

LeddarEcho

High-Fidelity Component-Level Model for Sensor Simulation



LeddarEcho™ Simulation Software provides a high-fidelity model of the XLRator™ automotive front LiDAR. This unique high-precision simulation tool enables LiDAR developers and Tier 1-2 suppliers to accelerate both sensor and perception development. LeddarEcho significantly reduces the R&D cycles, optimization and validation time of LiDAR sensors based on the LeddarEngine™ and supports the development of related advanced driver assistance systems (ADAS) and autonomous driving (AD) applications.

LeddarEcho is developed in partnership with dSPACE, which simulates the driving environment with its AURELION software. LeddarEcho can also operate with other environment simulators.

Key Features

- Software-in-the-loop (SiL) simulation
- Open application programming interface (API)
- Modeling at submodule (component) level
- High-fidelity LiDAR model

Key Applications

- Sensor development
 - Concept simulation
 - Module simulation
 - Requirement clarifications
- Perception development
 - Data generation
 - Sensor selection
 - Platform architecture

Limited release available soon. Full LeddarEcho product release: Fall 2022.

How It Works

With its flexible open API, LeddarEcho™ is integrated into the environment simulation software and provides a replica of the sensing solution’s building blocks. The high-fidelity model is then used to assess the performance of the sensor in different conditions, while LiDAR concept designs and architectures can also be tested.

At the system level, LeddarEcho can be utilized in different phases of perception development. System architects can use it to choose between different sensors while also finalizing the way the sensor will be installed on the vehicle. Once the sensor and its location are finalized, LeddarEcho will be instrumental in generating synthetic data needed to train and assess the perception module. This will enrich the data and further save on the time and effort spent on data collection and annotation. Having a high-fidelity model of the sensor enables engineering teams to take earlier leaps in software development while the hardware platform goes through design, integration and calibration.



Quality data is valuable and expensive. A physically accurate simulation of the sensor through LeddarEcho accelerates the early stages of LiDAR development, while further saving valuable time for reproducing the challenging use cases needed to assess sensor design and performance.

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