Technological impact assessment of automated driving on vehicle E/E architecture

CLIENT: ASIAN INDUSTRIAL CONGLOMERATE

BACKGROUND: Client wants to know about technological challenges due to autonomous driving functions. FEV was asked to provide comprehensive insights.

DELIVERABLES

- ADAS/AD roadmap & sales forecast for key markets Europe, USA and China
  - Based on SAE automation level, differentiated for each function
  - Estimation until 2035

- Analysis of key automotive market players

- Assessment of selected key topics related to ADAS/AD
  - Key challenges of E/E architect., sensor-set config., HD maps, costs
  - Impact on other vehicle models (Body, Chassis, Interieur, Exterior,...)
  - Current status of regulations & Standards

- Deep dive in E/E architecture
  - Provided information on vehicle hardware & software architecture
  - Identified development of E/E architecture due to AD technology
  - Analysis of OEMs regarding current and future E/E architecture developments

CURRENT & NEAR-TERM TECHNOLOGICAL CHALLENGES

<table>
<thead>
<tr>
<th>E/E ARCHITECT</th>
<th>SENSOR SET</th>
<th>HD MAP</th>
<th>COSTS</th>
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<tbody>
<tr>
<td></td>
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<td>Level 2</td>
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E/E ARCHITECT DEEP DIVE

ANALYSIS OF FUTURE ARCHITECTURES

OEM ANALYSIS

- Introduction of ethernet at BMW
- OEM 1
- OEM 2
- OEM 3
- OEM 4

IMPACT ON OTHER VEHICLE MODULES

REGULATION & STANDARDS

SYSTEM INTERACTION OF DRIVER

<table>
<thead>
<tr>
<th>OEM 1</th>
<th>OEM 2</th>
<th>OEM 3</th>
<th>OEM 4</th>
</tr>
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<tbody>
<tr>
<td>2008 BMW X5</td>
<td>2015 BMW 750i</td>
<td>2018 BMW 750i</td>
<td>2018 BMW 750i</td>
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</tbody>
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