

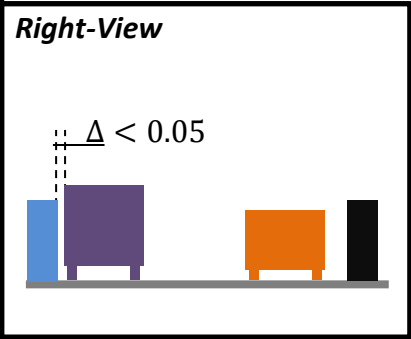
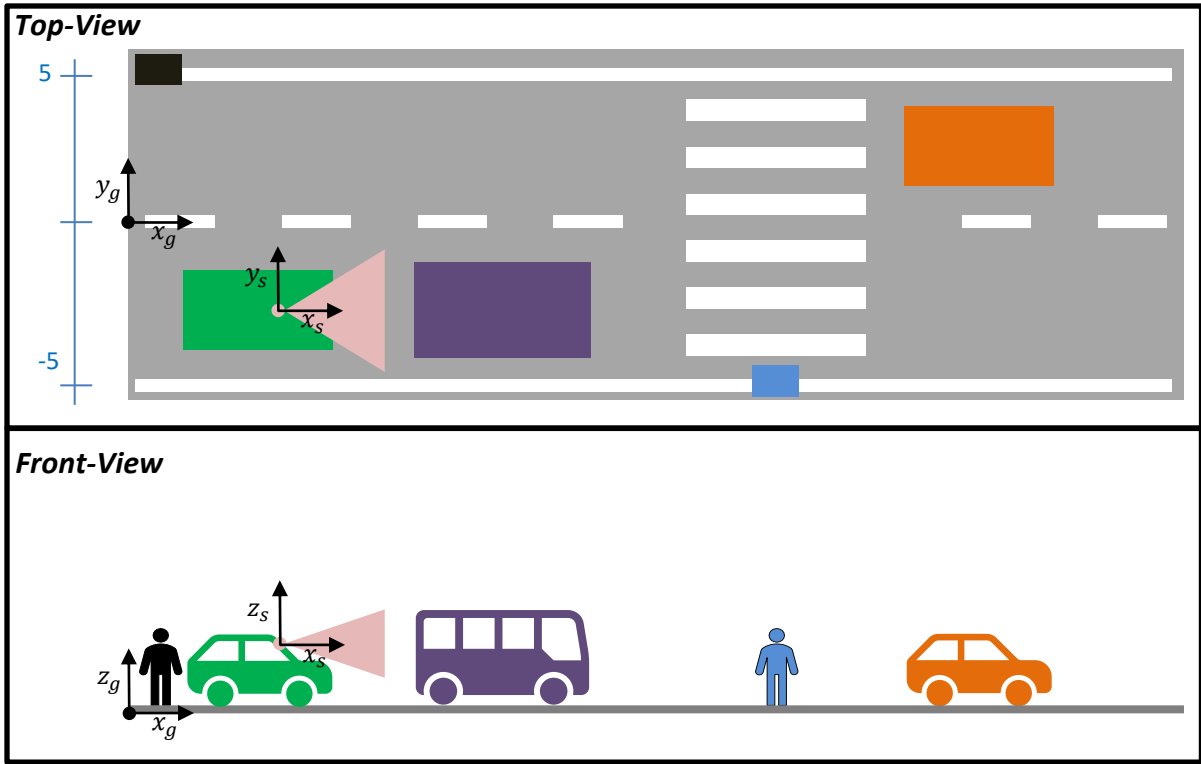
OSI Messages Overview

Dr. techn. Kmeid Saad,
Principal Application Engineer EMEA

Kmeid.saad@ansys.com



OSI3::GroundTruth / SensorView / SensorViewConfiguration / SensorData



Assumptions:

1. *osi3::SensorViewConfiguration*: (relevant for *SensorView*)
 1. range: 80 [m]
 2. *field_of_view_vertical* = xx [rad]
 3. *field_of_view_horizontal* = xx [rad]
 4. *osi3::MountingPosition* (ISO 8855 – Veh. Coordinate)
 - orientation = xx.xx [rad]
 - position = xx.xx [m]
 5. *osi3::Identifier* = xx [-]

Sensor Model Description (relevant for *SensorData*)

1. *osi3::CameraSensorViewConfiguration*
 - *mounting_positon* (x_s, y_s, z_s , orientation)
 - *field_of_view_vertical*
 - *field_of_view_horizontal*
 - ...
2. When lateral offset between two detected objects inside the field of view is less than 0.05 [m] the sensor only considers the largest object. (relevant for *OSI::SensorData*)

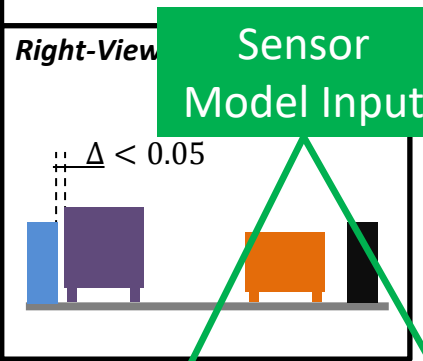
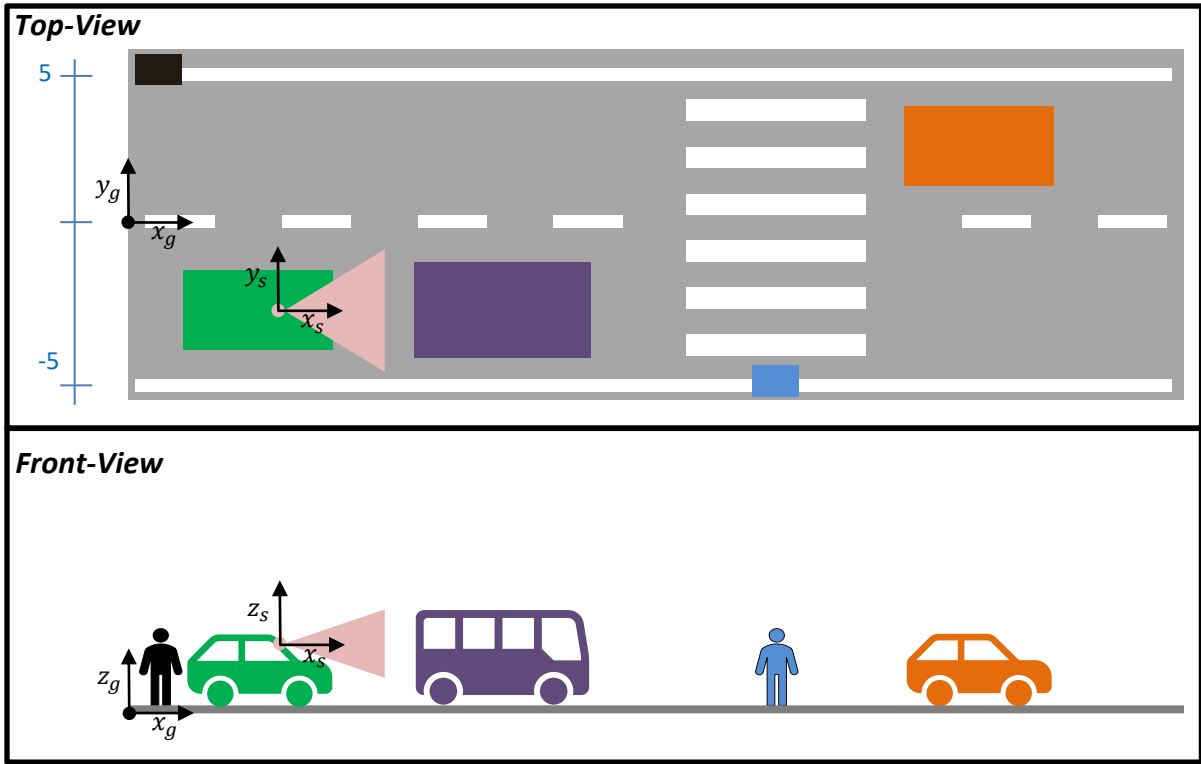
Legend:
 x_g, y_g, z_g : global coordinate system axis, represent the World Frame (could be anywhere).

x_s, y_s, z_s : Virtual mounting position of the sensor, sensor coordinate system, defined relative to the vehicles frame's origin (center of rear axis) ISO 8855.

	OSI:GroundTruth (x_g, y_g, z_g)					OSI:SensorView (global_ground_truth)					OSI:SensorView (camera_sensor_view, image)					OSI:SensorData (x_s, y_s, z_s) (detected_moving_objects)				
Obj.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
x	20	2	50	90	110	20	x	50	90	x	x	x	29	69	x	x	x	29	x	x
y	-2.5	5	-2.5	-5	2.5	-2.5	x	-2.5	-5	x	x	x	0	-2.5	x	x	x	0	x	x
Nr.	5					3					2					1				



OSI3::GroundTruth / SensorView / SensorViewConfiguration / SensorData



Assumptions:

- osi3::SensorViewConfiguration: (relevant for SensorView)
 - range: 80 [m]
 - field_of_view_vertical = xx [rad]
 - field_of_view_horizontal = xx [rad]
 - osi3::MountingPosition (ISO 8855 – Veh. Coordinate)
 - orientation = xx.xx [rad]
 - position = xx.xx [m]
 - osi3::Identifier = xx [-]

Note (*mounting_position_rmse* is also included in GenericSensorViewConfiguration)

Sensor Model Description (relevant for SensorData)

- osi3::GenericSensorViewConfiguration
 - mounting_position (x_s, y_s, z_s)
 - field_of_view_vertical
 - field_of_view_horizontal
 - ...
- When lateral offset between two detected objects inside the field of view is less than 0.05 [m] the sensor only considers the largest object. (relevant for OSI:SensorData)

Legend:
 x_g, y_g, z_g : global coordinate system axis, represent the World Frame (could be anywhere).

x_s, y_s, z_s : Virtual mounting position of the sensor, sensor coordinate system, defined relative to the vehicles frame's origin (center of rear axis) ISO 8855.

	OSI:GroundTruth (x_g, y_g, z_g)					OSI:SensorView (global_ground_truth)					OSI:SensorView (camera_sensor_view, image)					OSI:SensorData (x_s, y_s, z_s) (detected_moving_objects)				
Obj.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
x	20	2	50	90	110	20	x	50	90	x	x	x	29	69	x	x	x	29	x	x
y	-2.5	5	-2.5	-5	2.5	-2.5	x	-2.5	-5	x	x	x	0	-2.5	x	x	x	0	x	x
Nr.	5					3					2					1				



OSI Project Proposal 2020

