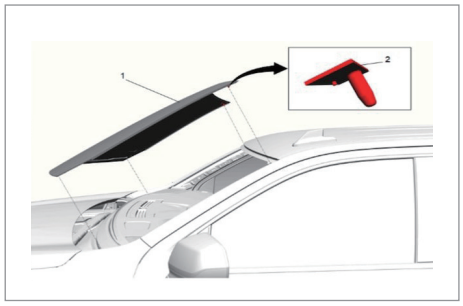
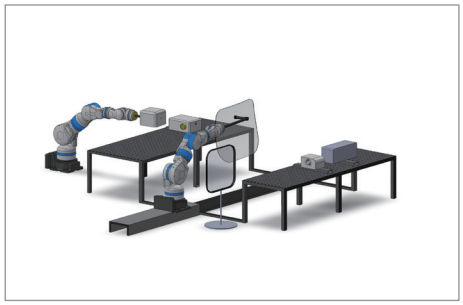
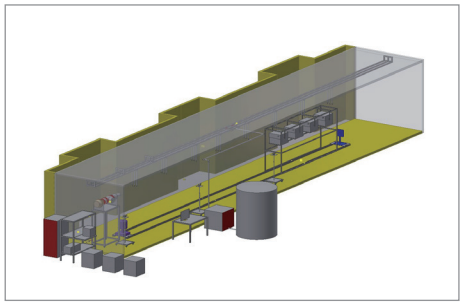
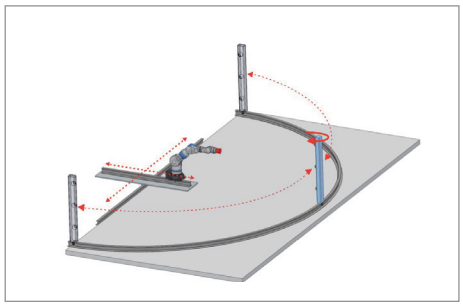
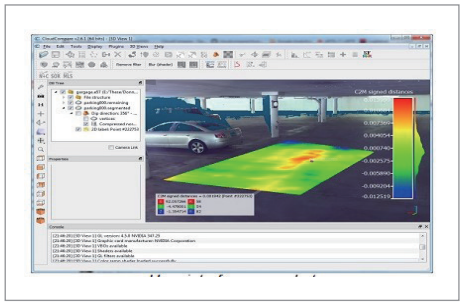
Automotive Perception Sensor Performance Evaluation System











Features

- Collaborative Robot-Based Automated Measurement
- Automatic Sequencing and Repetition Functions
- Automated Data Integration and Real-Time Analysis

Test Field	Evaluation Items	Details
Vehicle LiDAR Cover & Windshield Reflectance	Spectral Characteristics Analysis	- Measurement of broadband (800–1700 nm) transmittance and reflectance - Evaluation of wavelength response characteristics by coating material (AR, filter, etc.)
	Laser Beam Characteristics Analysis	- Measurement of beam divergence changes (widening, focusing) - Quantification of beam shape deformation - M^2 beam quality evaluation (assessment of focusing ability degradation)
	Point Cloud Analysis	- Analysis of point cloud changes depending on windshield presence, shape, and material - Quantification of accuracy degradation and recognition rate changes
	Performance by Incidence Angle of Cover Glass & Windshield	Adjustment of LiDAR or windshield to various angles using a collaborative robot to measure performance variations
Vehicle LiDAR Distance Performance	Range	Measurement of minimum/maximum detectable distance of the LiDAR
	Accuracy	Verification of error between measured and actual distances
	Precision	Analysis of deviation in repeatedly measured distances
	Resolution	Determination of the smallest distinguishable distance unit
Vehicle LiDAR Angular Performance	Range	Maximum/minimum horizontal and vertical angle difference
	Accuracy	Measurement of error between LiDAR-collected angle values and actual target angles
	Precision	Analysis of angular deviation in repeated measurements from the same position
	Resolution	Quantification of the smallest distinguishable angular unit
Environmental Detection Performance	Climatic Environment Testing	Demonstration testing of detection performance under temperature/humidity, rainfall, snowfall, fog, and sunlight conditions