OCEAN2020FOM_COMMCE_v1.1

Version: 1.1
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Security Classification: Unclassified

Description:

OCEAN2020 HLA EVOLVED simulated trials FOM definition for Communication Simulation in Contested Environment & Electromagnetic Modelling. Evaluate radio communication link between platforms.

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Module Data

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Type:	FOM
Version:	1.1
Modification Date:	2020-06-19
Security Classification:	Unclassified
Release Restrictions:	European Defence Agency - OCEAN2020 Project Beneficiaries
Use Limitiations:	European Defence Agency - OCEAN2020 Project Beneficiaries
Purpose:	OCEAN2020 HLA EVOLVED communication link FOM module revision 1.1
Application Domain:	Maritime
Description:	OCEAN2020 HLA EVOLVED simulated trials FOM definition for Communication Simulation in Contested Environment & Electromagnetic Modelling. Evaluate radio communication link between platforms.
Use History:	--NONE--
Other:	

HLAobjectRoot (Object)

Full Name: .HLAobjectRoot
Module: OCEAN2020FOM_COMMCE_v1.1
Sharing: Neither
Semantics:
Notes:

Added Attributes: This object adds no attributes

TxRxLink_obj (Object)

Full Name: 0.TxRxLink_obj
Module: OCEAN2020FOM_COMMCE_v1.1
Sharing: PublishSubscribe
Semantics: Define the communication link between platform transmitter node and platform receiver node.
Notes:

Added Attributes:

Capacity
dataType: BitRateData updateType: NA
ownership: Divest updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: A rough estimation of the maximum bitrate according to Shannon Hartley theorem. Expression in Kb/s.

Frequency
dataType: FrequencyHertzUnsignedInteger64 updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Operative frequency of the radio transmission.

LinkStatus
dataType: RPRboolean updateType: Conditional
ownership: DivestAcquire updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Whether the link is operational or not.

Rx_ObjectID
dataType: RTIobjectId updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: The RTI object instance ID of the receiver involved on the link.

SN

dataType: Float32 updateType: Conditional
ownership: Divest updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: The signal to noise ratio on the considered communication channel. It represents the desired signal level to the total noise plus undesired signal level ratio.

Tx_ObjectID

dataType: RTIobjectId updateType: Static
ownership: DivestAcquire updateCondition: NA
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: The RTI object instance ID of the transmitter involved on the link.

BER

dataType: Float32 updateType: Conditional
ownership: Divest updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Bit Error Rate for numeric transmission.

SER

dataType: Float32 updateType: Conditional
ownership: Divest updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Symbol Error Rate for numeric transmission.

Modulation

dataType: HLAASCIIstring updateType: Conditional
ownership: Divest updateCondition: On Change
sharing: PublishSubscribe transportation: HLAbestEffort
order: Receive
Dimensions: --none--
Semantics: Type of numeric modulation: 64QAM, 16PSK,...

HLAinteractionRoot (Interaction)

Full Name: .HLAinteractionRoot
Module: OCEAN2020FOM_COMMCE_v1.1
Sharing: Neither
Semantics:
Notes:

Added Parameters: This object adds no parameters

TxRx_Link_OffReq (Interaction)

Full Name: 0.TxRx_Link_OffReq
Module: OCEAN2020FOM_COMMCE_v1.1
Sharing: PublishSubscribe
Semantics: TxRxLink_obj deletion request.
Notes:

Added Parameters:
- Rx_HostObjectID
  - dataType: RTIobjectId
  - Semantics: The RTI object instance ID of the entity platform object which receiver embedded system is part of.
  - NOTE:Not optional
- Tx_HostObjectID
  - dataType: RTIobjectId
  - Semantics: The RTI object instance ID of the entity platform object which transmitter embedded system is part of.
  - NOTE:Not optional

TxRx_Link_OnReq (Interaction)

Full Name: 0.TxRx_Link_OnReq
Module: OCEAN2020FOM_COMMCE_v1.1
Sharing: PublishSubscribe
Semantics: TxRxLink_obj creation request.
Notes:

Added Parameters:
- FrequencyHopping
  - dataType: FrequencyHertzUnsignedInteger64
  - Semantics: Hopping process selected center frequency of the radio transmissions.
  - NOTE:Not optional
- Rx_HostObjectID
  - dataType: RTIobjectId
  - Semantics: The RTI object instance ID of the entity platform object which receiver embedded system is part of.
  - NOTE:Not optional
- Tx_HostObjectID

dataType: RTIobjectId
Semantics: The RTI object instance ID of the entity platform object which transmitter embedded system is part of.
NOTE:Not optional

Basic Data Types

HLAinteger16BE

size: 16
interpretation: Integer in the range [-2^15, 2^15 - 1]
endian: Big
encoding: 16-bit twos complement signed integer. The most significant bit contains the sign.

HLAinteger32BE

size: 32
interpretation: Integer in the range [-2^31, 2^31 - 1]
endian: Big
encoding: 32-bit twos complement signed integer. The most significant bit contains the sign.

HLAinteger64BE

size: 64
interpretation: Integer in the range [-2^63, 2^63 - 1]
endian: Big
encoding: 64-bit twos complement signed integer first. The most significant bit contains the sign.

HLAfloat32BE

size: 32
interpretation: Single-precision floating point number
endian: Big
encoding: 32-bit IEEE normalized single-precision format. See IEEE Std 754-1985

HLAfloat64BE

size: 64
interpretation: Double-precision floating point number
endian: Big
encoding: 64-bit IEEE normalized double-precision format. See IEEE Std 754-1985

HLAoctetPairBE

size: 16
interpretation: 16-bit value
endian: Big
encoding: Assumed to be portable among devices.

HLAinteger16LE

size: 16
interpretation: Integer in the range [-2^15, 2^15 - 1]
endian: Little
encoding: 16-bit twos complement signed integer. The most significant bit contains the sign.

HLAinteger32LE

size: 32
interpretation: Integer in the range [-2^31, 2^31 - 1]
endian: Little
encoding: 32-bit twos complement signed integer. The most significant bit contains the sign.

HLAinteger64LE

size: 64
interpretation: Integer in the range [-2^63, 2^63 - 1]
endian: Little
encoding: 64-bit twos complement signed integer first. The most significant bit contains the sign.

HLAfloat32LE

size: 32
interpretation: Single-precision floating point number
endian: Little
encoding: 32-bit IEEE normalized single-precision format. See IEEE Std 754-1985

HLAfloat64LE

size: 64
interpretation: Double-precision floating point number
endian: Little
encoding: 64-bit IEEE normalized double-precision format. See IEEE Std 754-1985

HLAoctetPairLE

size: 16
interpretation: 16-bit value
endian: Little
encoding: Assumed to be portable among hardware devices.

HLAoctet

size: 8
interpretation: 8-bit value
endian: Big
encoding: Assumed to be portable among hardware devices.

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

HLAASCIIstring

dataType: HLAASCIIchar
cardinality: Dynamic
encoding: HLAvariableArray
semantics: ASCII string representation

HLAunicodeString

dataType: HLAunicodeChar
cardinality: Dynamic
encoding: HLAvariableArray
semantics: Unicode string representation

HLAopaqueData

dataType: HLAbyte
cardinality: Dynamic
encoding: HLAvariableArray
semantics: Uninterpreted sequence of bytes

HLAtoken

dataType: HLAbyte
cardinality: 0
encoding: HLAfixedArray
semantics:

HLAhandle

dataType: HLAbyte
cardinality: Dynamic
encoding: HLAvariableArray
semantics: Encoded value of a handle. The encoding is based on the type of handle

HLAtransportationName

dataType: HLAunicodeChar
cardinality: Dynamic
encoding: HLAvariableArray
semantics: String whose legal value shall be a name from any row in the OMT transportation table (IEEE Std 1516.2-2010)

HLAupdateRateName

dataType: HLAunicodeChar
cardinality: Dynamic
encoding: HLAvariableArray
semantics: String whose legal value shall be a name from any row in the OMT update rate table (IEEE Std 1516.2-2010)

HLAlogicalTime

dataType: HLAbyte
cardinality: Dynamic
encoding: HLAvariableArray
semantics: An encoded logical time. An empty array shall indicate that the values is not defined

HLAtimeInterval

dataType: HLAbyte
cardinality: Dynamic
encoding: HLAvariableArray
semantics: An encoded logical time interval. An empty array shall indicate that the values is not defined

HLAhandleList

dataType: HLAhandle
cardinality: Dynamic
encoding: HLAvariableArray
semantics: List of encoded handles

HLAinteractionSubList

dataType: HLAinteractionSubscription
cardinality: Dynamic
encoding: HLAvariableArray
semantics: List of interaction subscription indicators

HLAargumentList

dataType: HLAunicodeString
cardinality: Dynamic
encoding: HLAvariableArray
semantics: List of arguments

HLAobjectClassBasedCounts

dataType: HLAobjectClassBasedCount
cardinality: Dynamic
encoding: HLAvariableArray
semantics: List of counts of various items based on object class. In all MOM interactions that have a parameter of datatype HLAobjectClassBased- Counts, if an HLAobjectClassBasedCount element of the HLAobjectClassBasedCounts array would have a value (object class, 0), the HLAobjectClassBasedCount element shall not be present in the HLAobjectClassBasedCounts array. In other words, only HLAobject- ClassBasedCount elements that have positive counts shall be present in an HLAobjectClassBasedCounts array. From this, it follows that if all object class counts have a zero value, then the HLAobjectClass- BasedCounts array shall not have any elements in it; it shall be an empty HLAobjectClassBasedCounts array.

HLAinteractionCounts

dataType: HLAinteractionCount
cardinality: Dynamic
encoding: HLAvariableArray
semantics: List of interaction counts. In all MOM interactions that have a parameter of datatype HLAinteractionCounts, if an HLAinteractionCount element of the HLAinteractionCounts array would have a value (interaction class, 0), the HLAinteractionCount element shall not be present in the HLAinteractionCounts array. In other words, only HLAinteractionCount elements that have positive counts shall be present in an HLAinteractionCounts array. From this, it follows that if all interaction class counts have a zero value, then the HLAinteractionCounts array shall not have any elements in it; it shall be an empty HLAinteractionCounts array.

HLAsynchPointList

dataType: HLAunicodeString
cardinality: Dynamic
encoding: HLAvariableArray

semantics: List of names of synchronization points.

HLAsynchPointFederateList

dataType: HLAsynchPointFederate
cardinality: Dynamic
encoding: HLAvariableArray
semantics: List of joined federates and the synchronization status of each.

HLAmoduleDesignatorList

dataType: HLAunicodeString
cardinality: Dynamic
encoding: HLAvariableArray
semantics: List of designators of FOM modules.

RTIobjectId

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

RTIobjectIdArray

dataType: RTIobjectId
cardinality: Dynamic
encoding: HLAvariableArray
semantics: Set of IDs of registered object instances.

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.

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.

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.

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.

Float32Array1Plus

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

Integer16Array1Plus

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

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.

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.

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.

MarkingArray31

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

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).

VariableDatumStructLengthlessArray

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

AntennaPatternVariantStructLengthlessArray

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

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.

SignalDataLengthlessArray1Plus

dataType: Octet
cardinality: [1..2147483647]

encoding: RPRlengthlessArray
semantics: The audio or digital data conveyed in a radio transmission.

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)

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)

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

AttributeValuePairStructArray1Plus

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

DatumIdentifierLengthlessArray

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

FixedDatumStructLengthlessArray

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

RecordSetStructArray1Plus

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

RecordStructArray

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

VariableDatumStructArray

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

ShaftDataStructLengthlessArray1Plus

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

SupplyStructLengthlessArray

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

FundamentalParameterDataStructLengthlessArray

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

DepthMeterFloat32LengthlessArray

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

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

PerimeterPointStructLengthlessArray

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

TemperatureDegreeCelsiusFloat32LengthlessArray

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

MarkingArray11

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

PropulsionSystemDataStructLengthlessArray

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

VectoringNozzleSystemDataStructLengthlessArray

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

Simple Data Types

HLAASCIIchar

representation: HLAoctet
units: NA
resolution: NA
accuracy: NA
semantics: Standard ASCII character (see ANSI Std x3.4-1986)

HLAunicodeChar

representation: HLAoctetPairBE
units: NA
resolution: NA
accuracy: NA
semantics: Unicode UTF-16 character (see The Unicode Standard, Version 3.0)

HLAbyte

representation: HLAoctet
units: NA
resolution: NA
accuracy: NA
semantics: Uninterpreted 8-bit byte

HLAcount

representation: HLAinteger32BE
units: NA
resolution: NA
accuracy: NA
semantics: NA

HLAseconds

representation: HLAinteger32BE
units: s
resolution: NA
accuracy: NA
semantics: NA

HLAmsec

representation: HLAinteger32BE
units: ms
resolution: NA
accuracy: NA
semantics: NA

HLAnormalizedFederateHandle

representation: HLAinteger32BE
units: NA
resolution: NA
accuracy: NA
semantics: The type of the normalized value of a federate handle as returned by the Normalize Federate Handle service. The value is appropriate for defining the range of the HLAfederate dimension for regions with this dimension.

HLAindex

representation: HLAinteger32BE
units: NA
resolution: NA
accuracy: NA
semantics: NA

HLAinteger64Time

representation: HLAinteger64BE
units: NA
resolution: 1
accuracy: NA
semantics: Standardized 64 bit integer time

HLAfloat64Time

representation: HLAfloat64BE
units: NA
resolution: 4.9E-308
accuracy: NA
semantics: Standardized 64 bit float time

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: Datatype for quantity angle, based on unit degree (of arc), unit symbol °.

AngleRadianFloat32

representation: HLAfloat32BE
units: radian (rad)
resolution: NA
accuracy: NA
semantics: Datatype for quantity 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.

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: Datatype for quantity 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: Datatype for quantity frequency, based on SI derived unit hertz, unit symbol Hz.

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: Datatype for quantity length, based on SI base unit meter, unit symbol m.

MassKilogramFloat32

representation: HLAfloat32BE
units: kilogram (kg)
resolution: NA
accuracy: NA
semantics: Datatype for quantity 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.

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: Abbreviation for the power ratio in decibels (dB) of a measured power referenced to 1 milliwatt (mW).

RevolutionsPerMinuteInteger16

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

TemperatureDegreeCelsiusFloat32

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

TimeMicrosecondFloat32

representation: HLAfloat32BE
units: microsecond
resolution: NA
accuracy: NA
semantics: Datatype for quantity 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: Datatype for quantity time, based on SI base unit second, expressed in millisecond, unit symbol ms.

TimeSecondInteger32

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

TimestampUnsignedInteger32

representation: RPRunsignedInteger32BE
units: 1.676 microsecond
resolution: 1
accuracy: perfect
semantics: The scale of the time value contained in the most significant 31 bits of the timestamp shall be determined by setting one hour equal to (2^31-1), thereby resulting in each time unit representing 3600 s/(2^31-1) = 1.676 microsecond.

UnsignedInteger16

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

UnsignedInteger32

representation: RPRunsignedInteger32BE
units: NA
resolution: 1
accuracy: perfect
semantics: Integer in the range [0, 2^32].

UnsignedInteger64

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

UnsignedInteger8

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

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.

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.

FrequencyHertzUnsignedInteger64

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

SpeedChangeRateRPMPerSecondInteger16

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

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.

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.

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

RevolutionsPerMinuteFloat32

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

VelocityDecimeterPerSecondInteger16

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

BitRateData

representation: HLAfloat32BE
units: Kbps
resolution: N/A
accuracy: N/A
semantics: N/A