Visualisation Facilities of the Graphical CSP tool TERRA

Zhou Lu and Jan Broenink
Robotics and Mechatronics, University of Twente
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Way of Working

Electronics design

Software design

Controller design

Mechanics design

Legend

TERRA

20-sim

(co) simulation

Simulation time

Real-time

ECS software architecture

(G)UI, Supervisory, Sequence, Safety

Control laws (Loop control, CT)

Time Triggered & Discrete Event software

Plant dynamics

Plant dynamics & 3D animation

Plant model (RT sim)

Target execution platform

I/O stub

Target execution platform

I/O

Real plant

Surface model

RT sim

Real plant

Target execution platform

I/O

Real plant

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Simulation and Visualization: Step 1

- Model Integration

Diagram:
- Step 1: Edit Models
  - 20-sim Controller Model
  - Plant Dynamics
  - TERRA CSP
  - TERRA CSP
  - TERRA CSP

- Step 2: (Co) Simulation
  - Execution Environment
  - Platform Specific Executable
  - FMU

- Step 3: Visualization
  - LoggerServer
  - Animation
  - LogInterpretor
  - SimCon
  - Plug-ins

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Simulation and Visualization: Step 2

- Code generation and simulation
Simulation and Visualization: Step 3

- Visualizing simulation results
Visualizing Simulation Results

- Overall structure of the visualization
  - Execute models
  - Logged data will be stored as CSV files
  - Mapping model elements
  - Parsing logged data
  - Publishing states to a graphical view
Thanks!