DrivingSimulator

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Driving Simulator

Was developed / constructed for a Ph.D.

• Driving Simulation with OpenDS (https://opends.dfki.de/)
• CAN-Network + Messages
• Simulation2CAN Connector (Data logger)
• Instrument Cluster with CAN-Connection (python + javascript)
CAN Network

Structure:

4 Gateways:
- Telematics (Green)
  - AGL Instrument Cluster
  - AGL IVI
  - Driver Monitor (Health state)
- Powertrain (Blue)
  - Gear
  - Motor
- Chassis (Gray)
  - Light
  - FGR
  - Camera
- Interior (Orange)
  - Climate
  - Airbag
  - Door
  - Seat
  - Interior-Light

CAN Network Diagram
CAN Messages

- Powertrain + Gear already used
- Interior was planned + simply implemented
- Example Messages in the image
Example Messages

<table>
<thead>
<tr>
<th>Name</th>
<th>Length</th>
<th>Byte Order</th>
<th>Value Type</th>
<th>Initial Value</th>
<th>Factor</th>
<th>Offset</th>
<th>Min...</th>
<th>Max</th>
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</thead>
<tbody>
<tr>
<td>~Engine_Petrol_Level</td>
<td>8</td>
<td>Intel</td>
<td>Signed</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>~Engine_PetrolLevel</td>
<td>8</td>
<td>Intel</td>
<td>Signed</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
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<td>Intel</td>
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<td>0</td>
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<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
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<td>0</td>
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<tr>
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<td>7</td>
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</tr>
</tbody>
</table>

- Made in CANoe
- already converted with canmatrix to kcd
What to do? Installation

• Download OpenDS
• Update OpenDS (CAN sources + driving task)
• Download pySIM2CAN
• Create VCAN device on linux (or other)
• Update IP adress in OpenDS
• Start both