WELCOME SPEECH
ETHERNET & IP @ AUTOMOTIVE TECHNOLOGY DAY

Simon J. Chandler BEng (Hons) MBA
Chief Engineer Electrical Architecture & Software Systems
9th October 2018, Olympia London
WELCOME

8th ETHERNET & IP @ AUTOMOTIVE TECHNOLOGY DAY
JLR AUTOMOTIVE ETHERNET JOURNEY

Start of Ethernet Pre development

2012
Master controller with Broadcom Polar Switch

2015
AVB 802.1 AS running in Switch
Multiple HW and SW suppliers collaborating
New electrical architecture Pre development (AutoSAR, FlexRay, DoIP)

2017
Ethernet Backbone Capability

20xx
Development of Dynamic Network

BroadR-Reach Standardised (100Base-T1)
Ethernet extended into ADAS domain and backbone
ENVIRONMENT IS CHANGING

Changes in how we live

Changing nature of consumers

Changing nature of driving

Disruption of the value chain
The changes affecting us and our industry, including ACES, efficiency and our united spirit
**AUTOMOTIVE CHALLENGES**

**A**utonomous

High complexity in number of protocols and rate of deployment of protocols to fulfil Automotive use cases

**C**onnected

How our cars are viewed

**E**lectrified

Emissions

**S**hared

Shared Economy

**ARCHITECTURAL TRANSITIONS**

Introduction of Complex, Distributed Systems

**PROTOCOL COMPLEXITY**

High complexity in number of protocols and rate of deployment of protocols to fulfil Automotive use cases

**SECURITY**

Ethernet Security is as weak as its weakest link

**TOOLING & VALIDATION**

How do we design, configure and test
VW Cost Cuts - reduce R&D spending, drive R&D and production improvements + new products.

BMW to streamline car equipment levels to pay for R&D

Daimler set a new target of saving €1bn in research and development by 2025 to help offset the lower profitability of electric cars.

Audi and Porsche to join forces on vehicle development - sharing platforms, modules and components.

Audi set to invest in electric cars through billion-pound cost cuts to research and development.

THE AUTOMOTIVE INDUSTRY IS REFOCUSING INVESTMENT TO ENABLE THE DELIVERY OF NEW & EXCITING ACES TECHNOLOGIES
WHAT DOES THE FUTURE LOOK LIKE

Migration to Centralised Architecture

Increasing Speed and Consolidation

Engineering Challenge!

• Networks getting faster & faster, more compute power
• More functionality, less repetition
• Reduced hardware complexity

Business Challenge!

• Features and services even more distributed
• Not just Engineering
• Must collaborate like never before!

<table>
<thead>
<tr>
<th>I.T.</th>
<th>Manufacturing</th>
<th>MP&amp;L</th>
</tr>
</thead>
<tbody>
<tr>
<td>V2X</td>
<td>Self driving vehicles</td>
<td>Over the air updates</td>
</tr>
<tr>
<td>Cy Sec</td>
<td>Software BoM</td>
<td></td>
</tr>
<tr>
<td>Marketing</td>
<td>Sales</td>
<td>Service</td>
</tr>
<tr>
<td>Late feature config</td>
<td>Graphics update for 2nd owner</td>
<td>Prognostics</td>
</tr>
</tbody>
</table>
THE PROGRAM