Road Surface Modeling and Services

OpenCRG

PolyExplore's OpenCRG service provides a highly detailed representation of road surfaces, capturing features, elevation, curvature and other fine details with exceptional accuracy. Examples of these features include cobblestones, potholes and speed bumps. OpenCRG road surface simulation can partially replace road testing, shortening the development cycle for automotive components. Its realistic 3D road surface modeling makes it ideal for high-precision applications such as automotive vehicle simulations, road maintenance planning, detailed mapping and more.

As one of the few providers with both the technology to collect this data and the expertise to process it, PolyExplore offers tailored OpenCRG data processing solutions to meet the specific needs of our clients. Additionally, we can seamlessly incorporate OpenCRG into OpenDRIVE, enhancing the basic road network layout with detailed road surface features and elevating the realism of driving simulations.

FEATURES

- Advanced data acquisition and processing capabilities
- Millimeter-level road surface modeling
- Support ASCII and binary OpenCRG formats
- Road information extraction and feature identification
- Point cloud density of 2 mm, grid size 2 - 5 mm
- Expertise in long-distance and circular OpenCRG roads
- Compatible with multiple automotive software, e.g., CarMaker, VTD, Adams, etc.
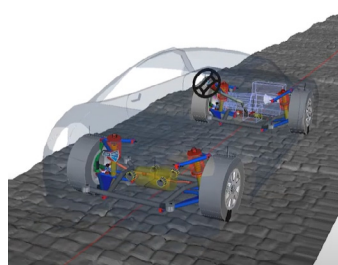

Cobblestone Road

Washboard Road

APPLICATIONS

- Digital Twin
- Pavement Damage Assessment
- Road Rescontruction Design
- Vehicle Dynamics Testing
- High-Fidelity Road Mapping
- Tire / Vibration/ Suspension / Driving Simulation

Vehicle Dynamics

Driving Simulation

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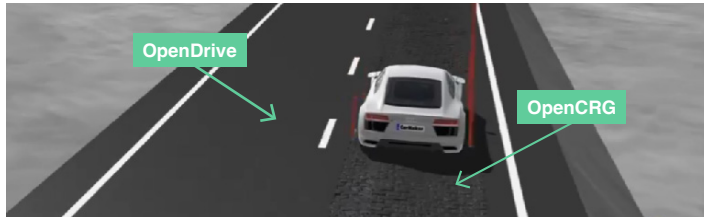**Visit polyexplore.com for more information.**

High-Performance, Cost-Effective Navigation & Mapping Solutions.
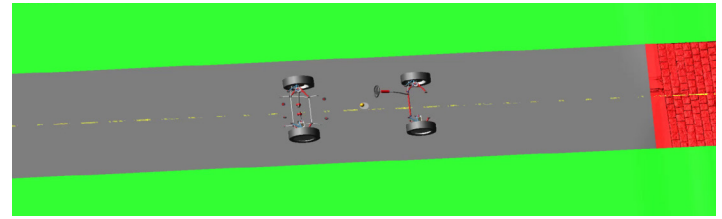
PolyExplore Inc.

2210 O'Toole Ave, San Jose, CA 95131
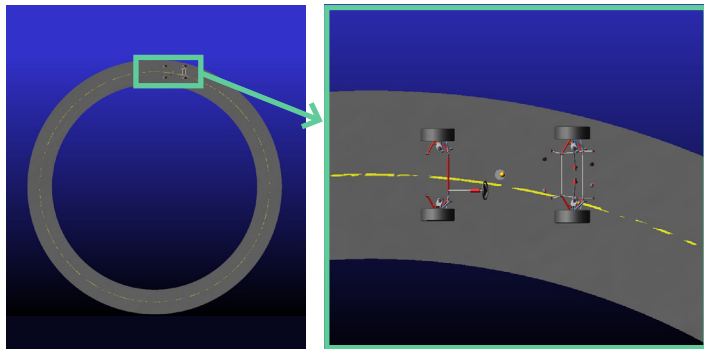contact@polyexplore.com

REV. 1.00

USER CASES

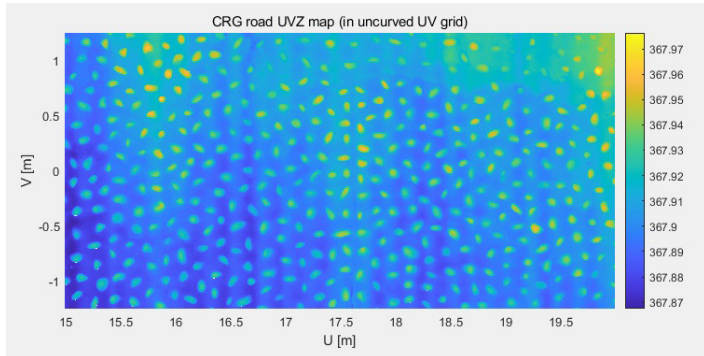*CarMaker Simulation with OpenDRIVE & OpenCRG Integration*
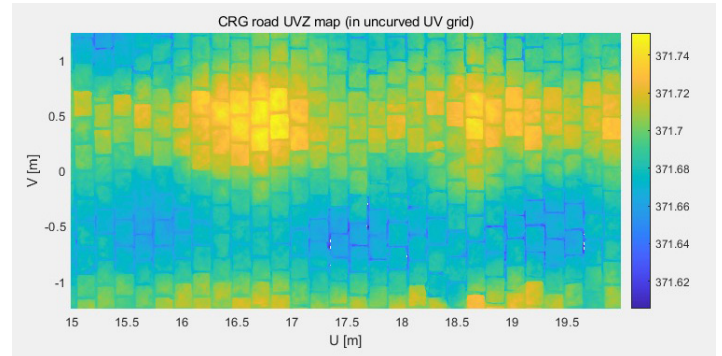

Adams Simulation

Circular OpenCRG

Road Surface	Point Cloud	Average Error (m)	Standard Deviation (m)
Cobblestone Road	#193 Point Cloud	0.000445	0.001023
	#194 Point Cloud	0.000552	0.000731
	#195 Point Cloud	0.000578	0.00068
	#196 Point Cloud	0.00058	0.000667
	#197 Point Cloud	0.000608	0.000964
Twist Road	#230 Point Cloud	0.000423	0.000353
	#231 Point Cloud	0.000422	0.000837
	#232 Point Cloud	0.000435	0.001423
	#233 Point Cloud	0.00045	0.001676
...	...	...	...
Total (Average)		0.000521976	0.000741756

Please contact us at contact@polyexplore.com for the full table details
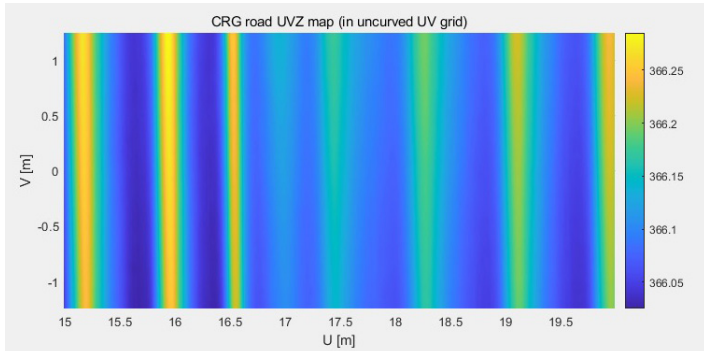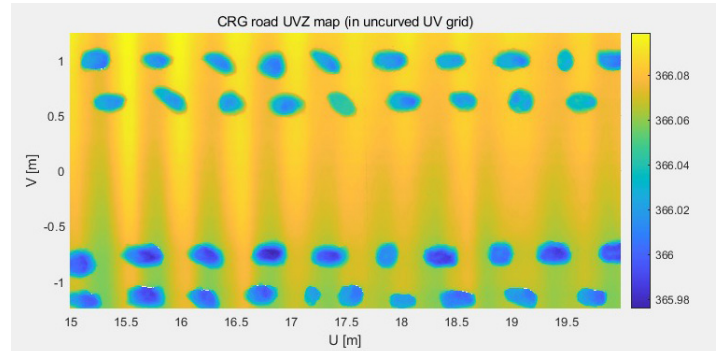
Belgian Block Road

Cobblestone Road

Washboard Road

Road with Pit Holes

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