ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING.
GAME CHANGING TECHNOLOGIES.
TRANSITION OF RESPONSIBILITY FROM HUMAN TO MACHINE: A TECHNICAL QUANTUM LEAP.

**Responsibility Transition Overview**

*Level 0: No active assistance system*
- **Driver:** Hands on, Eyes on
- **No longitudinal or transverse guide**

*Level 1-Assisted: Longitudinal or transverse guide*
- **Driver:** Hands on, Eyes on
- **Auxiliary system:** Longitudinal or transverse guide

*Level 2-PAD: Traffic control*
- **Driver:** Hands temp. off, Eyes on
- **Support system:** Longitudinal and transverse guide

*Level 3-HAD: Awareness for take over*
- **Driver:** Hands off, Eyes off
- **System:** Take over request

*Level 4-FAD: No driver intervention*
- **Driver:** Hands off, Eyes off
- **System:** No take over request

*Level 5-FAD: No driver intervention*
- **Driver:** Hands off, Mind off
- **System:** Driver off

**Environment Options**
- **Autobahn (Option):** City (Ride sharing)
ARTIFICIAL INTELLIGENCE, MACHINE LEARNING AND BIG DATA. DATA DRIVEN DEVELOPMENT.

<table>
<thead>
<tr>
<th>On-board</th>
<th>Off-board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perception, Sensorfusion</td>
<td>Labeling of training data</td>
</tr>
<tr>
<td>Scene understanding</td>
<td>Data from the fleet</td>
</tr>
<tr>
<td>Plan execution, motion control</td>
<td>Up to 500 PB/a</td>
</tr>
<tr>
<td>Mission and trajectory planning</td>
<td>Evolution through training</td>
</tr>
<tr>
<td>Model update</td>
<td>Backend</td>
</tr>
<tr>
<td>Simulation and sign-off</td>
<td></td>
</tr>
</tbody>
</table>