

Name	Type	Description
Identifier	UniqueIdentifier	<p>Identifier of the risk.</p> <p>Each UniqueIdentifier can be correlated with other UniqueIdentifiers, either manually, by operators, or automatically, by systems, so that duplicate objects in the network can be identified and brought together for a better understanding of the information being shared.</p>

Metadata	Metadata	The Metadata of a Risk
OccurrencePeriod	Period	Defines the period of time concerned by the Risk.
RiskLevel	RiskLevelType	The risk level is used to define the importance of a risk on the maritime domain.
RiskProbability	RiskProbabilityType	The probability of occurrence of the risk
RiskSeverity	RiskSeverityType	The importance of the consequences of the risk
RiskType	RiskType	Identifies the type of the risk

8.1.17.2.2. RiskLevelType Class

The risk level is defined regarding the impact of the risk's occurrence. It is a combination of the two previous data: risk probability and risk severity. A risk which occurs frequently and has a critical severity will have a high risk level. Respectively, a low probability risk with negligible severity will have a low risk level. This enumeration presents the possible risk levels.

Name	Type	Description
HIGH		A high level risk occurs frequently and has important consequences
MEDIUM		Medium level risks have medium impact on maritime activities
LOW		A low level risk has a low impact on maritime activities (improbable or rare risk, risk with negligible severity)
OTHER		Risk level not included above
NON_SPECIFIED		Risk level non-specified

8.1.17.2.3. RiskProbabilityType Class

This enumeration presents the different probabilities which can be assigned to a risk.

Name	Type	Description
FREQUENT		The risk occurs frequently
PROBABLE		The risk is probable
OCCASIONAL		The risk could occur on some occasions
RARE		The occurrence of the risk is rare

IMPROBABLE		The risk is improbable
OTHER		Risk Probability not included above
NON_SPECIFIED		Risk Probability non-specified

8.1.17.2.4. RiskSeverityType Class

This enumeration presents the different severities which can be assigned to a risk.

Name	Type	Description
CATASTROPHIC		A major catastrophic event is the consequence of the risk (death of people, major pollution)
CRITICAL		The occurrence of the risk leads to major consequences affecting maritime activities (maritime traffic blocked)
MARGINAL		The risk's consequences are marginal. The risk has no impact on maritime activities, people or cargo.
NEGLIGIBLE		The risk's consequences are negligible.
OTHER		Risk severity not included above
NON_SPECIFIED		Risk severity non-specified

8.1.17.2.5. RiskType Class

This enumeration presents the possible types of Risks.

Name	Type	Description
ACCIDENT		accident. DESCRIPTION: Accident
ILLEGAL_IMMIGRATION		illegal immigration. DESCRIPTION: Illegal Immigration
DRUG_TRAFFICKING		drug trafficking. DESCRIPTION: Drug Trafficking
COLLISION		collision. DESCRIPTION: Collision

HUMAN_TRAFFICKING		human trafficking. DESCRIPTION: Human Trafficking
SMUGGLING		smuggling. DESCRIPTION: Smuggling
ILLEGAL_FISHING		illegal fishing. DESCRIPTION: Illegal Fishing
WEAPONS_TRAFFICKING		weapons trafficking. DESCRIPTION: Weapons Trafficking
FIRE		fire. DESCRIPTION: Fire
POLLUTION		pollution. DESCRIPTION: Pollution
OTHER		other. DESCRIPTION: Risk type not included above
NON_SPECIFIED		non-specified. DESCRIPTION: Risk type non-specified

8.1.18. UniqueIdentifier Core Entity

8.1.18.1. UniqueIdentifier UML Models

The following figure depicts the diagram of the classes that belong to the UniqueIdentifier Core Entity:

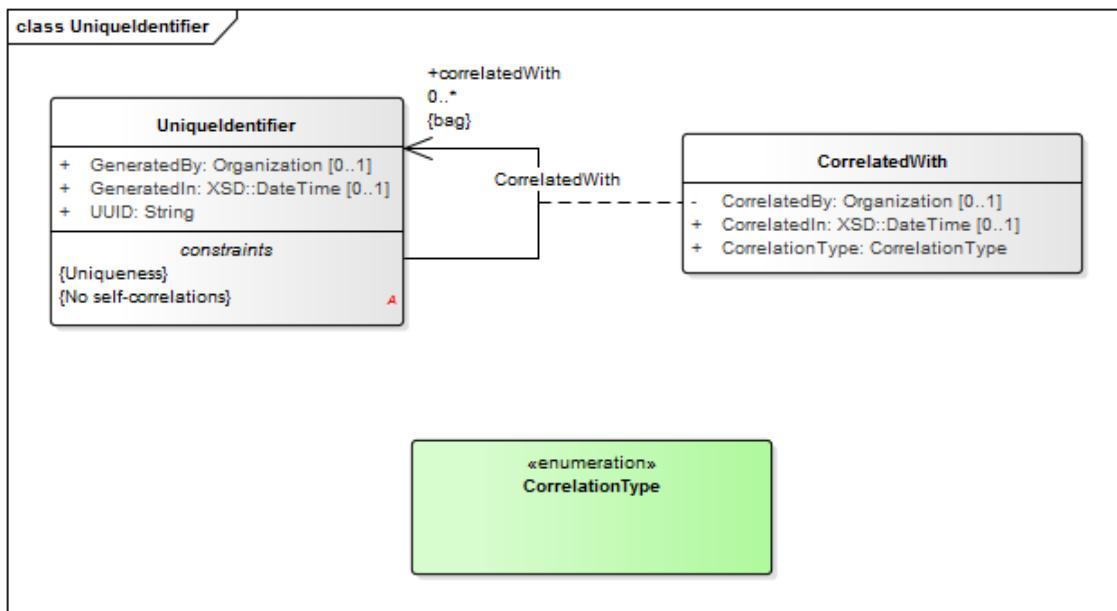


Figure 8-18 - CISE UniqueIdentifier model

8.1.18.2. UniqueIdentifier Vocabulary

8.1.18.2.1. CorrelatedWith Class

This class allows the correlation among the different objects in the information sharing environment. This correlation will allow the identification and "merging" of duplicate objects in the network, thus making the information shared more understandable.

Name	Type	Description
CorrelatedBy	Organization	Organization that correlated two UUIDs
CorrelatedIn	xs:DateTime	Date and time when this correlation was made
CorrelationType	CorrelationType	Process used to perform the correlation

8.1.18.2.2. UniqueIdentifier Class

The Unique Identifier is a fundamental entity of the overall data model of the information sharing environment, since it will allow, as its name implies, to uniquely identify each and every single data object exchanged through the network. With this identifier it will also be possible for the legacy systems to keep trace of the relationships between their data objects and those from the information sharing environment. It will be possible to understand who and when is publishing each and every data object in the network.

Name	Type	Description
GeneratedBy	Organization	Organization that generated the Unique Identifier object
GeneratedIn	xs:DateTime	Date and time when this UUID was generated
UUID	String	UUID is represented by 32 hexadecimal digits, displayed in five groups separated by hyphens, in the form 8-4-4-4-12 for a total of 36 characters (32 alphanumeric characters and four hyphens)

8.1.18.2.3. CorrelationType Class

This enumeration presents the possible types of processes used to perform the objects correlation.

Name	Type	Description
MANUAL		Correlation performed by an operator
AUTOMATIC		Correlation performed automatically by a system

OTHER		Correlation performed by any other process not listed here
NON_SPECIFIED		The correlation process is not declared

8.1.19. Vessel Core Entity

8.1.19.1. Vessel UML Models

The following figure depicts the diagram of the classes that belong to the Vessel Core Entity:

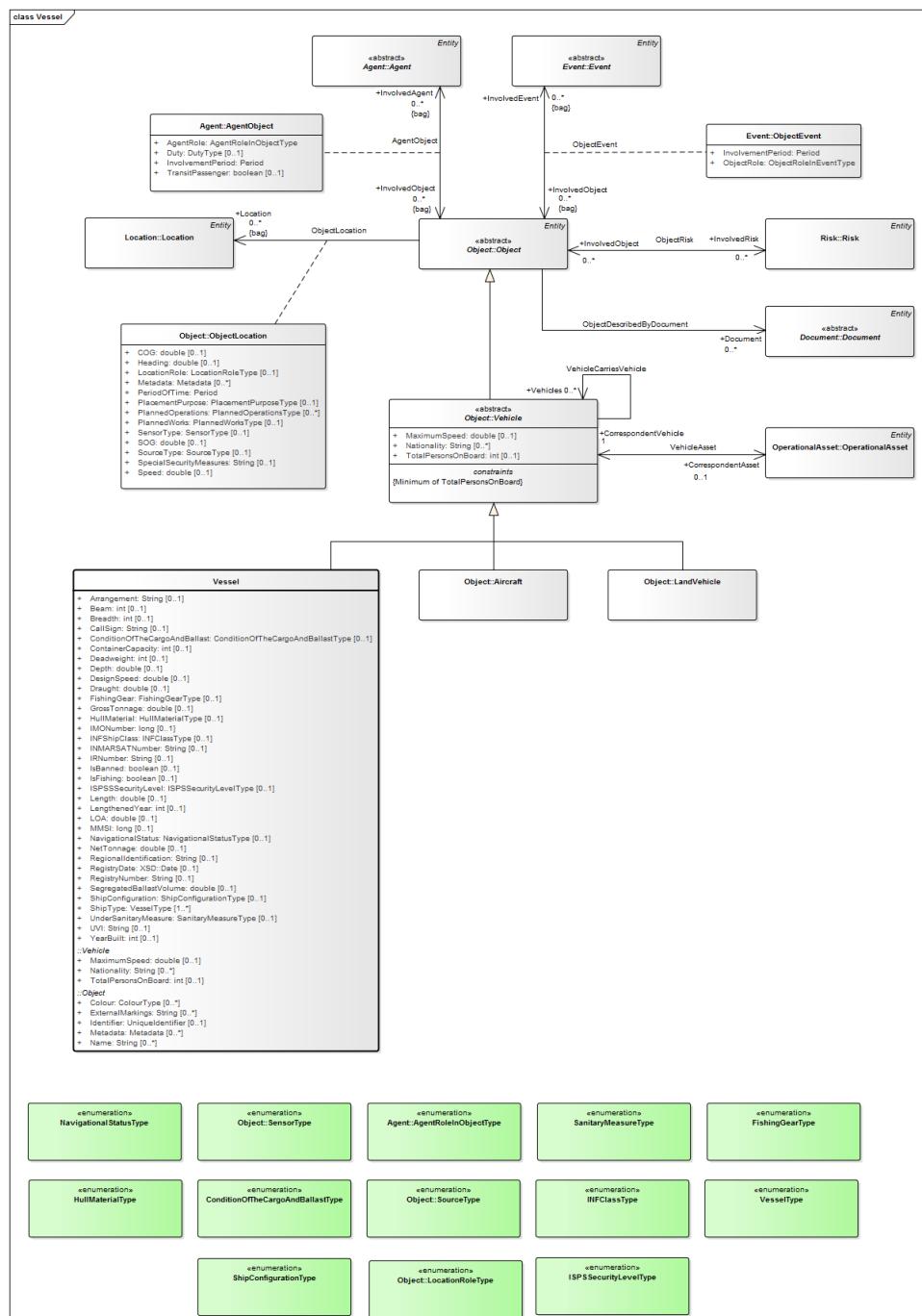


Figure 8-19 - CISE Vessel model

8.1.19.2. Vessel Vocabulary

8.1.19.2.1. Vessel Class

The class **Vessel** is a sub-class of the class **Vehicle**. A vessel refers to a ship or a boat. **Vessel** has the same associations and relationships than its parent-classes **Vehicle** and **Object**. Thus it can have relationship with **Document**, **Risk**, **Event**, **Location**, and **Agent**. It can also be associated with **OperationalAsset**.

Name	Type	Description
Arrangement	String	Arrangement
Beam	int	Beam measurement in meters.
Breadth	int	Distance side to side of the vessel in meters
CallSign	String	Callsign as defined by ITU-R M.1371
ConditionOfTheCargoAndBallast	ConditionOfTheCargoAndBallastType	Indicates the current load of cargo and ballast
ContainerCapacity	int	Container capacity in feet. Available in common standard lengths of 20-ft (6.1 m), 40-ft (12.2 m), 45-ft (13.7 m), 48-ft (14.6 m), and 53-ft (16.2 m).
Deadweight	int	Dead weight in tonnes
Depth	double	Depth
DesignSpeed	double	Design speed in knots
Draught	double	Draught in meter
FishingGear	FishingGearType	Indicates the type of fishing gear aboard the vessel
GrossTonnage	double	Gross tonnage (no unit)
HullMaterial	HullMaterialType	Hull material
IMONumber	long	The IMO number of the vessel.
INFShipClass	INFClassType	International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships
INMARSATNumber	String	INMARSAT number
IRNumber	String	Information request number for the vessel.
IsBanned	boolean	Indicates if a vessel is banned
IsFishing	boolean	Indicates if a vessel is currently fishing
ISPSSecurityLevel	ISPSSecurityLevelType	International Ship and Port Security levels as defined by the ISPS code

Name	Type	Description
Length	double	Length in meters.
LengthenedYear	int	Lengthened year
LOA	double	Length overall of the vessel in meters.
MMSI	long	MMSI number as defined by ITU-R M.
NavigationalStatus	NavigationalStatusType	Navigational status enumeration defined by the IVEF standard
NetTonnage	double	Net tonnage
RegionalIdentification	String	Regional identification
RegistryDate	xs:Date	Registry date
RegistryNumber	String	Registry number
SegregatedBallastVolume	double	Separated volume of ballast
ShipConfiguration	ShipConfigurationType	Indicates the hull configuration of the vessel
ShipType	VesselType	Different types of vessels.
UnderSanitaryMeasure	SanitaryMeasureType	Sanitary measure to be taken in respect to the vessel
UVI	String	Unique vessel identifier defined by the FAO.
YearBuilt	int	Year when the vessel was built

8.1.19.2.2. ConditionOfTheCargoAndBallastType Class

This enumeration presents the vessel load's condition.

Name	Type	Description
FULL		Vessel fully loaded
EMPTY		Vessel empty
INERTED		Load inerted
OTHER		Any other condition not mentioned above
NON_SPECIFIED		Condition not specified

8.1.19.2.3. FishingGearType Class

This enumeration presents the list of fishing gears a vessel can be equipped with according to UN FAO rules.

Name	Type	Description
SURROUNDING_NETS		Surrounding nets
SEINE_NETS		Seine nets
TRAWL_NETS		Trawl nets
DREDGES		Dredges
LIFT_NETS		Lift nets
FALLING_NETS		Falling nets
GILLNETS_AND_ENTANGLING_NETS		Gillnets and entangling nets
TRAPS		Traps
HOOKS_AND_LINES		Hooks and lines
GRAPPLING_AND_WOUNDING_GEAR		Grappling and wounding gears
STUPEFYING_DEVICES		Stupefying devices
OTHER		Any other gear not mentioned above
NON_SPECIFIED		Gear not specified

8.1.19.2.4. HullMaterialType Class

This enumeration presents hull material types.

Name	Type	Description
HIGH_STRENGTH_STEEL		High Strength Steel
OTHER		Any other type not mentioned above
NON_SPECIFIED		Type not specified

8.1.19.2.5. INFClassType Class

-This enumeration presents the list of international codes for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes.

See <http://www.imo.org/OurWork/Safety/Cargoes/Pages/IrradiatedNuclearFuel.aspx> for further details.

Name	Type	Description

INF_1		Class INF 1 ship - Ships which are certified to carry INF cargo with an aggregate activity less than 4,000 TBq (TeraBecquerel= measurement of radioactivity)
INF_2		Class INF 2 ship - Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes with an aggregate activity less than 2×10^6 TBq and ships which are certified to carry plutonium with an aggregate activity less than 2×10^5 TBq.
INF_3		Class INF 3 ship - Ships which are certified to carry irradiated nuclear fuel or high-level radioactive wastes and ships which are certified to carry plutonium with no restriction of the maximum aggregate activity of the materials
OTHER		Any class not mentioned above
NON_SPECIFIED		Class not specified

8.1.19.2.6. ISPSSecurityLevelType Class

This enumeration presents the possible values for the security level of the port.

(This enumeration presents the three levels of the ISPS code. See http://www.imo.org/blast/mainframe.asp?topic_id=583&doc_id=2689#code for further details.)

Name	Type	Description
SECURITY_LEVEL_1		Normal, the level at which the ship or port facility normally operates. Security level 1 means the level for which minimum appropriate protective security measures shall be maintained at all times.
SECURITY_LEVEL_2		Heightened, the level applying for as long as there is a heightened risk of a security incident. Security level 2 means the level for which appropriate additional protective security measures shall be maintained for a period of time as a

		result of heightened risk of a security incident.
SECURITY_LEVEL_3		Exceptional, the level applying for the period of time when there is the probable or imminent risk of a security incident. Security level 3 means the level for which further specific protective security measures shall be maintained for a limited period of time when a security incident is probable or imminent, although it may not be possible to identify the specific target.
OTHER		Any other security level not mentioned above
NON_SPECIFIED		Security level not specified

8.1.19.2.7. NavigationalStatusType Class

This enumeration presents the different types of navigational statuses in accordance with the inter VTS exchange format.

Name	Type	Description
UNDER WAY USING ENGIN E		Under way using engine
AT_ANCHOR		At anchor
NOT_UNDER_COMMAND		Not under command
RESTRICTED_MANOEUVRABILITY		Restricted manoeuvrability
CONSTRAINED_BY_HER_DR AUGHT		Constrained by her draught
MOORED		Moored
AGROUND		Aground
ENGAGED_IN_FISHING		Engaged in fishing
UNDER_WAY_SAILING		Under way sailing
ENGAGED_IN_FISHING_OTHER_THAN_TRAWLING		Engaged in fishing other than trawling

AIR_CUSHION_VESSEL_IN_N ON_DISPLAMENET_MODE_O R_WIG_CRAFT_TAKING_OFF _LANDING_OR_IN_FLIGHT		Air-cushion vessel in non-displacement mode or WIG craft taking off, landing or in flight
POWER_DRIVEN_VESSEL_TO WING_ASTERN		Power driven vessel towing astern
POWER_DRIVEN_VESSEL_TO WIG_AHEAD_OR_PUSHING_A LONGSIDE		Power driven vessel towing ahead or pushing alongside
IN_DISTRESS_OR_REQUIRING_ASSISTANCE		In distress or requiring assistance
AISSART_SEEKING_TO_ATTRACT_ATTENTION		AIS SART, seeking to attract attention
UNDEFINED_DEFAULT		Undefined default
OTHER		Any other severity not mentioned above
NON_SPECIFIED		Severity not specified

8.1.19.2.8. SanitaryMeasureType Class

This enumeration presents the list of sanitary measure a vessel can be the object of.

Name	Type	Description
QUARANTINE		Quarantine
ISOLATION		Isolation
DISINFECTION		Disinfection
DECONTAMINATION		Decontamination
OTHER		Any other sanitary measure not mentioned above
NON_SPECIFIED		Sanitary measure not specified

8.1.19.2.9. ShipConfigurationType Class

This enumeration presents the list of ship configuration types.

Name	Type	Description
SINGLE_HULL_TANKER		Single hull tanker
SINGLE_HULL_WITH_SEGRE GATTED_BALLOST_TANKS		Single hull with segregated ballast tanks

DOUBLE_HULL_TANKER		Double hull tanker
OTHER		Any other ship configuration type not mentioned above
NON_SPECIFIED		Ship configuration type not specified

8.1.19.2.10. VesselType Class

This enumeration presents the different types of Vessel. This list is limited to general type of vessel. It could be detailed in further modeling activities.

Name	Type	Description
PASSENGER_SHIP		Passenger ship
FISHING_VESSEL		Fishing vessel
NUCLEAR_SHIP		Nuclear ship
BULK_CARRIER		Bulk carrier
OIL_TANKER		Oil tanker
GENERAL_CARGO_SHIP		General cargo ship
HIGH_SPEED_CRAFT		High-speed craft
MOBILE_OFF_SHORE_DRILLING_UNIT		Mobile off-shore drilling unit
SPECIAL_PURPOSE_SHIP		Special purpose ship
OTHER		Any other certainty not mentioned above
NON_SPECIFIED		Certainty not specified

9. Annex C: e-CISE Data Model Technical Adoption

9.1. e-CISE Adoption Guidelines

The e-CISE Data Model technical adoption guide, is an additional outcome of the D3.1 e-CISE Data Model description. The purpose of this document is to provide high level as well as specific guidelines on how to represent and exchange e-CISE entities. For guidelines regarding the CISE Data Model entities please refer to the Guidelines of the CISE Data Model published by DG and JRC [3].

9.1.1. Generic Adoption Guidelines

In this section of the adoption guideline, the reader can find generic guidelines which apply on almost all e-CISE entities and should be applied by all Systems exchanging e-CISE information.

9.1.1.1. Unique Identifier

The UniqueIdentifier as defined by CISE, is used to uniquely identify each and every single data object exchanged through the network. In the following sample please find the minimum information required to specify a valid Unique Identifier.

```
<Identifier>
  <GeneratedBy>
    <IdentificationNumber>06111223</IdentificationNumber>
  </GeneratedBy>
  <GeneratedIn>2020-03-07T06:25:44.820+02:00</GeneratedIn>
  <UUID>c2f8a480-63ca-427e-98db-306ddf27ef5f</UUID>
</Identifier>
```

Unique identifier as shown in the above example consists of two parts

- The Organization that generated the Unique Identifier (GeneratedBy)
- The UUID, represented by 32 hexadecimal digits.
- The Timestamp of the UniqueIdentifier's generation

Regarding UUID, the organization generating this Identifier must provide a way of generating it, in order to be able to relate uniquely a specific e-CISE object.

E-CISE entities are having relationships and associations with other e-CISE Entities. For example, a Vessel could be involved in a MaritimeAnomaly. When an organization needs to share the Anomaly, the following could apply with regard to sharing the involved vessel.

- Involved vessel is not shared.
- Specifying just the UniqueIdentifier of the Vessel involved, only if that Vessel is already exchanged with the recipient of the Anomaly.
- Specifying the involved Vessel's most important information and exchange it together with the information of the Anomaly.

9.1.1.2. Fusion of Information

When a fused entity is expressed in e-CISE format and in order to enable traceability to the information sources of the fusion process the following principles should be applied.

- The raw e-CISE entities which are being used as counterparts of the fusion correlation process must have a valid UniqueIdentifier and be exchanged prior to the fused entity.
- The fused entity must correlate the UniqueIdentifiers of all e-CISE entities used in the information fusion process, and provide them using the CorrelatedWith association class of the UniqueIdentifier class.
- In order to obtain the fusion counterpart entity information, a discovery using the UniqueIdentifier of the entity correlated with the fused entity must be performed.

In the following example, consisting of fictional information, the Vessel with UUID: `899e0fcd-560d-4f32-bb3e-7c538edc53da` is generated with Automatic Fusion of the Vessel with UUID: `3b5a54c0-4bf7-4aeb-a44e-20af2d80c25d` and Vessel with UUID: `608e2dbb-4ed6-4ba9-bf8b-3a4d4bbbedc74`.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Vessel xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/vessel/"
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/"
  xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/"
  xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Vessel">
  <Identifier>
    <GeneratedIn>2020-04-15T19:19:42.003+03:00</GeneratedIn>
    <UUID>899e0fcd-560d-4f32-bb3e-7c538edc53da</UUID>
    <correlatedWithRel>
      <UniqueIdentifier>
        <GeneratedBy>
          <IdentificationNumber>06111223</IdentificationNumber>
        </GeneratedBy>
        <GeneratedIn>2020-04-15T19:19:41.993+03:00</GeneratedIn>
        <UUID>3b5a54c0-4bf7-4aeb-a44e-20af2d80c25d</UUID>
      </UniqueIdentifier>
      <UniqueIdentifier>
        <GeneratedBy>
          <IdentificationNumber>06111223</IdentificationNumber>
        </GeneratedBy>
        <GeneratedIn>2020-04-15T19:19:42.001+03:00</GeneratedIn>
        <UUID>608e2dbb-4ed6-4ba9-bf8b-3a4d4bbbedc74</UUID>
      </UniqueIdentifier>
      <CorrelationType>Automatic</CorrelationType>
      <CorrelationSource>Fusion</CorrelationSource>
      <CorrelationMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/uniqueidentifier/"
        xsi:type="ns11:FusionMetadata">
        <FusionId>Fusion-1</FusionId>
      </CorrelationMetadata>
      <CorrelatedIn>2020-04-15T19:19:42.003+03:00</CorrelatedIn>
      <CorrelatedBy>
        <IdentificationNumber>06111223</IdentificationNumber>
      </CorrelatedBy>
    </correlatedWithRel>
  </Identifier>

```

</Vessel>

9.1.1.3. Date Attributes of e-CISE Entities

Most of the e-CISE entities have attributes referring to Date datatype. Most of them are self-explanatory like the registryDate of a Vessel. Please follow the below guidelines to provide dates referring to the generation and location of an e-CISE entity.

- [Metadata:CreationDate](#): The date and time of the e-CISE entity, should be provided.
- [LocationRel:PeriodOfTime](#): The period (start date and optionally end date) referring to the duration of the object at a specific location. This must be provided always together with the Location of the object to enable spatiotemporal capabilities.

9.1.1.4. Geometry

As documented in the D3.1 Geometry in e-CISE can be instantiated as PointGeometry, CircularGeometry, BoundingBoxGeometry, WKTGeometry or XMLGeometry. The Geometries must be provided in WGS84 geodetic system or in a Local Coordinate System in specific cases. In case of CircularGeometry the radius must be provided in kilometers.

9.1.1.5. Units of measurement

In e-CISE there is no mechanism to externally configure the measurement unit types. The International System of units is the Metric System most commonly used in e-CISE. For attributes requiring such values, the unit of measurement can be inferred from the attribute's name (e.g. RadiusInKms) or by the description of the attribute as documented in the D3.1.

Specifically, for DateTime type elements, the generic guideline is that it should be formatted and exchanged in UTC format. Alternatively, the time zone must be specified.

9.1.2. e-CISE Data Model Entities Adoption Guidelines

In the following sections, sample e-CISE Data Model XMLs are provided. The information included is fictional and the purpose is to demonstrate e-CISE capabilities.

9.1.2.1. Sensors

Sensors in e-CISE refers to the means of detection of an object or a person. A Sensor in e-CISE data model can be a Camera, a Radar or an AIS device. In the following sections, Sensors samples are provided as expressed in e-CISE.

9.1.2.1.1. AisDevice

A sample representation of an AIS transmitter mounted on a Vessel is provided below in e-CISE format.

```
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<AisDevice xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/sensor/">
```

```

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns7:AisDevice">
  <SensorType>AutomaticIdentificationSystem</SensorType>
  <SensorStatusType>OnlineNotTransmitting</SensorStatusType>
  <IsPortable>false</IsPortable>
  <HostPlatform>
    <HostEntityType>Vehicle</HostEntityType>
    <HostVehicle xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
      <Identifier>
        <GeneratedBy>
          <AlternativeName>ALTNAMES1</AlternativeName>
          <IdentificationNumber>06111223</IdentificationNumber>
          <LegalName>Organization1</LegalName>
        </GeneratedBy>
        <UUID>85f043d7-e829-4549-b254-a4f7a54f8c84</UUID>
      </Identifier>
      <MMSI>123456789</MMSI>
    </HostVehicle>
    <MountingPosition>
      <Altitude>34.0</Altitude>
      <Latitude>220.0</Latitude>
      <Longitude>10.0</Longitude>
    </MountingPosition>
  </HostPlatform>
  <AisType>ClassA</AisType>
</AisDevice>

```

9.1.2.1.2. Radar

A sample representation of a fixed rotating Radar is provided below in e-CISE format.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Radar xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/sensor/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns7:Radar">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMES1</AlternativeName>
      <IdentificationNumber>06111223</IdentificationNumber>
      <LegalName>Organization1</LegalName>
    </GeneratedBy>
    <UUID>cdf9c828-908c-4b9a-9eba-b0cc15384514</UUID>
  </Identifier>
  <SensorType>MaritimeRadar</SensorType>
  <SensorStatusType>Online</SensorStatusType>
  <IsPortable>false</IsPortable>
  <Yaw>90.0</Yaw>
  <Pitch>90.0</Pitch>
  <Roll>45.0</Roll>
  <HostPlatform>
    <HostEntityType>Fixed</HostEntityType>

```

```

<MountingPosition>
  <Latitude>39.25299291875617</Latitude>
  <Longitude>25.86387634277344</Longitude>
</MountingPosition>
</HostPlatform>
<Band>C BAND</Band>
<OperationalMode>COASTAL</OperationalMode>
<IsRotating>true</IsRotating>
<Configuration>
  <HorizontalFieldOfView>120.0</HorizontalFieldOfView>
  <VerticalFieldOfView>74.0</VerticalFieldOfView>
  <RangeInMeters>30000.0</RangeInMeters>
</Configuration>
</Radar>

```

9.1.2.1.3. Camera

A sample representation of a camera sensor mounted on a UAV is provided below in e-CISE format.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Camera xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/sensor/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns7:Camera">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAME</AlternativeName>
      <IdentificationNumber>076422321</IdentificationNumber>
      <LegalName>Organization3</LegalName>
    </GeneratedBy>
    <UUID>e13c7130-81fd-43da-8c08-10dc76121f18</UUID>
  </Identifier>
  <SensorType>Camera</SensorType>
  <IsPortable>true</IsPortable>
  <Yaw>25.0</Yaw>
  <Pitch>25.0</Pitch>
  <Roll>25.0</Roll>
  <HostPlatform>
    <HostEntityType>Vehicle</HostEntityType>
    <HostVehicle xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/object/" xsi:type="ns8:Aircraft">
      <Identifier>
        <GeneratedBy>
          <AlternativeName>ALTNAME</AlternativeName>
          <IdentificationNumber>076422321</IdentificationNumber>
          <LegalName>Organization3</LegalName>
        </GeneratedBy>
        <UUID>707d490a-4f32-45c5-8214-89df4c1d6ed4</UUID>
      </Identifier>
      <AircraftType>UAV</AircraftType>
      <Yaw>15.0</Yaw>
      <Pitch>35.0</Pitch>
    </HostVehicle>
  </HostPlatform>

```

```

<Roll>45.0</Roll>
</HostVehicle>
<MountingPosition>
  <Altitude>34.0</Altitude>
  <Latitude>22.0</Latitude>
  <Longitude>10.0</Longitude>
</MountingPosition>
</HostPlatform>
<Type>RGB</Type>
<OperationalModeType>Dynamic</OperationalModeType>
<ScopeType>DayNight</ScopeType>
<HasAudio>false</HasAudio>
<MediaType>video/mpeg</MediaType>
<FrameRate>30</FrameRate>
<HorizontalFieldOfView>180.0</HorizontalFieldOfView>
<VerticalFieldOfView>145.0</VerticalFieldOfView>
<SupportsAnalytics>true</SupportsAnalytics>
</Camera>

```

9.1.2.1.4. Network Camera

A sample representation of a network camera mounted on a fixed position is provided below in e-CISE format.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<NetworkCamera
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/sensor/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ns7:NetworkCamera">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMExxx</AlternativeName>
      <IdentificationNumber>076422321</IdentificationNumber>
      <LegalName>Organization3</LegalName>
    </GeneratedBy>
    <UUID>05125c84-1f12-4809-ac56-7113596384be</UUID>
  </Identifier>
  <SensorType>Camera</SensorType>
  <IsPortable>false</IsPortable>
  <Yaw>25.0</Yaw>
  <Pitch>25.0</Pitch>
  <Roll>25.0</Roll>
  <HostPlatform>
    <HostEntityType>Fixed</HostEntityType>
    <MountingPosition>
      <Latitude>39.25299291875617</Latitude>
      <Longitude>25.86387634277344</Longitude>
    </MountingPosition>
  </HostPlatform>
  <Type>RGB</Type>

```

```

<Type>Thermal</Type>
<OperationalModeType>Static</OperationalModeType>
<ScopeType>DayNight</ScopeType>
<HasAudio>true</HasAudio>
<MediaType>video/mpeg</MediaType>
<FrameRate>30</FrameRate>
<HorizontalFieldOfView>180.0</HorizontalFieldOfView>
<VerticalFieldOfView>145.0</VerticalFieldOfView>
<SupportsAnalytics>true</SupportsAnalytics>
<IpAddress>10.40.1.44</IpAddress>
<IpPort>8080</IpPort>
<NetworkProtocol>http://</NetworkProtocol>
<ConnectionUrl>http://10.40.1.44: 8080/cgi-bin/avi.cgi?refresh=0</ConnectionUrl>
<ConnectionType>Direct</ConnectionType>
<Username>a_username</Username>
<Password>a_password</Password>
</NetworkCamera>

```

9.1.2.2. Object Assessment

In e-CISE a Sensor can provide information related to Object Assessment when associated with the location of an Object, Agent or Event. The sensor could have one of the following roles in that association.

- Detecting
- Tracking

To share information related to Object Assessment in e-CISE the following could be provided.

- Information of the Object or Person detected
- Information of the Sensor used to detect.
- Metadata Information related to the role of the Sensor.

9.1.2.2.1. Detection of a Vessel by AIS sensor

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Vessel xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/vessel/" 
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/" 
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/" 
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/" 
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/" 
  xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/" 
  xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/" 
  xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/" 
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Vessel">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>06111223</IdentificationNumber>
    </GeneratedBy>
    <GeneratedIn>2020-04-16T01:16:18.073+03:00</GeneratedIn>
    <UUID>88e3e33b-c262-4d1d-ad2d-2f23f7e27089</UUID>
  </Identifier>
  <Name>MARY BST</Name>
  <LocationRel>

```

```

<Location>
  <Geometry xsi:type="ns2:PointGeometry">
    <Latitude>39.27525265211992</Latitude>
    <Longitude>25.86688186645508</Longitude>
  </Geometry>
</Location>
<COG>1.0</COG>
<Heading>1.1</Heading>
<SourceType>Observation</SourceType>
<SourceType>AIS</SourceType>
<SOG>12.2</SOG>
<InvolvedSensorRel>
  <Sensor xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:AisDevice">
    <SensorType>AutomaticIdentificationSystem</SensorType>
    <SensorStatusType>Online</SensorStatusType>
    <IsPortable>false</IsPortable>
    <HostPlatform>
      <HostEntityType>Vehicle</HostEntityType>
      <HostVehicle xsi:type="ns10:Vessel">
        <Identifier>
          <GeneratedBy>
            <IdentificationNumber>06111223</IdentificationNumber>
          </GeneratedBy>
          <GeneratedIn>2020-04-16T01:16:17.346+03:00</GeneratedIn>
          <UUID>d2718a2f-c946-43f7-876c-67b20bbf5dc5</UUID>
        </Identifier>
        <MMSI>123456789</MMSI>
      </HostVehicle>
      <MountingPosition>
        <Altitude>34.0</Altitude>
        <Latitude>220.0</Latitude>
        <Longitude>10.0</Longitude>
      </MountingPosition>
    </HostPlatform>
    <AisType>ClassA</AisType>
  </Sensor>
  <SensorRole>Detecting</SensorRole>
  <SensorMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:DetectionMetadata">
    <DetectionConfidence>
      <Percentage>80.0</Percentage>
    </DetectionConfidence>
    <SensorMetadata>
    </SensorMetadata>
  </InvolvedSensorRel>
</LocationRel>
<Breadth>14</Breadth>
<CallSign>callsign179.67793842697054</CallSign>
<IMONumber>97808807956147021</IMONumber>
<MMSI>7578874037971138932</MMSI>
<ShipType>GeneralCargo</ShipType>
</Vessel>

```

9.1.2.2.2. Detection of a Vessel by a Radar

In the following sample the full information of a Vessel track, as detected by a Maritime radar is provided.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Vessel xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/vessel/"
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/"
  xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/"
  xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Vessel">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>06111223</IdentificationNumber>
    </GeneratedBy>
    <GeneratedIn>2020-04-16T01:18:02.268+03:00</GeneratedIn>
    <UUID>44c06be8-62d6-4dcd-9043-4c4fa4426e5e</UUID>
  </Identifier>
  <LocationRel>
    <Location>
      <Geometry xsi:type="ns2:PointGeometry">
        <Latitude>39.25525265211992</Latitude>
        <Longitude>25.84688186645508</Longitude>
      </Geometry>
    </Location>
    <Heading>9.0</Heading>
    <PeriodOfTime>
      <StartDate>2020-04-16</StartDate>
      <StartTime>01:18:02.270+03:00</StartTime>
    </PeriodOfTime>
    <SourceType>Observation</SourceType>
    <SourceType>Radar</SourceType>
    <SOG>30.0</SOG>
    <InvolvedSensorRel>
      <Sensor xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:Radar">
        <Identifier>
          <GeneratedBy>
            <IdentificationNumber>06111223</IdentificationNumber>
          </GeneratedBy>
          <GeneratedIn>2020-04-16T01:18:02.258+03:00</GeneratedIn>
          <UUID>e895cf2f-f383-4e22-86a1-2beb5d6ff1bc</UUID>
        </Identifier>
        <SensorType>MaritimeRadar</SensorType>
        <SensorStatusType>Online</SensorStatusType>
        <IsPortable>false</IsPortable>
        <Yaw>90.0</Yaw>
        <Pitch>90.0</Pitch>
        <Roll>45.0</Roll>
        <HostPlatform>
          <HostEntityType>Fixed</HostEntityType>

```

```

<MountingPosition>
  <Latitude>39.25299291875617</Latitude>
  <Longitude>25.86387634277344</Longitude>
</MountingPosition>
</HostPlatform>
<Band>C BAND</Band>
<OperationalMode>COASTAL</OperationalMode>
<IsRotating>true</IsRotating>
<Configuration>
  <HorizontalFieldOfView>120.0</HorizontalFieldOfView>
  <VerticalFieldOfView>74.0</VerticalFieldOfView>
  <RangeInMeters>30000.0</RangeInMeters>
</Configuration>
</Sensor>
<SensorRole>Detecting</SensorRole>
<SensorMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:DetectionMetadata">
  <DetectionConfidence>
    <Percentage>80.0</Percentage>
  </DetectionConfidence>
</SensorMetadata>
</InvolvedSensorRel>
</LocationRel>
</Vessel>

```

9.1.2.2.3. Fusion of a Vessel by Radar and AIS

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Vessel xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/vessel/" xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/" xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/" xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/" xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/" xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/" xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/" xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Vessel">
<Identifier>
  <GeneratedBy>
    <IdentificationNumber>06111223</IdentificationNumber>
  </GeneratedBy>
  <GeneratedIn>2020-04-16T01:16:18.073+03:00</GeneratedIn>
  <UUID>12345678-c262-4d1d-ad2d-2f23f7e27089</UUID>
  <correlatedWithRel>
    <UniqueIdentifier>
      <GeneratedBy>
        <IdentificationNumber>06111223</IdentificationNumber>
      </GeneratedBy>
      <GeneratedIn>2020-04-16T01:16:18.073+03:00</GeneratedIn>
      <UUID>88e3e33b-c262-4d1d-ad2d-2f23f7e27089</UUID>
    </UniqueIdentifier>
    <UniqueIdentifier>
      <GeneratedBy>
```

```

<IdentificationNumber>06111223</IdentificationNumber>
</GeneratedBy>
<GeneratedIn>2020-04-16T01:18:02.268+03:00</GeneratedIn>
<UUID>44c06be8-62d6-4dcd-9043-4c4fa4426e5e</UUID>
</UniqueIdentifier>
<CorrelationType>Automatic</CorrelationType>
<CorrelationSource>Fusion</CorrelationSource>
<CorrelationMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/uniqueidentifier/" xsi:type="ns11:FusionMetadata">
  <FusionId>Fusion-1</FusionId>
</CorrelationMetadata>
<CorrelatedIn>2020-04-15T19:19:42.003+03:00</CorrelatedIn>
<CorrelatedBy>
  <IdentificationNumber>06111223</IdentificationNumber>
</CorrelatedBy>
</correlatedWithRel>
</Identifier>
<Name>MARY BST</Name>
<LocationRel>
  <Location>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>39.26525265211992</Latitude>
      <Longitude>25.85688186645508</Longitude>
    </Geometry>
  </Location>
  <COG>1.0</COG>
  <Heading>9</Heading>
  <SourceType>FusionServices</SourceType>
  <SourceType>AIS</SourceType>
  <SourceType>Radar</SourceType>
  <SOG>30.0</SOG>
  <InvolvedSensorRel>
    <Sensor xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:AisDevice">
      <SensorType>AutomaticIdentificationSystem</SensorType>
      <SensorStatusType>Online</SensorStatusType>
      <IsPortable>false</IsPortable>
      <AisType>ClassA</AisType>
    </Sensor>
    <SensorRole>Detecting</SensorRole>
    <SensorMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:DetectionMetadata">
      <DetectionConfidence>
        <Percentage>80.0</Percentage>
      </DetectionConfidence>
    </SensorMetadata>
  </InvolvedSensorRel>
  <InvolvedSensorRel>
    <Sensor xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:Radar">
      <Identifier>
        <GeneratedBy>
          <IdentificationNumber>06111223</IdentificationNumber>
        </GeneratedBy>
        <GeneratedIn>2020-04-16T01:18:02.258+03:00</GeneratedIn>

```

```

<UUID>e895cf2f-f383-4e22-86a1-2beb5d6ff1bc</UUID>
</Identifier>
<SensorType>MaritimeRadar</SensorType>
<SensorStatusType>Online</SensorStatusType>
<IsPortable>false</IsPortable>
<Yaw>90.0</Yaw>
<Pitch>90.0</Pitch>
<Roll>45.0</Roll>
<Band>C BAND</Band>
<OperationalMode>COASTAL</OperationalMode>
<IsRotating>true</IsRotating>
<Configuration>
  <HorizontalFieldOfView>120.0</HorizontalFieldOfView>
  <VerticalFieldOfView>74.0</VerticalFieldOfView>
  <RangeInMeters>30000.0</RangeInMeters>
</Configuration>
</Sensor>
<SensorRole>Detecting</SensorRole>
<SensorMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:DetectionMetadata">
  <DetectionConfidence>
    <Percentage>80.0</Percentage>
  </DetectionConfidence>
  </SensorMetadata>
</InvolvedSensorRel>
</LocationRel>
<Breadth>14</Breadth>
<CallSign>callsign179.67793842697054</CallSign>
<IMONumber>97808807956147021</IMONumber>
<MMSI>7578874037971138932</MMSI>
<ShipType>GeneralCargo</ShipType>
</Vessel>

```

9.1.2.2.4. Detection of a Person by a Camera

In the following example the e-CISE representation of a Person detected by a Fixed camera is provided. The CameraDetectionMetadata is also provided enabling the correlation of the detected Person with the Camera's video stream.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Person xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/person/" xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/" xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/" xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/" xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/" xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/" xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/" xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Person">
<Identifier>
  <GeneratedBy>
    <IdentificationNumber>076422321</IdentificationNumber>
  </GeneratedBy>

```

```

<GeneratedIn>2020-04-16T01:36:13.837+03:00</GeneratedIn>
<UUID>f1646222-d720-4441-9083-2bc123eb84b8</UUID>
</Identifier>
<ConfirmationStatus>Pending</ConfirmationStatus>
<IsOfInterest>true</IsOfInterest>
<IsSuspect>true</IsSuspect>
<LocationRel>
  <Location>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>24.98610025220411</Latitude>
      <Longitude>22.246337890625004</Longitude>
    </Geometry>
  </Location>
<InvolvedSensorRel>
  <Sensor xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:Camera">
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <GeneratedIn>2020-04-16T01:36:13.837+03:00</GeneratedIn>
      <UUID>f1646222-d720-4441-9083-2bc123eb84b8</UUID>
    </Identifier>
    <SensorType>Camera</SensorType>
    <IsPortable>false</IsPortable>
    <HostPlatform>
      <HostEntityType>Fixed</HostEntityType>
      <MountingPosition>
        <Latitude>40.89093668840454</Latitude>
        <Longitude>26.22041702270508</Longitude>
      </MountingPosition>
    </HostPlatform>
    <Type>RGB</Type>
    <ScopeType>DayNight</ScopeType>
    <MediaType>video/mpeg</MediaType>
    <FrameRate>30</FrameRate>
    <SupportsAnalytics>true</SupportsAnalytics>
  </Sensor>
  <SensorRole>Detecting</SensorRole>
  <SensorMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:CameraDetectionMetadata">
    <Alias>detection #1</Alias>
    <DetectionConfidence>
      <Percentage>65.0</Percentage>
    </DetectionConfidence>
    <VideoStartTime>2020-04-16T01:36:13.845+03:00</VideoStartTime>
    <VideoStream>
      <Subject>Video stream from camera</Subject>
      <StreamType>Video</StreamType>
      <StreamURI>http://10.40.1.44: 8080/cgi-bin/avi.cgi?refresh=0</StreamURI>
    </VideoStream>
    <VideoDetectionMetadata>
      <DetectionFrameNumber>1</DetectionFrameNumber>
      <DetectionTimeSinceVideoStartInSeconds>0.033</DetectionTimeSinceVideoStartInSeconds>
    </VideoDetectionMetadata>
  </SensorMetadata>
</Sensor>

```

```

<BoundingBox>
  <TopLeftPoint>
    <Latitude>400.0</Latitude>
    <Longitude>100.0</Longitude>
  </TopLeftPoint>
  <BottomLeftPoint>
    <Latitude>250.0</Latitude>
    <Longitude>100.0</Longitude>
  </BottomLeftPoint>
  <TopRightPoint>
    <Latitude>250.0</Latitude>
    <Longitude>150.0</Longitude>
  </TopRightPoint>
  <BottomRightPoint>
    <Latitude>400.0</Latitude>
    <Longitude>150.0</Longitude>
  </BottomRightPoint>
</BoundingBox>
</VideoDetectionMetadata>
<VideoDetectionMetadata>
  <DetectionFrameNumber>2</DetectionFrameNumber>
  <DetectionTimeSinceVideoStartInSeconds>0.066</DetectionTimeSinceVideoStartInSeconds>
  <BoundingBox>
    <TopLeftPoint>
      <Latitude>403.0</Latitude>
      <Longitude>103.0</Longitude>
    </TopLeftPoint>
    <BottomLeftPoint>
      <Latitude>253.0</Latitude>
      <Longitude>103.0</Longitude>
    </BottomLeftPoint>
    <TopRightPoint>
      <Latitude>253.0</Latitude>
      <Longitude>153.0</Longitude>
    </TopRightPoint>
    <BottomRightPoint>
      <Latitude>403.0</Latitude>
      <Longitude>153.0</Longitude>
    </BottomRightPoint>
  </BoundingBox>
</VideoDetectionMetadata>
</SensorMetadata>
</InvolvedSensorRel>
</LocationRel>
<Gender>Male</Gender>
</Person>

```

9.1.2.2.5. Detection of a LandVehicle by a Camera

In the following example the e-CISE representation of a LandVehicle detected by a Fixed camera is provided. The CameraDetectionMetadata is also provided enabling the correlation of the detected Land Vehicle with the Camera's video stream.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<LandVehicle xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/object/" 
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/" 
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/" 
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/" 
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/" 
  xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/" 
  xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/" 
  xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/" 
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:LandVehicle">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>076422321</IdentificationNumber>
    </GeneratedBy>
    <GeneratedIn>2020-04-16T01:36:13.845+03:00</GeneratedIn>
    <UUID>f33582ea-3cff-4334-91e0-0f6405d859b7</UUID>
  </Identifier>
  <Notes>Stolen car</Notes>
  <LocationRel>
    <Location>
      <Geometry xsi:type="ns2:PointGeometry">
        <Latitude>24.98610025220411</Latitude>
        <Longitude>22.246337890625004</Longitude>
      </Geometry>
    </Location>
    <InvolvedSensorRel>
      <Sensor xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:Camera">
        <Identifier>
          <GeneratedBy>
            <IdentificationNumber>076422321</IdentificationNumber>
          </GeneratedBy>
          <GeneratedIn>2020-04-16T01:36:13.837+03:00</GeneratedIn>
          <UUID>f1646222-d720-4441-9083-2bc123eb84b8</UUID>
        </Identifier>
        <SensorType>Camera</SensorType>
        <IsPortable>false</IsPortable>
        <HostPlatform>
          <HostEntityType>Fixed</HostEntityType>
          <MountingPosition>
            <Latitude>40.89093668840454</Latitude>
            <Longitude>26.22041702270508</Longitude>
          </MountingPosition>
        </HostPlatform>
        <Type>RGB</Type>
        <ScopeType>DayNight</ScopeType>
        <MediaType>video/mpeg</MediaType>
        <FrameRate>30</FrameRate>
        <SupportsAnalytics>true</SupportsAnalytics>
      </Sensor>
      <SensorRole>Detecting</SensorRole>
      <SensorMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" 
        xsi:type="ns11:CameraDetectionMetadata">
        <Alias>detection #1</Alias>
      </SensorMetadata>
    </InvolvedSensorRel>
  </LocationRel>
</LandVehicle>

```

```

<DetectionConfidence>
  <Percentage>65.0</Percentage>
</DetectionConfidence>
<VideoStartTime>2020-04-16T01:36:13.845+03:00</VideoStartTime>
<VideoStream>
  <Subject>Video stream from camera</Subject>
  <StreamType>Video</StreamType>
  <StreamURI>http://10.40.1.44: 8080/cgi-bin/avi.cgi?refresh=0</StreamURI>
</VideoStream>
<VideoDetectionMetadata>
  <DetectionFrameNumber>1</DetectionFrameNumber>
  <DetectionTimeSinceVideoStartInSeconds>0.033</DetectionTimeSinceVideoStartInSeconds>
  <BoundingBox>
    <TopLeftPoint>
      <Latitude>400.0</Latitude>
      <Longitude>100.0</Longitude>
    </TopLeftPoint>
    <BottomLeftPoint>
      <Latitude>250.0</Latitude>
      <Longitude>100.0</Longitude>
    </BottomLeftPoint>
    <TopRightPoint>
      <Latitude>250.0</Latitude>
      <Longitude>150.0</Longitude>
    </TopRightPoint>
    <BottomRightPoint>
      <Latitude>400.0</Latitude>
      <Longitude>150.0</Longitude>
    </BottomRightPoint>
  </BoundingBox>
</VideoDetectionMetadata>
<VideoDetectionMetadata>
  <DetectionFrameNumber>2</DetectionFrameNumber>
  <DetectionTimeSinceVideoStartInSeconds>0.066</DetectionTimeSinceVideoStartInSeconds>
  <BoundingBox>
    <TopLeftPoint>
      <Latitude>403.0</Latitude>
      <Longitude>103.0</Longitude>
    </TopLeftPoint>
    <BottomLeftPoint>
      <Latitude>253.0</Latitude>
      <Longitude>103.0</Longitude>
    </BottomLeftPoint>
    <TopRightPoint>
      <Latitude>253.0</Latitude>
      <Longitude>153.0</Longitude>
    </TopRightPoint>
    <BottomRightPoint>
      <Latitude>403.0</Latitude>
      <Longitude>153.0</Longitude>
    </BottomRightPoint>
  </BoundingBox>
</VideoDetectionMetadata>

```

```

        </SensorMetadata>
        </InvolvedSensorRel>
    </LocationRel>
    <ClassificationType>Stolen</ClassificationType>
    <ClassificationConfidence>
        <Percentage>100.0</Percentage>
        <Level>VeryHighConfidence</Level>
    </ClassificationConfidence>
    <ConfirmationStatus>Confirmed</ConfirmationStatus>
    <TotalPersonsOnBoard>1</TotalPersonsOnBoard>
    <LicensePlate>AAA 1111</LicensePlate>
</LandVehicle>

```

9.1.2.2.6. Tracking of a Vehicle by a Camera

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<LandVehicle xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/object/" 
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/" 
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/" 
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/" 
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/" 
  xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/" 
  xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/" 
  xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/" 
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:LandVehicle">
    <Identifier>
        <GeneratedBy>
            <IdentificationNumber>076422321</IdentificationNumber>
        </GeneratedBy>
        <GeneratedIn>2020-04-16T01:49:37.873+03:00</GeneratedIn>
        <UUID>feccd796-b0c2-44ac-ab50-e61667d25d0f</UUID>
    </Identifier>
    <Notes>Tracking</Notes>
    <Notes>Stolen car</Notes>
    <LocationRel>
        <Location>
            <Geometry xsi:type="ns2:PointGeometry">
                <Latitude>24.98610025220411</Latitude>
                <Longitude>22.246337890625004</Longitude>
            </Geometry>
        </Location>
        <InvolvedSensorRel>
            <Sensor xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:Camera">
                <Identifier>
                    <GeneratedBy>
                        <AlternativeName>AltName1</AlternativeName>
                        <IdentificationNumber>076422321</IdentificationNumber>
                        <LegalName>Organization1</LegalName>
                    </GeneratedBy>
                    <GeneratedIn>2020-04-16T01:49:37.864+03:00</GeneratedIn>
                    <UUID>aa001127-5868-42a0-86b6-900d57cd3563</UUID>
                </Identifier>
                <SensorType>Camera</SensorType>
            </Sensor>
        </InvolvedSensorRel>
    </LocationRel>
</LandVehicle>

```

```

<IsPortable>false</IsPortable>
<HostPlatform>
    <HostEntityType>Fixed</HostEntityType>
    <MountingPosition>
        <Latitude>40.89093668840454</Latitude>
        <Longitude>26.22041702270508</Longitude>
    </MountingPosition>
</HostPlatform>
<Type>RGB</Type>
<ScopeType>DayNight</ScopeType>
<MediaType>video/mpeg</MediaType>
<FrameRate>30</FrameRate>
<SupportsAnalytics>true</SupportsAnalytics>
</Sensor>
<SensorRole>Tracking</SensorRole>
<SensorMetadata xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns11:TrackingMetadata">
    <Alias>tracking vehicle#1</Alias>
    <TrackId>track-id-2</TrackId>
    <TrackingCounterpart>
        <GeneratedBy>
            <IdentificationNumber>076422321</IdentificationNumber>
        </GeneratedBy>
        <GeneratedIn>2020-04-16T01:36:13.845+03:00</GeneratedIn>
        <UUID>f33582ea-3cff-4334-91e0-0f6405d859b7</UUID>
    </TrackingCounterpart>
    </SensorMetadata>
    </InvolvedSensorRel>
</LocationRel>
<ClassificationType>Stolen</ClassificationType>
<ClassificationConfidence>
    <Percentage>100.0</Percentage>
    <Level>VeryHighConfidence</Level>
</ClassificationConfidence>
<ConfirmationStatus>Confirmed</ConfirmationStatus>
<TotalPersonsOnBoard>1</TotalPersonsOnBoard>
<LicensePlate>AAA 1111</LicensePlate>
</LandVehicle>

```

9.1.2.3. Operations

Operation in e-CISE is represented as a collection of missions and tasks that need to be performed to support the planning of long-term surveillance activities. A sample operation represented in e-CISE is provided below.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Operation
    xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
    xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
    xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
    xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
    xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/operation/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:type="ns7:Operation">

```

```

<Identifier>
  <GeneratedBy>
    <AlternativeName>ALTNAMES</AlternativeName>
    <IdentificationNumber>076422321</IdentificationNumber>
    <LegalName>Organization3</LegalName>
  </GeneratedBy>
  <UUID>bf394663-5cf5-486e-b663-80c21bbcec7c</UUID>
</Identifier>
<ImpliedRiskRel>
  <Risk>
    <RiskType>Accident</RiskType>
  </Risk>
</ImpliedRiskRel>
<Name>SAR Operation Lesvos</Name>
<Description>Search and Rescue Operations near Lesvos island</Description>
<Type>Protection</Type>
<Status>InProgress</Status>
<Priority>VeryHigh</Priority>
<InvolvedMissionRel>
  <Mission>
    <Identifier>
      <GeneratedBy>
        <AlternativeName>ALTNAMES</AlternativeName>
        <IdentificationNumber>076422321</IdentificationNumber>
        <LegalName>Organization3</LegalName>
      </GeneratedBy>
      <UUID>384a99e2-53fe-4c15-b606-74e29065b371</UUID>
    </Identifier>
    <Status>Accomplished</Status>
  </Mission>
</InvolvedMissionRel>
<Duration>
  <EndDate>2022-03-08</EndDate>
  <EndTime>06:27:48.816+02:00</EndTime>
  <StartDate>2020-03-08</StartDate>
  <StartTime>06:27:48.815+02:00</StartTime>
</Duration>
<Objectives>Reducing the number of victims at the sea</Objectives>
</Operation>

```

9.1.2.4. Missions

9.1.2.4.1. CollectionPlan

A sample collection plan on the specified Area of Interest, represented in e-CISE is depicted below.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<CollectionPlan
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/mission/">
```

```

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ns7:CollectionPlan">
<Identifier>
  <GeneratedBy>
    <AlternativeName>ALTNAMES1</AlternativeName>
    <IdentificationNumber>06111223</IdentificationNumber>
    <LegalName>Organization1</LegalName>
  </GeneratedBy>
  <UUID>31b8f0c0-f101-47c4-b75b-5e50f7b3877c</UUID>
</Identifier>
<Status>CollectionInProgress</Status>
<CreationDate>2020-03-08T06:46:26.390+02:00</CreationDate>
<Priority>VeryHigh</Priority>
<InformationRequirement>
  <Originator xsi:type="ns4:Organization">
    <AlternativeName>ALTNAMES1</AlternativeName>
    <IdentificationNumber>06111223</IdentificationNumber>
    <LegalName>Organization1</LegalName>
  </Originator>
  <Justification>Information Required for this area of interest</Justification>
  <AssociatedSubjectRel>
    <Subject>
      <InvolvedSubjectLocation>
        <Location>
          <Geometry xsi:type="ns2:WKTGeometry">
<WKT>POLYGON ((26.015625 40.38839687388361, 25.905761718750004 40.805493843894176,
25.197143554687504 40.896905775860006, 25.257568359375 40.15788524950653,
25.95520019531250440.26695230509781, 26.015625 40.38839687388361))</WKT>
          </Geometry>
        </Location>
        <LocationType>AOI</LocationType>
      </InvolvedSubjectLocation>
    </Subject>
  </AssociatedSubjectRel>
</InformationRequirement>
<InformationReliabilityLevel>HighConfidence</InformationReliabilityLevel>
<InformationClassification>EURestricted</InformationClassification>
<InformationSensitivityDegree>Amber</InformationSensitivityDegree>
<PublishedStatus>Draft</PublishedStatus>
<InvolvedAgentRel>
  <Agent xsi:type="ns4:Organization">
    <AlternativeName>ALTNAMES1</AlternativeName>
    <IdentificationNumber>06111223</IdentificationNumber>
    <LegalName>Organization1</LegalName>
  </Agent>
  <AgentRole>Author</AgentRole>
</InvolvedAgentRel>
</CollectionPlan>

```

9.1.2.4.2. Search and Rescue Mission Plan

Below a sample example of a Search and Rescue Mission Plan represented in e-CISE, which demonstrates all required Operational Assets and Tasks in order to perform a successful Search and Rescue Mission.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Mission
    xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
    xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
    xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
    xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
    xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/mission/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:type="ns7:Mission">
    <Identifier>
        <GeneratedBy>
            <AlternativeName>ALTNAME</AlternativeName>
            <IdentificationNumber>076422321</IdentificationNumber>
            <LegalName>Organization3</LegalName>
        </GeneratedBy>
        <UUID>0a79d7b7-9032-4383-9feb-c1c6014b8728</UUID>
    </Identifier>
    <IsMissionTemplate>true</IsMissionTemplate>
    <Type>SearchAndRescue</Type>
    <Priority>VeryHigh</Priority>
    <InvolvedOperationalAsset>
        <OperationalAsset>
            <OperationalAssetType>SearchAndRescueVehicle</OperationalAssetType>
            <OperationalCapability>SearchAndRescue</OperationalCapability>
        </OperationalAsset>
    </InvolvedOperationalAsset>
    <InvolvedTaskRel>
        <Task>
            <Type>Transit</Type>
            <Domain>Maritime</Domain>
        </Task>
    </InvolvedTaskRel>
    <InvolvedTaskRel>
        <Task>
            <Type>RemainOnStation</Type>
            <Domain>Maritime</Domain>
        </Task>
    </InvolvedTaskRel>
    <InvolvedTaskRel>
        <Task>
            <Type>Locate</Type>
            <Domain>Maritime</Domain>
        </Task>
    </InvolvedTaskRel>
    <InvolvedTaskRel>
        <Task>
            <Type>Transfer</Type>
            <Domain>Maritime</Domain>
        </Task>
    </InvolvedTaskRel>
    <InvolvedTaskRel>
        <Task>
            <Type>MedicalServices</Type>

```

```

<Domain>Maritime</Domain>
</Task>
</InvolvedTaskRel>
<InvolvedTaskRel>
<Task>
<Type>Transport</Type>
<Domain>Maritime</Domain>
</Task>
</InvolvedTaskRel>
</Mission>

```

9.1.2.4.3. Search and Rescue Mission

When a Search and Rescue Mission is required to be executed, previous information intelligence can be consulted. In the following example please find an accomplished Search and Rescue Mission, consisting of all Tasks executed within this Mission, the Meteo-Oceanographic condition information and a reference to the originating Mission plan used to instantiate the Mission.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Mission
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/mission/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ns7:Mission">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMES</AlternativeName>
      <IdentificationNumber>076422321</IdentificationNumber>
      <LegalName>Organization3</LegalName>
    </GeneratedBy>
    <UUID>e90dedb5-06fa-4217-9b76-f8c6d3db6f75</UUID>
  </Identifier>
  <IsMissionTemplate>false</IsMissionTemplate>
  <Name>SAR Mission Near Lesvos #1</Name>
  <Type>SearchAndRescue</Type>
  <Status>Accomplished</Status>
  <Priority>VeryHigh</Priority>
  <CreationDate>2020-03-07T19:15:06.408+02:00</CreationDate>
  <CompletionPercentage>100.0</CompletionPercentage>
  <OriginatingMissionPlan>
    <Identifier>
      <GeneratedBy>
        <AlternativeName>ALTNAMES</AlternativeName>
        <IdentificationNumber>076422321</IdentificationNumber>
        <LegalName>Organization3</LegalName>
      </GeneratedBy>
      <UUID>0a79d7b7-9032-4383-9feb-c1c6014b8728</UUID>
    </Identifier>
  </OriginatingMissionPlan>
  <MeteoOceanographicCondition>

```

```

<SeaCondition>Moderate</SeaCondition>
<SeaLevelPressure>10.0</SeaLevelPressure>
<Tides>High</Tides>
<WaveHeight>2.5</WaveHeight>
<WavePeriod>9.2</WavePeriod>
</MeteoOceanographicCondition>
<InvolvedTaskRel>
  <Task>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>07b2b302-4437-4f98-b651-59e4c37a8dcd</UUID>
    </Identifier>
    <Type>Transit</Type>
    <Domain>Maritime</Domain>
  </Task>
  <TaskRole>Primary</TaskRole>
</InvolvedTaskRel>
<InvolvedTaskRel>
  <Task>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>8f9d789a-4031-4e6d-9c9b-fa6c8be3c123</UUID>
    </Identifier>
    <Type>RemainOnStation</Type>
    <Domain>Maritime</Domain>
  </Task>
  <TaskRole>Primary</TaskRole>
</InvolvedTaskRel>
<InvolvedTaskRel>
  <Task>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>80bcb835-f636-48b3-b9e8-14f0893ead4c</UUID>
    </Identifier>
    <Type>Locate</Type>
    <Domain>Maritime</Domain>
  </Task>
  <TaskRole>Primary</TaskRole>
</InvolvedTaskRel>
<InvolvedTaskRel>
  <Task>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>5812a72a-da4c-402d-ad83-a028d1679451</UUID>
    </Identifier>

```

```

<Type>Transfer</Type>
<Domain>Maritime</Domain>
</Task>
<TaskRole>Primary</TaskRole>
</InvolvedTaskRel>
<InvolvedTaskRel>
<Task>
<Identifier>
<GeneratedBy>
<IdentificationNumber>076422321</IdentificationNumber>
</GeneratedBy>
<UUID>2f05f491-cf44-4df4-917d-f4550e1aebef</UUID>
</Identifier>
<Type>MedicalServices</Type>
<Domain>Maritime</Domain>
</Task>
<TaskRole>Primary</TaskRole>
</InvolvedTaskRel>
<InvolvedTaskRel>
<Task>
<Identifier>
<GeneratedBy>
<IdentificationNumber>076422321</IdentificationNumber>
</GeneratedBy>
<UUID>9bef6407-fa7f-415b-a147-7264bb2cd5f7</UUID>
</Identifier>
<Type>Transport</Type>
<Domain>Maritime</Domain>
</Task>
<TaskRole>Primary</TaskRole>
</InvolvedTaskRel>
</Mission>

```

9.1.2.5. Task

9.1.2.5.1. Search and Rescue Mission Tasks

In the following sections we represent in e-CISE format all Tasks involved in a successful Search and Rescue Mission.

9.1.2.5.1.1. Transit Task

Transit Task is the Task required by the Search and Rescue Mission in order to transit a SearchAndRescue boat near the Area of Interest. Please find below a sample example of a Transit task represented in e-CISE.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
      xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
      xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
      xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
      xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

```

```

xsi:type="ns7:Task">
<Identifier>
  <GeneratedBy>
    <IdentificationNumber>076422321</IdentificationNumber>
  </GeneratedBy>
  <UUID>07b2b302-4437-4f98-b651-59e4c37a8dcd</UUID>
</Identifier>
<IsAcknowledged>true</IsAcknowledged>
<OccurrencePeriod>
  <StartDate>2020-03-07</StartDate>
  <StartTime>18:07:05.136+02:00</StartTime>
</OccurrencePeriod>
<LocationRel>
  <Location>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>38.98121723311122</Latitude>
      <Longitude>25.91133312311555</Longitude>
    </Geometry>
  </Location>
  <LocationRole>StartPlace</LocationRole>
</LocationRel>
<LocationRel>
  <Location>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>38.983965305617666</Latitude>
      <Longitude>26.158447265625004</Longitude>
    </Geometry>
  </Location>
  <LocationRole>EndPlace</LocationRole>
</LocationRel>
<CreationDate>2020-03-07T18:07:05.147+02:00</CreationDate>
<IsTaskTemplate>false</IsTaskTemplate>
<IsJointTask>false</IsJointTask>
<Type>Transit</Type>
<Domain>Maritime</Domain>
<Status>Accomplished</Status>
<Description>Transit Search and Rescue Boat to location of Interest</Description>
<Priority>VeryHigh</Priority>
<Response>Execute</Response>
<AckStatus>Acknowledged</AckStatus>
<Subject>
  <SubjectType>Mixed</SubjectType>
  <SubjectName>Area with people need rescue at sea</SubjectName>
  <InvolvedSubjectLocation>
    <Location>
      <Geometry xsi:type="ns2:PointGeometry">
        <Latitude>38.983965305617666</Latitude>
        <Longitude>26.158447265625004</Longitude>
      </Geometry>
    </Location>
    <LocationType>HighSeas</LocationType>
    <IsThreat>false</IsThreat>
  </InvolvedSubjectLocation>

```

```

</Subject>
<InvolvedOperationalAssetRel>
  <OperationalAsset>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>05fbbd32-8ce7-413c-b89f-23764aed7189</UUID>
    </Identifier>
    <AvailabilityPeriod>
      <EndDate>2020-03-08</EndDate>
      <EndTime>18:07:04.196+02:00</EndTime>
      <StartDate>2020-03-07</StartDate>
      <StartTime>18:07:04.195+02:00</StartTime>
    </AvailabilityPeriod>
    <MaxPassengers>30</MaxPassengers>
    <OperationalAssetType>SearchAndRescueVehicle</OperationalAssetType>
    <OperationalCapability>SearchAndRescue</OperationalCapability>
    <CorrespondentVehicleRel>
      <Vehicle xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
        <Identifier>
          <GeneratedBy>
            <AlternativeName>ALTNAMES1</AlternativeName>
            <IdentificationNumber>06111223</IdentificationNumber>
            <LegalName>Organization1</LegalName>
          </GeneratedBy>
          <UUID>0b21e0d6-9f1c-487e-b98b-aee63b7f5889</UUID>
        </Identifier>
        <MMSI>123456789</MMSI>
      </Vehicle>
    </CorrespondentVehicleRel>
  </OperationalAsset>
</InvolvedOperationalAssetRel>
</Task>

```

9.1.2.5.1.2. Remain on Station Task

When the Search and Rescue boat has arrived to the Area of Interest, a Remain on Station task is executing which commands the boat to stay in the current area for surveillance. Please find below a sample example of a Remain on Station Task represented in e-CISE.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/">
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ns7:Task">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>076422321</IdentificationNumber>
    </GeneratedBy>

```

```

<UUID>8f9d789a-4031-4e6d-9c9b-fa6c8be3c123</UUID>
</Identifier>
<IsAcknowledged>true</IsAcknowledged>
<OccurrencePeriod>
  <StartDate>2020-03-07</StartDate>
  <StartTime>18:07:05.152+02:00</StartTime>
</OccurrencePeriod>
<LocationRel>
  <Location>
    <Geometry xsi:type="ns2:WKTGeometry">
      <WKT>POLYGON ((26.16531372070313 39.005311873985306,
      26.33834838867188 38.966883415149596, 26.331481933593754
      38.86216695339701, 26.144714355468754 38.9871677013526,
      26.16531372070313 39.005311873985306))</WKT>
    </Geometry>
  </Location>
  <LocationRole>SurveillancePlace</LocationRole>
</LocationRel>
<CreationDate>2020-03-07T18:07:05.160+02:00</CreationDate>
<IsTaskTemplate>false</IsTaskTemplate>
<IsJointTask>false</IsJointTask>
<Type>RemainOnStation</Type>
<Domain>Maritime</Domain>
<Status>Accomplished</Status>
<Description>Remain on Station: Surveillance of Area to find People at sea</Description>
<SpecialInstructions>Perform Surveillance for maximum of 10 hours</SpecialInstructions>
<Priority>VeryHigh</Priority>
<Response>Execute</Response>
<AckStatus>Acknowledged</AckStatus>
<InvolvedOperationalAssetRel>
  <OperationalAsset>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>05fbbd32-8ce7-413c-b89f-23764aed7189</UUID>
    </Identifier>
    <AvailabilityPeriod>
      <EndDate>2020-03-08</EndDate>
      <EndTime>18:07:04.196+02:00</EndTime>
      <StartDate>2020-03-07</StartDate>
      <StartTime>18:07:04.195+02:00</StartTime>
    </AvailabilityPeriod>
    <MaxPassengers>30</MaxPassengers>
    <OperationalAssetType>SearchAndRescue</OperationalAssetType>
    <OperationalCapability>SearchAndRescue</OperationalCapability>
    <CorrespondentVehicleRel>
      <Vehicle xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
        <Identifier>
          <GeneratedBy>
            <AlternativeName>ALTNAMES1</AlternativeName>
            <IdentificationNumber>06111223</IdentificationNumber>
            <LegalName>Organization1</LegalName>

```

```

</GeneratedBy>
<UUID>0b21e0d6-9f1c-487e-b98b-aee63b7f5889</UUID>
</Identifier>
<MMSI>123456789</MMSI>
</Vehicle>
</CorrespondentVehicleRel>
</OperationalAsset>
</InvolvedOperationalAssetRel>
</Task>

```

9.1.2.5.1.3. Locate Task

Locate Task is the task which aims to locate the people who are in danger at the sea. Please find below a sample example of a Locate task represented in e-CISE.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/">
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ns7:Task">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>076422321</IdentificationNumber>
    </GeneratedBy>
    <UUID>80bcb835-f636-48b3-b9e8-14f0893ead4c</UUID>
  </Identifier>
  <IsAcknowledged>true</IsAcknowledged>
  <OccurrencePeriod>
    <StartDate>2020-03-07</StartDate>
    <StartTime>18:07:05.161+02:00</StartTime>
  </OccurrencePeriod>
  <LocationRel>
    <Location>
      <Geometry xsi:type="ns2:PointGeometry">
        <Latitude>38.98610025220411</Latitude>
        <Longitude>26.246337890625004</Longitude>
      </Geometry>
    </Location>
    <LocationRole>SearchAndRescuePlace</LocationRole>
  </LocationRel>
  <InvolvedAgentRel>
    <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
      <LocationRel>
        <Location>
          <Geometry xsi:type="ns2:PointGeometry">
            <Latitude>38.98610025220411</Latitude>
            <Longitude>26.246337890625004</Longitude>
          </Geometry>
        </Location>
        <AgentRole>IsLocatedIn</AgentRole>
      </LocationRel>
    </Agent>
  </InvolvedAgentRel>
</Task>

```

```

</LocationRel>
<Gender>Female</Gender>
</Agent>
<AgentRole>Victim</AgentRole>
</InvolvedAgentRel>
<InvolvedAgentRel>
<Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
  <LocationRel>
    <Location>
      <Geometry xsi:type="ns2:PointGeometry">
        <Latitude>38.98610025220411</Latitude>
        <Longitude>26.246337890625004</Longitude>
      </Geometry>
    </Location>
    <AgentRole>IsLocatedIn</AgentRole>
  </LocationRel>
  <Gender>Male</Gender>
</Agent>
<AgentRole>Victim</AgentRole>
</InvolvedAgentRel>
<CreationDate>2020-03-07T18:07:05.161+02:00</CreationDate>
<IsTaskTemplate>false</IsTaskTemplate>
<IsJointTask>false</IsJointTask>
<Type>Locate</Type>
<Domain>Maritime</Domain>
<Status>Accomplished</Status>
<Description>Locate Persons at sea Task</Description>
<Priority>VeryHigh</Priority>
<Response>Execute</Response>
<AckStatus>Acknowledged</AckStatus>
<InvolvedOperationalAssetRel>
  <OperationalAsset>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>05fbbd32-8ce7-413c-b89f-23764aed7189</UUID>
    </Identifier>
    <AvailabilityPeriod>
      <EndDate>2020-03-08</EndDate>
      <EndTime>18:07:04.196+02:00</EndTime>
      <StartDate>2020-03-07</StartDate>
      <StartTime>18:07:04.195+02:00</StartTime>
    </AvailabilityPeriod>
    <MaxPassengers>30</MaxPassengers>
    <OperationalAssetType>SearchAndRescueVehicle</OperationalAssetType>
    <OperationalCapability>SearchAndRescue</OperationalCapability>
    <CorrespondentVehicleRel>
      <Vehicle xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
        <Identifier>
          <GeneratedBy>
            <AlternativeName>ALTNAMES1</AlternativeName>
            <IdentificationNumber>06111223</IdentificationNumber>

```

```

<LegalName>Organization1</LegalName>
</GeneratedBy>
<UUID>0b21e0d6-9f1c-487e-b98b-aee63b7f5889</UUID>
</Identifier>
<MMSI>123456789</MMSI>
</Vehicle>
</CorrespondentVehicleRel>
</OperationalAsset>
</InvolvedOperationalAssetRel>
</Task>

```

9.1.2.5.1.4. Transfer Task

Transfer Task is the task which aims to transfer on board all people in danger who are currently located at the sea. Please find below a sample example of a Transfer Task represented in e-CISE.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
      xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
      xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
      xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
      xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="ns7:Task">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>076422321</IdentificationNumber>
    </GeneratedBy>
    <UUID>5812a72a-da4c-402d-ad83-a028d1679451</UUID>
  </Identifier>
  <IsAcknowledged>true</IsAcknowledged>
  <OccurrencePeriod>
    <StartDate>2020-03-07</StartDate>
    <StartTime>18:07:05.164+02:00</StartTime>
  </OccurrencePeriod>
  <InvolvedAgentRel>
    <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
      <FullName>David C. Anonymous</FullName>
    </Agent>
    <AgentClassification>Operational</AgentClassification>
    <AgentRole>Rescuer</AgentRole>
  </InvolvedAgentRel>
  <CreationDate>2020-03-07T18:07:05.164+02:00</CreationDate>
  <IsTaskTemplate>false</IsTaskTemplate>
  <IsJointTask>false</IsJointTask>
  <Type>Transfer</Type>
  <Domain>Maritime</Domain>
  <Status>Accomplished</Status>
  <Description>Transfer persons on board</Description>
  <Priority>VeryHigh</Priority>
  <Response>Execute</Response>
  <AckStatus>Acknowledged</AckStatus>
  <Subject>

```

```

<SubjectIdentificationStatus>Identified</SubjectIdentificationStatus>
<InvolvedSubjectAgent>
  <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
    <LocationRel>
      <Location>
        <Geometry xsi:type="ns2:PointGeometry">
          <Latitude>38.98610025220411</Latitude>
          <Longitude>26.246337890625004</Longitude>
        </Geometry>
      </Location>
      <AgentRole>IsLocatedIn</AgentRole>
    </LocationRel>
    <Gender>Female</Gender>
  </Agent>
  <AgentRole>Victim</AgentRole>
  <IsThreat>false</IsThreat>
</InvolvedSubjectAgent>
<InvolvedSubjectAgent>
  <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
    <LocationRel>
      <Location>
        <Geometry xsi:type="ns2:PointGeometry">
          <Latitude>38.98610025220411</Latitude>
          <Longitude>26.246337890625004</Longitude>
        </Geometry>
      </Location>
      <AgentRole>IsLocatedIn</AgentRole>
    </LocationRel>
    <Gender>Male</Gender>
  </Agent>
  <AgentRole>Victim</AgentRole>
  <IsThreat>false</IsThreat>
</InvolvedSubjectAgent>
</Subject>
<InvolvedOperationalAssetRel>
  <OperationalAsset>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>05fbbd32-8ce7-413c-b89f-23764aed7189</UUID>
    </Identifier>
    <AvailabilityPeriod>
      <EndDate>2020-03-08</EndDate>
      <EndTime>18:07:04.196+02:00</EndTime>
      <StartDate>2020-03-07</StartDate>
      <StartTime>18:07:04.195+02:00</StartTime>
    </AvailabilityPeriod>
    <MaxPassengers>30</MaxPassengers>
    <OperationalAssetType>SearchAndRescueVehicle</OperationalAssetType>
    <OperationalCapability>SearchAndRescue</OperationalCapability>
    <CorrespondentVehicleRel>
      <Vehicle xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">

```

```

<Identifier>
  <GeneratedBy>
    <AlternativeName>ALTNAMES1</AlternativeName>
    <IdentificationNumber>06111223</IdentificationNumber>
    <LegalName>Organization1</LegalName>
  </GeneratedBy>
  <UUID>0b21e0d6-9f1c-487e-b98b-aee63b7f5889</UUID>
</Identifier>
<MMSI>123456789</MMSI>
</Vehicle>
</CorrespondentVehicleRel>
</OperationalAsset>
</InvolvedOperationalAssetRel>
</Task>

```

9.1.2.5.1.5. MedicalServices Task

Medical Services Task is the task which aims to provide medical assistance to the people rescued. In case of emergency the nearest hospital or medical authorities must be informed. Please find below a sample example of a Medical Services Task represented in e-CISE.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
      xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
      xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
      xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
      xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:type="ns7:Task">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>076422321</IdentificationNumber>
    </GeneratedBy>
    <UUID>2f05f491-cf44-4df4-917d-f4550e1aebef</UUID>
  </Identifier>
  <IsAcknowledged>true</IsAcknowledged>
  <OccurrencePeriod>
    <StartDate>2020-03-07</StartDate>
    <StartTime>18:07:05.169+02:00</StartTime>
  </OccurrencePeriod>
  <CreationDate>2020-03-07T18:07:05.169+02:00</CreationDate>
  <IsTaskTemplate>false</IsTaskTemplate>
  <IsJointTask>false</IsJointTask>
  <Type>MedicalServices</Type>
  <Domain>Maritime</Domain>
  <Status>Accomplished</Status>
  <Description>Provide Medical Services to the rescued people</Description>
  <Priority>VeryHigh</Priority>
  <Response>Execute</Response>
  <AckStatus>Acknowledged</AckStatus>
  <Subject>
    <InvolvedSubjectAgent>

```

```

<Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
  <FullName>Maria Petrovic</FullName>
  <Gender>Female</Gender>
</Agent>
<AgentRole>Victim</AgentRole>
<IsThreat>false</IsThreat>
</InvolvedSubjectAgent>
<InvolvedSubjectAgent>
  <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
    <FullName>Nicolas Petrovic</FullName>
    <Gender>Male</Gender>
  </Agent>
  <AgentRole>Victim</AgentRole>
  <IsThreat>false</IsThreat>
</InvolvedSubjectAgent>
</Subject>
</Task>

```

9.1.2.5.1.6. Transport Task

Transport Task is the task which aims to transport the people rescued to a safe place on the coast. Please find below a sample example of a Transport Task represented in e-CISE.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ns7:Task">
<Identifier>
  <GeneratedBy>
    <IdentificationNumber>076422321</IdentificationNumber>
  </GeneratedBy>
  <UUID>9bef6407-fa7f-415b-a147-7264bb2cd5f7</UUID>
</Identifier>
<IsAcknowledged>true</IsAcknowledged>
<OccurrencePeriod>
  <StartDate>2020-03-07</StartDate>
  <StartTime>18:07:05.136+02:00</StartTime>
</OccurrencePeriod>
<LocationRel>
  <Location>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>38.98610025220411</Latitude>
      <Longitude>26.246337890625004</Longitude>
    </Geometry>
  </Location>
  <LocationRole>StartPlace</LocationRole>
</LocationRel>
<LocationRel>
  <Location>

```

```

<Geometry xsi:type="ns2:PointGeometry">
  <Latitude>38.974357249228206</Latitude>
  <Longitude>26.369934082031254</Longitude>
</Geometry>
</Location>
<LocationRole>EndPlace</LocationRole>
</LocationRel>
<InvolvedAgentRel>
  <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
    <FullName>Maria Petrovic</FullName>
    <Gender>Female</Gender>
  </Agent>
  <AgentRole>Victim</AgentRole>
</InvolvedAgentRel>
<InvolvedAgentRel>
  <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
    <FullName>Nicolas Petrovic</FullName>
    <Gender>Male</Gender>
  </Agent>
  <AgentRole>Victim</AgentRole>
</InvolvedAgentRel>
<CreationDate>2020-03-07T18:07:05.147+02:00</CreationDate>
<IsTaskTemplate>false</IsTaskTemplate>
<IsJointTask>false</IsJointTask>
<Type>Transport</Type>
<Domain>Maritime</Domain>
<Status>Accomplished</Status>
<Description>Transport persons to a safe place on the coast</Description>
<Priority>VeryHigh</Priority>
<Response>Execute</Response>
<AckStatus>Acknowledged</AckStatus>
<InvolvedOperationalAssetRel>
  <OperationalAsset>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>a575ff38-b13e-44c6-8021-01b19c4517cf</UUID>
    </Identifier>
    <AvailabilityPeriod>
      <EndDate>2020-03-08</EndDate>
      <EndTime>18:16:05.449+02:00</EndTime>
      <StartDate>2020-03-07</StartDate>
      <StartTime>18:16:05.448+02:00</StartTime>
    </AvailabilityPeriod>
    <MaxPassengers>30</MaxPassengers>
    <OperationalAssetType>SearchAndRescueVehicle</OperationalAssetType>
    <OperationalCapability>SearchAndRescue</OperationalCapability>
    <CorrespondentVehicleRel>
      <Vehicle xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
        <Identifier>
          <GeneratedBy>
            <AlternativeName>ALTNAMES1</AlternativeName>

```

```

<IdentificationNumber>06111223</IdentificationNumber>
<LegalName>Organization1</LegalName>
</GeneratedBy>
<UUID>eab225c4-5cc3-46b6-9900-e1cd74ea6064</UUID>
</Identifier>
<MMSI>123456789</MMSI>
</Vehicle>
</CorrespondentVehicleRel>
</OperationalAsset>
</InvolvedOperationalAssetRel>
</Task>

```

9.1.2.5.2. Arrest Task

The following sample is the way of representing in e-CISE an Arrest Task. In the sample the target of Arrest is a known Threat involved in a Drug Smuggling Incident. The Arrest task among other information consists of the police officers involved and operating, as well as the video of the arrest.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/" 
      xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/" 
      xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/" 
      xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/" 
      xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/" 
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" 
      xsi:type="ns7:Task">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNANE</AlternativeName>
      <IdentificationNumber>076422321</IdentificationNumber>
      <LegalName>Organization3</LegalName>
    </GeneratedBy>
    <UUID>2604f3d4-65a2-410f-9ea8-d32ac707aae4</UUID>
  </Identifier>
  <IsAcknowledged>true</IsAcknowledged>
  <OccurrencePeriod>
    <StartDate>2020-03-08</StartDate>
    <StartTime>04:08:25.798+02:00</StartTime>
  </OccurrencePeriod>
  <LocationRel>
    <Location>
      <Geometry xsi:type="ns2:PointGeometry">
        <Latitude>40.84563272784062</Latitude>
        <Longitude>25.87269234101563</Longitude>
      </Geometry>
    </Location>
  </LocationRel>
  <DocumentRel>
    <Document xsi:type="ns3:MediaDocument">
      <Notes>Video of arrest</Notes>
      <Content>ZEdocGN5nBjeUJoSUhOaGJYQnNaU0JpWVhObEIEWTBJR052Ym5SbGJuUWdabTl5
      SUhSb1pTQndkWEp3YjNObGN5QnZaaUiwYUdVZ2MyRnRjR3hsY3c9PQ==</Content>
      <MediaType>video/mpeg</MediaType>
    </Document>
  </DocumentRel>
</Task>

```

```

</Document>
</DocumentRel>
<InvolvedAgentRel>
  <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
    <Identifier>
      <GeneratedBy>
        <AlternativeName>ALTNAMEN</AlternativeName>
        <IdentificationNumber>076422321</IdentificationNumber>
        <LegalName>Organization3</LegalName>
      </GeneratedBy>
      <UUID>63581d19-b57b-4ace-99f0-84bcf4aa1e5</UUID>
    </Identifier>
    <Nationality>GR</Nationality>
    <FullName>Nikos Karapetrou</FullName>
    <Gender>Male</Gender>
  </Agent>
  <AgentClassification>Operational</AgentClassification>
  <AgentRole>Operator</AgentRole>
</InvolvedAgentRel>
<InvolvedAgentRel>
  <Agent
    xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/"
    xsi:type="ns8:Person">
    <Identifier>
      <GeneratedBy>
        <AlternativeName>ALTNAMEN</AlternativeName>
        <IdentificationNumber>076422321</IdentificationNumber>
        <LegalName>Organization3</LegalName>
      </GeneratedBy>
      <UUID>dda7958a-7ce3-432b-a1c0-06dd7e1d5280</UUID>
    </Identifier>
    <Nationality>GR</Nationality>
    <FullName>Giwrgos Papadopoulos</FullName>
    <Gender>Male</Gender>
  </Agent>
  <AgentClassification>Operational</AgentClassification>
  <AgentRole>Coordinator</AgentRole>
</InvolvedAgentRel>
<CreationDate>2020-03-08T04:08:25.798+02:00</CreationDate>
<IsTaskTemplate>false</IsTaskTemplate>
<IsJointTask>false</IsJointTask>
<Type>Arrest</Type>
<Domain>Land</Domain>
<Status>Accomplished</Status>
<Priority>VeryHigh</Priority>
<Response>Execute</Response>
<Subject>
  <SubjectType>Agent</SubjectType>
  <IsThreat>true</IsThreat>
  <IsInnocent>false</IsInnocent>
  <InvolvedSubjectAgent>
    <Agent xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
      <Identifier>

```

```

<GeneratedBy>
  <AlternativeName>ALTNAMEN</AlternativeName>
  <IdentificationNumber>076422321</IdentificationNumber>
  <LegalName>Organization3</LegalName>
</GeneratedBy>
<UUID>34f3be8f-546d-4464-9da7-9e675d8eabb6</UUID>
</Identifier>
<IsSuspect>true</IsSuspect>
<FullName>Smuggler 1</FullName>
</Agent>
<AgentRole>Perpetrator</AgentRole>
<InvolvedInIncidentRel xsi:type="ns5:SmugglingIncident">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMEN</AlternativeName>
      <IdentificationNumber>076422321</IdentificationNumber>
      <LegalName>Organization3</LegalName>
    </GeneratedBy>
    <UUID>42e2ae92-1306-430d-961c-702d724ea0ad</UUID>
  </Identifier>
  </InvolvedInIncidentRel>
  <IsThreat>true</IsThreat>
  <ThreatCertainty>100.0</ThreatCertainty>
  </InvolvedSubjectAgent>
</Subject>
</Task>

```

9.1.2.5.3. Task generated from RFI

A task can be originated from the Information Requirement of a Request For Information. In the following example, a sample Task in e-CISE format is provided. The task's objective is to inspect the suspected Vessel, as indicated in the IR.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ns7:Task">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMEN</AlternativeName>
      <IdentificationNumber>076422321</IdentificationNumber>
      <LegalName>Organization3</LegalName>
    </GeneratedBy>
    <UUID>a2722eef-d36d-4e35-a8b3-f4191ee134bb</UUID>
  </Identifier>
  <OccurrencePeriod>
    <StartDate>2020-03-08</StartDate>
    <StartTime>05:56:08.078+02:00</StartTime>
  </OccurrencePeriod>

```

```

<DocumentRel>
  <Document xsi:type="ns3:MediaDocument">
    <Notes>Video of arrest</Notes>
    <Content>ZEdocGN5QnBjeUJoSUhOaGJYQnNaU0JpWVhObElEWTBJR052Ym5SbGJuUWdabT
    l5SUhSb1pTQndkWEp3YjNObGN5QnZaaUIwYUdVZ2MyRnRjR3hsY3c9PQ==</Content>
    <MediaType>video/mpeg</MediaType>
  </Document>
</DocumentRel>
<DocumentRel>
  <Document xsi:type="ns3:MediaDocument">
    <Notes>Photo of arrest</Notes>
    <Content>ZDEycGN5QnBjeUJoSWFzZGRkZGFzc0lEWTBJR052Ym5SbGJuUWdabTl5SUhSb1p
    TQndkWEp3YjNObGN5QnZaaUIwYUdVZ2MyRnRjR3hsY3c9PQ==</Content>
    <MediaType>image/png</MediaType>
  </Document>
</DocumentRel>
<Type>Inspect</Type>
<Domain>Maritime</Domain>
<Status>Accomplished</Status>
<Priority>Medium</Priority>
<AckStatus>Acknowledged</AckStatus>
<OriginatingRequestForInformation>
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMEx1</AlternativeName>
      <IdentificationNumber>06111223</IdentificationNumber>
      <LegalName>Organization1</LegalName>
    </GeneratedBy>
    <UUID>7e87b06f-3531-418e-ba60-6b5fefafa9a13</UUID>
  </Identifier>
</OriginatingRequestForInformation>
<Subject>
  <InvolvedSubjectObject>
    <Classification>AssumedFriend</Classification>
    <Object xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
      <Identifier>
        <GeneratedBy>
          <AlternativeName>ALTNAMEx1</AlternativeName>
          <IdentificationNumber>06111223</IdentificationNumber>
          <LegalName>Organization1</LegalName>
        </GeneratedBy>
        <UUID>7e92dc5e-accd-4173-9192-da4538c60b78</UUID>
      </Identifier>
      <LocationRel>
        <Location>
          <Geometry xsi:type="ns2:PointGeometry">
            <Latitude>39.25525265211992</Latitude>
            <Longitude>25.84688186645508</Longitude>
          </Geometry>
        </Location>
        <Heading>9.0</Heading>
        <SOG>3.2</SOG>
      </LocationRel>
    
```

```

<MMSI>123456789</MMSI>
</Object>
<IsThreat>false</IsThreat>
</InvolvedSubjectObject>
</Subject>
<InvolvedOperationalAssetRel>
<OperationalAsset>
<Identifier>
<GeneratedBy>
<IdentificationNumber>076422321</IdentificationNumber>
</GeneratedBy>
<UUID>a73ac4cb-4eb1-4f09-8c0b-484b499548ef</UUID>
</Identifier>
<AvailabilityPeriod>
<EndDate>2020-03-09</EndDate>
<EndTime>05:56:06.560+02:00</EndTime>
<StartDate>2020-03-08</StartDate>
<StartTime>05:56:06.560+02:00</StartTime>
</AvailabilityPeriod>
<MaxPassengers>5</MaxPassengers>
<OperationalAssetType>PatrolBoat</OperationalAssetType>
<OperationalCapability>Patrolling</OperationalCapability>
<CorrespondentVehicleRel>
<Vehicle xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
<Identifier>
<GeneratedBy>
<AlternativeName>ALTNAMES1</AlternativeName>
<IdentificationNumber>06111223</IdentificationNumber>
<LegalName>Organization1</LegalName>
</GeneratedBy>
<UUID>aa24b4df-56ae-411a-afa6-5e0f7df5cece</UUID>
</Identifier>
<MMSI>123456789</MMSI>
</Vehicle>
</CorrespondentVehicleRel>
</OperationalAsset>
</InvolvedOperationalAssetRel>
</Task>

```

9.1.2.5.4. UAV Task

In the following sample a UAV task is provided in e-CISE format. The task's purpose is to command a UAV operational asset to perform a fly task, through the provided waypoint coordinates. Samples regarding the acknowledgement of the Task from the UAV operator are also provided

9.1.2.5.4.1. UAV Task Request

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/task/"
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/">

```

```

xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/"
xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/"
xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Task">
<Identifier>
  <UUID>85807682-5a4c-4c0b-828c-d329f1e7bfd5</UUID>
</Identifier>
<LocationRel>
  <Location>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>39.201291727840626</Latitude>
      <Longitude>26.74434204101563</Longitude>
    </Geometry>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>39.201291727840626</Latitude>
      <Longitude>26.75434204101563</Longitude>
    </Geometry>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>39.202291727840624</Latitude>
      <Longitude>26.75434204101563</Longitude>
    </Geometry>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>39.202291727840624</Latitude>
      <Longitude>26.76434204101563</Longitude>
    </Geometry>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>39.202291727840624</Latitude>
      <Longitude>26.77434204101563</Longitude>
    </Geometry>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>39.20329172784062</Latitude>
      <Longitude>26.79434204101563</Longitude>
    </Geometry>
  </Location>
  <LocationRole>WayPoint</LocationRole>
  <SourceType>Estimation</SourceType>
</LocationRel>
<CreationDate>2020-03-24T16:58:58.551+02:00</CreationDate>
<Type>Inspect</Type>
<Domain>Air</Domain>
<Priority>High</Priority>
<InvolvedOperationalAssetRel>
  <OperationalAsset>
    <Identifier>
      <UUID>f72d308e-5758-4e18-bf26-9167643120a2</UUID>
    </Identifier>
    <OperationalAssetType>UAV</OperationalAssetType>
    <OperationalCapability>Patrolling</OperationalCapability>
    <CorrespondentVehicleRel>
      <Vehicle xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/object/">
        <xsi:type>"ns11:Aircraft"</xsi:type>
        <Identifier>
          <UUID>69c4ab97-82cd-4008-bc95-4ab59736841f</UUID>
        </Identifier>
      </Vehicle>
    </CorrespondentVehicleRel>
  </OperationalAsset>
</InvolvedOperationalAssetRel>

```

```

</Identifier>
<Name>UAV #1</Name>
<ClassificationType>OwnAsset</ClassificationType>
<AircraftType>UAV</AircraftType>
</Vehicle>
</CorrespondentVehicleRel>
</OperationalAsset>
<Action>Fly through way-point</Action>
</InvolvedOperationalAssetRel>
</Task>

```

9.1.2.5.4.2. UAV Task Accepted

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/task/"
      xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
      xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
      xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
      xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
      xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/"
      xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/"
      xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Task">
<Identifier>
    <UUID>85807682-5a4c-4c0b-828c-d329f1e7bfd5</UUID>
</Identifier>
<AckStatus>Acknowledged</AckStatus>
</Task>

```

9.1.2.5.4.3. UAV Task Updated

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/task/"
      xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
      xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
      xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
      xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
      xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/"
      xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/"
      xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Task">
<Identifier>
    <UUID>85807682-5a4c-4c0b-828c-d329f1e7bfd5</UUID>
</Identifier>
<Notes>UAV Task updated with new waypoints</Notes>
<LocationRel>
    <Location>
        <Geometry xsi:type="ns2:PointGeometry">
            <Latitude>39.201291727840626</Latitude>
            <Longitude>26.74434204101563</Longitude>
        </Geometry>
        <Geometry xsi:type="ns2:PointGeometry">
            <Latitude>39.201291727840626</Latitude>

```

```

<Longitude>26.75434204101563</Longitude>
</Geometry>
<Geometry xsi:type="ns2:PointGeometry">
  <Latitude>39.202291727840624</Latitude>
  <Longitude>26.75434204101563</Longitude>
</Geometry>
<Geometry xsi:type="ns2:PointGeometry">
  <Latitude>39.202291727840624</Latitude>
  <Longitude>26.76434204101563</Longitude>
</Geometry>
<Geometry xsi:type="ns2:PointGeometry">
  <Latitude>39.202291727840624</Latitude>
  <Longitude>26.77434204101563</Longitude>
</Geometry>
<Geometry xsi:type="ns2:PointGeometry">
  <Latitude>39.20329172784062</Latitude>
  <Longitude>26.79434204101563</Longitude>
</Geometry>
</Location>
<LocationRole>WayPoint</LocationRole>
<SourceType>Estimation</SourceType>
</LocationRel>
<AckStatus>AcknowledgedWithUpdates</AckStatus>
</Task>
```

9.1.2.5.4.4. UAV Task Denied

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Task xmlns:ns10="http://www.ecise.eu/datamodel/v1/entity/task/
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns6="http://www.cise.eu/servicemodel/v1/authority/"
  xmlns:ns7="http://www.cise.eu/servicemodel/v1/service/"
  xmlns:ns8="http://www.cise.eu/servicemodel/v1/message/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns10:Task">
<Identifier>
  <UUID>85807682-5a4c-4c0b-828c-d329f1e7bfd5</UUID>
</Identifier>
<Notes>UAV Task denied due to extreme weather conditions</Notes>
<AckStatus>Failed</AckStatus>
</Task>
```

9.1.2.6. Request For Information and Information Requirement

In the following example we are providing a sample of a Request for Information with specific Information Requirement expressed in e-CISE. The information requirement is to accumulate information of a specific Vessel to determine compliance with Law or existence of Safety Hazards.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<RequestForInformation
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
```

```

xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/task/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ns7:RequestForInformation">
<Identifier>
  <GeneratedBy>
    <AlternativeName>ALTNAMES1</AlternativeName>
    <IdentificationNumber>06111223</IdentificationNumber>
    <LegalName>Organization1</LegalName>
  </GeneratedBy>
  <UUID>7e87b06f-3531-418e-ba60-6b5fef9a913</UUID>
</Identifier>
<CreationDate>2020-03-08T05:16:40.537+02:00</CreationDate>
<Requestor xsi:type="ns4:Organization">
  <AlternativeName>ALTNAMES1</AlternativeName>
  <IdentificationNumber>06111223</IdentificationNumber>
  <LegalName>Organization1</LegalName>
</Requestor>
<InformationRequirement>
  <Justification>Information Required for this Vessel, to determine
    compliance with law</Justification>
  <CreationDate>2020-03-08T05:16:40.540+02:00</CreationDate>
  <ReconnaissanceRequirement>
    <ImagesRequired>true</ImagesRequired>
    <VideoRequired>true</VideoRequired>
  </ReconnaissanceRequirement>
  <AssociatedSubjectRel>
    <Subject>
      <InvolvedSubjectObject>
        <Classification>AssumedFriend</Classification>
        <Object xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
          <Identifier>
            <GeneratedBy>
              <AlternativeName>ALTNAMES1</AlternativeName>
              <IdentificationNumber>06111223</IdentificationNumber>
              <LegalName>Organization1</LegalName>
            </GeneratedBy>
            <UUID>a11f3271-8ce1-4358-8a97-4ef6bf2e5d4b</UUID>
          </Identifier>
          <LocationRel>
            <Location>
              <Geometry xsi:type="ns2:PointGeometry">
                <Latitude>39.25525265211992</Latitude>
                <Longitude>25.84688186645508</Longitude>
              </Geometry>
            </Location>
            <Heading>9.0</Heading>
            <SOG>3.2</SOG>
          </LocationRel>
          <MMSI>123456789</MMSI>
        </Object>
      </InvolvedSubjectObject>
    </Subject>
  </AssociatedSubjectRel>
</InformationRequirement>

```

```

<IsThreat>false</IsThreat>
</InvolvedSubjectObject>
</Subject>
</AssociatedSubjectRel>
</InformationRequirement>
<ValidityPeriod>
<EndDate>2020-03-13</EndDate>
<EndTime>05:16:40.547+02:00</EndTime>
<StartDate>2020-03-08</StartDate>
<StartTime>05:16:40.547+02:00</StartTime>
</ValidityPeriod>
<Priority>Medium</Priority>
</RequestForInformation>
```

9.1.2.7. Report

The following sample XML is representing in e-CISE, a sample IntelligenceReport related to a Search and Rescue Mission.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<IntelligenceReport
    xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
    xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
    xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
    xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
    xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/report/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:type="ns7:IntelligenceReport">
    <Identifier>
        <GeneratedBy>
            <IdentificationNumber>076422321</IdentificationNumber>
        </GeneratedBy>
        <UUID>241ce509-eb82-42d2-af4b-23fe4c04332d</UUID>
    </Identifier>
    <Title>SAR Mission report</Title>
    <Version>v1.0</Version>
    <Content>QSBzYW1wbGUgUmVwb3J0</Content>
    <ReferenceURI>http://10.1.4.11/mission-results.cgi</ReferenceURI>
    <DocumentType>IntelligenceReport</DocumentType>
    <Summary>Summary of mission</Summary>
    <Author xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns8:Person">
        <Identifier>
            <GeneratedBy>
                <IdentificationNumber>076422321</IdentificationNumber>
            </GeneratedBy>
            <UUID>7ae31be5-d5ac-4df7-a6a4-30294765070c</UUID>
        </Identifier>
        <Nationality>GR</Nationality>
        <FullName>Nikos Karapialis</FullName>
        <Gender>Male</Gender>
    </Author>
    <DisseminationLevel>RestrictedToAndromedaNetwork</DisseminationLevel>
```

```

<ReportedEvent xmlns:ns11="http://www.ecise.eu/datamodel/v1/entity/mission/"
xsi:type="ns11:Mission">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>076422321</IdentificationNumber>
    </GeneratedBy>
    <UUID>753a5be3-8ba6-4f41-a2b3-a2b6acd8e886</UUID>
  </Identifier>
  <Type>SearchAndRescue</Type>
  <Status>Accomplished</Status>
</ReportedEvent>
<IntelligenceReportType>INTSUM</IntelligenceReportType>
</IntelligenceReport>

```

9.1.2.8. Rule & Anomaly

Rule is the e-CISE entity used exclusively to configure Andromeda Data Fusion Services. In e-CISE a Rule apart from specific configuration must also provide Validity period, during which the Rule should be considered as valid, and Execution information. In the following sections sample XML examples of Rules and their generated Anomalies are depicted.

9.1.2.8.1. Maritime Low Speed Rule Executed Once

In order to configure an Andromeda Data Fusion Service to detect Maritime or Land objects moving with Low Speed the following simple Rule could be sent to the Andromeda Data Fusion Gateway. In the following example the Rule is configured with all required LowSpeed rule properties, with specific included location Areas, excluded vessels, as well as configured to be executed once during a specific period of time.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Rule xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident"/>
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMES1</AlternativeName>
      <IdentificationNumber>06111223</IdentificationNumber>
      <LegalName>Organization1</LegalName>
    </GeneratedBy>
    <UUID>c2f8a480-63ca-427e-98db-306ddf27ef5f</UUID>
  </Identifier>
  <Validity>
    <EndDate>2022-03-07</EndDate>
    <EndTime>00:53:14.025+02:00</EndTime>
    <StartDate>2020-03-07</StartDate>
    <StartTime>00:53:14.024+02:00</StartTime>
  </Validity>
  <CreationDate>2020-03-07T00:53:14.026+02:00</CreationDate>
  <UpdateDate>2020-03-07T00:53:14.026+02:00</UpdateDate>
  <Configuration>
    <Key>velocityThreshold</Key>
    <Value>4.2</Value>
  </Configuration>

```

```

<Type>Number</Type>
<Description>Speed Limit (knots). Speed limit (knots) for detecting specific changes in velocity values
</Description>
</Configuration>
<Configuration>
<Key>minDuration</Key>
<Value>60</Value>
<Type>Number</Type>
<Description>Minimum Duration (seconds). The minimum time duration (seconds) of possible speed
limit alerts to generate a Speed Alert</Description>
</Configuration>
<Configuration>
<Key>vesselCategory</Key>
<Value>PLEASURE;FISHING;RADAR</Value>
<Type>String</Type>
<Description>Vessel categories to include</Description>
</Configuration>
<IsDeleted>false</IsDeleted>
<PriorityLevel>Medium</PriorityLevel>
<Status>Enabled</Status>
<RuleDomainType>MaritimeDomain</RuleDomainType>
<RuleType>LowSpeed</RuleType>
<IncludedArea xsi:type="ns2:Area">
    <Geometry xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ns2:WKTGeometry">
        <WKT>POLYGON ((25.653076171875004 40.052847601823984, 26.114501953125004
40.16208338164619, 26.207885742187504 39.94343646197423, 26.125488281250004
39.61838363831915, 26.048583984375004 39.49556336059472, 25.345458984375004
39.69450749856091, 25.653076171875004 40.052847601823984))</WKT>
    </Geometry>
    <Description>Area1 used for detecting Low Speed vessels</Description>
</IncludedArea>
<IncludedArea xsi:type="ns2:Area">
    <Geometry xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ns2:WKTGeometry">
        <WKT>POLYGON ((25.136718750000004 39.17691709496078, 25.828857421875004
39.30454987014581, 26.416625976562504 38.92522904714054, 25.86181640625 38.578231965833155,
25.136718750000004 39.17691709496078))</WKT>
    </Geometry>
    <Description>Area2 used for detecting Low Speed vessels</Description>
</IncludedArea>
<IncludedArea xsi:type="ns2:Area">
    <Geometry xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ns2:WKTGeometry">
        <WKT>POLYGON ((25.460815429687504 40.8595252289932, 25.0872802734375
40.233411907115055, 25.614624023437504 40.14528929567662, 26.109008789062504
40.60144147645398, 25.933227539062504 40.834593138080244, 25.460815429687504
40.8595252289932))</WKT>
    </Geometry>
    <Description>Area3 used for detecting Low Speed vessels</Description>
</IncludedArea>
<ExcludedVehicle xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/vessel/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns7:Vessel">

```

```

<Identifier>
  <GeneratedBy>
    <AlternativeName>ALTNAMEx1</AlternativeName>
    <IdentificationNumber>06111223</IdentificationNumber>
    <LegalName>Organization1</LegalName>
  </GeneratedBy>
  <UUID>4b64895f-e377-4432-b16d-2cf6e2e2b4d0</UUID>
</Identifier>
<MMSI>123456789</MMSI>
</ExcludedVehicle>
<ExecutionMode>Once</ExecutionMode>
<ExecutionTimePeriod>
  <EndDate>2020-03-09</EndDate>
  <EndTime>00:53:14.029+02:00</EndTime>
  <StartDate>2020-03-07</StartDate>
  <StartTime>00:53:14.028+02:00</StartTime>
</ExecutionTimePeriod>
<SnoozeTimeInSeconds>60.0</SnoozeTimeInSeconds>
</Rule>

```

9.1.2.8.2. Maritime High Speed Rule Scheduled Execution

The following example specifies a high-speed rule which is being executed every day from 19:00 to 23:00 starting from StartDate and StartTime until EndDate and EndTime. Scheduling information is provided in the ExecutionTimePeriod attribute.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Rule xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMEx1</AlternativeName>
      <IdentificationNumber>06111223</IdentificationNumber>
      <LegalName>Organization1</LegalName>
    </GeneratedBy>
    <UUID>a7f92050-09a8-4bf3-9ebc-e2e30d25a2fe</UUID>
  </Identifier>
  <Validity>
    <EndDate>2021-03-07</EndDate>
    <EndTime>00:56:00.436+02:00</EndTime>
    <StartDate>2020-03-07</StartDate>
    <StartTime>00:56:00.436+02:00</StartTime>
  </Validity>
  <CreationDate>2020-03-07T00:56:00.436+02:00</CreationDate>
  <UpdateDate>2020-03-07T00:56:00.436+02:00</UpdateDate>
  <Configuration>
    <Key>velocityThreshold</Key>
    <Value>4.2</Value>
    <Type>Number</Type>
    <Description>Speed Limit (knots). Speed limit (knots) for detecting specific changes in velocity values</Description>
  </Configuration>
</Rule>

```

```

</Configuration>
<Configuration>
  <Key>minDuration</Key>
  <Value>60</Value>
  <Type>Number</Type>
  <Description>Minimum Duration (seconds). The minimum time duration (seconds) of possible speed limit alerts to generate a Speed Alert</Description>
</Configuration>
<Configuration>
  <Key>vesselCategory</Key>
  <Value>GENERALCARGO;DIVING</Value>
  <Type>String</Type>
  <Description>Vessel categories to include</Description>
</Configuration>
<IsDeleted>false</IsDeleted>
<PriorityLevel>Medium</PriorityLevel>
<Status>Enabled</Status>
<RuleDomainType>MaritimeDomain</RuleDomainType>
<RuleType>HighSpeed</RuleType>
<IncludedArea xsi:type="ns2:Area">
  <Geometry xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:type="ns2:WKTGeometry">
    <WKT>POLYGON ((25.653076171875004 40.052847601823984, 26.114501953125004
40.16208338164619, 26.207885742187504 39.94343646197423, 26.125488281250004
39.61838363831915, 26.048583984375004 39.49556336059472, 25.345458984375004
39.69450749856091, 25.653076171875004 40.052847601823984))</WKT>
  </Geometry>
  <Description>Area1 used for detecting Low Speed vessels</Description>
</IncludedArea>
<ExcludedVehicle xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/vessel/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns7:Vessel">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMES1</AlternativeName>
      <IdentificationNumber>06111223</IdentificationNumber>
      <LegalName>Organization1</LegalName>
    </GeneratedBy>
    <UUID>4a8cd4e2-c25f-47bf-96db-d6d59137f00b</UUID>
  </Identifier>
  <MMSI>123456789</MMSI>
</ExcludedVehicle>
<ExecutionMode>Scheduled</ExecutionMode>
<ExecutionTimePeriod>
  <EndDate>2020-04-07</EndDate>
  <EndTime>00:56:00.437+03:00</EndTime>
  <StartDate>2020-03-07</StartDate>
  <StartTime>00:56:00.437+02:00</StartTime>
</ExecutionTimePeriod>
<ExecutionExpression>0 0 19-23 * * MON-SUN</ExecutionExpression>
<SnoozeTimeInSeconds>60.0</SnoozeTimeInSeconds>
</Rule>

```

9.1.2.8.3. Land CrossingLine Rule Infinite execution

In the following sample, a Land domain CrossingLine Rule is demonstrated. As shown below all the required information like the geofence of the area of interest, excluded vehicles classified as own assets as well as rule's execution mode are provided.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<Rule xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
      xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
      xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
      xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/">
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMESPACE</AlternativeName>
      <IdentificationNumber>076422321</IdentificationNumber>
      <LegalName>Organization3</LegalName>
    </GeneratedBy>
    <UUID>3c3c3359-ddaa-49d3-b2df-1a77240d41ca</UUID>
  </Identifier>
  <Validity>
    <EndDate>2022-03-07</EndDate>
    <EndTime>01:19:48.774+02:00</EndTime>
    <StartDate>2020-03-07</StartDate>
    <StartTime>01:19:48.772+02:00</StartTime>
  </Validity>
  <CreationDate>2020-03-07T01:19:48.774+02:00</CreationDate>
  <UpdateDate>2020-03-07T01:19:48.774+02:00</UpdateDate>
  <Configuration>
    <Key>geofence</Key>
    <Value>LINESTRING(26.610260009765625 41.42264912910954,26.61369323730469
41.3814455977753,26.606826782226566 41.34176252711261,26.56150817871094
41.33196687858672)</Value>
    <Type>WKT</Type>
    <Description>The line being crossed</Description>
  </Configuration>
  <IsDeleted>false</IsDeleted>
  <PriorityLevel>Medium</PriorityLevel>
  <Status>Enabled</Status>
  <RuleDomainType>LandDomain</RuleDomainType>
  <RuleType>CrossingLine</RuleType>
  <ExcludedVehicle xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/object/">
    <xsi:type>ns7:LandVehicle</xsi:type>
  </ExcludedVehicle>
  <Identifier>
    <GeneratedBy>
      <AlternativeName>ALTNAMESPACE</AlternativeName>
      <IdentificationNumber>076422321</IdentificationNumber>
      <LegalName>Organization3</LegalName>
    </GeneratedBy>
    <UUID>502d11fe-2cc8-4297-b360-7653da8e0964</UUID>
  </Identifier>
  <ClassificationType>OwnAsset</ClassificationType>
  <Notes>Organization3 asset</Notes>
  <LicensePlate>IEK 3312</LicensePlate>

```

```

</ExcludedVehicle>
<ExecutionMode>Infinite</ExecutionMode>
<SnoozeTimeInSeconds>60.0</SnoozeTimeInSeconds>
</Rule>

```

9.1.2.8.4. Maritime Low Speed Anomaly

In e-CISE, if an anomaly is generated by a Data Fusion service the corresponding Rule used to configure the service, could be also shared. In the following example please find a sample Maritime LowSpeed Anomaly generated by a preconfigured Data Fusion service and detected by a Radar sensor. The information provided consists of the Anomaly, the vessel involved in this low speed maritime anomaly, information of the Radar which detected the Vessel as well as the configurations of the Rule used to trigger the anomaly.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<MaritimeAnomaly xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/anomaly/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns7:MaritimeAnomaly">
  <RequiresAssistance>false</RequiresAssistance>
  <OccurrencePeriod>
    <EndDate>2020-03-07</EndDate>
    <EndTime>02:46:39.100+02:00</EndTime>
    <StartDate>2020-03-07</StartDate>
    <StartTime>02:46:39.099+02:00</StartTime>
  </OccurrencePeriod>
  <LocationRel>
    <SourceType>Observation</SourceType>
    <SourceType>FusionServices</SourceType>
  </LocationRel>
  <InvolvedObjectRel>
    <Object xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/vessel/" xsi:type="ns8:Vessel">
      <Identifier>
        <GeneratedBy>
          <AlternativeName>ALTNAM1</AlternativeName>
          <IdentificationNumber>06111223</IdentificationNumber>
          <LegalName>Organization1</LegalName>
        </GeneratedBy>
        <UUID>bd86ede9-3874-4433-9d90-1ee27d7699cf</UUID>
      </Identifier>
      <LocationRel>
        <SOG>0.9</SOG>
        <InvolvedSensorRel>
          <Sensor xmlns:ns12="http://www.ecise.eu/datamodel/v1/entity/sensor/">
            <xsi:type>ns12.Radar</xsi:type>
            <Identifier>
              <GeneratedBy>
                <AlternativeName>AltName3</AlternativeName>
                <IdentificationNumber>06111223</IdentificationNumber>
                <LegalName>Organization3</LegalName>
              </GeneratedBy>
              <UUID>4f056b4e-5d75-42c2-aa15-3454355af009</UUID>
            </Identifier>
          </Sensor>
        </InvolvedSensorRel>
      </LocationRel>
    </Object>
  </InvolvedObjectRel>
</MaritimeAnomaly>

```

```

</Identifier>
<SensorType>MaritimeRadar</SensorType>
<SensorStatusType>Online</SensorStatusType>
<IsPortable>false</IsPortable>
<Yaw>90.0</Yaw>
<Pitch>90.0</Pitch>
<Roll>45.0</Roll>
<HostPlatform>
  <HostEntityType>Fixed</HostEntityType>
  <MountingPosition>
    <Latitude>39.25299291875617</Latitude>
    <Longitude>25.86387634277344</Longitude>
  </MountingPosition>
</HostPlatform>
<Band>C BAND</Band>
<OperationalMode>COASTAL</OperationalMode>
<IsRotating>true</IsRotating>
<Configuration>
  <HorizontalFieldOfView>120.0</HorizontalFieldOfView>
  <VerticalFieldOfView>74.0</VerticalFieldOfView>
  <RangeInMeters>30000.0</RangeInMeters>
</Configuration>
</Sensor>
<SensorRole>Detecting</SensorRole>
<SensorMetadata xmlns:ns12="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns12:DetectionMetadata">
  <DetectionConfidence>
    <Percentage>100.0</Percentage>
  </DetectionConfidence>
  <SensorMetadata>
    </InvolvedSensorRel>
  </LocationRel>
  <Length>12.0</Length>
  <MMSI>123456789</MMSI>
</Object>
</InvolvedObjectRel>
<AnomalyConfidence>
  <Percentage>80.0</Percentage>
</AnomalyConfidence>
<AnomalyPriority>Low</AnomalyPriority>
<RuleRel>
  <Rule>
    <Configuration>
      <Key>velocityThreshold</Key>
      <Value>4.2</Value>
      <Type>Number</Type>
      <Description>Speed Limit (knots). Speed limit (knots) for detecting specific changes in velocity values</Description>
    </Configuration>
    <Configuration>
      <Key>minDuration</Key>
      <Value>60</Value>
      <Type>Number</Type>
    </Configuration>
  </Rule>
</RuleRel>

```

```

<Description>Minimum Duration (seconds). The minimum time duration (seconds) of possible speed limit alerts to generate a Speed Alert</Description>
</Configuration>
<Configuration>
  <Key>vesselCategory</Key>
  <Value>PLEASURE;FISHING;RADAR</Value>
  <Type>String</Type>
  <Description>Vessel categories to include</Description>
</Configuration>
<RuleDomainType>MaritimeDomain</RuleDomainType>
<RuleType>LowSpeed</RuleType>
</Rule>
</RuleRel>
<MaritimeAnomalyType>LowSpeed</MaritimeAnomalyType>
</MaritimeAnomaly>

```

9.1.2.8.5. Land CrossingLine Anomaly

In e-CISE, if an anomaly is generated by a Data Fusion service the corresponding Rule used to configure the service, could be also shared. In the following example please find a sample Land CrossingLine Anomaly generated by a preconfigured Data Fusion service and detected by a Camera sensor mounted on a UAV. The information provided consists of the Anomaly, the LandVehicle involved in this crossing line land anomaly, information about the Camera which detected the Land Vehicle, as well as the configurations of the Rule used to trigger the anomaly.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<LandAnomaly xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/anomaly/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:type="ns7:LandAnomaly">
  <RequiresAssistance>true</RequiresAssistance>
  <OccurrencePeriod>
    <EndDate>2020-03-07</EndDate>
    <EndTime>03:25:30.609+02:00</EndTime>
    <StartDate>2020-03-07</StartDate>
    <StartTime>03:25:30.609+02:00</StartTime>
  </OccurrencePeriod>
  <LocationRel>
    <SourceType>Observation</SourceType>
    <SourceType>FusionServices</SourceType>
  </LocationRel>
  <InvolvedObjectRel>
    <Object xmlns:ns8="http://www.ecise.eu/datamodel/v1/entity/object/" xsi:type="ns8:LandVehicle">
      <Identifier>
        <GeneratedBy>
          <AlternativeName>ALTNNAME</AlternativeName>
          <IdentificationNumber>076422321</IdentificationNumber>
          <LegalName>Organization3</LegalName>
        </GeneratedBy>
        <UUID>7d87f316-ad05-4d7e-ac9a-5e3f1290145a</UUID>
      </Identifier>
    </Object>
  </InvolvedObjectRel>

```

```

</Identifier>
<ClassificationType>Suspect</ClassificationType>
<ClassificationConfidence>
  <Percentage>10.0</Percentage>
</ClassificationConfidence>
<ConfirmationStatus>Unconfirmed</ConfirmationStatus>
<Notes>Car</Notes>
<LocationRel>
  <SOG>60.0</SOG>
<InvolvedSensorRel>
  <Sensor xmlns:ns12="http://www.ecise.eu/datamodel/v1/entity/sensor/">
    xsi:type="ns12:Camera">
      <Identifier>
        <GeneratedBy>
          <AlternativeName>AltName1</AlternativeName>
          <IdentificationNumber>076422321</IdentificationNumber>
          <LegalName>Organization1</LegalName>
        </GeneratedBy>
        <UUID>07ecd114-2abb-4e14-ae04-4ffd0775321</UUID>
      </Identifier>
      <SensorType>Camera</SensorType>
      <IsPortable>true</IsPortable>
      <Yaw>25.0</Yaw>
      <Pitch>25.0</Pitch>
      <Roll>25.0</Roll>
      <HostPlatform>
        <HostEntityType>Vehicle</HostEntityType>
        <HostVehicle xsi:type="ns11:Aircraft">
          <Identifier>
            <GeneratedBy>
              <AlternativeName>AltName1</AlternativeName>
              <IdentificationNumber>076422321</IdentificationNumber>
              <LegalName>Organization1</LegalName>
            </GeneratedBy>
            <UUID>e0526ff1-0b7c-4fc3-8355-70f8e067d3c5</UUID>
          </Identifier>
          <AircraftType>UAV</AircraftType>
          <Yaw>15.0</Yaw>
          <Pitch>35.0</Pitch>
          <Roll>45.0</Roll>
        </HostVehicle>
        <MountingPosition>
          <Altitude>34.0</Altitude>
          <Latitude>22.0</Latitude>
          <Longitude>10.0</Longitude>
        </MountingPosition>
      </HostPlatform>
      <Type>RGB</Type>
      <OperationalModeType>Dynamic</OperationalModeType>
      <ScopeType>DayNight</ScopeType>
      <HasAudio>false</HasAudio>
      <MediaType>video/mpeg</MediaType>
      <FrameRate>30</FrameRate>
    </Sensor>
  </InvolvedSensorRel>
</LocationRel>

```

```

<HorizontalFieldOfView>180.0</HorizontalFieldOfView>
<VerticalFieldOfView>145.0</VerticalFieldOfView>
<SupportsAnalytics>true</SupportsAnalytics>
</Sensor>
<SensorRole>Detecting</SensorRole>
<SensorMetadata xmlns:ns12="http://www.ecise.eu/datamodel/v1/entity/sensor/" xsi:type="ns12:DetectionMetadata">
    <DetectionConfidence>
        <Percentage>70.0</Percentage>
    </DetectionConfidence>
    </SensorMetadata>
    </InvolvedSensorRel>
    </LocationRel>
</Object>
</InvolvedObjectRel>
<AnomalyConfidence>
    <Percentage>90.0</Percentage>
</AnomalyConfidence>
<AnomalyPriority>High</AnomalyPriority>
<RulesRel>
    <Rule>
        <Configuration>
            <Key>geofence</Key>
            <Value>LINESTRING(26.610260009765625 41.42264912910954,26.61369323730469 41.3814455977753,26.606826782226566 41.34176252711261,26.56150817871094 41.33196687858672)</Value>
            <Type>WKT</Type>
            <Description>The line being crossed</Description>
        </Configuration>
        <RuleDomainType>LandDomain</RuleDomainType>
        <RuleType>CrossingLine</RuleType>
    </Rule>
</RulesRel>
<LandAnomalyType>CrossingLine</LandAnomalyType>
</LandAnomaly>

```

9.1.2.9. Incidents

9.1.2.9.1. SmugglingIncident

In the following example we are representing in e-CISE format, a sample Smuggling Drugs Incident.

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<SmugglingIncident
    xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
    xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
    xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
    xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:type="ns5:SmugglingIncident">
    <Identifier>
        <GeneratedBy>
            <AlternativeName>ALTNAMES</AlternativeName>

```

```

<IdentificationNumber>076422321</IdentificationNumber>
<LegalName>Organization3</LegalName>
</GeneratedBy>
<UUID>42e2ae92-1306-430d-961c-702d724ea0ad</UUID>
</Identifier>
<OccurrencePeriod>
  <EndDate>2018-03-08</EndDate>
  <EndTime>02:26:15.970+02:00</EndTime>
  <StartDate>2019-03-08</StartDate>
  <StartTime>02:26:15.969+02:00</StartTime>
</OccurrencePeriod>
<LocationRel>
  <Location>
    <Geometry xsi:type="ns2:PointGeometry">
      <Latitude>40.84563272784062</Latitude>
      <Longitude>25.87269234101563</Longitude>
    </Geometry>
  </Location>
  <DateTime>
    <EndDate>2018-03-08</EndDate>
    <EndTime>02:26:15.988+02:00</EndTime>
    <StartDate>2019-03-08</StartDate>
    <StartTime>02:26:15.988+02:00</StartTime>
  </DateTime>
</LocationRel>
<InvolvedAgentRel>
  <Agent xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/person/" xsi:type="ns7:Person">
    <Identifier>
      <GeneratedBy>
        <AlternativeName>ALTNAMES</AlternativeName>
        <IdentificationNumber>076422321</IdentificationNumber>
        <LegalName>Organization3</LegalName>
      </GeneratedBy>
      <UUID>34f3be8f-546d-4464-9da7-9e675d8eabb6</UUID>
    </Identifier>
    <IsSuspect>true</IsSuspect>
    <FullName>Smuggler 1</FullName>
  </Agent>
  <AgentRole>Facilitator</AgentRole>
</InvolvedAgentRel>
<IncidentStatus>Ended</IncidentStatus>
<ConfirmationStatus>VisuallyConfirmed</ConfirmationStatus>
<BorderFlowPath>AtEntry</BorderFlowPath>
<BorderFlowPath>AtExit</BorderFlowPath>
<IsSuspiciousIncident>true</IsSuspiciousIncident>
<Certainty>Observed</Certainty>
<LawInfringementIncidentType>Smuggling</LawInfringementIncidentType>
<BorderGuardsInvolved>false</BorderGuardsInvolved>
<ModusOperandi>Dealing drugs in night clubs</ModusOperandi>
<NumberOfPerpetrators>1</NumberOfPerpetrators>
<SmugglingIncidentType>DrugSmugglingCocaine</SmugglingIncidentType>
<AreWeaponsInvolved>true</AreWeaponsInvolved>
<SmuggledObject>

```

```

<ObjectName>Cocaine</ObjectName>
<ObjectQuantity>0.5</ObjectQuantity>
<ObjectValue>30000.0</ObjectValue>
</SmuggledObject>
</SmugglingIncident>

```

9.1.2.10. Simulations

Simulations in Andromeda refer to the information exchange with Decision Support Services. To initiate a Simulation, a Simulation request must be sent to the Decision Support Services gateway in e-CISE Data Model format. The outcome of the simulation is encapsulated in the Simulation response. Please find below sample example of a Ship Navigation Simulation Request and the corresponding simulation response in e-CISE format.

9.1.2.10.1. Ship Navigation Simulation Request

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<ShipNavigationSimulationRequest
  xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
  xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
  xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
  xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
  xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/services/dst/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:type="ns7:ShipNavigationSimulationRequest">
  <Identifier>
    <GeneratedBy>
      <IdentificationNumber>076422321</IdentificationNumber>
    </GeneratedBy>
    <UUID>2cadc06f-90a1-48c4-a5c4-1bcbb0dc8224</UUID>
  </Identifier>
  <SimulationName>Ship navigation #1</SimulationName>
  <StartTime>2020-03-08T14:18:39.298+02:00</StartTime>
  <StartLocation xsi:type="ns2:PointGeometry">
    <Latitude>38.0</Latitude>
    <Longitude>18.41667</Longitude>
  </StartLocation>
  <EndLocation xsi:type="ns2:PointGeometry">
    <Latitude>37.95</Latitude>
    <Longitude>18.55</Longitude>
  </EndLocation>
  <BoundingBoxDeltaLatU>0.37</BoundingBoxDeltaLatU>
  <BoundingBoxDeltaLonL>1.14</BoundingBoxDeltaLonL>
  <BoundingBoxDeltaLatD>1.02</BoundingBoxDeltaLatD>
  <BoundingBoxDeltaLonR>1.58</BoundingBoxDeltaLonR>
  <Vessel>
    <Identifier>
      <GeneratedBy>
        <IdentificationNumber>076422321</IdentificationNumber>
      </GeneratedBy>
      <UUID>1d3aa41f-ea26-4c06-b53b-aa9319a828cd</UUID>
    </Identifier>
  
```

```

<MaximumSpeed>20.0</MaximumSpeed>
<Breadth>14</Breadth>
<CallSign>9HA2203</CallSign>
<DesignSpeed>18.0</DesignSpeed>
<Length>15.0</Length>
<ShipType>Sailing</ShipType>
<DesignPower>30.0</DesignPower>
</Vessel>
<IntentionalSpeedRed>1</IntentionalSpeedRed>
<SurfRiding>1</SurfRiding>
<ParRolling>1</ParRolling>
<SailClass>12</SailClass>
<WindModel>12</WindModel>
<WaveModel>1</WaveModel>
</ShipNavigationSimulationRequest>

```

9.1.2.10.2. Ship Navigation Simulation Response

```

<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<SimulationResponse
    xmlns:ns2="http://www.ecise.eu/datamodel/v1/entity/location/"
    xmlns:ns3="http://www.ecise.eu/datamodel/v1/entity/document/"
    xmlns:ns4="http://www.ecise.eu/datamodel/v1/entity/organization/"
    xmlns:ns5="http://www.ecise.eu/datamodel/v1/entity/incident/"
    xmlns:ns7="http://www.ecise.eu/datamodel/v1/entity/services/dst/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:type="ns7:SimulationResponse">
    <Identifier>
        <GeneratedBy>
            <IdentificationNumber>076422321</IdentificationNumber>
        </GeneratedBy>
        <UUID>09267a8b-42f2-4dd1-8101-867644bfb5db</UUID>
    </Identifier>
    <CorrelatedSimulationRequest xsi:type="ns7:ShipNavigationSimulationRequest">
        <Identifier>
            <GeneratedBy>
                <IdentificationNumber>076422321</IdentificationNumber>
            </GeneratedBy>
            <UUID>2cadc06f-90a1-48c4-a5c4-1bcbb0dc8224</UUID>
        </Identifier>
    </CorrelatedSimulationRequest>
    <Status>SUCCESS</Status>
    <UserId>usr-1</UserId>
    <Payload>{
        "payload": {
            "2_gdt_voyageplan.json": {
                "title": "VISIR ship route file. Developed in the frame of T...://www.ioniproject.eu/it/) projects (2012-2015).",
                "waypoints": [
                    {
                        "ISO_date": "20191126T100000",
                        "T_E": 10.2,
                        "UKC": 3079.1,

```

```
"WP": 1,  
"alpha": -149,  
"course": 90,  
"cum_dist": 0,  
"lat": 38,  
"lon": 18.41667,  
"parRoll": 0,  
"pureLossStab": 1,  
"redLambda": 2.006,  
"speed_out": 8.99,  
"surfRid": 0,  
"swh": 1.118,  
"throttle": 100  
},  
{  
"ISO_date": "20191126T100000",  
"T_E": 10.2,  
"UKC": 3079.1,  
"WP": 1,  
"alpha": -149,  
"course": 90,  
"cum_dist": 0,  
"lat": 38,  
"lon": 18.41667,  
"parRoll": 0,  
"pureLossStab": 1,  
"redLambda": 2.006,  
"speed_out": 8.99,  
"surfRid": 0,  
"swh": 1.118,  
"throttle": 100  
},  
{  
"ISO_date": "20191126T102301",  
"T_E": 11.86,  
"UKC": 3173.1,  
"WP": 3,  
"alpha": 173,  
"course": 117,  
"cum_dist": 3.45,  
"lat": 37.98333,  
"lon": 18.48333,  
"parRoll": 0,  
"pureLossStab": 1,  
"redLambda": 2.07,  
"speed_out": 8.99,  
"surfRid": 0,  
"swh": 1.115,  
"throttle": 100  
},  
{  
"ISO_date": "20191126T103529",  
"T_E": 11.61,
```

```
"UKC": 3179.1,  
"WP": 4,  
"alpha": 167,  
"course": 117,  
"cum_dist": 5.32,  
"lat": 37.96667,  
"lon": 18.51667,  
"parRoll": 0,  
"pureLossStab": 1,  
"redLambda": 2.105,  
"speed_out": 9,  
"surfRid": 0,  
"swh": 1.114,  
"throttle": 100  
},  
{  
"ISO_date": "20191126T104758",  
"T_E": 11.29,  
"UKC": 3182.1,  
"WP": 5,  
"alpha": 162,  
"course": 117,  
"cum_dist": 7.19,  
"lat": 37.95,  
"lon": 18.55,  
"parRoll": 0,  
"pureLossStab": 1,  
"redLambda": 2.137,  
"speed_out": 9,  
"surfRid": 0,  
"swh": 1.113,  
"throttle": 100  
}}}</Payload>  
</SimulationResponse>
```

10. Annex D: Quality Review Report

The ANDROMEDA Consortium uses the Quality Review Report process for its internal quality assurance for deliverables to assure consistency and high standard for documented project results.

The Quality Review Report is used individually by selected peer reviewers. The allocated time for the review is 7 calendar days. The author of the document has the final responsibility to reply on the comments and suggestions of the peer reviewers and decide what changes are needed to the document and what actions are to be undertaken.

10.1. Reviewers

Project Coordinator	Athina Foka (MMAIP)
Management Support Team Member	Alkis Astyakopoulos (KEMEA), Antonis Kostaridis (SATWAYS)
Internal Peer Reviewer(s)	Simone Brocchetti, Giuseppe Vella, Giovanni Barone (ENGINEERIING), João Pastor (INOVAWORKS)
External Peer Reviewer	David Berger (JRC)

10.2. Overall Peer Review Result

The Deliverable is:

- Fully accepted
- Accepted with minor corrections, as suggested by the reviewers
- Rejected unless major corrections are applied, as suggested by the reviewers

10.3. Consolidated Comments of Quality Reviewers

General Comments	
Deliverable contents thoroughness	Reviewers comment: The document is thorough and in line with the objectives of the project. Author's reply: -
Innovation level	Reviewers comment: The innovation level is adequate Author's reply: -
Correspondence to project and programme objectives	Reviewers comment: The document is in line with the objectives of the project and programme and is, thus, adequate. Author's reply: -
Specific Comments	
Relevance with the objectives of the deliverable	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Not applicable Reviewers comment: Author's reply:

Completeness of the document according to its objectives	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Not applicable Reviewers comment: Author's reply:
Methodological framework soundness	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Not applicable Reviewers comment: Author's reply:
Quality of the results achieved	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Not applicable Reviewers comment: Author's reply:
Structure of the deliverable with clear objectives, methodology, implementation, results and conclusions	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Not applicable Reviewers comment: Author's reply:
Clarity and quality of presentation, language and format	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Not applicable Reviewers comment: Author's reply:

Detailed Comments (please add rows as appropriate)

No.	Reference	Remark
1	Various Sections	JRC provided detailed comments on the e-CISE Data Model. An internal working document has been created to track the changes and communicate them between ANDROMEDA and JRC.
2		
3		
4		
5		