OCEAN2020FOM_SENSORS_v1.0

Version: 1.0
Last Update: 2020-10-19
Security Classification: Unclassified

Description:

OCEAN2020 HLA EVOLVED FOM definition for sensors simulation.

Generated by the MAK FOM Editor
Date: Thu Oct 22 2020 17:02:08 GMT+0200 (W. Europe Daylight Time)

Module Data

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Type:	FOM
Version:	1.0
Modification Date:	2020-10-19
Security Classification:	Unclassified
Release Restrictions:	European Defence Agency - OCEAN2020 Project Beneficiaries
Use Limitiations:	European Defence Agency - OCEAN2020 Project Beneficiaries
Purpose:	OCEAN2020 HLA EVOLVED sensors FOM module revision 1.0.
Application Domain:	Maritime
Description:	OCEAN2020 HLA EVOLVED FOM definition for sensors simulation.
Use History:	--NONE--
Other:	

HLAobjectRoot (Object)

Full Name: .HLAobjectRoot
Module: OCEAN2020FOM_SENSORS_v1.0
Sharing: Neither
Semantics:
Notes:

Added Attributes: This object adds no attributes

HLAinteractionRoot (Interaction)

Full Name: .HLAinteractionRoot
Module: OCEAN2020FOM_SENSORS_v1.0
Sharing: Neither
Semantics:
Notes:

Added Parameters: This object adds no parameters

SensorSettings (Interaction)

Full Name: 0.SensorSettings
Module: OCEAN2020FOM_SENSORS_v1.0
Sharing: PublishSubscribe
Semantics: Sensor settings interaction to update 3D sensor visualization
Notes:

Added Parameters:

ConfigName
- dataType: HLAASCIIstring
- Semantics: sensor config section name string, this value is an unique identifier to map sensor settings references.
- NOTE:Note has broken link!

Mode
- dataType: SensorMode
- Semantics: sensor mode to be activated
- NOTE:Note has broken link!

BlackHot
- dataType: RPRboolean
- Semantics: enable/disable black hot; valid only for IR mode
- NOTE:Note has broken link!

Blur
- dataType: RPRboolean
- Semantics: enable/disable blur

BlurLevel
- dataType: Float32
- Semantics: Blur level value range [0.00;1.00]; valild only if Blur is enabled

Noise
- dataType: RPRboolean
- Semantics: enale/disable noise

NoiseLevel
- dataType: Float32
- Semantics: Noise level value range [0.00;10.00]; valild only if Noise is enabled

ManualGainControl
- dataType: RPRboolean

Semantics: enable/disable manual gain controls

Contrast
dataType: Float32
Semantics: Contrast value range [0.00;1.00]; valid only if ManualGainControl is enabled

Brightness
dataType: Float32
Semantics: Brightness value range [0.00;1.00]; valid only if ManualGainControl is enabled

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

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