OCEAN2020FOM_SISO-STD-001.1-2015

Version: 1.0
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Security Classification: Unclassified

Description:

OCEAN2020 HLA EVOLVED simulated trials FOM definition for project extended Object/Interaction class.

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Module Data

OCEAN2020FOM_SISO-STD-001.1-2015

Type:	FOM
Version:	1.0
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Security Classification:	Unclassified
Release Restrictions:	European Defence Agency - OCEAN2020 Project Beneficiaries
Use Limitiations:	European Defence Agency - OCEAN2020 Project Beneficiaries
Purpose:	OCEAN2020 HLA EVOLVED extended standard RPR FOM version 2.0 module revision 0.7.
Application Domain:	Maritime
Description:	OCEAN2020 HLA EVOLVED simulated trials FOM definition for project extended Object/Interaction class.
Use History:	--NONE--
Other:	

HLAobjectRoot (Object)

Full Name: .HLAobjectRoot
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: Neither
Semantics:
Notes:

Added Attributes: This object adds no attributes

BaseEntity (Object)

Full Name: 0.BaseEntity
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

NOTE:Federates shall send the time at which the data is valid in the user defined tag with every attribute values update and interaction. The time shall be in the first 8 bytes (octets) of the user defined tag, using the DIS timestamp field format (see section 5.2.31 of IEEE 1278.1-1995) converted into hexadecimal ASCII character representation (0-9 and A-F). The ordering of the characters shall be in accordance with section 5.1.1 of IEEE 1278.1-1995, that is most significant octet first, with the most significant bits first (i.e. the character for bits 4-7 precedes the character for bits 0-3). All federates shall transmit this field, even if they do not use it themselves, so that other federates can use its value to compensate for network transport delays.

Added Attributes: This object adds no attributes

PhysicalEntity (Object)

Full Name: 0.1.PhysicalEntity
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

Added Attributes: This object adds no attributes

Platform (Object)

Full Name: 0.1.2.Platform
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

Added Attributes: This object adds no attributes

SubmersibleVessel (Object)

Full Name: 0.1.2.3.SubmersibleVessel
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

Added Attributes: This object adds no attributes

SubmersibleVesselData (Object)

Full Name: 0.1.2.3.4.SubmersibleVesselData
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: PublishSubscribe
Semantics: Every asset on which sensors or weapons are mounted in the scenario e.g. vessel, AUV, submarine, buoy…
Notes:

Added Attributes:

ASBHeight

dataType: Float64
ownership: NoTransfer
sharing: Publish
order: TimeStamp
Dimensions: --none--
Semantics: Above SeaBed Height
updateType: Conditional
updateCondition: On change
transportation: HLAreliable

SurfaceVessel (Object)

Full Name: 0.1.2.3.SurfaceVessel
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: Neither
Semantics:
Notes:

Added Attributes: This object adds no attributes

SurfaceVesselData (Object)

Full Name: 0.1.2.3.6.SurfaceVesselData
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: PublishSubscribe
Semantics: Surface Vessel additional data
Notes:

Added Attributes:

DimensionLength

dataType: Float32
ownership: DivestAcquire
updateType: Conditional
updateCondition: On Change

sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Define platform length dimension

DimensionWidth
dataType: Float32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Define platform width dimension

DimensionHeight
dataType: Float32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Define platform height dimension

Sensor (Object)

Full Name: 0.1.2.Sensor
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

Added Attributes: This object adds no attributes

Area (Object)

Full Name: 0.1.2.8.Area
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: PublishSubscribe
Semantics:
Notes:

Added Attributes:
Area_Id
dataType: Integer32 updateType: Static
ownership: NoTransfer updateCondition: during initialization
sharing: PublishSubscribe transportation: HLAreliable
order: TimeStamp
Dimensions: --none--
Semantics: ID code which identify the Area.

Area_Type
dataType: Integer32 updateType: Static

ownership: NoTransfer
sharing: PublishSubscribe
order: TimeStamp
updateCondition: during initialization
transportation: HLAreliable
Dimensions: --none--
Semantics: String defining the different types of areas: "survey", "inspection", "dangerous", "jammed".

Vertices
dataType: HLAASCIIstring
ownership: NoTransfer
sharing: PublishSubscribe
order: TimeStamp
updateType: Static
updateCondition: during initialization
transportation: HLAreliable
Dimensions: --none--
Semantics: It represent the polygon defining the outile of the area. It is a string containing all the vertices of the polygon. The format is the following: x0,y0 x1,y1 ... xf,yf

EmbeddedSystem (Object)

Full Name: 0.EmbeddedSystem
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

Added Attributes: This object adds no attributes

AIS (Object)

Full Name: 0.10.AIS
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: PublishSubscribe
Semantics: Automatic Identification System (AIS) is an automatic tracking system that uses transponders on ships and is used by vessel traffic services for multiple purpose linked to maritime security.
Notes:

Added Attributes:
ClassType
dataType: HLAASCIIstring
ownership: DivestAcquire
sharing: PublishSubscribe
order: Receive
updateType: Static
updateCondition: NA
transportation: HLAbestEffort
Dimensions: --none--
Semantics: Designation for vessel Class Type, it is a string which value can be either Class A or Class B

COG
dataType: Float32
ownership: DivestAcquire
sharing: PublishSubscribe
order: Receive
updateType: Conditional
updateCondition: On Change
transportation: HLAbestEffort
Dimensions: --none--
Semantics: Course over ground, relative to true north to 0.1°

Destination
dataType: HLAASCIIstring updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Harbour destination, 20 characters maximum

ETA
dataType: HLAASCIIstring updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Estimated Time of Arrival at destination, expressed as UTC month/date hour:minute

IMO
dataType: UnsignedInteger32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: International Maritime Organization number is a unique reference for ships, registered ship owners and management companies

Latitude
dataType: Float64 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: ship vessel Latitude value expressed in Decimal Degree

Longitude
dataType: Float64 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: ship vessel Longitude value expressed in Decimal Degree

MMSI
dataType: UnsignedInteger32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: The vessel's Maritime Mobile Service Identity (MMSI), a unique nine digit identification number

Name
dataType: HLAASCIIstring updateType: Static

ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: 20 characters to represent vessel name

NavigationStatus
dataType: HLAASCIIstring updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Indicate navigation state, it is a string which can take value as "at anchor", "under way using engine(s)" or "not under command"

SOG
dataType: Float32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Speed Over Ground expressed in meter/seconds

TB
dataType: Float32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: True Bearing at own position expressed as degree from 0 to 359 degrees

TH
dataType: Float32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: True Heading expressed as degree from 0 to 359 degrees

TurnRate
dataType: Float32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Rate of turn,right or left, expressed as degrees per minute

UTC_s
dataType: HLAASCIIstring updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--

Semantics: UTC Seconds, the seconds field of the UTC time when these data were generated

UTC_TimeStamp
dataType: HLAASCIIstring updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: UTC time stamp, the UTC time when these data were generated

RCS
dataType: HLAASCIIstring updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: international Radio Call Sign, up to seven characters, assigned to the vessel by its country of registry

VesselLength
dataType: Float32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Ship vessel length expressed in meter

VesselWidth
dataType: Float32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Ship vessel width expressed in meter

VesselType
dataType: HLAASCIIstring updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Vessel Type as ship/cargo

RadioTransmitter (Object)

Full Name: 0.10.RadioTransmitter
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

Added Attributes: This object adds no attributes

OCEAN2020RadioTransmitter (Object)

Full Name: 0.10.12.OCEAN2020RadioTransmitter
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: PublishSubscribe
Semantics:
Notes:

Added Attributes:

TransmitterMaxGaindB
- dataType: Float32
- updateType: Static
- ownership: DivestAcquire
- updateCondition: NA
- sharing: PublishSubscribe
- transportation: HLAbestEffort
- order: Receive
- Dimensions: --none--
- Semantics: Maximum gain of the transmitter in dB w.r.t. the isotropical antenna (in band, within intentional region).

TransmitterChannelBandwidthHz
- dataType: FrequencyHertzFloat32
- updateType: Conditional
- ownership: DivestAcquire
- updateCondition: On Change
- sharing: PublishSubscribe
- transportation: HLAbestEffort
- order: Receive
- Dimensions: --none--
- Semantics: Transmitter channel bandwidth in Hz (matched with Rx IF bandwidth).

TransmitterAntiJammingTechnique
- dataType: AntiJammingTechniqueEnum
- updateType: Conditional
- ownership: DivestAcquire
- updateCondition: On Change
- sharing: PublishSubscribe
- transportation: HLAbestEffort
- order: Receive
- Dimensions: --none--
- Semantics: Communication implemented anti jamming technique. May be related with SpreadSpectrum and TimeHopInUse attributes.

TransmitterType
- dataType: TxRxTypeEnum
- updateType: Static
- ownership: DivestAcquire
- updateCondition: NA
- sharing: PublishSubscribe
- transportation: HLAbestEffort
- order: Receive
- Dimensions: --none--
- Semantics: Type of the communication used to determine the transmitter side bands.

TransmitterHarmonicLevelAboveFunddB
- dataType: TxHarmonicLeveldBArray
- updateType: Static
- ownership: DivestAcquire
- updateCondition: NA
- sharing: PublishSubscribe
- transportation: HLAbestEffort
- order: Receive
- Dimensions: --none--
- Semantics: Transmitter harmonics level in dB above fundamental (second, third, fourth, fifth harmonic

level). In case thay are undefined (all equal to zero) MIL-STD suggested values will be used.

TransmitterBroadbandNoisePowerDensity
dataType: Float32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Transmitter broadband noise power density dBm/Hz.

TransmitterSpuriousLevelAbovefunddB
dataType: TxSpuriousLeveldBArray updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Spurious tones maximum level w.r.t. the fundamental, in a band close to the carrier and in a band away from the carrier.Two levels.

OperatingFrequency
dataType: FrequencyHertzUnsignedInteger64 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Transmitter operating frequency.

ChannelBandwidth
dataType: FrequencyHertzFloat32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: The bandwidth of the transmitter channel.

RadioReceiver (Object)

Full Name: 0.10.RadioReceiver
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

Added Attributes: This object adds no attributes

OCEAN2020RadioReceiver (Object)

Full Name: 0.10.14.OCEAN2020RadioReceiver
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: PublishSubscribe

Semantics:
Notes:

Added Attributes:

ReceiverMaxGaindB

dataType: Float32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Maximum gain of the receiver w.r.t. the isotropic antenna (in band, within intentional region).

Sensitivity

dataType: Float32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Receiver sensitivity in dBm

AntennaPatternData

dataType: AntennaPatternVariantStruct updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Receiver antenna pointing and half power beamwidth.

ReceiverAntiJammingTechnique

dataType: AntiJammingTechniqueEnum updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Communication implemented anti jamming technique.

ReceiverType

dataType: TxRxTypeEnum updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Type of the communication used.

ReceiverShapeFactor

dataType: Float32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Receiver shape factor to determine its selectivity.

ReceiverSpuriousLevel

dataType: RxSpuriousLeveldBArray updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Receiver residual sensitivity at the harmonic frequencies of the local oscillator. In case they are undefined (all equal to zero), MIL-STD values will be used.

ReceiverChannelBandwidthHz
dataType: FrequencyHertzFloat32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Channel bandwidth (IF filter).

FrequencyBandwidth
dataType: FrequencyHertzFloat32 updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: receiver tuning range

Frequency
dataType: FrequencyHertzUnsignedInteger64 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: center frequency of the tuning range

OperatingFrequency
dataType: FrequencyHertzUnsignedInteger64 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: receiver tuned frequency

ChannelBandwidth
dataType: FrequencyHertzFloat32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: receiver channel bandwidth

NoiseFigure
dataType: Float32 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive

Dimensions: --none--
Semantics: receiver noise figure in dB

HLAinteractionRoot (Interaction)

Full Name: .HLAinteractionRoot
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: Neither
Semantics:
Notes:

Added Parameters: This object adds no parameters

EventReport (Interaction)

Full Name: 0.EventReport
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing:
Semantics:
Notes:

Added Parameters: This object adds no parameters

MineEventReport (Interaction)

Full Name: 0.1.MineEventReport
Module: OCEAN2020FOM_SISO-STD-001.1-2015
Sharing: Neither
Semantics:
Notes:

Added Parameters: This object adds no parameters

Basic Data Types

RPRunsignedInteger16BE

size: 16
interpretation: Integer in the range [0, 2^16-1]
endian: Big
encoding: 16-bit unsigned integer.

RPRunsignedInteger32BE

size: 32
interpretation: Integer in the range [0, 2^32-1]
endian: Big
encoding: 32-bit unsigned integer.

RPRunsignedInteger64BE

size: 64
interpretation: Integer in the range [0, 2^64-1]
endian: Big
encoding: 64-bit unsigned integer.

RPRunsignedInteger8BE

size: 8
interpretation: Integer in the range [0, 2^8-1]
endian: Big
encoding: 8-bit unsigned integer.

Array Data Types

AntennaPatternVariantStructLengthlessArray

dataType: AntennaPatternVariantStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Represents an antenna's radiation pattern, its orientation in space, and the polarization of the radiation.

ArticulatedParameterStructLengthlessArray

dataType: ArticulatedParameterStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Dynamic array of ArticulatedParameterStruct elements, may also contain no elements. The array is encoded without array length, containing only the elements.

AttributeValuePairStructArray1Plus

dataType: AttributeValuePairStruct
cardinality: [1..2147483647]
encoding: HLAvariableArray
semantics: Array of AttributeValuePairStruct.

BreachableSegmentStructLengthlessArray

dataType: BreachableSegmentStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies a breachable linear object (a collection of segments)

BreachedStatusArray8

dataType: BreachedStatusEnum8
cardinality: 8
encoding: HLAfixedArray
semantics: Specifies the breached appearance for each individual segment portion of length = BreachLength

BreachStructLengthlessArray

dataType: BreachStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies a breach linear object (a collection of segments)

ClockTimeStructLengthlessArray

dataType: ClockTimeStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Dynamic array of ClockTimeStruct elements, may also contain no elements. The array is encoded without array length, containing only the elements.

CoefficientsLengthlessArray1Plus

dataType: Float32
cardinality: [1..2147483647]
encoding: RPRlengthlessArray
semantics: Represents the power distribution from the antenna as the coefficients of a spherical harmonic expansion.

The highest order of the expansion can be determined by the number of coefficients in the array.

DatumIdentifierLengthlessArray

dataType: DatumIdentifierEnum32
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Array of DatumIdentifierEnum32.

DepthMeterFloat32LengthlessArray

dataType: DepthMeterFloat32
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies ground - snow - water burial depth offset for each mine in a collection of mines

EntityTypeStructLengthlessArray

dataType: EntityTypeStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Dynamic array of EntityTypeStruct elements, may also contain no elements. The array is encoded without array length, containing only the elements.

EnvironmentRecStructArray

dataType: EnvironmentRecStruct
cardinality: Dynamic
encoding: HLAvariableArray
semantics: Specifies environment records as a collection of geometry and state records

ExhaustSmokeStructLengthlessArray

dataType: ExhaustSmokeStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies an exhaust smoke linear object (a collection of smoke segments)

FixedDatumStructLengthlessArray

dataType: FixedDatumStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Array of FixedDatumStructs.

Float32Array1Plus

dataType: Float32
cardinality: [1..2147483647]
encoding: HLAvariableArray
semantics: Generic dynamic array of Float32 elements, containing at least one element.

FundamentalParameterDataStructLengthlessArray

dataType: FundamentalParameterDataStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Array of Fundamental Parameter Data records.

GridAxisStructLengthlessArray

dataType: GridAxisStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies detailed information for a collection of grid axes

GridDataStructLengthlessArray

dataType: GridDataStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies detailed information for a collection of grid data representations

Integer16Array1Plus

dataType: Integer16
cardinality: [1..2147483647]
encoding: HLAvariableArray
semantics: Generic dynamic array of Integer16 elements, containing at least one element.

MarkingArray11

dataType: Octet
cardinality: 11
encoding: HLAfixedArray
semantics: String of characters represented by an 11 element character string.

MarkingArray31

dataType: Octet
cardinality: 31
encoding: HLAfixedArray
semantics: String of characters represented by a 31 element character string.

MineDielectricDifferenceLengthlessArray

dataType: MineDielectricDifference
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies local dielectric difference between the mine and the surrounding soil (reflectance) for each mine in a collection of mines

MinefieldLaneMarkerStructLengthlessArray

dataType: MinefieldLaneMarkerStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies a minefield lane marker (a collection of segments)

MinefieldPaintSchemeLengthlessArray

dataType: MinefieldPaintSchemeEnum32
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies the camouflage scheme/color for each mine in a collection of mines

MinefieldSensorTypeLengthlessArray

dataType: MinefieldSensorTypeEnum32
cardinality: Dynamic
encoding: RPRlengthlessArray

semantics: Specifies a collection of minefield sensor types

MineFusingStructLengthlessArray

dataType: MineFusingStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies the type of primary fuse, the type of the secondary fuse and the anti-handling device status for a collection of mines

MineIdentifierLengthlessArray

dataType: MineIdentifier
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Identifies the mine entity identifier for each mine in a collection of mines

MissingRecordNumbersLengthlessArray1Plus

dataType: UnsignedInteger8
cardinality: [1..2147483647]
encoding: RPRlengthlessArray
semantics: Specifies missing record numbers as a collection

OctetArray

dataType: Octet
cardinality: Dynamic
encoding: HLAvariableArray
semantics: Generic dynamic array of Octet elements, may also contain no elements.

OctetArray1Plus

dataType: Octet
cardinality: [1..2147483647]
encoding: HLAvariableArray
semantics: Generic dynamic array of Octet elements, containing at least one element.

OctetArray2

dataType: Octet
cardinality: 2
encoding: HLAfixedArray
semantics: Generic array of two Octet elements.

OctetArray3

dataType: Octet
cardinality: 3
encoding: HLAfixedArray
semantics: Generic array of three Octet elements.

OctetArray4

dataType: Octet
cardinality: 4
encoding: HLAfixedArray
semantics: Generic array of four Octet elements.

OctetArray7

dataType: Octet
cardinality: 7
encoding: HLAfixedArray
semantics: Generic array of seven Octet elements.

OctetArray8

dataType: Octet
cardinality: 8
encoding: HLAfixedArray
semantics: Generic array of eight Octet elements.

OctetPadding32Array

dataType: Octet
cardinality: Dynamic
encoding: RPRpaddingTo32Array
semantics: Generic dynamic array of meaningless Octet elements, to align the subsequent data structure to the next 32 bit octet boundary value (OBV). The array is encoded without array length, containing zero to three elements.

OctetPadding64Array

dataType: Octet
cardinality: Dynamic
encoding: RPRpaddingTo64Array
semantics: Generic dynamic array of meaningless Octet elements, to align the subsequent data structure to the next 64 bit octet boundary value (OBV). The array is encoded without array length, containing zero to seven elements.

OrientationStructLengthlessArray

dataType: OrientationStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Dynamic array of OrientationStruct elements, may also contain no elements. The array is encoded without array length, containing only the elements.

PerimeterPointStructLengthlessArray

dataType: PerimeterPointStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies the location of perimeter points (collection)

PropulsionSystemDataStructLengthlessArray

dataType: PropulsionSystemDataStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: A set of Propulsion System Data descriptions.

RecordSetStructArray1Plus

dataType: RecordSetStruct
cardinality: [1..2147483647]
encoding: HLAvariableArray
semantics: Array of RecordSetStruct

RecordStructArray

dataType: RecordStruct

cardinality: Dynamic
encoding: HLAvariableArray
semantics: Array of RecordStruct

RPRUserDefinedTag

dataType: HLAASCIIchar
cardinality: [8..2147483647]
encoding: RPRnullTerminatedArray
semantics: The array shall be at least 8 bytes (octets) in size, which shall contain the time according to the DIS time stamp field format (IEEE 1278.1-1995 section 5.2.31) converted into hexadecimal American Standard Code for Information Interchange (ASCII) character representation (0-9 and A-F), with leading zeros included. The ordering of the characters shall be in accordance with section 5.1.1 of IEEE 1278.1-1995, that is most significant octet first, with the most significant bits first (i.e. the character for bits 4-7 precedes the character for bits 0-3). This encoding is equivalent to the result of the 'C'-statement "sprintf(UserTag, "%08X", DIStimestamp)," where 'DIStimestamp' is represented in native format. More user-supplied information may be included, starting from the 9th character, as specified in the federation agreements.

RTIobjectId

dataType: HLAASCIIchar
cardinality: Dynamic
encoding: RPRnullTerminatedArray
semantics: An RTI object instance identification string.

RTIobjectIdArray

dataType: RTIobjectId
cardinality: Dynamic
encoding: HLAvariableArray
semantics: Set of ID's of registered object instances.

ShaftDataStructLengthlessArray1Plus

dataType: ShaftDataStruct
cardinality: [1..2147483647]
encoding: RPRlengthlessArray
semantics: Array of propulsion shaft states, one per shaft

SignalDataLengthlessArray1Plus

dataType: Octet
cardinality: [1..2147483647]
encoding: RPRlengthlessArray
semantics: The audio or digital data conveyed in a radio transmission.

SilentAggregateStructLengthlessArray

dataType: SilentAggregateStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Set of silent aggregates (aggregates not registered in the federation).

SilentEntityStructLengthlessArray

dataType: SilentEntityStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: A set of silent entities (entities not registered in the federation).

SupplyStructLengthlessArray

dataType: SupplyStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: A list of supply types and the number of each being offered or requested.

TemperatureDegreeCelsiusFloat32LengthlessArray

dataType: TemperatureDegreeCelsiusFloat32
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Specifies thermal contrast for each mine in a collection of mines

UnsignedInteger16Array1Plus

dataType: UnsignedInteger16
cardinality: [1..2147483647]
encoding: HLAvariableArray
semantics: Generic dynamic array of UnsignedInteger16 elements, containing at least one element.

UnsignedInteger32LengthlessArray

dataType: UnsignedInteger32
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Generic dynamic array of UnsignedInteger32 elements, may also contain no elements. The array is encoded without array length, containing only the elements.

UnsignedInteger64Array1Plus

dataType: UnsignedInteger64
cardinality: [1..2147483647]
encoding: HLAvariableArray
semantics: Generic dynamic array of UnsignedInteger64 elements, containing at least one element.

UnsignedInteger8LengthlessArray

dataType: UnsignedInteger8
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Generic dynamic array of UnsignedInteger8 elements, may also contain no elements. The array is encoded without array length, containing only the elements.

VariableDatumStructArray

dataType: VariableDatumStruct
cardinality: Dynamic
encoding: HLAvariableArray
semantics: Array of VariableDatumStruct

VariableDatumStructLengthlessArray

dataType: VariableDatumStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Set of additional data associated with an aggregate.

VectoringNozzleSystemDataStructLengthlessArray

dataType: VectoringNozzleSystemDataStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: A set of Vectoring Nozzle System Data description.

WorldLocationStructLengthlessArray

dataType: WorldLocationStruct
cardinality: Dynamic
encoding: RPRlengthlessArray
semantics: Dynamic array of WorldLocationStruct elements, may also contain no elements. The array is encoded without array length, containing only the elements.

TxHarmonicLeveldBArray

dataType: Float32
cardinality: 4
encoding: HLAfixedArray
semantics: Holds the power level of the harmonic w.r.t. the power level of the fundamental in dB: second, third, fourth, fifth harmonic level above the fundamental.

RxSpuriousLeveldBArray

dataType: Float32
cardinality: 5
encoding: HLAfixedArray
semantics: Holds the sensitivity level of the receiver spurious w.r.t. the tuned frequency.

TxSpuriousLeveldBArray

dataType: Float32
cardinality: 3
encoding: HLAfixedArray
semantics: Power level of the spurious w.r.t. the power level of the fundamental in dB. Two values: maximum level near the carrier, maximum level away from the carrier.

Simple Data Types

AccelerationMeterPerSecondSquaredFloat32

representation: HLAfloat32BE
units: meter per second squared (m/(s^2))
resolution: NA
accuracy: NA
semantics: Linear acceleration vector composed of SI base units. Based on the Linear Acceleration Vector record as specified in IEEE 1278.1-1995 section 5.2.33b.

AngleDegreeFloat32

representation: HLAfloat32BE
units: degree (deg)
resolution: NA
accuracy: NA
semantics: Angle, based on unit degree (of arc), unit symbol °.

AngleRadianFloat32

representation: HLAfloat32BE
units: radian (rad)
resolution: NA
accuracy: NA
semantics: Angle, based on SI derived unit radian, unit symbol rad.

AngularVelocityRadianPerSecondFloat32

representation: HLAfloat32BE
units: radian per second (rad/s)
resolution: NA
accuracy: perfect
semantics: Angular velocity vector composed of SI base units. Based on the Angular Velocity Vector record as specified in IEEE 1278.1-1995 section 5.2.2.

BitRateBitPerSecondUnsignedInteger32

representation: RPRunsignedInteger32BE
units: bit/second
resolution: 1
accuracy: perfect
semantics: Rate of transmission, in bits per second.

BitsUnsignedInteger16

representation: RPRunsignedInteger16BE
units: bit
resolution: 1
accuracy: perfect
semantics: Transmission size, in number of bits.

ClockTimeHourInteger32

representation: HLAinteger32BE
units: hour
resolution: 1
accuracy: perfect
semantics: Time past on the clock in full hours since a specified point in time.

DepthMeterFloat32

representation: HLAfloat32BE
units: meter (m)
resolution: NA
accuracy: NA
semantics: Depth, based on SI base unit meter, unit symbol m.

Float32

representation: HLAfloat32BE
units: NA
resolution: NA
accuracy: NA
semantics: Single-precision floating point number.

Float64

representation: HLAfloat64BE
units: NA
resolution: NA
accuracy: NA
semantics: Double-precision floating point number.

FrequencyHertzFloat32

representation: HLAfloat32BE
units: hertz (Hz)
resolution: NA
accuracy: NA
semantics: Frequency, based on SI derived unit hertz, unit symbol Hz.

FrequencyHertzUnsignedInteger64

representation: RPRunsignedInteger64BE
units: hertz (Hz)
resolution: NA
accuracy: NA
semantics: Frequency of a radio transmission, in hertz.

Integer16

representation: HLAinteger16BE
units: NA
resolution: 1
accuracy: perfect
semantics: Integer in the range [-2^15, 2^15-1].

Integer32

representation: HLAinteger32BE
units: NA
resolution: 1
accuracy: perfect
semantics: Integer in the range [-2^31, 2^31-1].

InterrogationsPerSecondFloat32

representation: HLAfloat32BE

units: interrogations/second
resolution: NA
accuracy: perfect
semantics: Number of interrogations per second.

LengthMeterFloat32

representation: HLAfloat32BE
units: meter (m)
resolution: NA
accuracy: NA
semantics: Length, based on SI base unit meter, unit symbol m.

MassKilogramFloat32

representation: HLAfloat32BE
units: kilogram (kg)
resolution: NA
accuracy: NA
semantics: Mass, based on SI base unit kilogram, unit symbol kg.

MeterFloat32

representation: HLAfloat32BE
units: meter (m)
resolution: NA
accuracy: perfect
semantics: Datatype based on SI base unit meter, unit symbol m.

MeterFloat64

representation: HLAfloat64BE
units: meter (m)
resolution: NA
accuracy: perfect
semantics: Datatype based on SI base unit meter, unit symbol m.

MineDielectricDifference

representation: HLAfloat32BE
units: NA
resolution: NA
accuracy: NA
semantics: Local dielectric difference between the mine and the surrounding soil (reflectance)

MineIdentifier

representation: RPRunsignedInteger16BE
units: NA
resolution: 1
accuracy: NA
semantics: Specifies a mine entity identifier

Octet

representation: HLAoctet
units: NA
resolution: 1
accuracy: perfect

semantics: Uninterpreted 8-bit value.

PercentFloat32

representation: HLAfloat32BE
units: percent (%)
resolution: NA
accuracy: NA
semantics: Percentage

PercentUnsignedInteger32

representation: RPRunsignedInteger32BE
units: percent (%)
resolution: 1
accuracy: perfect
semantics: Percentage

PowerRatioDecibelMilliwattFloat32

representation: HLAfloat32BE
units: decibel milliwatt (dBm)
resolution: NA
accuracy: perfect
semantics: Power ratio in decibels (dB) of a measured power referenced to 1 milliwatt (mW).

PowerWattFloat32

representation: HLAfloat32BE
units: watt (W)
resolution: NA
accuracy: perfect
semantics: The unit of power is the watt (W), which is equal to one joule per second.

RevolutionsPerMinuteFloat32

representation: HLAfloat32BE
units: RPM
resolution: NA
accuracy: perfect
semantics: Rotation speed expressed in revolutions per minute.

RevolutionsPerMinuteInteger16

representation: HLAinteger16BE
units: revolutions per minute (RPM)
resolution: 1
accuracy: NA
semantics: Frequency of rotation, expressed in revolutions per minute.

SpeedChangeRateRPMPerSecondInteger16

representation: HLAinteger16BE
units: RPM/s
resolution: 1
accuracy: perfect
semantics: Angular acceleration

TemperatureDegreeCelsiusFloat32

representation: HLAfloat32BE
units: degree Celsius (C)
resolution: NA
accuracy: NA
semantics: Temperature, based on SI derived unit degree Celsius, unit symbol °C.

TimeMicrosecondFloat32

representation: HLAfloat32BE
units: microsecond
resolution: NA
accuracy: NA
semantics: Time, based on SI base unit second, expressed in microsecond, unit symbol ¼ s .

TimeMillisecondUnsignedInteger32

representation: RPRunsignedInteger32BE
units: millisecond (ms)
resolution: NA
accuracy: NA
semantics: Time, based on SI base unit second, expressed in millisecond, unit symbol ms.

TimeSecondInteger32

representation: HLAinteger32BE
units: second (s)
resolution: 1
accuracy: perfect
semantics: Time, based on SI base unit second, unit symbol s.

TimestampUnsignedInteger32

representation: RPRunsignedInteger32BE
units: 3600/(2^31) second
resolution: 1
accuracy: perfect
semantics: The time past the hour, scaled so that value 0 represents the start of the hour and value 2^31 - 1 represents one time unit before the start of the next hour, thereby resulting in each time unit representing exactly 3600/(2^31) s, which is approximately 1.67638063 microsecond.

TransponderModeCAltitude100-FootInteger16

representation: HLAinteger16BE
units: 100-foot increment
resolution: 1
accuracy: perfect
semantics: Actual Mode C altitude in the range 0-126,000 feet in 100-foot increments.

UnsignedInteger16

representation: RPRunsignedInteger16BE
units: NA
resolution: 1
accuracy: perfect
semantics: Integer in the range [0, 2^16-1].

UnsignedInteger32

representation: RPRunsignedInteger32BE

units: NA
resolution: 1
accuracy: perfect
semantics: Integer in the range [0, 2^32-1].

UnsignedInteger64

representation: RPRunsignedInteger64BE
units: NA
resolution: 1
accuracy: perfect
semantics: Integer in the range [0, 2^64-1].

UnsignedInteger8

representation: RPRunsignedInteger8BE
units: NA
resolution: 1
accuracy: perfect
semantics: Integer in the range [0, 2^8-1].

VelocityDecimeterPerSecondInteger16

representation: RPRunsignedInteger16BE
units: decimeter per second (dm/s)
resolution: 1
accuracy: perfect
semantics: Velocity/Speed measured in decimeter per second.

VelocityMeterPerSecondFloat32

representation: HLAfloat32BE
units: meter per second (m/s)
resolution: NA
accuracy: perfect
semantics: Speed/Velocity in meter per second.

WavelengthMicronFloat32

representation: HLAfloat32BE
units: micron
resolution: NA
accuracy: perfect
semantics: Wavelength expressed in micrometer.