Release 8.0 Highlights
New Features in a Nutshell
MODEL. SIMULATE. ANALYZE.

RELEASE 8.0
Simscape Support
Simulink library for physical systems simulation

CarMaker for Simulink

CarMaker with Simulink plug-in

Build
Simulate
Convert
Share

CarMaker
Simulink
Simscape
Scenario Editor
Keyboard shortcuts

See tool tips for help.

Road segment
<Alt-r>
Scenario Editor
Keyboard shortcuts

See tool tips for help.

3D preview
<Ctrl-p>
Scenario Editor
Keyboard shortcuts

Press multiple times to cycle through options.
Scenario Editor
Keyboard shortcuts

Press multiple times to cycle through options.
Scenario Editor
Keyboard shortcuts

Press multiple times to cycle through options.
Scenario Editor
Keyboard shortcuts

Press multiple times to cycle through options.
Scenario Editor
Keyboard shortcuts

Press multiple times to cycle through options.

Alt R
Scenario Editor
Keyboard shortcuts

Press multiple times to cycle through options.
Scenario Editor
Keyboard shortcuts

Press multiple times to cycle through options.
Scenario Editor
Keyboard shortcuts

Press multiple times to cycle through options.
Combine shortcuts to accelerate your workflow.
Scenario Editor
Keyboard shortcuts

Combine shortcuts to accelerate your workflow.
Scenario Editor
Keyboard shortcuts

Combine shortcuts to accelerate your workflow.
Scenario Editor

Keyboard shortcuts

Combine shortcuts to accelerate your workflow.
Scenario Editor
Keyboard shortcuts

Combine shortcuts to accelerate your workflow.
Scenario Editor

Undo
Scenario Editor

Undo
Scenario Editor

Undo
Scenario Editor

Undo

Last steps
[12:45:45] Add Segment: Turn right
[12:45:39] Delete Segment
[12:45:35] Add Segment: Turn left
New Traffic Signs
Austria package
New Traffic Signs
Austria package
NEW 3D MODELS
STREET FURNITURE
IPGMovie
3-D object catalog
IPGMovie

3-D object catalog
IPGMovie

Fisheye distortion from external file
New Sensor Model
Lidar RSI
Lidar RSI
Overview

Ideal ➤ Perfect world
Lidar RSI
Overview

Ideal ➡️ Perfect world

HiFi ➡️ False positives & negatives
Lidar RSI
Overview

Ideal ➤ Perfect world

HiFi ➤ False positives & negatives

RSI ➤ Raw data

Lidar

▪ Scanner
  • Moving laser & photo diode
  • Moving mirror
  • Solid state

▪ Flash

➤ Generic framework based on ray tracing
Lidar RSI
Input features

LASER BEAM

Beam origin
Sensor origin

Direction of laser beam
Custom beam pattern
Lidar RSI
Input features

LASER BEAM

Raytracing rays

Custom beam pattern
Discretization by rays
Lidar RSI
Input features

LASER BEAM

SCENE INTERACTION

Atmospheric attenuation
Lidar RSI

Input features

LASER BEAM

SCENE INTERACTION

Atmospheric attenuation

Color, material & surface dependency

Color & material
Lidar RSI
Input features

LASER BEAM

SCENE INTERACTION

Atmospheric attenuation
Color, material & surface dependency
Diffuse
Lidar RSI
Input features

LASER BEAM

SCENE INTERACTION

Atmospheric attenuation
Color, material & surface dependency

Diffuse

Retroreflective
Lidar RSI
Input features

LASER BEAM
SCENE INTERACTION

Color, material & surface dependency
Atmospheric attenuation
Diffuse
Retroreflective
Specular
Lidar RSI
Input features

LASER BEAM

SCENE INTERACTION

Atmospheric attenuation

Color, material & surface dependency

Diffuse
Retroreflective
Specular
Transparent
Lidar RSI
Input features

LASER BEAM
SCENE INTERACTION
DETECTION

Threshold

Intensity
Time

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DETECTION
Lidar RSI
Input features

LASER BEAM
SCENE INTERACTION
DETECTION

Threshold
Multiple echoes per beam

Intensity
Time
Lidar RSI
Input features

- Laser Beam
- Scene Interaction
- Detection

- Intensity
- Time

Multiple echoes per beam
Separability

Threshold
Lidar RSI
Output features

LASER BEAM

SCENE INTERACTION

DETECTION

SCAN DATA

Sending & receiving direction
Lidar RSI
Output features

LASER BEAM
SCENE INTERACTION
DETECTION
SCAN DATA

Sending & receiving direction
Lidar RSI
Output features

LASER BEAM
SCENE INTERACTION
DETECTION
SCAN DATA

Sending & receiving direction
Light intensity

Intensity
Time
Lidar RSI
Output features

LASER BEAM

SCENE INTERACTION

DETECTION

SCAN DATA

Sending & receiving direction

Light intensity

Time & length of flight

Time

Intensity
Lidar RSI
Output features

LASER BEAM

SCENE INTERACTION

DETECTION

SCAN DATA

Sending & receiving direction

Light intensity

Time & length of flight

Pulse width

Intensity

Time
Lidar RSI
Output features

- Laser beam
- Scene interaction
- Detection
- Scan data

Sending & receiving direction
Light intensity
Time & length of flight
Pulse width
Number of interactions
Lidar RSI
Output features

LASER BEAM
SCENE INTERACTION
DETECTION
SCAN DATA

Sending & receiving direction
Light intensity
Time & length of flight
Pulse width
Number of interactions

Output features:
- Lidar RSI
- Laser beam
- Scene interaction
- Detection
- Scan data

Features:
- Number of interactions
- Sending & receiving direction
- Light intensity
- Time & length of flight
- Pulse width
Lidar RSI
Output features

LASER BEAM

SCENE INTERACTION

DETECTION

SCAN DATA

Sending & receiving direction
Light intensity
Time & length of flight
Pulse width
Number of interactions

Output features:
- Number of interactions
- Pulse width
- Time & length of flight
- Light intensity
- Sending & receiving direction

SCAN DATA
DETECTION
SCENE INTERACTION
LASER BEAM
Lidar RSI
Output features

- Laser beam
- Scene interaction
- Detection
- Scan data

Sending & receiving direction
Light intensity
Time & length of flight
Pulse width
Number of interactions
Lidar RSI
Demo highlights

- Custom beam pattern
- Retroreflective materials
- Threshold
- Transmissive materials
Lidar RSI

Overview

Ideal  ➤  Perfect world

HiFi  ➤  False positives & negatives

RSI  ➤  Raw data

- Lidar
- Ultrasonic
- Radar
- Camera
Scenario Editor

Vegetation strip
Scenario Editor

Animated 3-D objects
MODEL. SIMULATE. ANALYZE.

RELEASE 8.0
IPGMovie
New codecs for video export

- **ProRes (*.mov)**
  - medium compression
  - very good quality (visually lossless)

- **MPEG-4 part 2 (*.mp4)**
  - high compression
  - good quality

- **HuffYUV (*.avi)**
  - low compression
  - lossless

- **WMV7 (*.wmv)**
  - high compression
  - good quality
  - recommended codec for PowerPoint
Visualization of detailed road surfaces
LIVE DEMO IPGCONTROL 3.0

RELEASE 8.0
IPGControl 3.0
Demo highlights

Grid overlay
IPGControl 3.0
Demo highlights

Grid overlay
More signal analysis options
IPGControl 3.0

Demo highlights

- Grid overlay
- More signal analysis options
- Diagram synchronization
IPGControl 3.0

Demo highlights

- Grid overlay
- More signal analysis options
- Diagram synchronization
IPGControl 3.0

Demo highlights

- Grid overlay
- More signal analysis options
- Diagram synchronization
- Reversible axis
IPGControl 3.0
New features

- Grid overlay
- More signal analysis options
- Diagram synchronization
- Reversible axis
- Calculated signal list
IPGControl 3.0
New features

- Grid overlay
- More signal analysis options
- Diagram synchronization
- Reversible axis
- Calculated signal list
- Diagram scaling