



AUTOMOTIVE-GRADE PERCEPTION SOFTWARE

Innoviz's advanced perception software turns the InnovizOne LiDAR's raw point cloud data into perception outputs. The outputs can serve as a standalone, functionally safe perception software, or can be integrated into the vehicle's existing perception stack at different levels to support various sensor fusion architectures.

Innoviz's software leverages the rich data derived from InnovizOne, coupled with proprietary state-of-the-art AI algorithms, to provide superior scene perception and deliver an automotive-grade ASIL B(D) solution.

UNIQUE FEATURES



OBJECT
DETECTION,
CLASSIFICATION
& TRACKING



OBSTACLE
DETECTION &
TRACKING



PIXEL COLLISION
CLASSIFICATION



LANDMARK &
LANE MARKING
DETECTION,
CLASSIFICATION
& TRACKING



END-OF-LINE &
CONTINUOUS
ONLINE EXTRINSIC
CALIBRATIONS

ASIL B(D)

COMPLIANT WITH
ISO 26262

SCENE PERCEPTION

Object Detection, Classification and Tracking	Appearance & movement - based detection, classification and tracking
Obstacle Detection and Tracking	Detection and tracking of stationary entities that are “collision-relevant” in the drivable area
Pixel Collision Classification	Frame-by-frame segmentation of each pixel in the point cloud as either collision-relevant or not collision-relevant

LOCALIZATION

Lane Marking Detection, Classification and Tracking	Detection, classification and tracking of various types of road lane markings
Landmarks Detection and Tracking	Detection and tracking of landmarks, such as large planes, vertical lines, and horizontal lines, for map-based localization

EXTRINSIC SENSOR CALIBRATION

Target-based Extrinsic Calibration	End-of-line target-based calibration between the sensor and the vehicle's coordinate system to compensate for mounting errors
Continuous Extrinsic Calibration	Continuous estimation of the difference between the sensor and the vehicle's coordinate system to compensate for changing loading conditions and misalignment

FUSA - ASIL B(D) PERCEPTION OUTPUTS

ISO 26262	The processes and procedures used to design, develop, verify, validate, and maintain the LiDAR hardware, firmware and perception software conform with ISO 26262 and are rated ASIL B(D)
ASPICE	Development at ASPICE Level 2 standards