COSOMOsim: Next Generation Automotive Sensor Simulator Framework

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Abstract:

Recently autonomous driving development speed up using various simulation, however there are few dedicated simulator tools for various sensor which detect, measure objects. And most simulators didn't enable to faithfully reproduce actual Radar, LIDAR and the other sensor. COSMOsim is the only high accuracy sensor simulator, is developed by based on from radar electrical design to system level hardware/software. This presentation describes regarding what is genuine sensor simulation for autonomous driving simulation.

Biography:

TAKAHIRO YANAGI from OTSL Inc. Japan. In 1991, he joined DENSO research Laboratory, HONDA R&D, YAMAHA Research Center, SILVACO, Mitusi, ANSYS (former ANSOFT), Siemens Wireless module, PI research LABO, LLC, OTSL Inc. Currently, he is working for Highly precision sensor simulator development for Autonomous driving, and his concern is modeling, simulation from semiconductor level to Autonomous System level modeling for Autonomous driving era. His experiences are High Speed Analog/Mixed signal design and simulation, F1 EMS system development, Electric throttle control system development using GA and Neural networks, SDR (Software Defined Radio) Project for mobile phone and Base station, High Speed Broad casting device, system development using FM modulation, development for the world's first transient noise simulator using Mote Carlo, M2M Automotive project, Power Semiconductor modeling for SiC, power system design and modeling EV/PHV, and The World's first millimeter-wave radar

simulator, and LIDAR simulator, Camera simulator, Far-IR sensor simulator, Ultrasonic simulator which are called by COSMOsim Framework.

Publication of speakers:

1. Takahiro Yanagi et al; Millimeter wave radar Simulator using 3DCG high precision map including reflectivity of millimeter wave

2. Takahiro Yanagi et al ; Develop Optical Simulator for LCD

3. Takahiro Yanagi et al; Interference of chirp sequence radars by OFDM radars at 77 GHz, Conference Paper, Mar 2017

4. Takahiro Yanagi et al; Stepped-Carrier OFDM-Radar Processing Scheme to Retrieve High-Resolution Range-Velocity Profile at Low Sampling Rate Sep 2017

5. Takahiro Yanagi et al; High Range and Doppler Resolution by Application of Compressed Sensing Using Low Baseband Bandwidth OFDM Radar, Jun 2018

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