



Network Topology Analysis

Chris Mash, Marvell

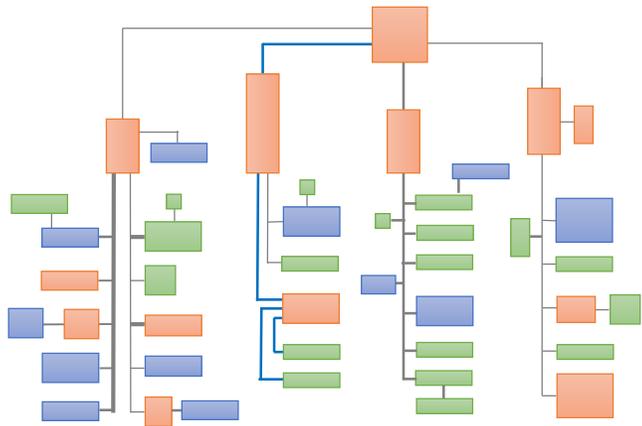
> 10G Study Group
July 18, 2019, Vienna, Austria

Supporters & Affiliations

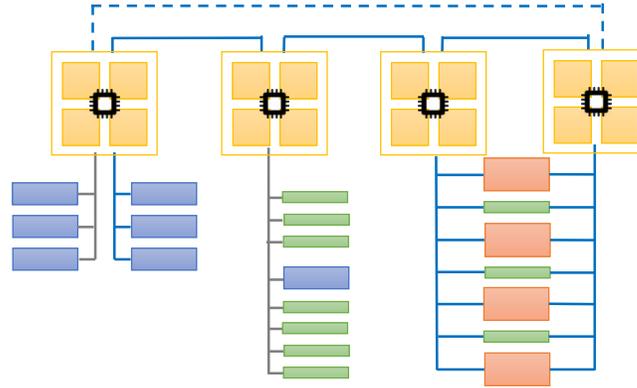
- Klemens Brueckner – **Audi**
- Hideki Goto – **JASPAR / Toyota**
- Olaf Grau – **Bosch**
- Daniel Hopf - **Continental**
- Haysam Kadry – **Ford**
- Keld Lange – **Porsche**
- Jim Lawlis – **Ford**
- Kirsten Matheus – **BMW**
- Sanaz Mortazavi – **Volkswagen**
- Takumi Nomura – **JASPAR / Honda**
- Christoph Wechsler – **Audi**
- Natalie Wienckowski – **GM**
- Helge Zinner – **Continental**

Why 10G+

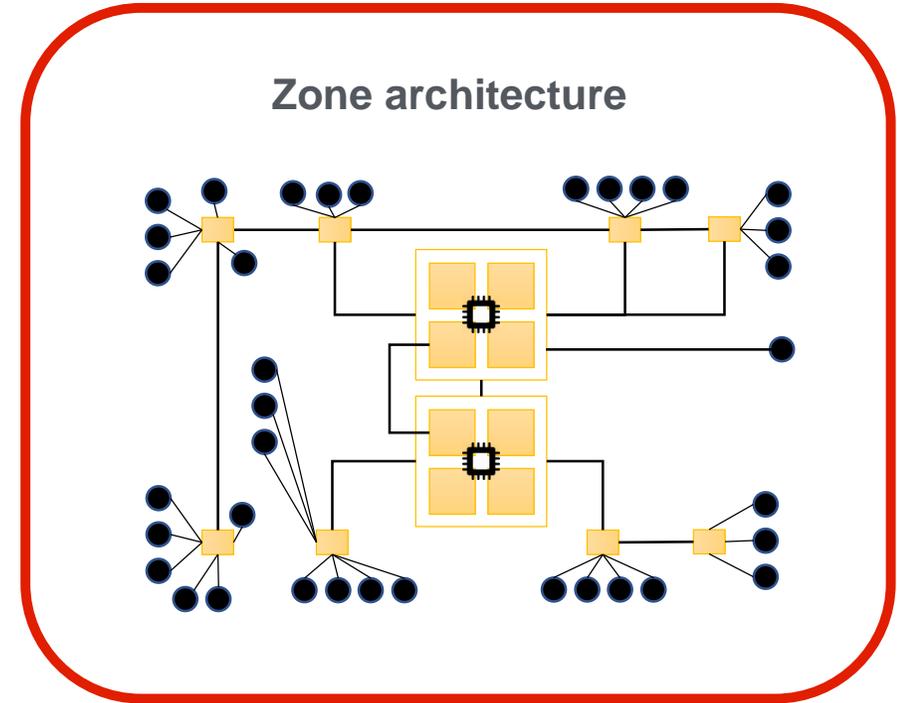
Traditional architecture



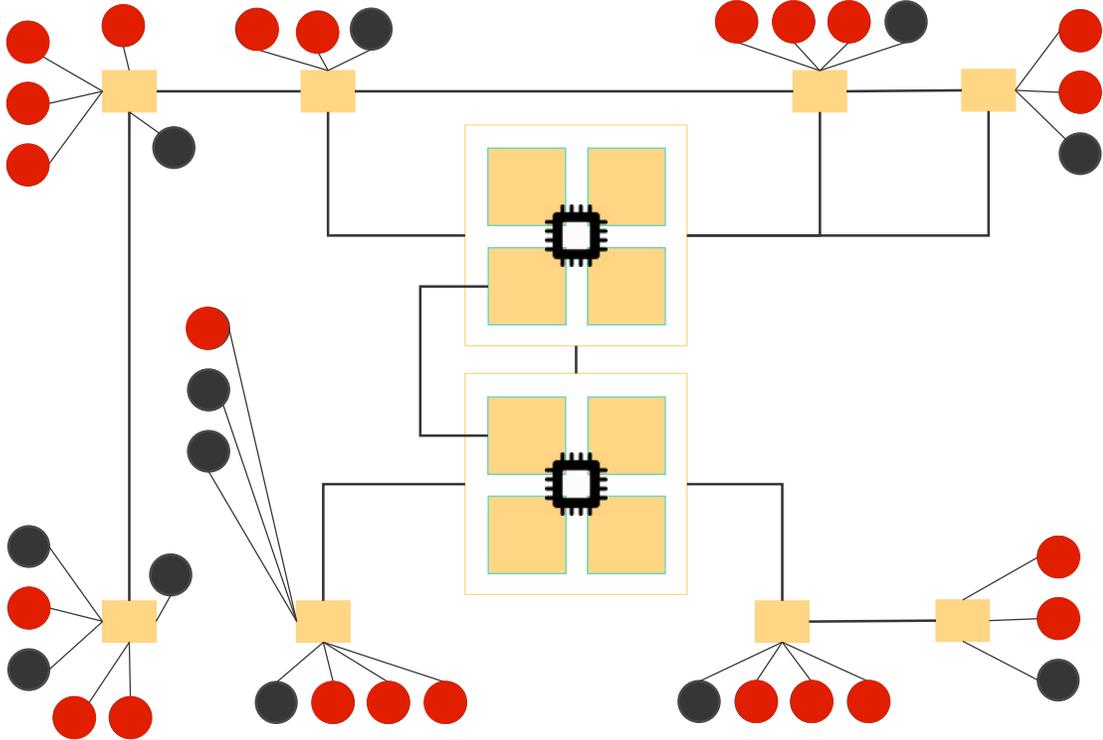
Domain architecture



Zone architecture

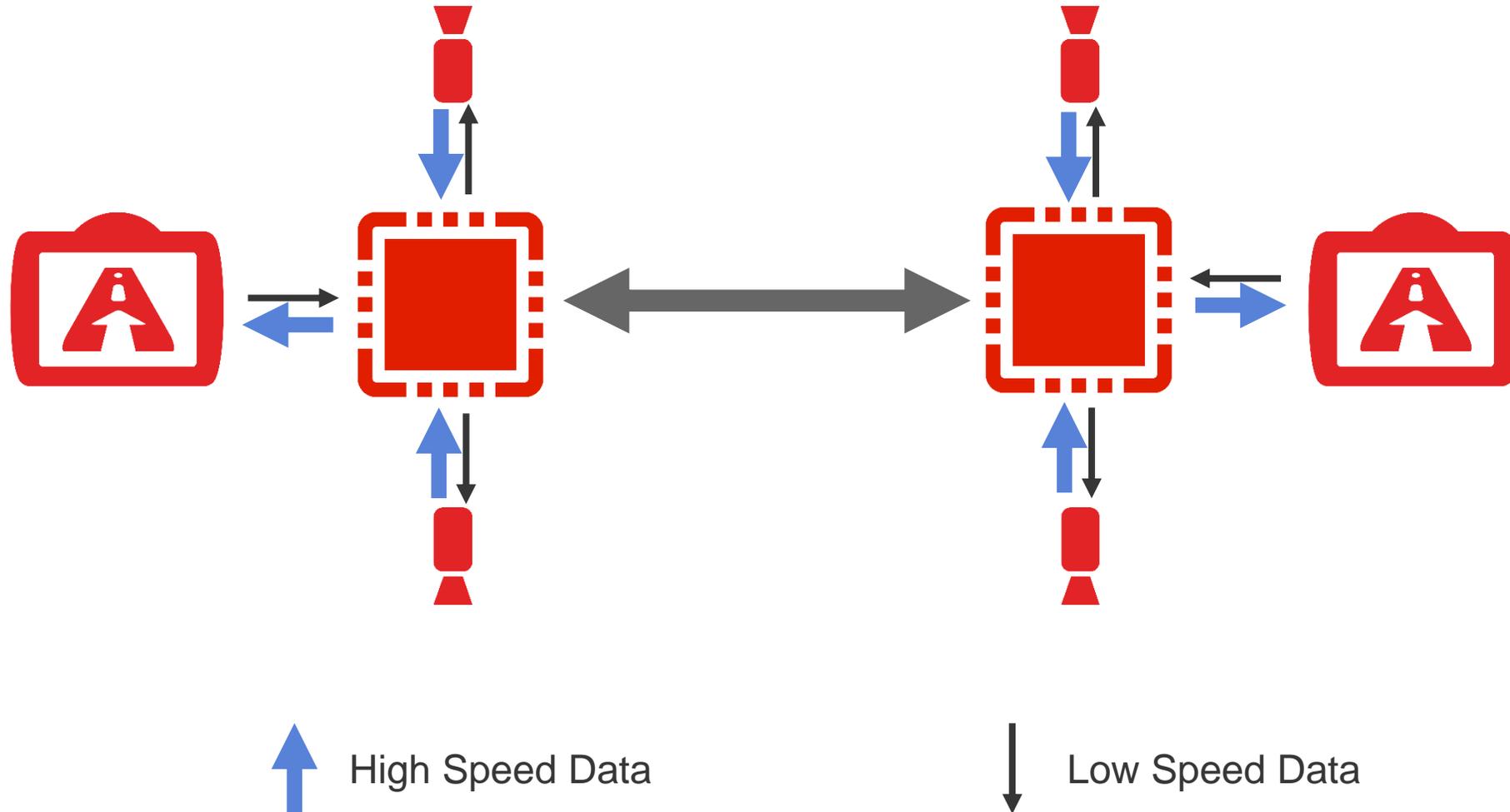


Example Network Architecture

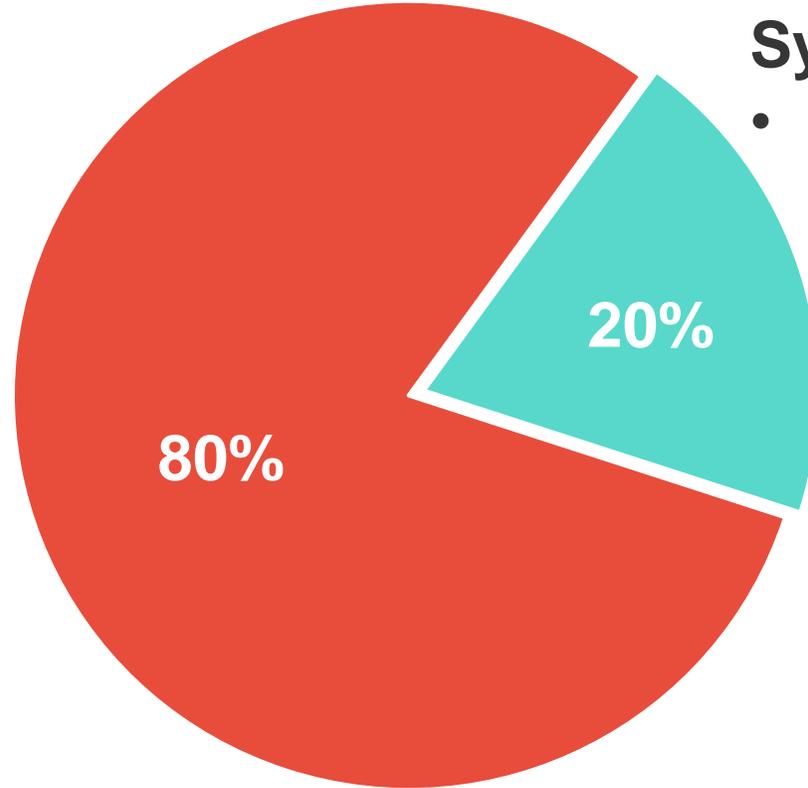


● Asymmetric Data Requirement

Camera/Display Network Topology



Network Topology Breakdown



Asymmetric:

- Typically > 100:1
- From Sensor
- To Display
- Black Box
- Aggregation Connection

Symmetric:

- Inter-Server/Zone Connection

Summary & Thoughts

- Majority of high-speed links in automotive architecture require asymmetric traffic
- Propose adding asymmetric objective
- Highly optimise asymmetric option (80% of market) to ensure lower relative 'cost' than symmetric implementation
 - Explore further in future contributions
- Asymmetry is not new in 802.3