



Welcome to the 2019 Automotive Ethernet Technology Day Detroit, MI

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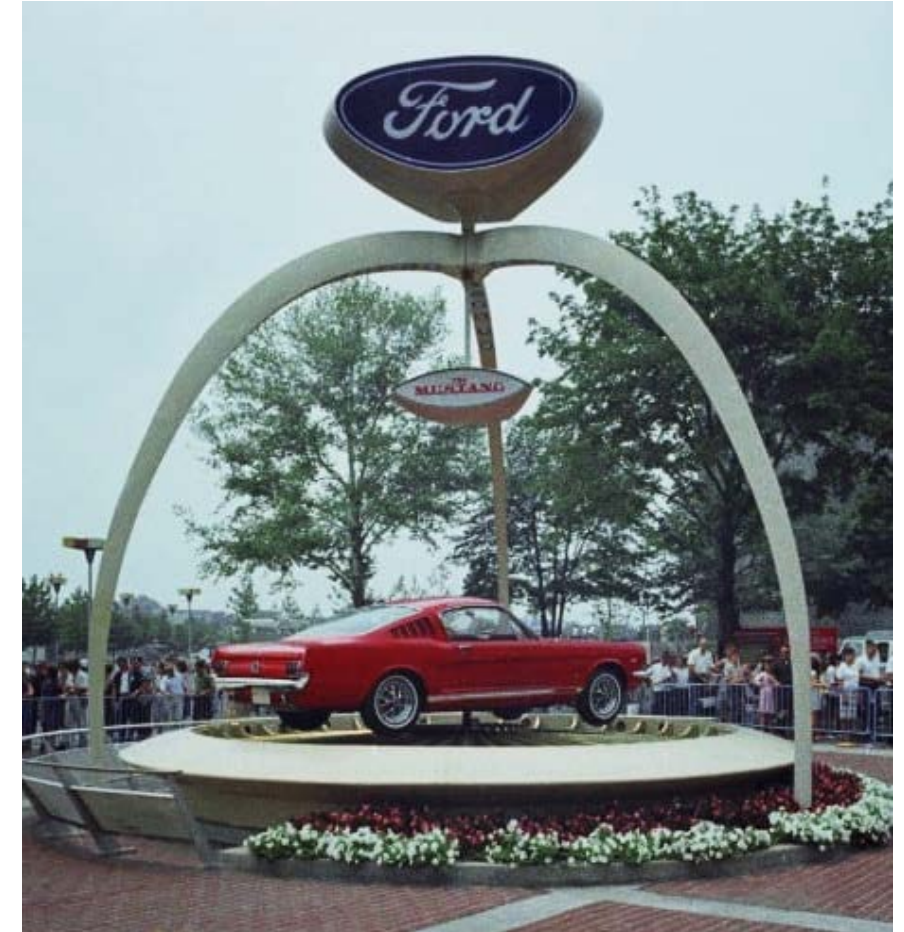
Research & Advanced Engineering at Ford Motor Company

September 24th 2019 Detroit Michigan USA

Automotive Electrical Architecture Transformation

Previous transformations:

- First we had initial connections of various integrated systems with nonstandard networks.
 - Emergence of standards
 - Shared sensors
 - AUTOSAR
- Next came the integration of Consumer Electronics
 - Phones and Tablets
 - Introducing Consumer Electronics reusable software blocks



Were now in the midst of a revolution that overshadows all the rest

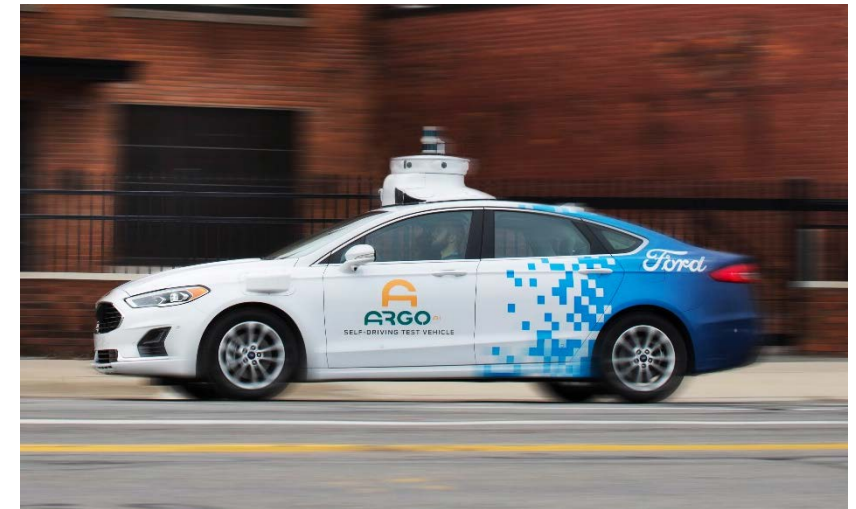
Ethernet - Key Enabler for Connected Vehicle Revolution

- Last year, Ethernet celebrated it's 45th birthday (May 1973)
- Throughout its lifetime, it has shown its ability to change and adapt to new Use Cases
- Automotive is the latest industry to make use of Ethernet



The Ethernet Connected Vehicle

- Global Standardization of Ethernet
 - New Electrical Architectures
 - Security
 - Over the Air Updatable Vehicles
 - Driver assist to Autonomous Vehicles
 - Remote Features
 - New Revenue for the company



Ethernet Enables New Dynamic Software Architectures

- Enabling complex distributed software platforms
- Introduction of Service Oriented Architectures
- Multiple virtual operating systems
 - Virtual Machines – (Multiple operating systems on one Host)
 - Containerization – (self contained applications)
- Large compute platforms that can share resources



Automotive Architecture challenges

- Automotive electrical applications are expected to change at the rate of consumer electronics
- Unlike Consumer Electronics (short lifetime 2-3years max), the life of the vehicle will still remain at 15+ years



The challenge is to design architectures that need to be adaptable and upgradable through their entire lifetime

Henry Ford Quote that still applies today

- If I had asked them what they wanted they would have said a faster horse.



2019 Automotive Ethernet Content

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- Program
 - Presentations
 - Vendor Displays
 - Panel Session with industry experts