



# Transforming the Realism and Usability of Driving Simulation



**DSC 2023 EUROPE** VR

Driving Simulation & Virtual Reality  
Conference & Exhibition

Antibes

September 6<sup>th</sup> – 8<sup>th</sup> 2023

rFpro has been the industry leading  
driving simulation software since 2007

since **2007**

Model the **real world**

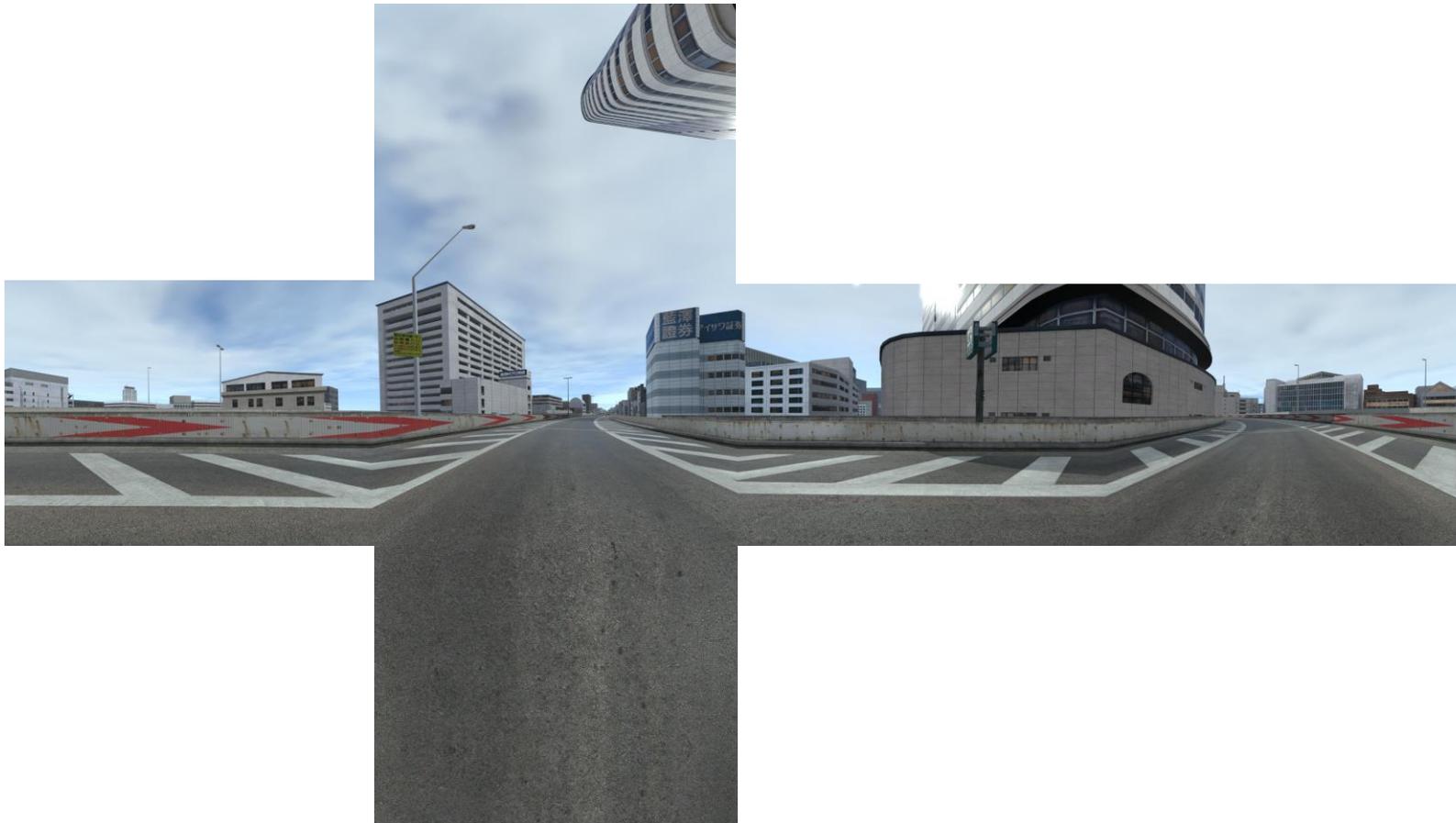
Allow you to **interact** with that world

**Scale** testing & training **data, massively**

# Driver in the Loop

# Driver in The Loop

- HDR10 compatible displays
- Varjo headset support
- 360° playback videos for VR



# Proving Grounds



# Public Roads



# Testing & Race Circuits



# Parking Locations



# Los Angeles

65km drivable road loop

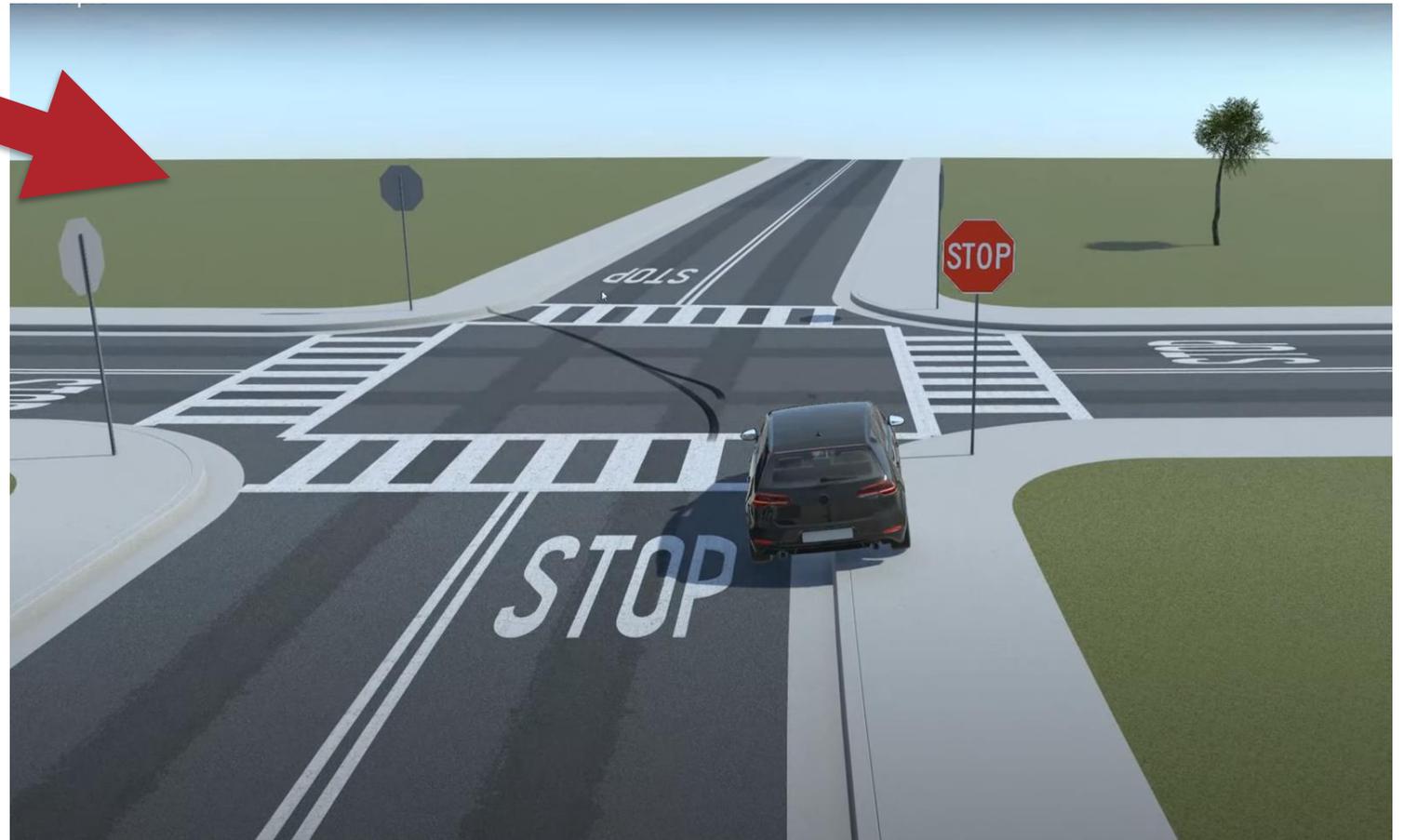
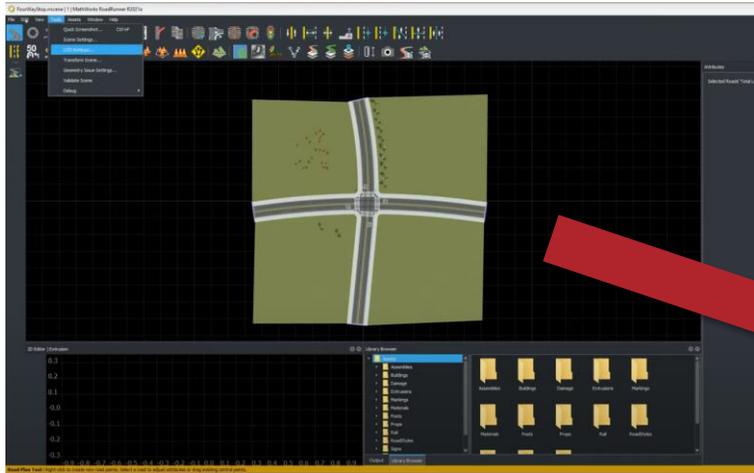


**15 Private Proving Grounds**

for

**11 Different OEMs / Tier 1s**

# MathWorks RoadRunner rFpro Export

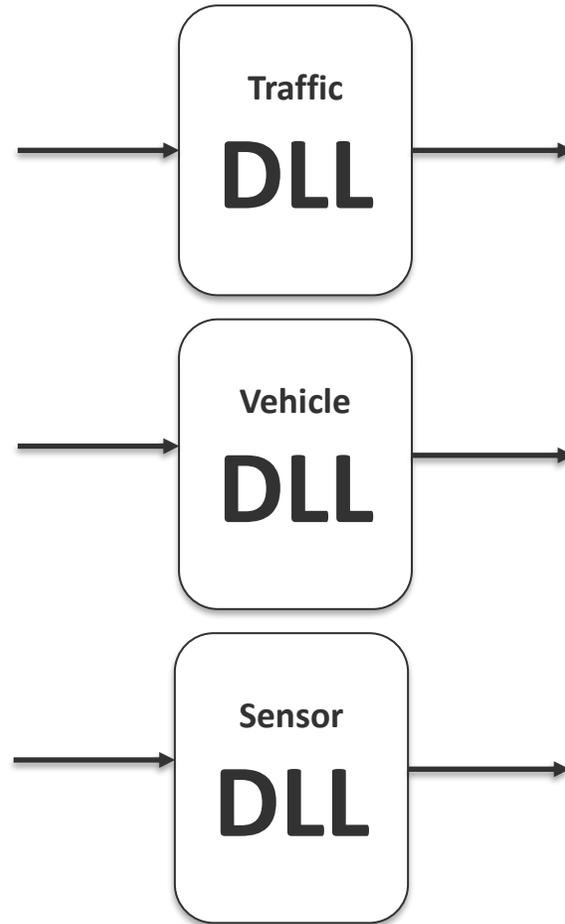


# Automotive & ADAS

# Live Object Visibility Control



# Traffic Simulink Traffic Plugin



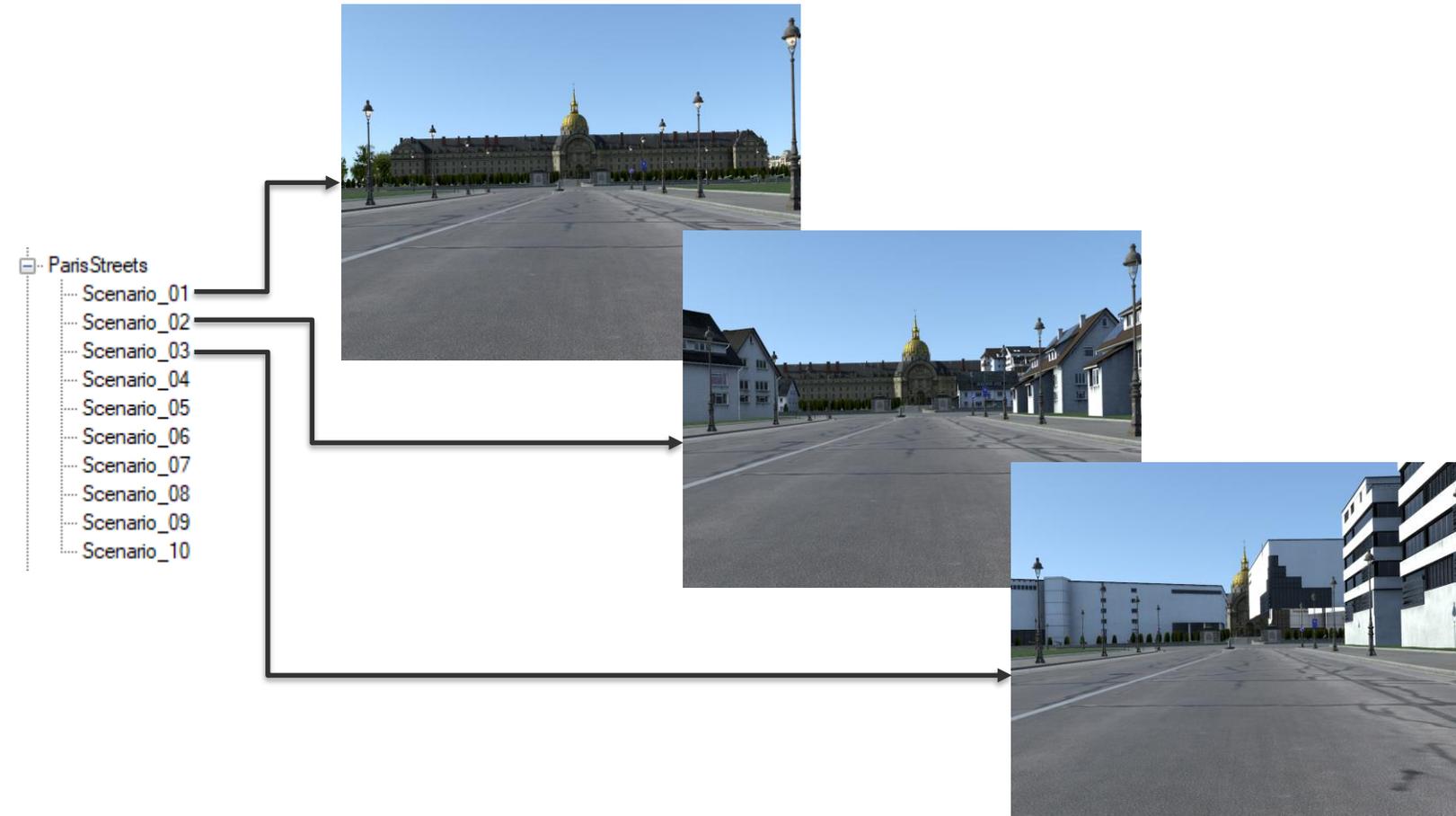
# Scene Variations – Python Scripted Objects

**Diverse Object Library  
& user expandable!**



**Scene Editing API  
in Python**

# Preconfigured Scenes



# Advanced Lighting

Hi-Def headlight & street lighting profiles

Using industry standard IES definitions



Driver In the Loop  
& Training Data  
quality improvements



**Orientation**



**Position**



**Live Control**

**Intensity**



**Colour**



0.1 degrees resolution

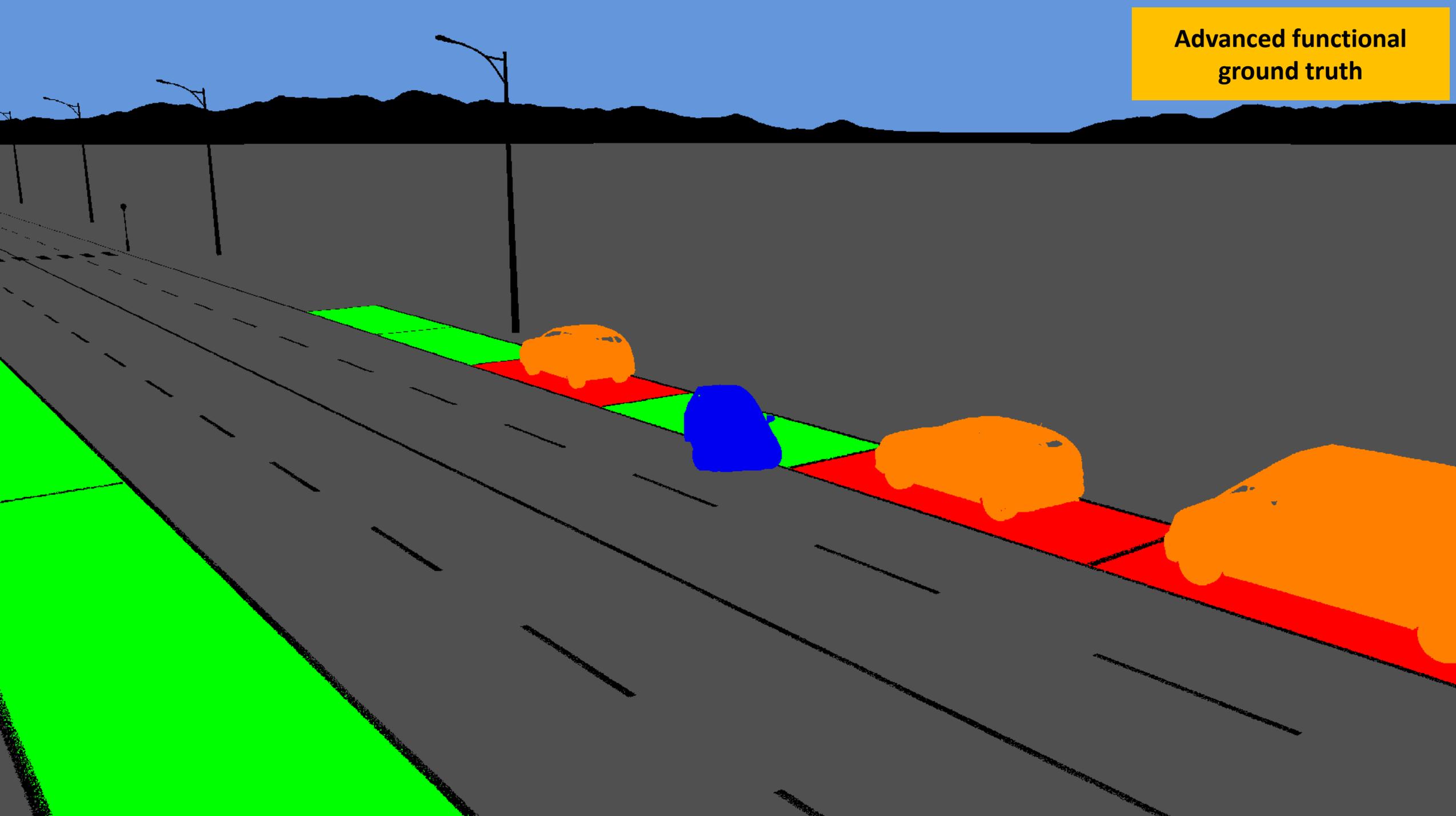


# Training Data Generation

LED flicker simulation

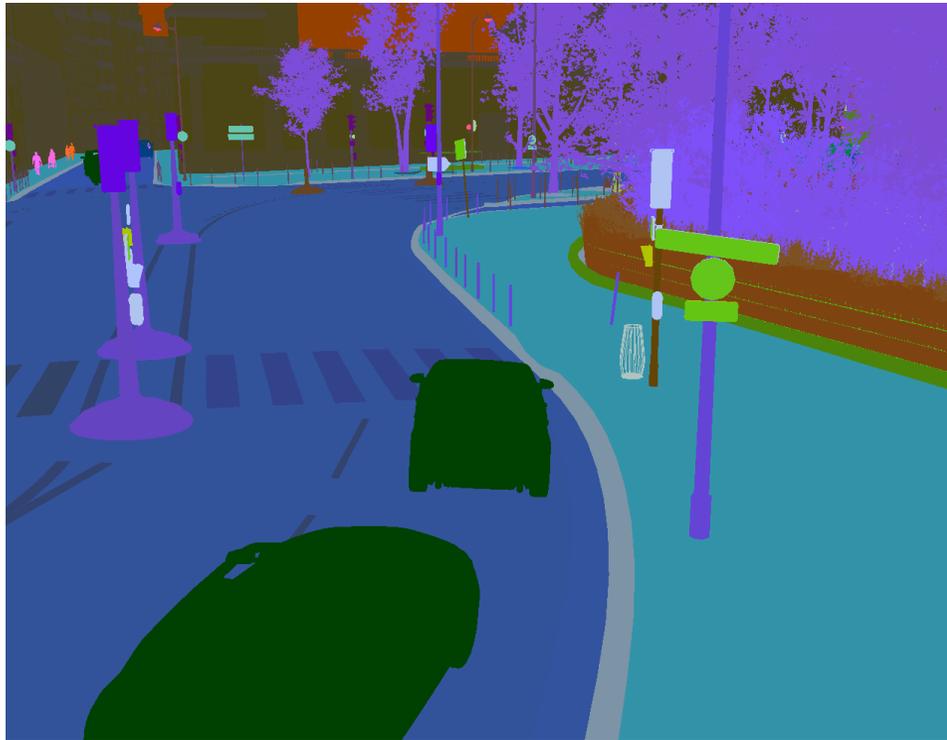


Advanced functional  
ground truth

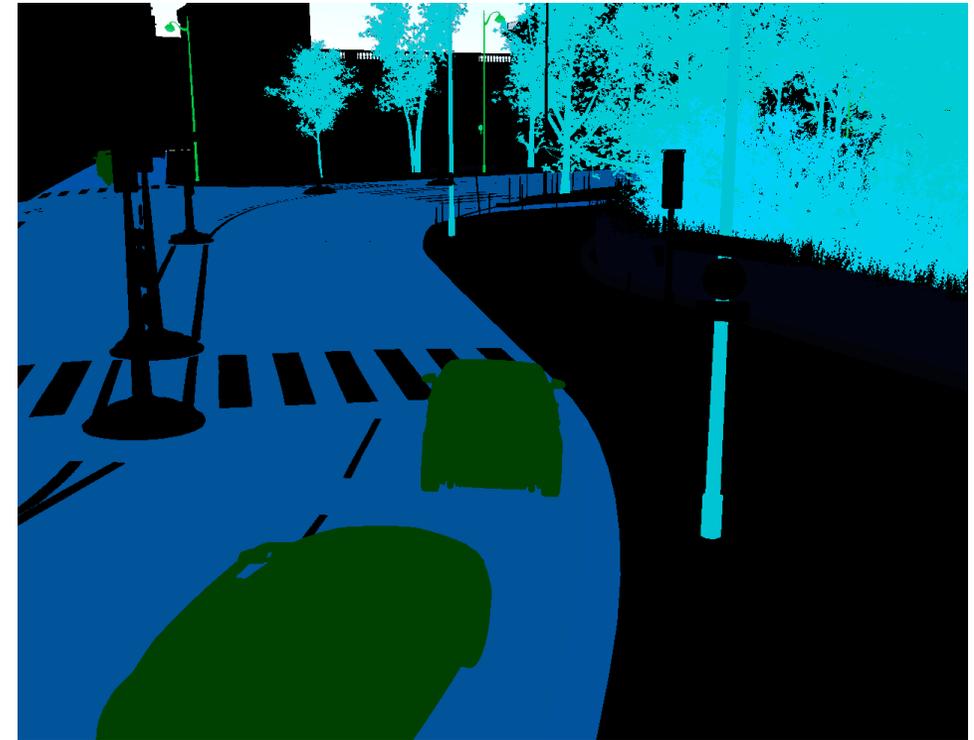


# Ground Truth Classification

**Sensor 1**



**Sensor 2**



Fully ray traced  
simulation



## Sony Semiconductor Solutions' sensor models integrated into rFpro

“The collaboration between rFpro and Sony Semiconductor Solutions will provide an automotive-grade End2End perception simulation pipeline to the ADAS perception system developers.

Sony has prepared a sensor model based on the internal architecture of the image sensors used in camera systems to achieve automotive-grade fidelity”



Kenji Onishi

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Thank you

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