ETSI GS CDM 005 V1.6.1 (2024-07)

Common information sharing environment service and Data Model (CDM); Data Model; Release 1

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ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

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Foreword

This Group Specification (GS) has been produced by ETSI Industry Specification Group (ISG) european Common information sharing environment service and Data Model (CDM).

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

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Introduction

In October 2009 the European Commission adopted the Communication COM/2009/538 [i.4].

This Communication introduced the first general guiding principles of the Common Information Sharing Environment (CISE) and initiated the CISE development process (Figure 1).

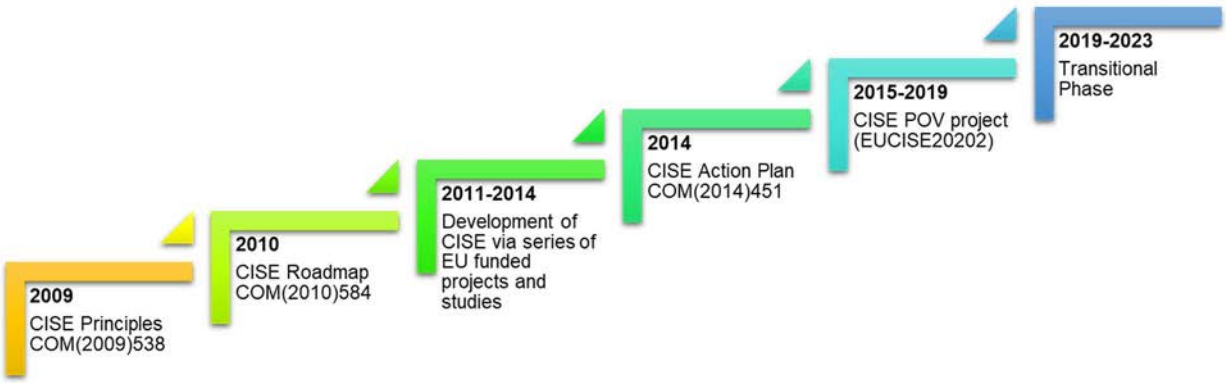

Figure 1: CISE development process

The Communication stated among other things, that the aim of the integrated maritime surveillance is to generate a situational awareness of activities at sea, impacting on the denominated seven maritime sectors: Maritime Safety and Security, Border Control, Maritime Pollution and Marine Environment Protection, Fisheries Control, Customs, General Law Enforcement and Defence, as well as the economic interests of the EU, so as to facilitate sound decision making.

Hybrid and complementary cross-sectoral and cross-border information exchange requires a common "data language" within the common network architecture as well as a common set of IT- services to handle the data transfer.

The technical standardization proposal for CISE implementation was therefore initiated by EUCISE 2020 project and directed towards a standardization process within the framework of a professional European standardization environment in order to elaborate universal and sustainable technical specifications for the implementation and development of CISE, as well as offering a technical solution for other, similar information exchange regimes.

ISG CDM was established in 2019 to carry out the technical standardization of CISE.

The requirements in the present document respect the operational and technical requirements defined during the CISE development process (Figure 1) and the general principles of CISE as originally defined in [i.4], [i.5] and later elaborated in the most recent version of the CISE Architecture [i.6] as follows:

- CISE connects public authorities in the EU and EEA responsible for maritime surveillance: civil and military, regional/sectorial organizations and EU agencies.
- CISE connects existing maritime surveillance ICT systems. However, CISE is not a new surveillance system, nor a new screen in the surveillance centres.
- CISE promotes a sector-neutral solution: all sectors and systems are important.
- CISE follows a decentralized approach: point-to-point exchange of information.
- Information exchange is voluntary, i.e. not enforced by legislation.

1 Scope

The present document gives terms and definitions for the Data Model of the european Common information sharing environment service and Data Model (CDM), specifying the set of rules for the description of the CISE entities exchanged among participants of the CISE network.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at https://docbox.etsi.org/Reference.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

[1] IETF RFC 6351: "xCard: vCard XML Representation".

[2] ISO 3166-1:2020: "Codes for the representation of names of countries and their subdivisions - Part 1: Country code".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] ETSI GS CDM 002: "Common information sharing environment service and Data Model (CDM); System Requirements definition; Release 1".

[i.2] ETSI GS CDM 003: "Common Information sharing environment service and Data Model (CDM); CDM Architecture; Release 1".

[i.3] ETSI GS CDM 004: "Common Information Sharing Environment Service and Data Model (CDM); Service Model; Release 1".

[i.4] Communication from the Commission COM(2009)538 final: "Towards the integration of maritime surveillance: A common information sharing environment for the EU maritime domain".

[i.5] CISE Architecture Visions Document V3.0 06/11/2013.

[i.6] CISE Architecture, Version 2.0, Date 04/03/2022.

[i.7] CISE Core Vocabulary Specification, Version 1.5.3, Date 23/11/2017.

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the following terms apply:

adaptor: component connecting a CISE Participant to CISE network via standardized interface

NOTE 1: The Adaptor is the bridge between the Legacy System and the Gateway translating LS data to the CISE Data Model. The Adaptor uses available Gateway Services depending on the strategy chosen for message exchange patterns and Data Model.

NOTE 2: The Adaptor could be either software or software/hardware component.

NOTE 3: In case of a new legacy system connected to CISE, the adaptor functionality may be part of the new legacy system.

consumer: participant requesting Services over CISE network, only consuming but not providing information

CoopP: test project on cooperation in execution of various maritime functionalities at sub-regional or sea-basin level in the field of integrated maritime surveillance

NOTE 1: Project financed by the European Commission in 2013 defining the CISE use cases and the first version of the CISE data and service model.

cross-border: exchange of information between EU or EFTA countries

cross-sector: exchange of information between two or more EU maritime sectors

EUCISE2020: EUropean test bed for the maritime Common Information Sharing Environment in the 2020 perspective

NOTE 1: This FP7 project developed the existing CISE Network and software (2014-2019).

NOTE 2: More information on the project can be found at https://cordis.europa.eu/project/id/608385.

legacy system: software designed to perform specific tasks and that exposes certain functionalities through interfaces in the domain of the maritime surveillance

NOTE: In the present document, Public Authorities maintain Legacy Systems. Legacy Systems are the originator and final destinations of messages exchange in CISE.

maritime sector: one of the following seven sectors performing maritime activities:

- Maritime Safety, Security and Prevention of Pollution by Ships;
- Fisheries Control;
- Marine Pollution Preparedness and Response, Marine Environment;
- Customs;
- Border Control;
- General Law Enforcement;
- Defence.

message: one of the structured sentences exchanged between Participants to discover, request and provide Services

node: components that provide CISE infrastructure and access point to CISE network

participant: legacy system connected to the CISE network for exchanging maritime data

provider: participant that provides Services over CISE network

public authority: any organization or legal entity that has an interest in maritime surveillance information

NOTE 1: An authority can be local, regional, national or European.

NOTE 2: This organization may have responsibilities linked to one of the seven sectors of maritime surveillance.

service: self-describing, high-level abstraction of coarse-grained business capability

NOTE 1: The type of a service indicates the main data entity exchanged using this service, e.g. VesselService.

NOTE 2: Service providers can offer several services of the same type handling different subsets of data. For instance, providers could define one service (type VesselService) to exchange information from a vessel database and a second one (type VesselService) to exchange vessel information with their location obtained from a sensor.

NOTE 3: Providers will decide which attributes and related entities of the main entity will be exchanged using the service. For instance, a service of type VesselService will enable the exchange of Vessel data entities and could also handle information of the Cargo, Incident, Location data entities (and the corresponding relationships), depending on the service provider and the capabilities of the legacy systems.

user: person appointed by the Public Authorities, interacting directly with CISE or with a Legacy System connected to CISE

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the following abbreviations apply.

AGE	Agent
AIS	Automatic Identification System
AMSL	Above Mean Sea Level
C2	Command and Control system
CBRN	Activities related to chemical, bacteriological, radioactive and nuclear substances
CDM	CISE Data Model
CHEM	Chemical
CISE	Common Information Sharing Environment
CMB	Combat-related area
COG	Course Over Ground
CSO	Company Security Officer
DGR	Dangerous area
DOC	Document
DRZLE	Drizzle
EEA	European Economic Area
EU	European Union
EUCISE2020	European Union Common Information Sharing Environment
EVE	Event
FF	Fire Fighting
FP7	7th Framework Programme
FSTT	Fire Services Technical Intervention
GEN	Generic activities
HUM	Humidity
ICT	Information & Communication Technology
IMO	International Maritime Organization
INT	Intelligence
INW	Inland Waterway
IT	Information Technology
KML	Keyhole Markup Language
LOA	Length Overall

LOC	Location
LS	Legacy System
MAC	Multi-agency Cooperation
MIL	Military activities
MMSI	Maritime Mobile Service Identity
NAT	National
NET	Network and telecommunication activities
OBJ	Object
OPR	Use Operational Resources
OTH	Other
PER	Period
POL	Police activities
QMED	Qualified Member of the Engine Department
REC	Reconstruction/rehabilitation activities
ROV	Remotely Operated Vehicle
RSC	Rescue activities
RSK	Risk
SAV	Save and Rescue Endangered Life
SCS	Support Community Safety
SOC	Social and media/communication activities
SOG	Speed Over Ground
SSO	Special Security Officer
TDS	Thunderstorm
UAV	Unmanned Air Vehicle
UID	Unique Identifier
UML	Unified Modelling Language
UNDG	United Nations Dangerous Goods
UNK	Unknown
USV	Unmanned Surface Vehicle
UUID	Universally Unique Identifier
UUV	Unmanned Underwater Vehicle
UVI	Unique Vessel Identifier defined by the FAO
VEG	Vegetable Oil or Waste
VULN	Vulnerability area
WGH	Weigth
WIN	Windy
WKT	Well Known Text
XML	eXtensible Markup Language
XSD	XML Schema Definition

4 Overview

The present document describes the CISE Data Model to support the requirements defined in ETSI GS CDM 002 [i.1], ETSI GS CDM 003 [i.2] and ETSI GS CDM 004 [i.3] for the implementation of the European Common Information sharing environment.

Clause 5 informs on how the CISE Data Model can be used to exchange messages between CISE participants, describing the CISE entities and their information.

Clause 6 provides the specifications of the CISE Data Model. These specifications include also the list of available CISE Service Type mentioned in ETSI GS CDM 004 [i.3].

5 The CISE Information Model

The CISE Information Model consists of seven (7) core entities:

- Agent.
- Document.

- Event.
- Location.
- Object.
- Period.
- Risk.

Agent is an operative entity that provides information about individual persons or organizations which are involved as actors or targets in the events and activities subject to information exchange through the CISE network.

Document entity allows tracing and exchanging information in a persistent manner in almost any possible electronic format.

Event is an entity that provides information about movements, anomalies, incidents or actions which occur in the events and activities subject to information exchange through the CISE network.

Location entity provides information about the localization of objects, events and activities shared through the CISE network. Locations can be described using a place name, a geometry or an address.

Object is an abstract entity that handles information about physical entities like vehicles (vessels, aircrafts and land vehicles) and cargo.

Period is an entity used to define a time interval relevant to the object, event or activity shared through the CISE network. It can be expressed by any combination of a duration, a start date, a start time, an end date and an end time.

Risk entity represents a situation at sea that can lead to a potentially dangerous event.

The seven core entities encapsulate relation entities that support the full description of the CISE information model.

The relation entities of the Agent entity are:

- Organization.
- Person.

The relation entities of the Document entity are:

- Metadata.
- UID.

The relation entities of the Event entity are:

- Action.
- Anomaly.
- Incident.
- Movement.

The relation entity of the Location entity is:

- Meteo-Oceanographic Condition.

The relation entities of the Object entity are:

- Cargo.
- Operational Asset.
- Vessel.

Also, each core entity can be associated with another core entity to create complex descriptions.

Figure 5.1 depicts the CISE information model presenting in a graphical way the relationship between the core entities and the associated relation entities.

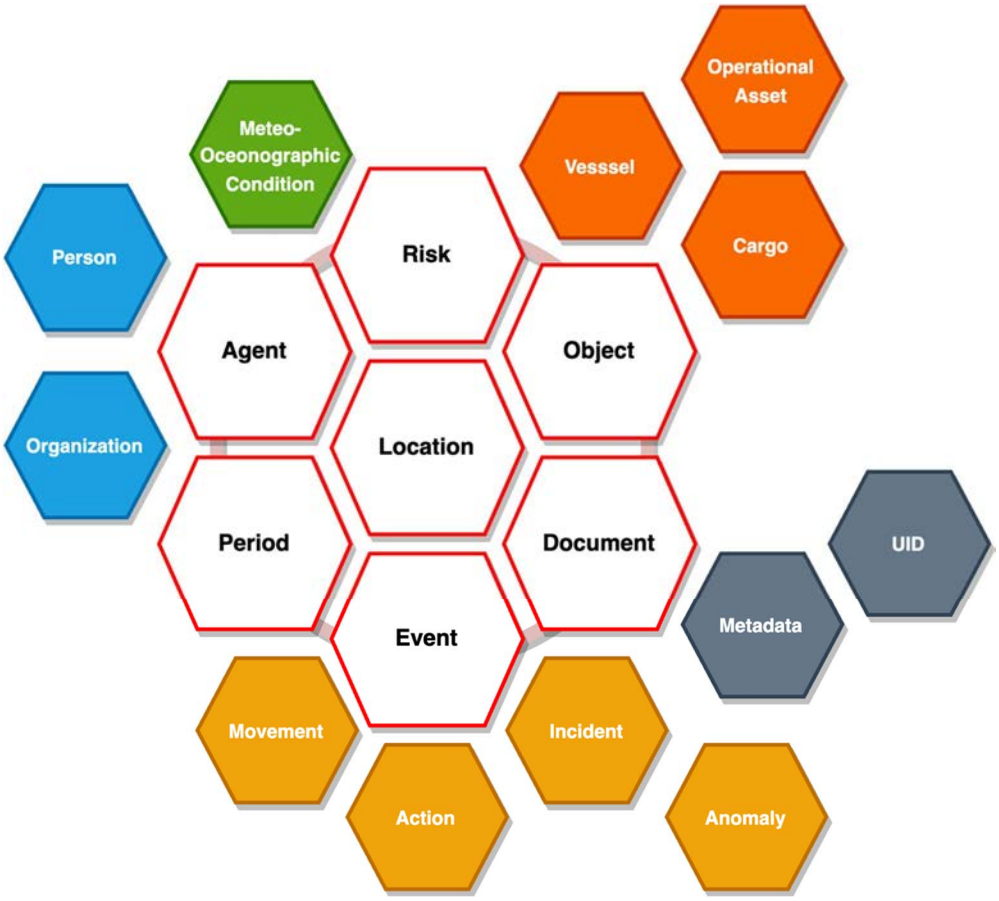

Figure 5.1: The CISE Information Model [i.7]

6 Common Data Model

6.1 Introduction

This clause defines the requirements of the CISE Data Model.

6.2 CISE Entity Specifications

6.2.1 Agent Core Entity

6.2.1.1 Agent Core Entity General Requirements

[Cdm-AGE-001] The Agent core entity shall be described by means of:

- Agent Class Attributes.
- Agent Relation Entities:
  - Organization Entity.
  - Person Entity.

- Agent Associated Entities:
  - Agent Core Entity.
  - Location Core Entity.
  - Object Core Entity.
  - Risk Core Entity.

Figure 6.2.1.1-1 illustrates the Agent Core Entity model.

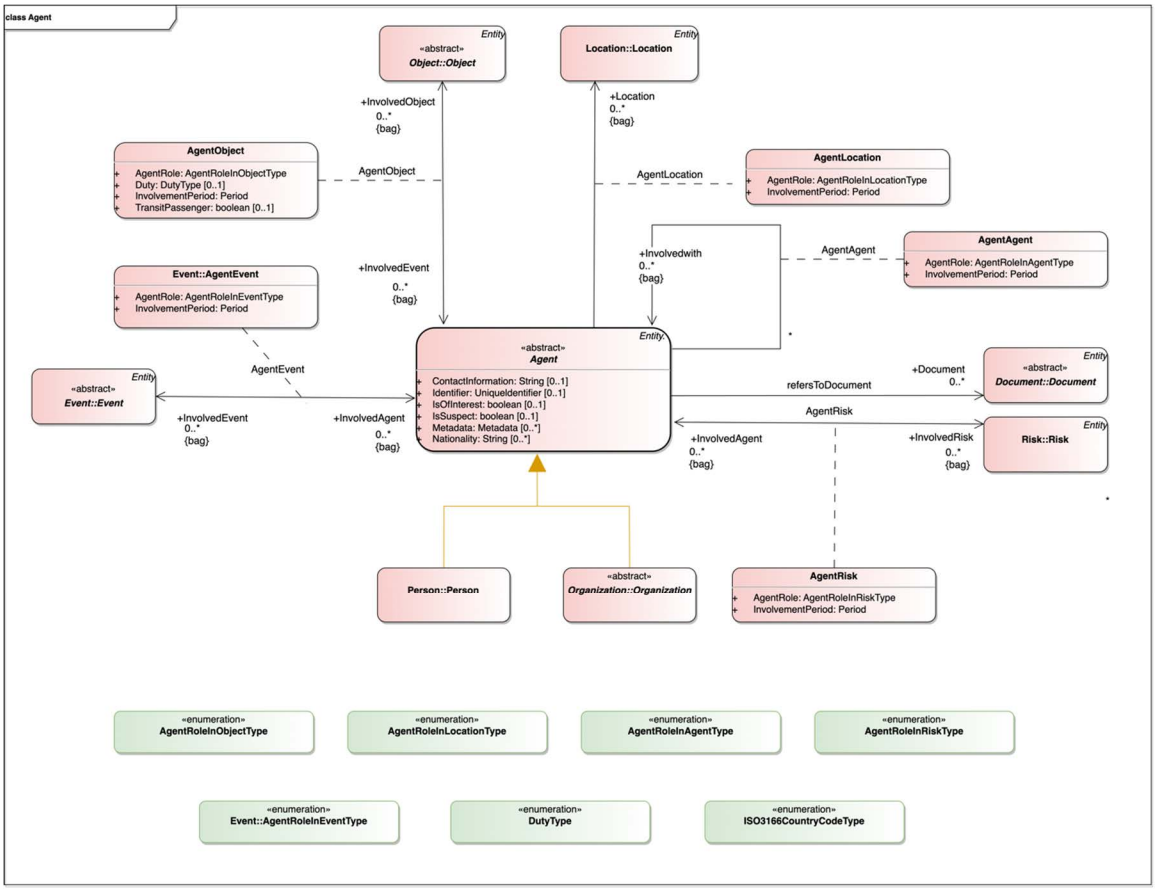

Figure 6.2.1.1-1: CISE Agent UML conceptual model [i.7]

[Cdm-AGE-002] The Agent entity shall be described by the following attributes:

- ContactInformation
- Identifier
- IsOfInterest
- IsSuspect
- Metadata
- Nationality

Table 6.2.1.1-1 illustrates the data structure supported by the CISE Agent entity.

Table 6.2.1.1-1: Data structure of CISE Agent entity

Field Name	Data Type	Note
ContactInformation	String	XCard [1]
Identifier	UniqueIdentifierType	Ref.to [Cdm-DOC-003]
IsOfInterest	Boolean	
IsSuspect	Boolean	True if there is suspect related to the agent
Metadata	MetadataType	Ref.to [Cdm-DOC-006]
Nationality	String	Three-letter country code [2]

6.2.1.2 Agent Relation Entity

6.2.1.2.1 Organization Entity

Figure 6.2.1.2.1-1 illustrates the Organization Entity model.

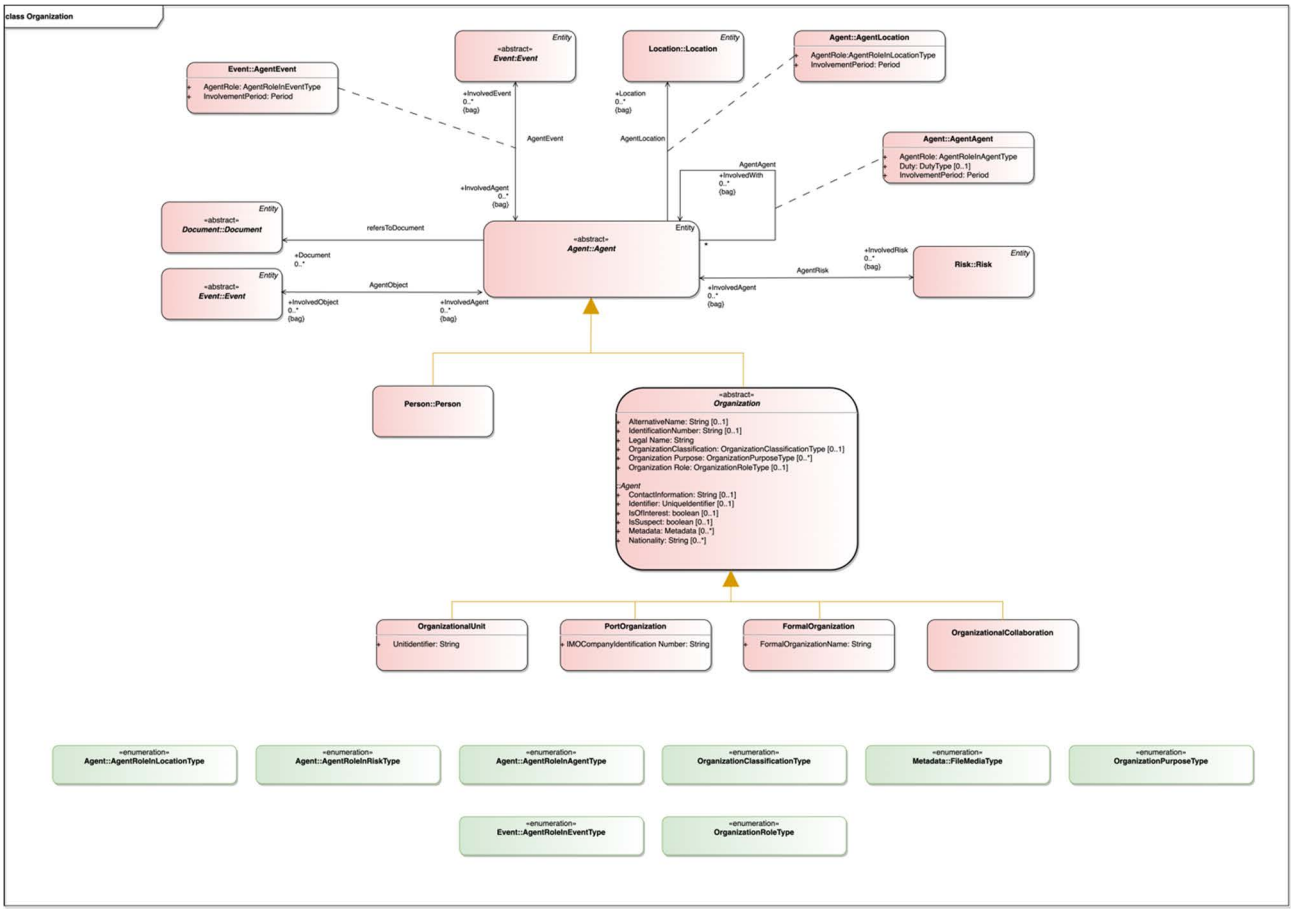

Figure 6.2.1.2.1-1: CISE Organization UML conceptual model [i.7]

[Cdm-AGE-003] The Organization entity shall be described by means of:

- Organization attributes:
- Organization sub-classes:
  - Organizational Unit.
  - Port Organization.
  - Formal Organization.

- Organizational Collaboration.

[Cdm-AGE-004] The Agent entity shall be described by the following attributes:

- AlternativeName.
- IdentificationNumber.
- LegalName.
- OrganizationClassification.
- OrganizationPurpose.
- OrganizationRole.

Table 6.2.1.2.1-1 illustrates the data structure supported by the CISE Organization entity.

Table 6.2.1.2.1-1: data structure of CISE Organization entity

Field Name	Data Type	Note
AlternativeName	String	
IdentificationNumber	String	
LegalName	String	
OrganizationClassification	OrganizationClassificationType	
OrganizationPurpose	OrganizationPurposeType	
OrganizationRole	OrganizationRoleType	

[Cdm-AGE-005] The Organization Classification Type shall support the following values:

- Governmental.
- European.
- MemberState.
- NonGovernmental.
- Criminal.
- Private.
- InterGovernmental.
- Other.
- NonSpecified.

[Cdm-AGE-006] The Organization Purpose Type shall support the following values:

- GeneralLawEnforcement.
- Customs.
- MarineEnvironment.
- MaritimeSafetyAndSecurity.
- Defence.
- FisheriesControl.
- BorderControl.
- Profitable.

- NonProfitable.
- Other.
- NonSpecified.

[Cdm-AGE-007] The Organization Role Type shall support the following values:

- PortAuthority.
- CoastalStation.
- PortStateControl.
- NationalCompetentAuthority.
- InspectionAuthority.
- Other.
- NonSpecified.

[Cdm-AGE-008] The Formal Organizational sub-class shall be described by the following attributes:

- Formal Organization Name.

Table 6.2.1.2.1-2 illustrates the data structure supported by the CISE Formal Organization sub-class.

Table 6.2.1.2.1-2: data structure of CISE Formal Organization sub-class.

Field Name	Data Type	Note
FormalOrganizationName	String	

[Cdm-AGE-009] The Organizational Unit sub-class shall be described by the following attributes:

- Unit Identifier.

Table 6.2.1.2.1-3 illustrates the data structure supported by the CISE Organization Unit sub-class.

Table 6.2.1.2.1-3: data structure of CISE Organization Unit sub-class

Field Name	Data Type	Note
UnitIdentifier	String	

[Cdm-AGE-010] The Port Organization sub-class shall be described by the following attributes:

- IMO Company Identification Number.

Table 6.2.1.2.1-4 illustrates the data structure supported by the CISE Port Organization sub-class.

Table 6.2.1.2.1-4: data structure of CISE Port Organization sub-class

Field Name	Data Type	Note
IMOCompanyIdentificationNumber	String	

6.2.1.2.2 Person Entity

[Cdm-AGE-011] The Person entity shall be described by means of the following attributes:

- Alternative Name.
- Birth Date.

- Birth Name.
- Date of Death.
- Family Name.
- Full Name.
- Gender.
- Given Name.
- Patronymic Name.
- Person Identifier.

Figure 6.2.1.2.2-1 illustrates the Person entity model.

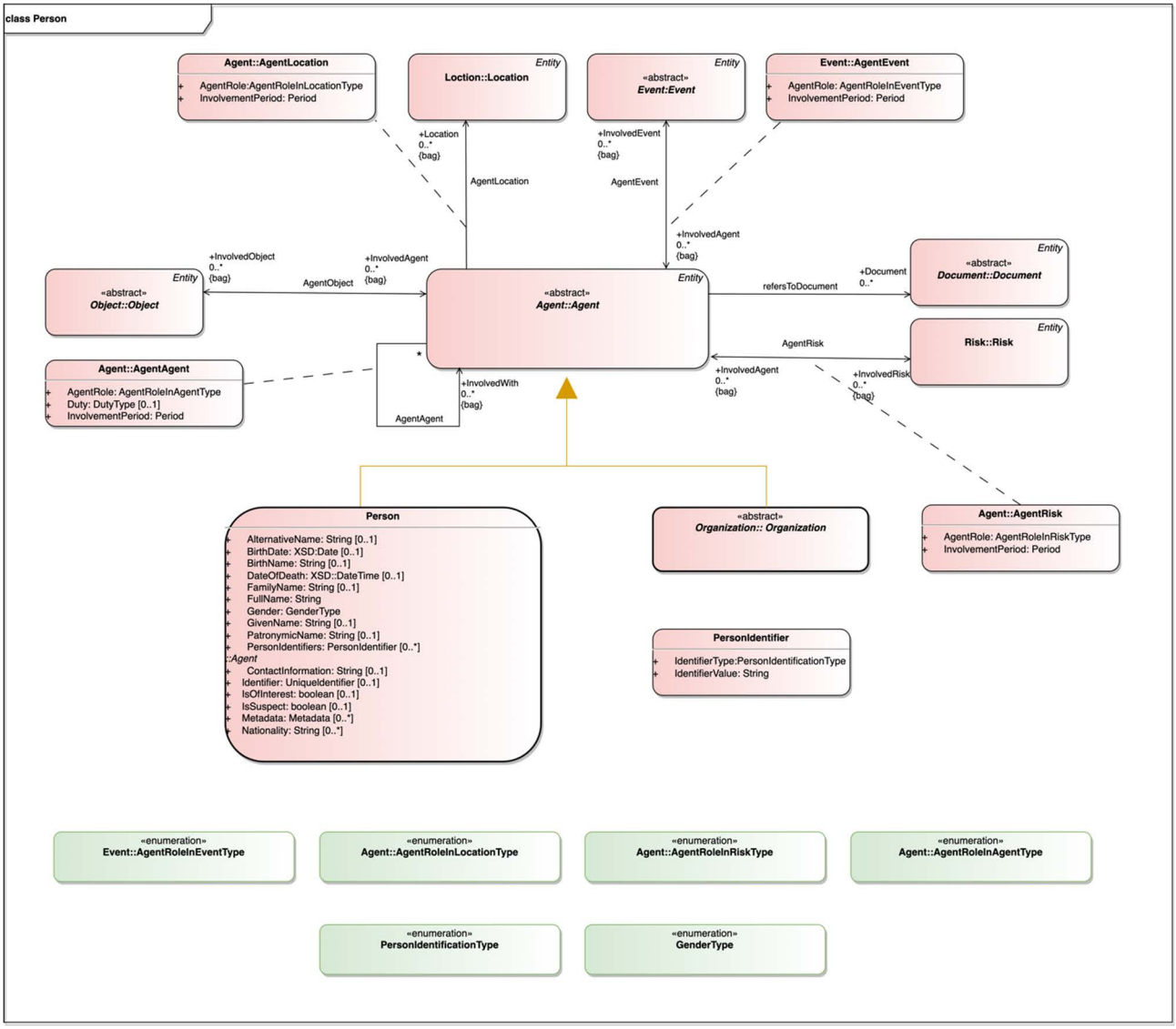

Figure 6.2.1.2.2-1: The CISE Person UML conceptual model [i.7]

Table 6.2.1.2.2-1 illustrated the data structure supported by the CISE Person entity.

Table 6.2.1.2.2-1: Data structure of CISE Person model

Field Name	Data Type	Note
AlternativeName	String	
BirthDate	XSD::Date	
BirthName	String	
DateOfDeath	XSD::DateTime	
FamilyName	String	
FullName	String	
Gender	GenderType	
GivenName	String	
PatronymicName	String	
PersonIdentifiers	PersonIdentifierType	

[Cdm-AGE-012] The GenderType shall support the following values:

- Female.
- Male.
- Other.
- Unknown.
- NotApplicable.

[Cdm-AGE-013] The PersonIdentifier Type shall be described by the following attributes:

- Identifier Type.
- Identifier Value.

Table 6.2.1.2.2-2 illustrated the data structure supported by the CISE PersonIdentifier type.

Table 6.2.1.2.2-2: Data structure of CISE PersonIdentifier type

Field Name	Data Type	Note
IdentifierType	PersonIdentificationType	
IdentifierValue	String	

[Cdm-AGE-014] The PersonIdentification Type shall support the following values:

- IdentityCard.
- SocialSecurityCard.
- Passport.
- FiscalDocument.
- VISA.
- CrewMasterBook.
- Other.
- NonSpecified.

6.2.1.3 Agent Associated Entity

6.2.1.3.1 Agent Entity

[Cdm-AGE-015] The association with an Agent entity shall be described by the following attributes:

- Agent Role.
- Duty.
- Involvement Period.

Table 6.2.1.3.1-1 illustrated the data structure supported by the Agent associated entity.

Table 6.2.1.3.1-1: Data structure of CISE Agent associated model

Field Name	Data Type	Note
AgentRole	AgentRoleInAgentType	
Duty	DutyType	
InvolvementPeriod	Period Entity	Ref.to [Cdm-PER-001]

[Cdm-AGE-016] TheAgentRoleInAgentType shall support the following values:

- Leads.
- WorksFor.
- ManagesSecurityCSO.
- Encompasses.
- Owns.
- Other.
- NonSpecified.

[Cdm-AGE-017] The DutyType shall support the following values:

- AbleSeaman.
- Agent.
- AsstFoodBevMngr.
- BarManager.
- BarService.
- Bosun.
- Cadet.
- Captain.
- CargoTechnician.
- CasinoStaff.
- ChiefCook.
- ChiefElectrician.
- ChiefHousekeeper.
- ChiefEngineer.
- ChiefMaster.
- ChiefMate.

- ChiefOfficer.
- ChiefPurser.
- ChiefSteward.
- ClassSurveyor.
- CSO.
- Cook.
- CraneOperator.
- CrewMember.
- CruiseDirector.
- CruiseStaff.
- DeckApprentice.
- DeckFitter.
- DeckOfficer.
- Deckhand.
- Doctor.
- Donkeyman.
- ElectricalEngineer.
- ElectricalOfficer.
- Electrician.
- EngineerCadet.
- EngineeringCrew.
- EngineFitter.
- Entertainment.
- FacilitiesCrew.
- FacilitiesManager.
- FirstAsstEngineer.
- FirstEngineer.
- FirstMate.
- FirstOfficer.
- Fitter.
- FourthOfficer.
- FoodBevMngr.
- FoodService.
- FourthAsstEngineer.

- Greaser.
- Hospitality.
- HotelDirector.
- HotelStaff.
- HousekeepingStaff.
- InformationTechnology.
- JuniorEngineer.
- LaundryMaster.
- Lifeboatman.
- Maitred.
- MarineCrew.
- MarketingRevenueMngr.
- Master.
- MasterFirstClassPilot.
- MateFirstClassPilot.
- Mechanic.
- MedicalStaff.
- Messman.
- Motorman.
- Oiler.
- Operator.
- OrdinarySeaman.
- Owner.
- Painter.
- Porter.
- Provision.
- ProvisionMaster.
- Pumpman.
- QMED.
- RadioOfficer.
- Reeferman.
- RepairMan.
- RiddingCrew.
- SafetyAndSecurity.

- SecondAsstEngineer.
- SecondMate.
- SecondOfficer.
- SSO.
- StaffCaptain.
- Steward.
- Superintendent.
- Tankerman.
- ThirdAsstEngineer.
- ThirdMate.
- ThirdOfficer.
- ThirdParty.
- TruckMechanic.
- Tunnelman.
- UtilityPerson.
- VettingInspector.
- Welder.
- Wiper.
- YardPersonell.
- Other.
- NonSpecified.

6.2.1.3.2 Location Entity

[Cdm-AGE-018] The association with a Location entity shall be described by the following attributes:

- Agent Role.
- Involvement Period.

Table 6.2.1.3.2-1 illustrated the data structure supported by the Location associated entity.

Table 6.2.1.3.2-1: data structure of CISE Location associated model

Field Name	Data Type	Note
AgentRole	AgentRoleInLocationType	
InvolvementPeriod	Period Entity	Ref.to [Cdm-PER-001]

[Cdm-AGE-019] The AgentRoleInLocation type shall support the following values:

- Owns.
- IsLocatedIn.
- CountryOfBirth.

- PlaceOfBirth.
- CountryOfDeath.
- PlaceOfDeath.
- EmbarkationPort.
- DisembarkationPort.
- CountryOfResidence.
- Other.
- NonSpecified.

6.2.1.3.3 Object Entity

[Cdm-AGE-020] The association with an Object entity shall be described by the following attributes:

- Agent Role.
- Duty.
- Involvement Period.
- Transit Passenger.

Table 6.2.1.3.3-1 illustrated the data structure supported by the Object associated entity.

Table 6.2.1.3.3-1: data structure of CISE Object associated model

Field Name	Data Type	Note
AgentRole	AgentRoleInObjectType	
Duty	DutyType	Ref. to [Cdm-AGE-016]
InvolvementPeriod	Period Entity	Ref.to [Cdm-PER-001]
TransitPassenger	Boolean	

[Cdm-AGE-021] The AgentRoleInObject type shall support the following values:

- Owner.
- ShipAgent.
- Passenger.
- CrewMember.
- CaptainMaster.
- ShipOperatingCompany.
- CompanySecurityOfficer.
- Employee.
- VesselBuilder.
- VesselCharterer.
- VesselRegisteredOwner.
- VesselCompany.
- ShippingAgent.

- Declarant.
- CarrierAgent.
- ShippingLine.
- CustomsBroker.
- DPGContactPoint.
- Other.
- NonSpecified.

6.2.1.3.4 Risk Entity

[Cdm-AGE-022] The association with a Risk entity shall be described by the following attributes:

- Agent Role.
- Involvement Period.

Table 6.2.1.3.4-1 illustrates the data structure supported by the Risk associated entity.

Table 6.2.1.3.4-1: data structure of CISE Risk associated model

Field Name	Data Type	Note
AgentRole	AgentRoleInRiskType	
InvolvementPeriod	Period Entity	Ref.to [Cdm-PER-001]

[Cdm-AGE-023] The AgentRoleInRisk type shall support the following values:

- Cause.
- Involved.
- Reports.
- Other.
- NonSpecified.

6.2.2 Document Core Entity

6.2.2.1 Document Core Entity General Requirements

Figure 6.2.2.1-1 illustrates the Document Core Entity model.

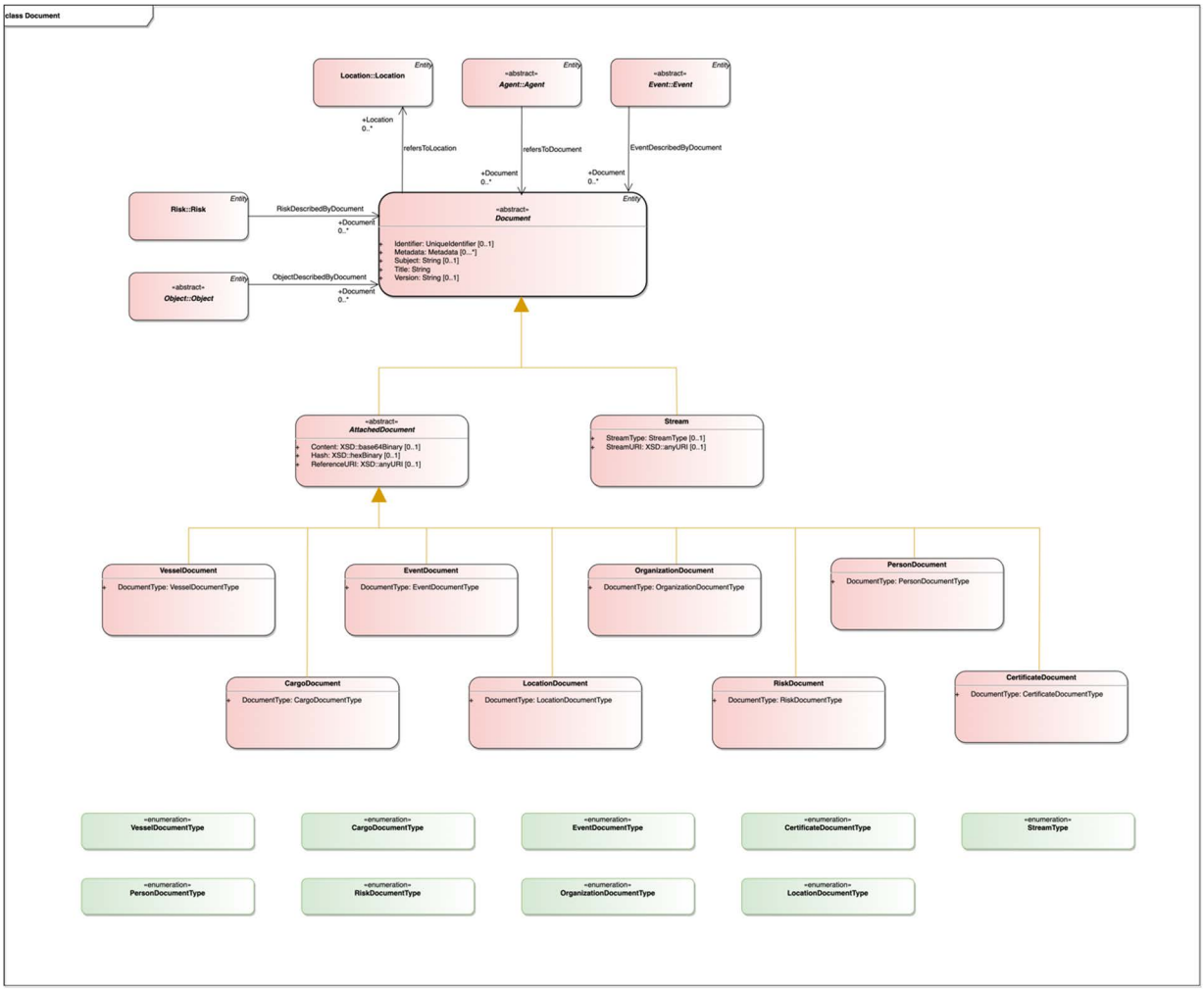

Figure 6.2.2.1-1: CISE Document UML conceptual model [i.7]

[Cdm-DOC-001] The Document core entity shall be described by means of:

- Document Attributes.
- Document Relation Entities:
  - Attached Document.
  - Stream.
- Document Associated Entities:
  - Agent Core Entity.
  - Event Core Entity.
  - Location Core Entity.
  - Object Core Entity.
  - Risk Core Entity.

[Cdm-DOC-002] The Document entity shall be described by the following attributes:

- Identifier.
- Metadata.
- Subject.

- Title.
- Version.

Table 6.2.2.1-1 illustrates the data structure supported by the CISE Document entity.

Table 6.2.2.1-1: data structure of CISE Document entity

Field Name	Data Type	Note
Identifier	UniqueIdentifierType	Ref.to [Cdm-DOC-003]
Metadata	MetadataType	Ref.to [Cdm-DOC-006]
Subject	String	
Title	String	
Version	String	

[Cdm-DOC-003] The UniqueIdentifierType shall be described by the following attributes:

- GeneratedBy.
- GeneratedIn.
- UUID.

Table 6.2.2.1-2 illustrates the data structure supported by the UniqueIdentifierType.

Table 6.2.2.1-2: data structure of CISE UniqueIdentiferType

Field Name	Data Type	Note
GeneratedBy	OrganizationType	
GeneratedIn	XSD::DateTime	
UUID	String	
CorrelatedWith	CorrelatedWithType	

[Cdm-DOC-004] The CorrelatedWithType shall be described by the following attributes:

- CorrelatedBy.
- CorrelatedIn.
- CorrelationType.

Table 6.2.2.1-3 illustrates the data structure supported by the CorrelatedWithType.

Table 6.2.2.1-3: data structure of CISE CorrelatedWithType

Field Name	Data Type	Note
CorrelatedBy	OrganizationType	
CorrelatedIn	XSD::DateTime	
CorrelationType	CorrelationType	

[Cdm-DOC-005] The CorrelationType shall support the following values:

- Manual.
- Automatic.
- Other.
- NonSpecified.

[Cdm-DOC-006] The MetadataType shall be described by the following attributes:

- Abstract.

- Comments.
- CreationDate.
- Creator.
- Description.
- Designation.
- FileMediaType.
- FileSchema.
- FileURI.
- InformationReliabilityLevel.
- InformationSecurityClassification.
- InformationSensitivityDegree.
- Language.
- PublicationDate.
- Publisher.
- ValidityPeriod.

Table 6.2.2.1-4 illustrates the data structure supported by the MetadataType.

Table 6.2.2.1-4: data structure of CISE MetadataType

Field Name	Data Type	Note
Abstract	String	
Comments	String	
CreationDate	XSD::DateTime	
Creator	AgentType	
Description	String	
Designation	String	
FileMediaType	FileMediaType	
FileSchema	XSD::anyURI	
FileURI	XSD::anyURI	
InformationReliabilityLevel	InformationReliabilityLevelType	
InformationSecurityClassification	InformationSecurityClassificationType	
InformationSensitivityDegree	InformationSensitivityDegreeType	
Language	String	
PublicationDate	XSD::DateTime	
ValidityPeriod	Period Entity	Ref.to [Cdm-PER-001]
CorrelatedWith	CorrelatedWithType	

[Cdm-DOC-007] The FileMediaType shall support the following values:

- x-world/x-3dmf.
- video/avi.
- image/jpeg.

[Cdm-DOC-008] The InformationReliabilityLevelType shall support the following values:

- VeryHighConfidence.
- HighConfidence.

- Confident.
- LowConfidence.
- VeryLowConfidence.
- NonSpecified.

[Cdm-DOC-009] The InformationSecurityClassificationType shall support the following values:

- EUTopSecret.
- EUSecret.
- EUConfidential.
- EURestricted.
- NonClassified.
- NonSpecified.

[Cdm-DOC-010] The InformationSensitivityDegreeType shall support the following values:

- Red.
- Amber.
- Green.
- White.
- NonSpecified.

6.2.2.2 Document Relation Entity

6.2.2.2.1 AttachedDocument Entity

[Cdm-DOC-011] The AttachedDocument entity shall be described by means of:

- AttachedDocument attributes.
- AttachedDocument sub-classes:
  - CargoDocument.
  - CertificateDocument.
  - EventDocument.
  - LocationDocument.
  - OrganizationDocument.
  - PersonDocument.
  - RiskDocument.
  - VesselDocument.

[Cdm-DOC-012] The AttachedDocument entity shall be described by the following attributes:

- Content.
- Hash.

- ReferenceURI

Table 6.2.2.2.1-1 illustrates the data structure supported by the CISE AttachedDocument entity.

Table 6.2.2.2.1-1: data structure of CISE AttachedDocument entity

Field Name	Data Type	Note
Content	XSD::base64Binary	
Hash	hexBinary	
ReferenceURI	XSD::anyURI	

[Cdm-DOC-013] The CargoDocument sub-class shall be described by the following attributes:

- DocumentType.

Table 6.2.2.2.1-2 illustrates the data structure supported by the CISE CargoDocument sub-class.

Table 6.2.2.2.1-2: data structure of CISE CargoDocument sub-class

Field Name	Data Type	Note
DocumentType	CargoDocumentType	

[Cdm-DOC-014] The CargoDocumentType class shall support the following values:

- CargoManifest.
- VATException.
- EntrySummaryDeclaration.
- IMOFALForm2CargoDeclaration.
- IMOFALForm3ShipsStoresDeclaration.
- IMOFALForm4CrewsEffectsDeclaration.
- NotificationOfDangerousGoods.
- IMOFALForm7DangerousGoods.
- SingleAdministrativeDocument.
- CatchCertificate.
- FishingLogbook.
- Other.
- NonSpecified.

[Cdm-DOC-015] The CertificateDocument sub-class shall be described by the following attributes:

- DocumentType.

Table 6.2.2.2.1-3 illustrates the data structure supported by the CISE CertificateDocument sub-class.

Table 6.2.2.2.1-3: data structure of CISE CertificateDocument sub-class.

Field Name	Data Type	Note
DocumentType	CertificateDocumentType	

[Cdm-DOC-016] The CertificateDocumentType class shall support the following values:

- TonnageCertificate.
- LoadLineCertificate.
- MinimumSafeManningDocument.
- OilPollutionPreventionCertificate.
- SewagePollutionPreventionCertificate.
- VDRComplianceCertificate.
- ISMComplianceDocument.
- SafetyManagementCertificate.
- ISSCertificate.
- PSSCertificate.
- STPSSaCertificate.
- STPSSpCertificate.
- CSSConstructionCertificate.
- CSSEquipmentCertificate.
- CSSRadioCertificate.
- CSSCertificate.
- GrainAuthorizationDocument.
- CivilLiabilityCertificate.
- EnhancedSurveyDocument.
- NLSCertificate.
- BulkChemicalsCarriageCertificate.
- IntBulkChemicalsCarriageCertificate.
- BulkLiquidGasCertificate.
- IntBulkLiquidGasCertificate.
- HSCSafetyCertificate.
- HSCOperationPermit.
- IMDGCertificate.
- INFCertificate.
- RegistryCertificate.
- HullClassCertificate.
- EngineClassCertificate.
- PandICertificate.
- ILO133Certificate.

- ILO92Certificate.
- ITFBlueCard.
- DeclarationOfHealth.
- GasFreeCertificate.
- DeRatCertificate.
- Certificate.
- Other.
- NonSpecified.

[Cdm-DOC-017] The EventDocument sub-class shall be described by the following attribute:

- DocumentType.

Table 6.2.2.2.1-4 illustrates the data structure supported by the CISE EventDocument sub-class.

Table 6.2.2.2.1-4: data structure of CISE EventDocument sub-class.

Field Name	Data Type	Note
DocumentType	EventDocumentType	

[Cdm-DOC-018] The EventDocumentType class shall support the following values:

- RegionalMonitors.
- IncidentReport.
- EnvironmentalIncidentDocument.
- EvacuationOrders.
- AccidentReport.
- HazardsMappingAndTrackingHumanitarianAssistance.
- OrganizedCrimeDocuments.
- TerroristThreadDocuments.
- ShipHijackingSuspicionReport.
- CrewHostagingSuspicionReport.
- WeaponsOnboardSuspicionReport.
- InitialPiracyAttackReport.
- FollowUpPiracyAttackReport.
- Other.
- NonSpecified.

[Cdm-DOC-019] The LocationDocument sub-class shall be described by the following attribute:

- DocumentType.

Table 6.2.2.2.1-5 illustrates the data structure supported by the CISE LocationDocument sub-class.

Table 6.2.2.2.1-5: data structure of CISE LocationDocument sub-class

Field Name	Data Type	Note
DocumentType	LocationDocumentType	

[Cdm-DOC-020] The OrganizationDocument sub-class shall be described by the following attribute:

- DocumentType.

Table 6.2.2.2.1-6 illustrates the data structure supported by the CISE OrganizationDocument sub-class.

Table 6.2.2.2.1-6: data structure of CISE OrganizationDocument sub-class.

Field Name	Data Type	Note
DocumentType	OrganizationDocumentType	

[Cdm-DOC-021] The OrganizationDocumentType class shall support the following values:

- HarbourSecurityDocument.
- ISPSCode.
- Map.
- Other.
- NonSpecified.

[Cdm-DOC-022] The PersonDocument sub-class shall be described by the following attribute:

- DocumentType.

Table 6.2.2.2.1-7 illustrates the data structure supported by the CISE PersonDocument sub-class.

Table 6.2.2.2.1-7: data structure of CISE PersonDocument sub-class.

Field Name	Data Type	Note
DocumentType	PersonDocumentType	

[Cdm-DOC-023] The PersonDocumentType class shall support the following values:

- TravelDocument.
- NationalID.
- DriversLicense.
- SeafarersIDDocument.
- CrewCertificates.
- ResidencePermit.
- WorkPermit.
- WorkCertificate.
- HealthCertificate.
- BirthCertificate.
- DeathCertificate.

- CriminalRecord.
- Photograph.
- Other.
- NonSpecified.

[Cdm-DOC-024] The RiskDocument sub-class shall be described by the following attribute:

- DocumentType.

Table 6.2.2.2.1-8 illustrates the data structure supported by the CISE RiskDocument sub-class.

Table 6.2.2.2.1-8: data structure of CISE RiskDocument sub-class.

Field Name	Data Type	Note
DocumentType	RiskDocumentType	

[Cdm-DOC-025] The RiskDocumentType class shall support the following values:

- BriefingNotes.
- RouteDescription.
- Facilitationanalysis.
- MigrantProfile.
- KeyDevelopments.
- RiskRatings.
- HAZMATNotification.
- RiskAssessment.
- OrganisedCrimeDocuments.
- TerroristThreatDocuments.
- ShipHijackingSuspicionReport.
- CrewHostagingSuspicionReport.
- WeaponsOnBoardSuspicionReport.
- Other.
- NonSpecified.

[Cdm-DOC-026] The VesselDocument sub-class shall be described by the following attribute:

- DocumentType.

Table 6.2.2.2.1-9 illustrates the data structure supported by the CISE VesselDocument sub-class.

Table 6.2.2.2.1-9: data structure of CISE VesselDocument sub-class.

Field Name	Data Type	Note
DocumentType	VesselDocumentType	

6.2.2.2.2 Stream Entity

[Cdm-DOC-027] The Stream entity shall be described by means of:

- Stream attributes:
  - StreamType.
  - StreamURI.

Table 6.2.2.2.2-1 illustrates the data structure supported by the CISE Stream entity.

Table 6.2.2.2.2-1: Data structure of CISE Stream entity

Field Name	Data Type	Note
StreamType	StreamType	
StreamURI	XSD::anyURI	

[Cdm-DOC-28] The StreamType shall support the following values:

- Video.
- ImageMap.
- VectorialMap.
- Radar.
- AIS.

6.2.3 Event Core Entity

6.2.3.1 Event Core Entity General Requirements

[Cdm-EVE-001] The Event core entity shall be described by means of:

- Event Attributes.
- Event Relation Entities:
  - Action.
  - Anomaly.
  - Incident.
  - Movement.
- Event Associated Entities:
  - Agent Core Entity.
  - Document Core Entity.
  - Event Core Entity.
  - Location Core Entity.
  - Object Core Entity.
  - Risk Core Entity.

Figure 6.2.3.1-1 illustrates the Event Core Entity model.

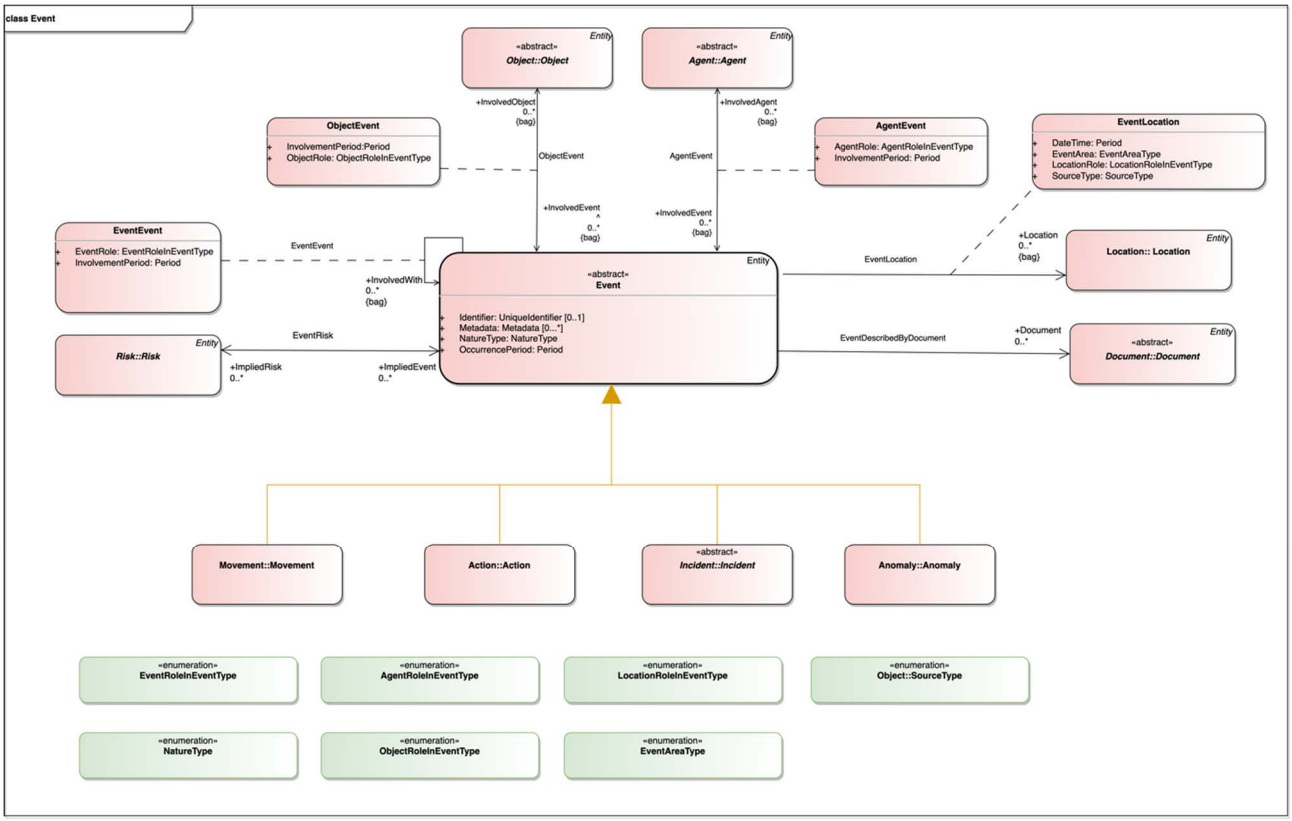

Figure 6.2.3.1-1: CISE Event UML conceptual model [i.7]

[Cdm-EVE-002] The Event entity shall be described by the following attributes:

- Identifier.
- Metadata.
- NatureType.
- OccurrencePeriod.

Table 6.2.3.1-1 illustrates the data structure supported by the CISE Event entity.

Table 6.2.3.1-1: data structure of CISE Event entity

Field Name	Data Type	Note
Identifer	UniqueIdentifierType	Ref.to [Cdm-DOC-003]
Metadata	MetadataType	Ref.to [Cdm-DOC-006]
NatureType	NatureType	
OccurrencePeriod	Period Entity	Ref.to [Cdm-PER-001]

[Cdm-EVE-003] The NatureType shall support the following values:

- Observed.
- Declared.
- Estimated.
- Simulated.
- Other.
- NonSpecified.

6.2.3.2 Event Relation Entity

6.2.3.2.1 Action Entity

[Cdm-EVE-004] The Action entity shall be described by the following attributes:

- ActionsStatus.
- ActionType.
- Mission.
- Priority.

Table 6.2.3.2.1-1 illustrates the data structure supported by the CISE Action entity.

Table 6.2.3.2.1-1: data structure of CISE Action entity

Field Name	Data Type	Note
ActionStatus	ActionStatusType	
ActionType	ActionType	
Mission	MissionType	
Priority	PriorityType	

[Cdm-EVE-005] The ActionStatusType shall support the following values:

- Aborted.
- Cancelled.
- Completed.
- InProgress.
- NotStarted.
- Paused.
- Other.
- NonSpecified.

[Cdm-EVE-006] The ActionType shall support the following values:

- Inspection.
- Confirmation.
- Rescue.
- Deterrence.
- Assistance.
- Acknowledgment.
- Exercise.
- Search.
- Detection.
- Tracking.
- Interception.

- Other.
- NonSpecified.

[Cdm-EVE-007] The MissionType shall support the following values:

- C2.
- CBRN.
- FF.
- FSTT.
- GEN.
- INT.
- MAC.
- MIL.
- NET.
- OPR.
- POL.
- REC.
- RSC.
- SAV.
- SCS.
- SOC.
- Other.
- NonSpecified.

[Cdm-EVE-008] The PriorityType shall support the following values:

- High
- Medium
- Low.
- Other.
- NonSpecified.

6.2.3.2.2 Anomaly Entity

[Cdm-EVE-009] The Anomaly entity shall be described by the following attributes:

- AnomalyType.

[Cdm-EVE-010] The AnomalyType shall support the following values:

- UnexpectedMovement.
- CargoLeaking.

- ShiftingOfCargo.
- VesselOutOfTrafficLanes.
- VesselWithErraticMovements.
- StainOfOilSighted.
- DetectionOfChangesInAISParameters.
- PerformingAISSpoofing.
- WithoutAISTransmission.
- DoNotAnswerOnVHFCh16.
- Other.
- NonSpecified.

6.2.3.2.3 Incident Entity

[Cdm-EVE-011] The Incident entity shall be described by:

- Incident attributes.
- Incident sub-classes:
  - MaritimeSafetyIncident.
  - IrregularMigrationIncident.
  - LawInfringementIncident.
  - CrisisIncident.

[Cdm-EVE-012] The Incident attributes shall support the following values:

- Certainty.
- DeathsOnBoard.
- DiseasesOnBoard.
- Instructions.
- NumberOfIllPersons
- ResponseType.
- ResponseUrgency.
- Severity.
- SickAnimalOnBoard.

Table 6.2.3.2.3-1 illustrates the data structure supported by the CISE Incident entity.

Table 6.2.3.2.3-1: data structure of CISE Incident entity

Field Name	Data Type	Note
Certainty	CertaintyType	
DeathsOnBoard	Integer	
DiseasesOnBoard	Boolean	
InfectionOnBoard	Boolean	
Instructions	String	
NumberOfIllPersons	Integer	
ResponseType	ResponseType	
ResponseUrgency	UrgencyType	
Severity	SeverityType	
SickAnimalOnBoard	Boolean	

[Cdm-EVE-013] The CertaintyType shall support the following values:

- Observed.
- Likely.
- Possible.
- Unlikely.
- Unknown.
- Other.
- NonSpecified.

[Cdm-EVE-014] The ResponseType shall support the following values:

- Shelter.
- Evacuate.
- Prepare.
- Execute.
- Avoid.
- Monitor.
- Assess.
- AllClear.
- None.
- Other.
- NonSpecified.

[Cdm-EVE-015] The SeverityType shall support the following values:

- Extreme.
- Severe.
- Moderate.
- Minor.
- Unknown.

- Other.
- NonSpecified.

[Cdm-EVE-016] The UrgencyType shall support the following values:

- Immediate.
- Expected.
- Future.
- Past.
- Unknown.
- Other.
- NonSpecified.

[Cdm-EVE-017] The CrisisIncident sub-class shall be described by the following attribute:

- CrisisIncidentType.

[Cdm-EVE-018] The CrisisIncidentType shall support the following values:

- NaturalDisasterTsunami.
- NaturalDisasterEarthquake.
- NaturalDisasterHeatWave.
- NaturalDisasterWildFire.
- NaturalDisasterFlood.
- NaturalDisasterVolcanicEruption.
- NaturalDisasterStorm.
- NaturalDisasterSnowStorm.
- NaturalDisasterTropicalStorm.
- NaturalDisasterLightningStrike.
- NaturalDisasterLandslide.
- NaturalDisasterAvalanche.
- NaturalDisasterOutbreakOfInfectiousDiseaseAndOtherBioHazard.
- NaturalDisasterOther.
- ManMadeDisasterManMadeFire.
- ManMadeDisasterManMadeExplosion.
- ManMadeDisasterMaritimeAccident.
- ManMadeDisasterAircraftAccident.
- ManMadeDisasterRadiation.
- ManMadeDisasterOilPollution.
- ManMadeDisasterWastePollution.

- ManMadeDisasterAnyOtherManMadeDisaster.
- ViolenceAssassination.
- ManMadeDisasterTerroristAttack.
- ViolenceBombing.
- ViolenceDisorderProtestMutiny.
- ViolenceAirMissileAttack.
- ViolenceBioChemicalAttack.
- ViolenceHeavyWeaponsFire.
- ViolenceShooting.
- ViolenceStabbing.
- ViolencePhysicalAttack.
- ViolenceExecution.
- ViolenceVandalism.
- ViolenceRobbery.
- ViolenceKidnappingHostageTaking.
- MinesExplosives.
- ArmedConflict.
- HumanitarianCrisis.
- Other.
- NonSpecified.

[Cdm-EVE-019] The IrregularMigrationIncident sub-class shall be described by the following attribute:

- IrregularMigrationIncidentType.

[Cdm-EVE-020] The IrregularMigrationIncidentType shall support the following values:

- IrregularBorderEntry.
- EventRefusedBorderEntry.
- IrregularEntryAttempt.
- IrregularBorderExit.
- RefusedBorderEntry.
- IrregularExitAttempt.
- IrregularStay.
- FacilitatorInterception.
- FacilitatorDisclosure.
- InterceptionInThirdCountryTerritory.
- Other.

- NonSpecified.

[Cdm-EVE-021] The LawInfringementIncident sub-class shall be described by the following attribute:

- LawInfringementIncidentType.

[Cdm-EVE-022] The LawInfringementIncidentType shall support the following values:

- HumanTraffickingExploitationOfProstitutionOfOthers.
- HumanTraffickingOtherFormsOfSexualExploitation.
- HumanTraffickingForcedLabourOrServices.
- HumanTraffickingSlaveryOrPracticesSimilarToSlavery.
- HumanTraffickingServitude.
- HumanTraffickingExploitationOfActivitiesAssociatedWithBeggingOrOfUnlawfulActivities.
- HumanTraffickingRemovalOfOrgans.
- HumanTraffickingOther.
- DrugSmugglingMarihuana.
- DrugSmugglingCocaine.
- DrugSmugglingHashish.
- DrugSmugglingCannabis.
- DrugSmugglingHeroin.
- DrugSmugglingAmphetamine.
- DrugSmugglingMetamphetamine.
- DrugSmugglingEcstasy.
- DrugSmugglingOpium.
- DrugSmugglingHallucinogens.
- DrugSmugglingOtherDrugs.
- GoodsSmugglingGoodsCarriedWithNoRequiredPermits.
- GoodsSmugglingExciseGoods.
- GoodsSmugglingCounterfeitedProducts.
- GoodsSmugglingNaturalResourcesMinerals.
- GoodsSmugglingThreatenedSpecies.
- GoodsSmugglingCulturalHeritageGoods.
- SmugglingInWasteAndOtherHazardousMaterialWaste.
- SmugglingInWasteAndOtherHazardousMaterialChemical.
- SmugglingInWasteAndOtherHazardousMaterialBiohazard.
- SmugglingInWasteAndOtherHazardousMaterialRadioActive.
- SmugglingInWasteAndOtherHazardousMaterialNuclear.

- SmugglingInWasteAndOtherHazardousMaterialOtherDangerousSubstances.
- SmugglingInWeaponAndRelatedAccessoriesArmsWeapons.
- SmugglingInWeaponAndRelatedAccessoriesWeaponsOfMassDestruction.
- SmugglingInWeaponAndRelatedAccessoriesAmmunition.
- SmugglingInWeaponAndRelatedAccessoriesExplosives.
- SmugglingInOtherMaterial.
- OtherRelatedCrossBorderCriminalActivityStolenVehicle.
- OtherRelatedCrossBorderCriminalActivityDocumentFalsificationFraud.
- OtherRelatedCrossBorderCriminalActivityOther.
- LawInfringementByVessels.
- IllegalFlightOfAnAircraft.
- LawInfringementByVehicles.
- OtherAdministrativeOffense.
- Other.
- NonSpecified.

[Cdm-EVE-023] The MaritimeSafetyIncident sub-class shall be described by the following attribute:

- MaritimeSafetyIncidentType.

[Cdm-EVE-024] The MaritimeSafetyIncidentType shall support the following values:

- Pollution.
- Waste.
- LostFoundContainers.
- VTSRulesInfringement.
- BannedShip.
- InsuranceFailure.
- ResultInspection.
- PilotOrPortReport.
- Fire.
- Collision.
- Medico.
- Grounding.
- Flooding.
- List.
- Capsizing.
- EngineFailure.

- StructuralFailure.
- SteeringGearFailure.
- ElectricalGeneratingSystemFailure.
- NavigationEquipmentFailure.
- CommunicationEquipmentFailure.
- IncidentNatureAbandonShip.
- IncidentNatureSinking.
- DetainedShip.
- Other.
- NonSpecified.

[Cdm-EVE-025] The PollutionIncidentType shall support the following values:

- AreaCoverPercentage.
- Characteristics.
- DriftCourse.
- DriftSpeed.
- PollutionType.
- Quantity.

Table 6.2.3.2.3-2 illustrates the data structure supported by the CISE PollutionIncidentType.

Table 6.2.3.2.3-2: data structure of CISE PollutionIncidentType

Field Name	Data Type	Note
AreaCoverPercentage	String	
Characteristics	String	
DriftCourse	integer	
DriftSpeed	double	
PollutionType	PollutionType	
Quantity	double	

[Cdm-EVE-026] The PollutionType shall support the following values:

- OIL.
- CHEM.
- FISH.
- VEG.
- OTH.
- UNK.

6.2.3.2.4 Movement Entity

[Cdm-EVE-027] The Movement entity shall be described by the following attributes:

- MovementType.

- Purpose.
- VoyageNumber.

Table 6.2.3.2.4-1 illustrates the data structure supported by the CISE Movement entity.

Table 6.2.3.2.4-1: data structure of CISE Movement entity

Field Name	Data Type	Note
MovementType	MovementType	
Purpose	String	
VoyageNumber	String	

[Cdm-EVE-028] The MovementType shall support the following values:

- RoutePlan.
- Voyage.
- Voyage leg.
- Search pattern.
- Patrol route plan.
- Other.
- NonSpecified.

6.2.3.3 Event Associated Entity

6.2.3.3.1 Agent Entity

[Cdm-EVE-029] The association with an Agent entity shall be described by the following attributes:

- Agent Role.
- Involvement Period.

Table 6.2.3.3.1-1 illustrated the data structure supported by the Agent associated entity.

Table 6.2.3.3.1-1: data structure of CISE Agent associated model

Field Name	Data Type	Note
AgentRole	AgentRoleInEventType	
InvolvementPeriod	Period Entity	Ref.to [Cdm-PER-001]

[Cdm-EVE-030] The AgentRoleInEventType shall support the following values:

- Coordinator.
- Participant.
- Observer.
- Cause.
- Reporter.
- Victim.
- Informed.

- Perpetrator.
- Other.
- NonSpecified.

6.2.3.3.2 Event Entity

[Cdm-EVE-031] The association with an Event entity shall be described by the following attributes:

- Event Role.
- Involvement Period.

Table 6.2.3.3.2-1 illustrated the data structure supported by the Event associated entity.

Table 6.2.3.3.2-1: data structure of CISE Event associated model

Field Name	Data Type	Note
EventRole	EventRoleInEventType	
InvolvementPeriod	Period Entity	Ref.to [Cdm-PER-001]

[Cdm-EVE-032] The EventRoleInEventType shall support the following values:

- Causes.
- Responds.
- Prevents.
- Encompasses.
- Requires.
- Other.
- NonSpecified.

6.2.3.3.3 Location Entity

[Cdm-EVE-033] The association with a Location entity shall be described by the following attributes:

- DateTime.
- EventArea.
- LocationRole.
- SourceType.

Table 6.2.3.3.3-1 illustrated the data structure supported by the Location associated entity.

Table 6.2.3.3.3-1: data structure of CISE Location associated model

Field Name	Data Type	Note
DateTime	Period Entity	Ref.to [Cdm-PER-001]
EventArea	EventAreaType	
LocationRole	LocationRoleInEventType	
SourceType	SourceType	

[Cdm-EVE-034] The EventAreaType shall support the following values:

- AIR.

- CMB.
- DGR.
- FLAME.
- GEN.
- PLUME.
- SMOKE.
- VULN.
- Other.
- NonSpecified.

[Cdm-EVE-035] The LocationRoleInEventType shall support the following values:

- StartPlace.
- EndPlace.
- LastPlace.
- NextPlace.
- Other.
- NonSpecified.

6.2.3.3.4 Object Entity

[Cdm-EVE-036] The association with an Object entity shall be described by the following attributes:

- Object Role.
- Involvement Period.

Table 6.2.3.3.4-1 illustrated the data structure supported by the Object associated entity.

Table 6.2.3.3.4-1: Data structure of CISE Object associated model

Field Name	Data Type	Note
ObjectRole	ObjectRoleInEventType	
InvolvementPeriod	Period Entity	Ref.to [Cdm-PER-001]

[Cdm-EVE-037] The ObjectRoleInEventType shall support the following values:

- Coordinator
- Participant
- Observer
- Cause
- Reporter
- Victim
- Mean
- Other

- NonSpecified.

6.2.4 Location Core Entity

6.2.4.1 Location Core Entity General Requirements

[Cdm-LOC-001] The Location core entity shall be described by means of:

- Location Class Attributes.
- Location Relation Entities:
  - MeteoOceanographiCondition.
  - NamedLocation.
  - PortLocation.
  - PortFacilityLocation.
- Location Associated Entities:
  - Agent Core Entity.
  - Document Core Entity.
  - Event Core Entity.
  - Object Core Entity.
  - Risk Core Entity.

Figure 6.2.4.1-1 illustrates the Location Core Entity model.

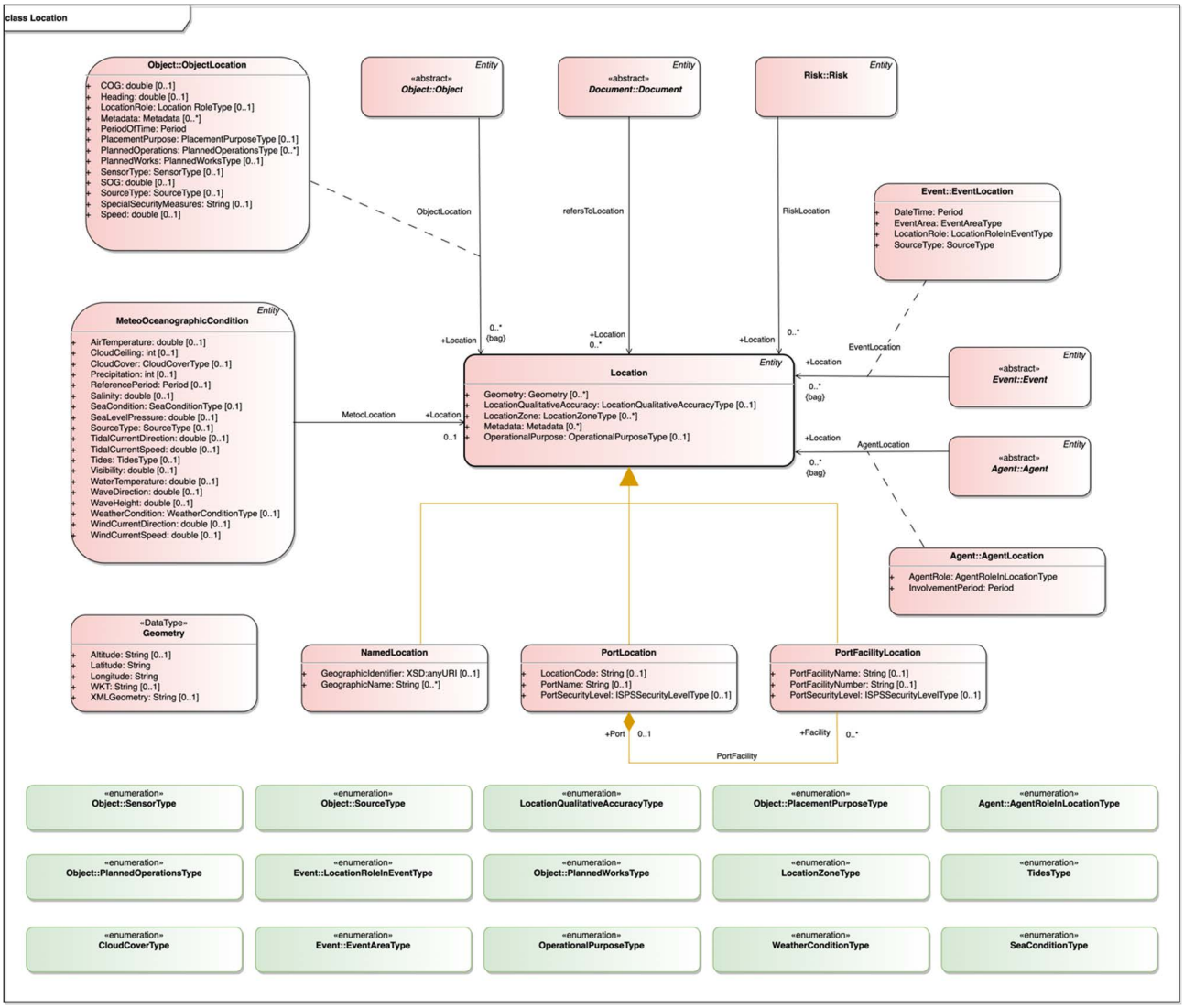

Figure 6.2.4.1-1: CISE Location UML conceptual model [i.7]

[Cdm-LOC-002] The Location entity shall be described by the following attributes:

- Geometry.
- LocationQualitativeAccuracy.
- LocationZone.
- Metadata.
- OperationalPurpose.

Table 6.2.4.1-1 illustrates the data structure supported by the CISE Location entity.

Table 6.2.4.1-1: data structure of CISE Location entity

Field Name	Data Type	Note
Geometry	Geometry Data Type	
LocationQualitativeAccuracy	LocationQualitativeAccuracyType	
LocationZone	LocationZoneType	
Metadata	Metadata Type	Ref.to [Cdm-DOC-006]
OperationalPurpose	OperationalPurposeType	

[Cdm-LOC-003] The Geometry Data Type shall support the following values:

- Altitude.
- Latitude.
- Longitude.
- WKT.
- XMLGeometry.

Table 6.2.4.1-2 illustrates the data structure supported by the Geometry data type.

Table 6.2.4.1-2: Data structure of CISE Geometry data type

Field Name	Data Type	Note
Altitude	String	Geographic Altitude in meters AMSL.
Latitude	String	Geographic Latitude, expressed using the WGS84 reference.
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

[Cdm-LOC-004] The LocationQualitativeAccuracyType shall support the following values:

- High.
- Medium.
- Low.
- Other.
- NonSpecified.

[Cdm-LOC-005] The LocationZoneType shall support the following values:

- HighSeas.
- TerritorialWaters.
- CoastLine.
- ContiguousZone.
- Port.
- ControlPoint.
- GreenBorder.
- Inland.
- ExclusiveEconomicArea.
- ThirdCountry.
- INW.
- NAT.
- Other.
- NonSpecified.

[Cdm-LOC-006] The OperationalPurposeType shall support the following values:

- Search area.
- Surveillance area.
- Other.
- NonSpecified.

6.2.4.2 Location Relation Entity

6.2.4.2.1 MeteoOceanographicCondition Entity

[Cdm-LOC-007] The MeteoOceanographicCondition entity shall be described by means of the following attributes:

- AirTemperature.
- CloudCeiling.
- CloudCover.
- Precipitation.
- ReferencePeriod.
- Salinity.
- SeaCondition.
- SeaLevelPressure.
- SourceType.
- TidalCurrentDirection.
- TidalCurrentSpeed.
- Tides.
- Visibility.
- WaterTemperature.
- WaveDirection.
- WaveHeight.
- WeatherCondition.
- WindCurrentDirection.
- WindCurrentSpeed.

Table 6.2.4.2.1-1 illustrates the data structure supported by the MeteoOceanographicCondition entity.

Table 6.2.4.2.1-1: Data structure of CISE MeteoOceanographicCondition entity

Field Name	Data Type	Note
AirTemperature	Double	
CloudCeiling	Integer	value in meters
CloudCover	CloudCoverType	
Precipitation	Integer	value in millimetres
ReferencePeriod	Period Entity	Ref.to [Cdm-PER-001]
Salinity	Double	value in g per Kg of water
SeaCondition	SeaConditionType	
SeaLevelPressure	Double	value in Hpa
SourceType	SourceType	
TidalCurrentDirection	Double	value in degrees
TidalCurrentSpeed	Double	value in tenths of knots
Tides	TidesType	
Visibility	Double	value in nautical miles
WaterTemperature	Double	
WaveDirection	Double	value in degrees
WaveHeight	Double	value in meters
WeatherCondition	WeatherConditionType	
WindCurrentDirection	Double	value in degrees
WindCurrentSpeed	Double	value in meters/seconds

[Cdm-LOC-008] The CloudCoverType shall support the following values:

- ClearSky.
- Okta1.
- Okta2.
- Octa3.
- Okta4.
- Okta5.
- Okta6.
- Okta7.
- Okta8.
- SkyObscured.

[Cdm-LOC-009] The SeaConditionType shall support the following values:

- Calm (glassy).
- Calm (rippled).
- Smooth (wavelets).
- Slight.
- Moderate.
- Rough.
- Very rough.
- High.
- Very high.

- Phenomenald.

[Cdm-LOC-010] The SourceType shall support the following values:

- Observed.
- Declared.
- Estimated.
- Simulated.
- Other.
- NonSpecified.

[Cdm-LOC-011] The Tides Type shall support the following values:

- Low.
- High.

[Cdm-LOC-012] The WeatherConditionType shall support the following values:

- HUM.
- ICY.
- TDS.
- WIN.
- DRZLE.
- FOG.
- Other.
- NonSpecified.

6.2.4.2.2 NamedLocation Entity

[Cdm-LOC-013] The NamedLocation entity shall be described by means of the following attributes:

- GeographicIdentifier.
- GeographicName.

Table 6.2.4.2.2-1 illustrates the data structure supported by the NamedLocation entity.

Table 6.2.4.2.2-1: Data structure of CISE NamedLocation entity

Field Name	Data Type	Note
GeographicIdentifier	XSD::anyURI	
GeographicName	String	

6.2.4.2.3 PortFacilityLocation Entity

[Cdm-LOC-014] The PortFacilityLocation entity shall be described by means of the following attributes:

- PortFacilityName.
- PortFacilityNumber.
- PortSecurityLevel.

Table 6.2.4.2.3-1 illustrates the data structure supported by the PortFacilityLocation entity.

Table 6.2.4.2.3-1: Data structure of CISE PortFacilityLocation entity

Field Name	Data Type	Note
PortFacilityName	String	
PortFacilityNumber	String	
PortSecurityLevel	ISPSSecurityLevelType	

[Cdm-LOC-015] The ISPSSecurityLevel Type shall support the following values:

- High.
- Medium.
- Low.
- Other.
- NonSpecified.

6.2.4.2.4 PortLocation Entity

[Cdm-LOC-016] The PortLocation entity shall be described by means of the following attributes:

- Organization attributes.
- Organization sub-classes.

Table 6.2.4.2.4-1 illustrates the data structure supported by the PortLocation entity.

Table 6.2.4.2.4-1: data structure of CISE PortLocation entity

Field Name	Data Type	Note
LocationCode	String	
PortName	String	
PortSecurityLevel	ISPSSecurityLevelType	Ref. to [Cdm-LOC-014]

6.2.5 Object Core Entity

6.2.5.1 Object Core Entity General Requirements

Figure 6.2.5.1-1 illustrates the Object Core Entity model.

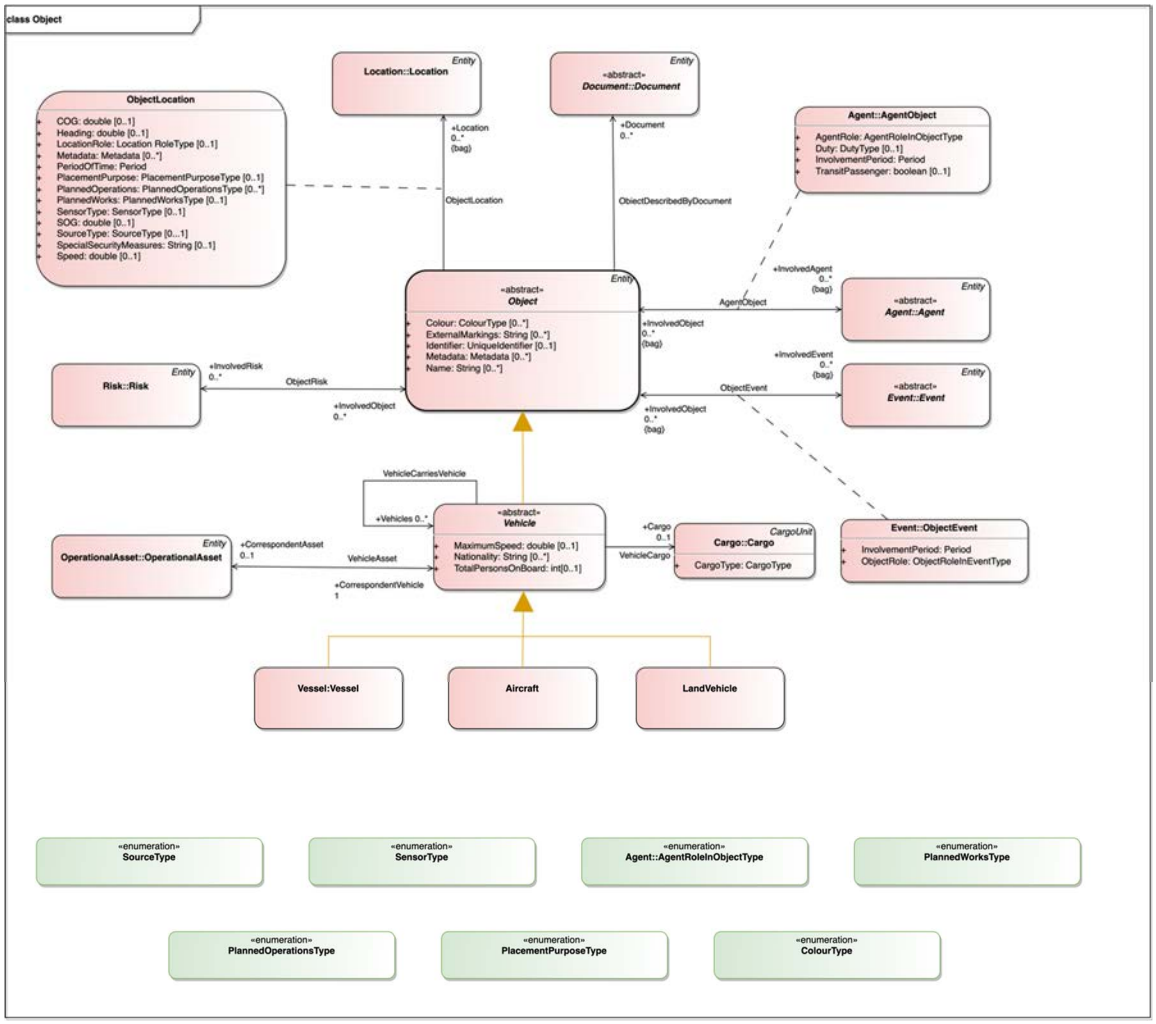

Figure 6.2.5.1-1: CISE Object UML conceptual model [i.7]

[Cdm-OBJ-001] The Object core entity shall be described by means of:

- Object Class Attributes.
- Object Relation Entities:
  - CargoUnit Entity.
  - Operational Asset Entity.
  - Vehicle Entity.
- Object Associated Entities:
  - Agent Core Entity.
  - Document Core Entity.
  - Event Core Entity.
  - Location Core Entity.
  - Object Core Entity.
  - Risk Core Entity.

[Cdm-OBJ-002] The Object entity shall be described by the following attributes:

- Colour.
- External Markings.
- Identifier.
- Metadata.
- Name.

Table 6.2.5.1-1 illustrates the data structure supported by the CISE Object entity.

Table 6.2.5.1-1: data structure of CISE Object entity

Field Name	Data Type	Note
Colour	ColourType	
ExternalMarkings	String	
Identifier	UniqueIdentifierType	Ref.to [Cdm-DOC-003]
Metadata	Metadata Type	Ref.to [Cdm-DOC-006]
Name	String	

[Cdm-OBJ-003] The ColourType shall support the following values:

- Cyan.
- Grey.
- Yellow.
- White.
- Black.
- Pink.
- Green.
- Blue.
- Brown.
- Orange.
- Violet.
- Red.

6.2.5.2 Object Relation Entity

6.2.5.2.1 CargoUnit Entity

[Cdm-OBJ-004] The CargoUnit entity shall be described by means of:

- CargoUnit sub-classes:
  - Cargo.
  - Catch.
  - ContainmentUnit.

Figure 6.2.5.2.1-1 illustrates the CargoUnit entity model.

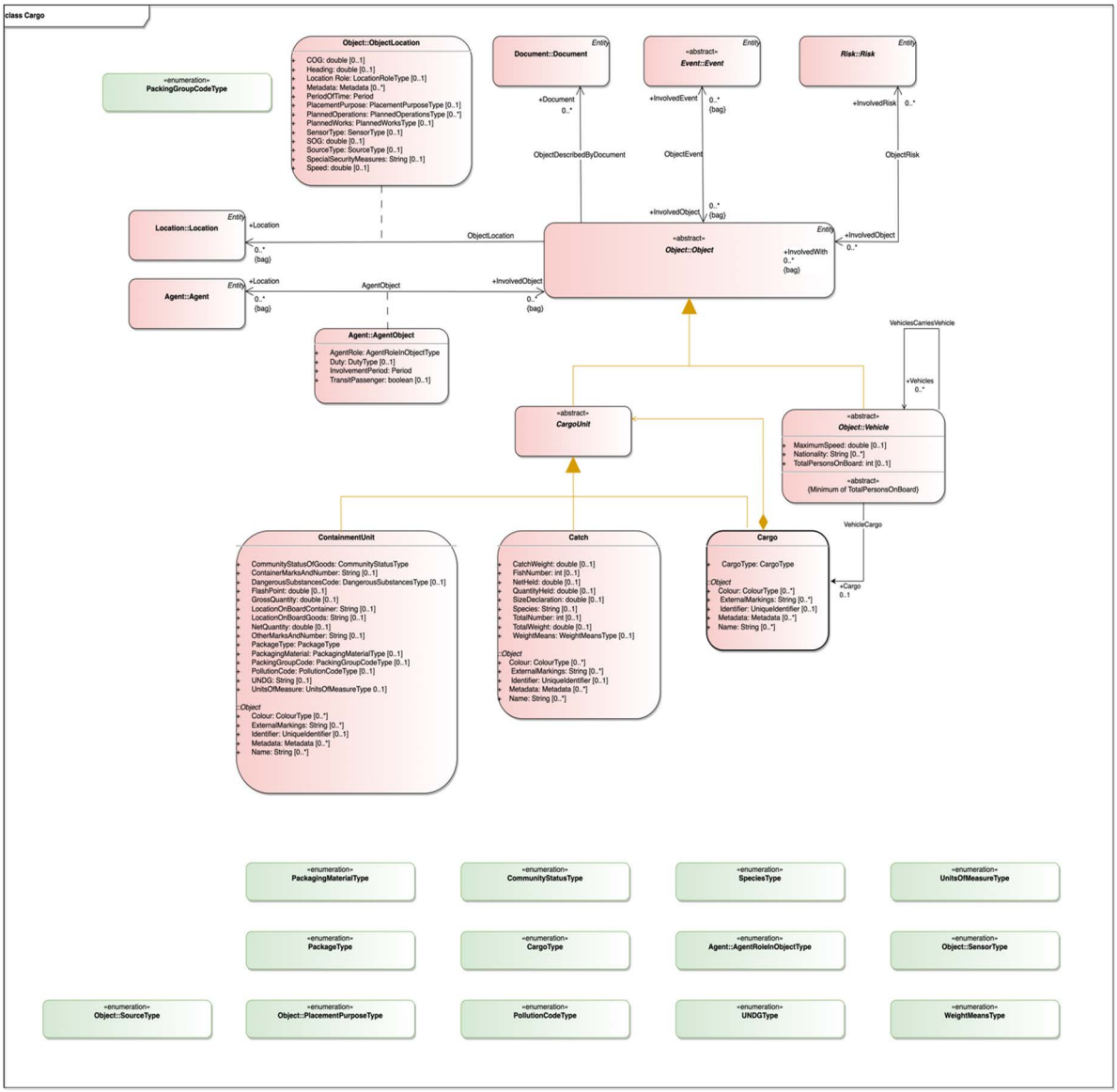

Figure 6.2.5.2.1-1: CISE CargoUnit UML conceptual model [i.7]

[Cdm-OBJ-005] The Cargo sub-class shall be described by the following attribute:

- CargoType.

Table 6.2.5.2.1-1 illustrates the data structure supported by the CISE Cargo sub-class.

Table 6.2.5.2.1-1: Data structure of CISE Cargo sub-class

Field Name	Data Type	Note
CargoType	CargoType	

[Cdm-OBJ-006] The CargoType shall support the following values:

- NoCargoUnitLiquidBulkGoods.
- NoCargoUnitSolidBulkGoods.
- LargeFreightContainers.
- OtherFreightContainers.
- Palletized.

- PreSlung.
- MobileSelfPropelledUnits.
- OtherMobileUnits.
- Reserved.
- OtherCargoTypes.
- Other.
- NonSpecified.

[Cdm-OBJ-007] The Catch sub-class shall be described by the following attributes:

- CatchWeight.
- FishNumber.
- NetHeld.
- QuantityHeld.
- SizeDeclaration.
- Species.
- TotalNumber.
- TotalWeight.
- UniqueIdentifier.
- WeightMeans.

Table 6.2.5.2.1-2 illustrates the data structure supported by the CISE Catch sub-class.

Table 6.2.5.2.1-2: data structure of CISE Catch sub-class

Field Name	Data Type	Note
CatchWeight	double	
FishNumber	integer	
NetHeld	double	
QuantityHeld	double	
SizeDeclaration	double	
Species	string	
TotalNumber	integer	
TotalWeight	double	
UniqueIdentifier	UniqueIdentifierType	Ref.to [Cdm-DOC-003]
WeightMeans	WeightMeansType	

[Cdm-OBJ-008] The WeightMeansType shall support the following values:

- EST.
- WGH.

[Cdm-OBJ-009] The ContainmentUnit sub-class shall be described by the following attributes:

- CommunityStatusOfGoods.
- ContainerMarksAndNumber.
- DangerousSubstancesCode.

- FlashPoint.
- GrossQuantity.
- LocationOnBoardContainer.
- LocationOnBoardGoods.
- NetQuantity.
- OtherMarksAndNumber.
- PackageType.
- PackagingMaterial.
- PackingGroupCode.
- PollutionCode.
- UNDG.
- UniqueIdentifier.
- UnitsOfMeasure.

Table 6.2.5.2.1-3 illustrates the data structure supported by the CISE ContainmentUnit sub-class.

Table 6.2.5.2.1-3: data structure of CISE ContainmentUnit sub-class

Field Name	Data Type	Note
CommunityStatusOfGoods	CommunityStatusType	
ContainerMarksAndNumber	String	
DangerousSubstancesCode	DangerousSubstancesType	
FlashPoint	double	
GrossQuantity	double	
LocationOnBoardContainer	String	
LocationOnBoardGoods	String	
NetQuantity	double	
OtherMarksAndNumber	String	
PackageType	PackageType	
PackagingMaterial	PackagingMaterialType	
PackingGroupCode	PackingGroupCodeType	
PollutionCode	PollutionCodeType	
UNDG	String	
UniqueIdentifier	UniqueIdentifier	Ref.to [Cdm-DOC-003]
UnitsOfMeasure	UnitsOfMeasureType	

[Cdm-OBJ-010] The CommunityStatusType shall support the following values:

- CommunityGoods.
- ComunityGoodsFromNonFiscalTerritories.
- CommunityGoodsBeingExported.
- OtherGoods.
- NonSpecified.

[Cdm-OBJ-011] The DangerousSubstancesType shall support the following values:

- Class1Explosives.
- Class21FlammableGases.

- Class22ToxicGases.
- Class23NonFlammableCompressedGases.
- Class31Petrol.
- Class32FuelOil.
- Class33FuelOil.
- Class41FlammableSolid.
- Class42SpontaneouslyCombustible.
- Class43DangerousWhenWet.
- Class51OxidizingAgent.
- Class52OrganixPeroxide.
- Class61ToxicSubstances.
- Class62InfectiousBiologicalSubstances.
- Class7RadioactiveMaterials.
- Class8Corrosives.
- Class9MiscellaneousDangerousSubstances.
- MHBMaterialsHazardousOnlyInBulk.
- Other.
- NonSpecified.

[Cdm-OBJ-012] The PackageType shall support the following values:

- Bulk.
- LoosedUnpackedExcludingBulk.
- RigidBoxTypePrismatic.
- RigidDrumTypeCylindrical.
- RigidBulbTypeSpherical.
- RigidOther.
- FlexibleBagType.
- ForFutureUse.
- Reserved.
- OtherSpecialPackages.
- Other.
- NonSpecified.

[Cdm-OBJ-013] The PackagingMaterialType shall support the following values:

- None.
- Plastics.

- PaperAndFibreboard.
- Wood.
- ForFutureUse.
- Metal.
- GlassPorcelainCeramicStoneware.
- Textile.
- Reserved.
- UnknownOrNotOtherwiseEnumerated.
- Other.
- NonSpecified.

[Cdm-OBJ-014] The PackingGroupCodeType shall support the following values:

- GroupIGreatDanger.
- GroupIIMediumDanger.
- GroupIIIMinorDanger.
- None.
- Other.
- NonSpecified.

[Cdm-OBJ-015] The PollutionCodeType shall support the following values:

- CategoryX.
- CategoryY.
- CategoryZ.
- OtherSubstances.
- NonSpecified.

[Cdm-OBJ-016] The UnitsOfMeasureType shall support the following values:

- Kilogram.
- MetricTonne.
- Other.
- NonSpecified.

6.2.5.2.2 Operational Asset Entity

[Cdm-OBJ-017] The OperationalAsset entity shall be described by the following attributes:

- AvailabilityPeriod.
- Identifier.
- MaxPassengers.

- MaxSpeed.
- Metadata.
- OperationalAssetType.
- OperationalCapability.
- Range.
- ReadinessState.

Table 6.2.5.2.2-1 illustrates the data structure supported by the CISE OperationalAsset entity.

Table 6.2.5.2.2-1: data structure of CISE OperationalAsset entity

Field Name	Data Type	Note
AvailabilityPeriod	Period Entity	Ref.to [Cdm-PER-001]
Identifier	UniqueIdentifierType	Ref.to [Cdm-DOC-003]
MaxPassengers	integer	
MaxSpeed	double	values in knots
Metadata	MetadataType	Ref.to [Cdm-DOC-006]
OperationalAssetType	OperationalAssetType	
OperationalCapability	OperationalCapabilityType	
Range	double	values in miles
ReadinessState	XSD::Time	

[Cdm-OBJ-018] The OperationalAssetType shall support the following values:

- Aircraft.
- Helicopter.
- PatrolBoat.
- UAV.
- Submarine.
- Frigate.
- SpeedBoat.
- Drone.
- Tank.
- Truck.
- FourWheelDrive.
- Carrier.
- Ambulance.
- Motorcycle.
- ArtilleryVehicle.
- DesertPatrolVehicle.
- Tractor.
- Wrecker.

- Trailer.
- Humvee.
- Firetrack.
- Van.
- UUV.
- ROV.
- USV.
- SeaPlatform.
- Aeroplane.
- Destroyer.
- Cruiser.
- AircraftCarrier.
- Corvette.
- AuxiliaryShips.
- LandingShips.
- AssaultShips.
- MineWarfareShips.
- StrategicFixedAssets.
- Ballons.
- Other.
- NonSpecified.

[Cdm-OBJ-019] The OperationalCapabilityType shall support the following values:

- SearchAndRescue.
- OilPollution.
- TelecommunicationsTLC.
- Patrolling.
- PiracyAttack.
- IllegalMigration.
- CounterDrugSmuggling.
- CounterIllegalFishing.
- Firefighting.
- Coordination.
- Simulation.
- Mobility.

- Training.
- Maintenance.
- Sustainability.
- IntelligenceSurveillanceReconnaissance.
- C2WcommandAndControlWarfare.
- Other.
- NonSpecified.

6.2.5.2.3 Vehicle Entity

[Cdm-OBJ-020] The Vehicle entity shall be described by means of:

- Vehicle attributes.
- Vehicle sub-classes:
  - Vessel.
  - Aircraft.
  - Land Vehicle.

[Cdm-OBJ-021] The Vehicle entity shall be described by the following attributes:

- MaximumSpeed.
- Nationality.
- TotalPersonsOnBoard.

Table 6.2.5.2.3-1 illustrates the data structure supported by the CISE Vehicle entity.

Table 6.2.5.2.3-1: Data structure of CISE Vehicle entity

Field Name	Data Type	Note
MaximumSpeed	Double	values in knots
Nationality	String	two-letter country codes
TotalPersonsOnBoard	Integer	

[Cdm-OBJ-022] The Vessel sub-class shall be described by means of the following attributes:

- Arrangement.
- Beam.
- Breadth.
- CallSign.
- ConditionOfTheCargoAndBallast.
- ContainerCapacity.
- Deadweight.
- Depth.
- DesignSpeed.

- Draught.
- FishingGear.
- GrossTonnage.
- HullMaterial.
- IMONumber.
- INFShipClass.
- INMARSATNumber.
- IRNumber.
- IsBanned.
- IsFishing.
- ISPSSSecurityLevel.
- Length.
- LengthenedYear.
- LOA.
- MMSI.
- NavigationalStatus.
- NetTonnage.
- RegionalIdentification.
- RegistryDate.
- RegistryNumber.
- SegregatedBallastVolume.
- ShipConfiguration.
- ShipType.
- UnderSanitaryMeasure.
- UVI.
- YearBuilt.

Table 6.2.5.2.3-2 illustrates the data structure supported by the Vessel sub-class.

Table 6.2.5.2.3-2: Data structure of CISE Vessel sub-class

Field Name	Data Type	Note
Arrangement	String	
Beam	integer	values in meters
Breadth	integer	values in meters
CallSign	String	
ConditionOfTheCargoAndBallast	ConditionOfTheCargoAndBallastType	
ContainerCapacity	integer	values in feet
Deadweight	integer	values in tonnes
Depth	double	
DesignSpeed	double	values in knots

Field Name	Data Type	Note
Draught	double	values in meters
FishingGear	FishingGearType	
GrossTonnage	double	
HullMaterial	HullMaterialType	
IMONumber	long	
INFShipClass	INFClassType	
INMARSATNumber	String	
IRNumber	String	
IsBanned	boolean	
IsFishing	boolean	
ISPSSSecurityLevel	ISPSSecurityLevelType	
Length	double	values in meters
LengthenedYear	integer	
LOA	double	values in meters
MMSI	long	
NavigationalStatus	NavigationalStatusType	
NetTonnage	double	
RegionalIdentification	String	
RegistryDate	XSD::Date	
RegistryNumber	String	
SegregatedBallastVolume	double	
ShipConfiguration	ShipConfigurationType	
ShipType	VesselType	
UnderSanitaryMeasure	SanitaryMeasureType	
UVI	String	
YearBuilt	integer	

[Cdm-OBJ-023] The ConditionOfTheCargoAndBallastType shall support the following values:

- Full.
- Empty.
- Inerted.
- Other.
- NonSpecified.

[Cdm-OBJ-024] The FishingGearType shall support the following values:

- SurroundingNets.
- SeineNets.
- TrawlNets.
- Dredges.
- LiftNets.
- FallingNets.
- GillnetsAndEntanglingNets.
- Traps.
- HooksAndLines.
- GrapplingAndWoundingGears.
- StupefyingDevices.
- Other.

- NonSpecified.

[Cdm-OBJ-025] The HullMaterialType shall support the following values:

- HighStrengthSteel.
- Other.
- NonSpecified.

[Cdm-OBJ-026] The INFClassType shall support the following values:

- INF1.
- INF2.
- INF3.
- Other.
- NonSpecified.

[Cdm-OBJ-027] The ISPSSecurityLevelType shall support the following values:

- SecurityLevel1.
- SecurityLevel2.
- SecurityLevel3.
- Other.
- NonSpecified.

[Cdm-OBJ-028] The NavigationalStatusType shall support the following values:

- UnderWayUsingEngine.
- AtAnchor.
- NotUnderCommand.
- RestrictedManoeuvrability.
- ConstrainedByHerDraught.
- Moored.
- Aground.
- EngagedInFishing.
- UnderWaySailing.
- EngagedInFishingOtherThanTrawling.
- AirCushionVesselInNonDisplamenetModeOrWIGCraftTakingOffLandingOrInFlight.
- PowerDrivenVesselTowingAstern.
- PowerDrivenVesselTowigAheadOrPushingAlongside.
- InDistressOrRequiringAssistance.
- AISSARTSeekingToAttractAttention.
- UndefinedDefault.

- Other.
- NonSpecified.

[Cdm-OBJ-029] The SanitaryMeasureType shall support the following values:

- Quarantine.
- Isolation.
- Disinfection.
- Decontamination.
- Other.
- NonSpecified.

[Cdm-OBJ-030] The ShipConfigurationType shall support the following values:

- SingleHullTanker.
- SingleHullWithSegregatedBallastTanks.
- DoubleHullTanker.
- Other.
- NonSpecified.

[Cdm-OBJ-031] The VesselType shall support the following values:

- PassengerShip.
- FishingVessel.
- NuclearShip.
- BulkCarrier.
- OilTanker.
- GeneralCargoShip.
- HighSpeedCraft.
- MobileOffShoreDrillingUnit.
- SpecialPurposeShip.
- Other.
- NonSpecified.

6.2.5.3 Object Associated Entity

6.2.5.3.1 Location Entity

[Cdm-OBJ-032] The association with a Location entity shall be described by the following attributes:

- COG.
- Heading.
- LocationRole.

- Metadata.
- PeriodOfTime.
- PlacementPurpose.
- PlannedOperations.
- PlannedWorks.
- SensorType.
- SOG.
- SourceType.
- SpecialSecurityMeasures.
- Speed.

Table 6.2.5.3.1-1 illustrated the data structure supported by the Location associated entity.

Table 6.2.5.3.1-1: Data structure of CISE Location associated model

Field Name	Data Type	Note
COG	double	values in degrees
Heading	double	values in degrees
LocationRole	LocationRoleType	
Metadata	MetadataType	Ref.to [Cdm-DOC-006]
PeriodOfTime	Period Entity	Ref.to [Cdm-PER-001]
PlacementPurpose	PlacementPurposeType	
PlannedOperations	PlannedOperationsType	
PlannedWorks	PlannedWorksType	
SensorType	SensorType	
SOG	double	values in knots
SourceType	SourceType	
SpecialSecurityMeasures	String	
Speed	double	values in knots

[Cdm-OBJ-033] The LocationRoleType shall support the following values:

- PortOfEmbarkation.
- PortOfDisembarkation.
- PortOfRegistry.
- LengthenedPlace.
- PortOfLoading.
- PortOfDischarge.
- NonSpecified.

[Cdm-OBJ-034] The PlacementPurposeType shall support the following values:

- InTransit.
- Assigned.
- Other.
- NonSpecified.

[Cdm-OBJ-035] The PlannedOperationsType shall support the following values:

- Loading.
- Unloading.
- Other.
- NonSpecified.

[Cdm-OBJ-036] The PlannedWorksType shall support the following values:

- Inspection.
- MaintenanceAndRepair.
- Other.
- NonSpecified.

[Cdm-OBJ-037] The SensorType shall support the following values:

- Sighting.
- UnderwaterSensor.
- MaritimeRadar.
- SyntheticApertureRadar.
- EOIROptronicSystem.
- MaritimeMovingTargetIdentification.
- SignalInterceptionSystemsCOMINT.
- SignalInterceptionSystemsELINT.
- EnvironmentalSensingSystems.
- AutomaticIdentificationSystem.
- VesselMonitoringSystem.
- LongRangeIdentificationTracking.
- AutomaticVehicleLocation.
- AcousticSystems.
- NonTraditionalSources.
- Other.
- NonSpecified.

[Cdm-OBJ-038] The SourceType shall support the following values:

- Observation.
- Declaration.
- Estimation.
- Simulation.
- Correlation.

- Other.
- NonSpecified.

6.2.6 Period Core Entity

6.2.6.1 Period Core Entity General Requirements

[Cdm-PER-001] The Period core entity shall be described by means of the following attributes:

- Duration.
- EndDate.
- EndTime.
- StartDate.
- StartTime.

Figure 6.2.6.1-1 illustrates the Period Core Entity model.

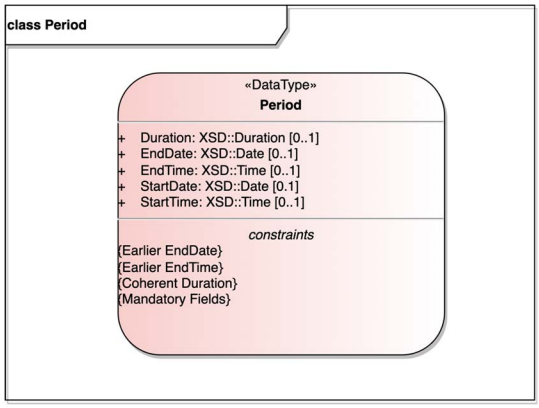

Figure 6.2.6.1-1: CISE Period UML conceptual model [i.7]

Table 6.2.6.1-1 illustrates the data structure supported by the CISE Period entity.

Table 6.2.6.1-1: data structure of CISE Period entity

Field Name	Data Type	Note
Duration	XSD::Duration	The time interval is specified in the following form "PnYnMnDTnHnMnS" where: • P indicates the period (required). • nY indicates the number of years. • nM indicates the number of months. • nD indicates the number of days. • T indicates the start of a time section (required if hours, minutes, or seconds are to be specified). • nH indicates the number of hours. • nM indicates the number of minutes. • nS indicates the number of seconds.
EndDate	XSD::Date	values in "YYYY-MM-DD"
EndTime	XSD::Time	
StartDate	XSD::Date	values in "YYYY-MM-DD"
StartTime	XSD::Time	

6.2.7 Risk Core Entity

6.2.7.1 Risk Core Entity General Requirements

[Cdm-RSK-001] The Risk core entity shall be described by means of:

- Risk Class Attributes.
- Risk Associated Entities:
  - Agent Core Entity.
  - Document Core Entity.
  - Event Core Entity.
  - Location Core Entity.
  - Object Core Entity.

Figure 6.2.7.1-1 illustrates the Risk Core Entity model.

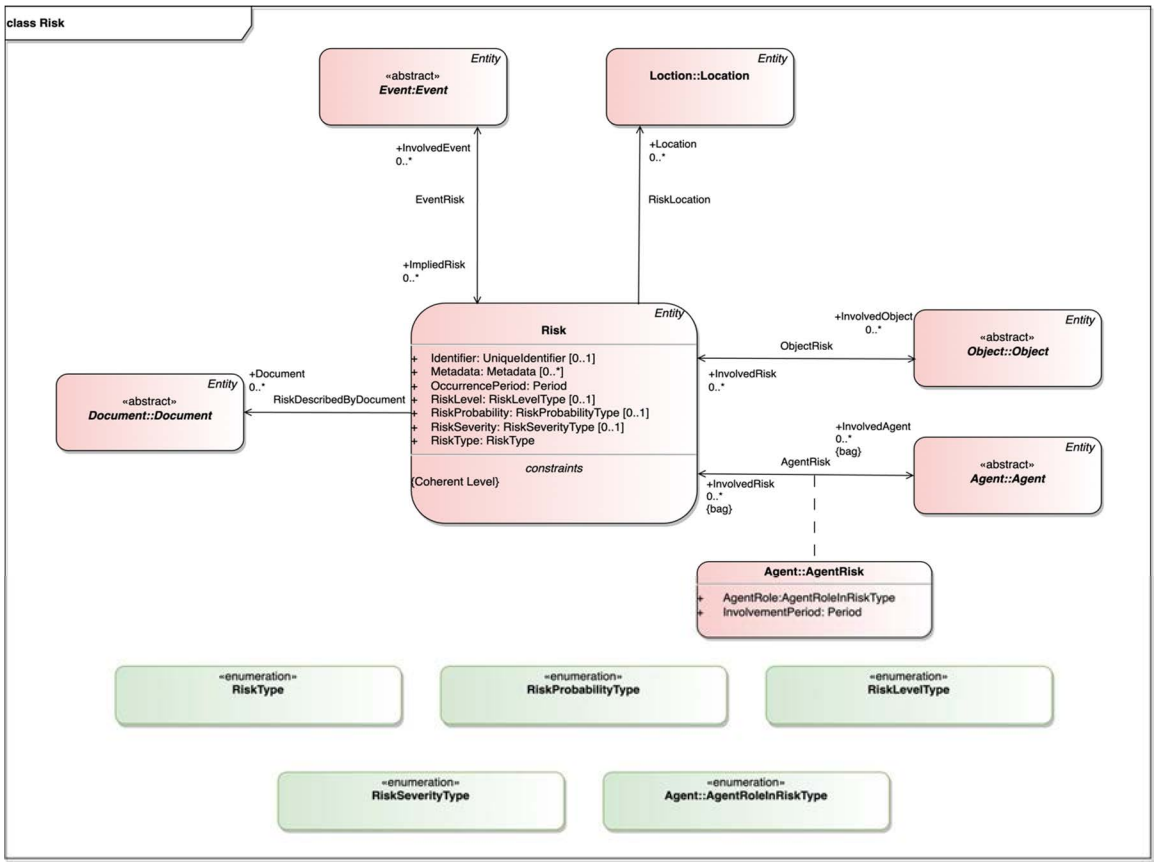

Figure 6.2.7.1-1: CISE Risk UML conceptual model [i.7]

[Cdm-RSK-002] The Risk entity shall be described by the following attributes:

- Identifier.
- Metadata.
- OccurrencePeriod.
- RiskLevel.
- RiskProbability.

- RiskSeverity.
- RiskType.

Table 6.2.7.1-1 illustrates the data structure supported by the CISE Risk entity.

Table 6.2.7.1-1: Data structure of CISE Risk entity

Field Name	Data Type	Note
Identifier	UniqueIdentifierType	Ref.to [Cdm-DOC-003]
Metadata	MetadataType	Ref.to [Cdm-DOC-006]
OccurrencePeriod	Period Entity	Ref.to [Cdm-PER-001]
RiskLevel	RiskLevelType	
RiskProbability	RiskProbabilityType	
RiskSeverity	RiskSeverityType	
RiskType	RiskType	

[Cdm-RSK-003] The RiskLevelType shall support the following values:

- High.
- Medium.
- Low.
- Other.
- NonSpecified.

[Cdm-RSK-004] The RiskProbabilityType shall support the following values:

- Frequent.
- Probable.
- Occasional.
- Rare.
- Improbable.
- Other.
- NonSpecified.

[Cdm-RSK-005] The RiskSeverityType shall support the following values:

- Catastrophic.
- Critical.
- Marginal.
- Negligible.
- Other.
- NonSpecified.

[Cdm-RSK-006] The RiskType shall support the following values:

- Accident.
- IllegalImmigration.

- DrugTrafficking.
- Collision.
- HumanTrafficking.
- Smuggling.
- IllegalFishing.
- WeaponsTrafficking.
- Fire.
- Pollution.
- Other.
- NonSpecified.

7 CISE Service Type

[Cdm-SER-001] The ServiceType shall support the following values:

- ActionService
- AgentService
- AircraftService
- AnomalyService
- CargoDocumentService
- CargoService
- CertificateDocumentService
- CrisisIncidentService
- DocumentService
- EventDocumentService
- IncidentService
- IrregularMigrationIncidentService
- LandVehicleService
- LawInfringementIncidentService
- LocationService
- LocationDocumentService
- MaritimeSafetyIncidentService
- MeteoOceanographicConditionService
- MovementService
- OperationalAssetService

- OrganizationService
- OrganizationDocumentService
- PersonService
- PersonDocumentService
- RiskDocumentService
- RiskService
- VesselDocumentService
- VesselService.

Table 7-1 illustrates the CISE Data Model entities supported by CISE service types.

Table 7-1: CISE data mode entities supported by CISE service types

Service Type	Supported CISE Data Model entity
ActionService	Action
AgentService	Agent, Person, Organization, OrganizationalUnit, PortOrganization, FormalOrganization, OrganizationalCollaboration
AircraftService	Aircraft
AnomalyService	Anomaly
CargoDocumentService	CargoDocument
CargoService	Cargo, Catch, ContainementUnit
CertificateDocumentService	CertificateDocument
CrisisIncidentService	CrisisIncident
DocumentService	Document, VesselDocument, CargoDocument, EventDocument, LocationDocument, OrganizationDocument, RiskDocument, PersonDocument, CertificateDocument, Stream
EventDocumentService	EventDocument
IncidentService	Incident, MaritimeSafetyIncident, PollutionIncident, IrregularMigrationIncident, LawInfringementIncident, CrisisIncident
IrregularMigrationIncidentService	IrregularMigrationIncident
LandVehicleService	LandVehicle
LawInfringementIncidentService	LawInfringementIncident
LocationService	Location, PortLocation, PortFacilityLocation, NamedLocation
LocationDocumentService	LocationDocument
MaritimeSafetyIncidentService	MaritimeSafetyIncident, PollutionIncident
MeteoOceanographicConditionService	MeteoOceanographicCondition
MovementService	Movement
OperationalAssetService	OperationalAsset
OrganizationService	Organization, PortOrganization, OrganizationalUnit, OrganizationalCollaboration, FormalOrganization
OrganizationDocumentService	OrganizationDocument
PersonService	Person
PersonDocumentService	PersonDocument
RiskDocumentService	RiskDocument
RiskService	Risk
VesselDocumentService	VesselDocument
VesselService	Vessel

Annex A (informative): Change history

Date	Version	Information about changes
September 2021	V.1.5.3	First version.
June 2024	V.1.6.1	CISE entities and relevant attributes and values have been updated in order to ensure harmonization and removal of duplications and multiplicities. Pictures and tables have been revised accordingly. Formal methodology for requirements specification has been adopted. ETSI guidances and recommendations for data model specification have been followed.

History

Document history		
V1.5.3	September 2021	Publication
V1.6.1	July 2024	Publication