



**3DEXPERIENCE®**

# Dassault Systèmes in High-Tech

London | September 3<sup>rd</sup>, 2014

Olivier RIBET  
Vice-President, High Tech Industry

# High-Tech: Driver of Innovation across Industries

**Connect** Product, Nature & Life ...



... is the **challenge of all industries**



# Building up a Strong Footprint in High-Tech Industry

## High-Tech Industry at a glance

- 717 HT companies (36%) in Top 2000 Global Companies.
- Revenue : €3,350 B (19.9%).
- R&D: 12.7% (Top 2000 <10%).

Source : European Commission Industrial Research & Innovation

## High-Tech at 3DS

- #4 industry for 3DS in revenue.
- +1,700 customers globally. (excl. SOLIDWORKS)
- North America, Japan, Korea, Greater China, Northern Europe, Central Europe
- 9% DS Net revenue (FY 2013).
- Entering new domains:  
Marketing, Material & Chemical. Expand from Digital Manufacturing to Manufacturing Operation Management and Operation Planning and Optimization.

« Our performance is benefiting from improving dynamics in our largest industry, Transportation & Mobility, as well as High Tech most notably. »

Bernard Charlès – Q2 2014 Financial Highlights

# High-Tech Industry | Market Segmentation

OEMs

SUPPLIERS

## Consumer Electronics

- Personal Communication
- PC, Peripherals, Print/Scan
- Photography
- Home entertainment
- Smart Appliances



LG

## Security Control & Instrumentation

- Residential Automation
- Industrial Automation
- Measure & Control Devices
- Power & Instrumentation
- Robotics



AGILENT TECHNOLOGIES

## Computing & Communication Equipment

- Media Broadcast Systems
- Telecom Equipment
- Computer Networking
- Enterprise Computing



FUJITSU NETWORK

## Semiconductor Manufacturers

- Integrated Device Mfg (IDM)
- Semi Fabs & Foundries
- Semi Equipment
- IP Providers



ATMEL  
GLOBAL UNICHIP CORPORATION

## Technology Suppliers

- Integrated Sub-Systems
- Specialized Electronics
- Active & Passive Components
- Batteries & Power Supplies
- Storage: CD, DVD, HDD



CLARION

## Contract Manufacturing Services

- Design Services (ODM)
- Manufacturing Services (EMS)
- Engineering Services
- Supply Chain Services



PEGATRON  
CELESTICA

Enable the creation of a new class of **Smart Connected Objects & Experiences** → Cross Industries.  
Foster **continuous, rapid, profitable and sustainable innovation**.  
**Build ecosystems:** hardware, software, cloud, services and content.

# What the High-Tech Industry Value The Most?

CONSUMER  
VALUE

Connected,  
Personal,  
User Experiences

Eco-  
technology

Ubiquity &  
digital continuity

Performance,  
Price, Brand,  
Design



Time To Volume,  
To Quality

IP Protection &  
Reuse

Differentiation  
& Diversification

Supply Chain  
Flexibility

COMPANY  
VALUE

# Innovation in the Age of Smart Connected Experiences

## HIGH-TECH INDUSTRY EXPERIENCES:

« Objects that sense the Environment or other Objects and communicate with Humans »

### Better Life

Connecting Objects  
to Humans



### Better Products

Connecting Objects  
to Objects

### Better Nature

Connecting Objects  
to Environment

## SOFTWARE | Internet of OBJECTS → My\_THINGS

- Functional, Logical, Physical, in the age of IOT.
- Connected Experiences Life Cycle: Create & Make > Sell & Activate > Use & Enhance > Improve & Reinvent.
- Electronics (SOC) / Sensors + Networks + Software

## SERVICES | Internet of HUMANS → My\_LIFE

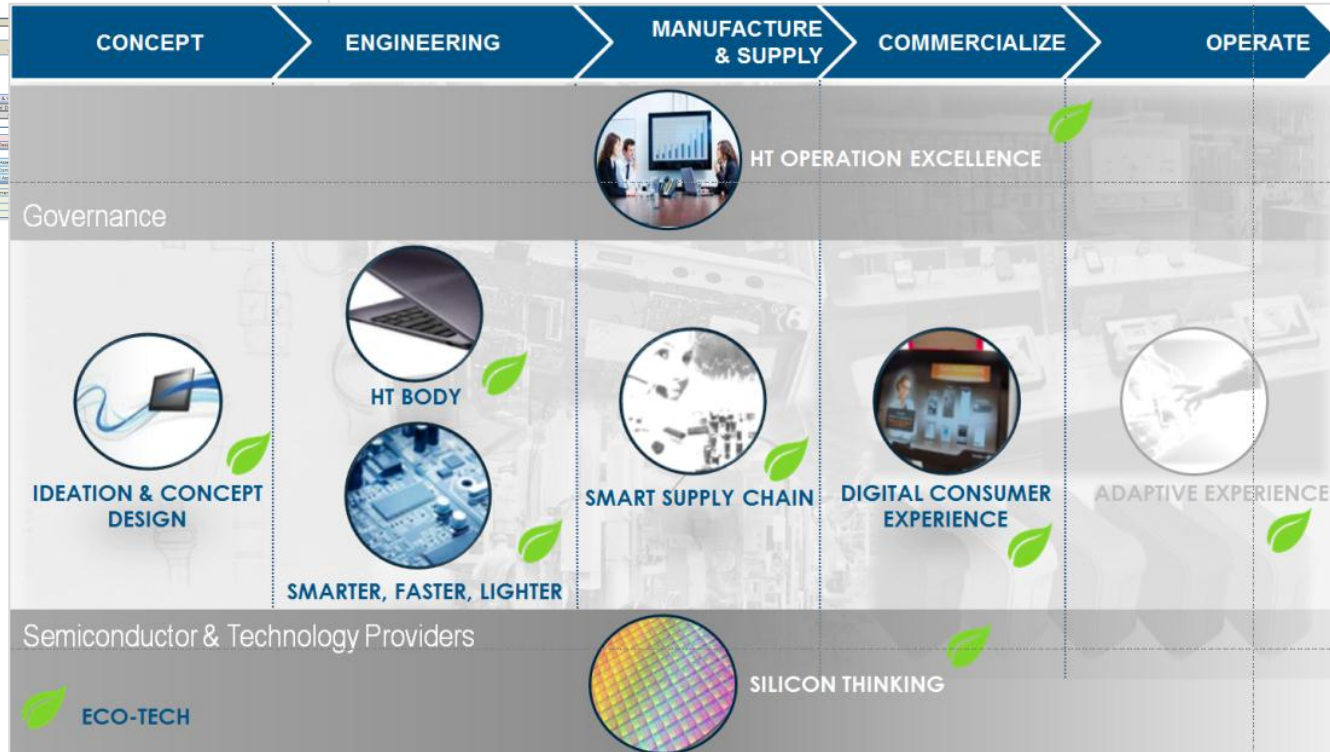
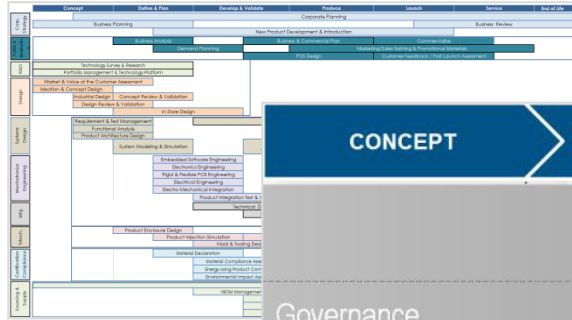
- Make Smart and Connected Objects possible.
- Blend Products & Personal / Social identities.
- Enable new game changer Experiences.
- Avoid disconnected silos and ecosystems.

## CONTENT | Internet of ENVIRONMENT → My\_WORLD

- Design, Durable and Digital Experiences.
- Command & Control (visualize) my Connected Experiences
- Deliver in-context relevant content & services to enrich overall Experience

Enabling the delivery of the Internet of Experiences, based on Dassault Systèmes Software, Content and Services.

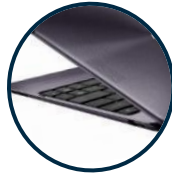
# 3DS High-Tech Solution Experiences



# 3DS High-Tech Solution Experiences

## HT BODY

From Imagination to fast Mass Production  
Gain market leadership through 3D-enabled collaborative design and engineering



## IDEATION & CREATIVE DESIGN

Enhanced New Product Introduction  
Ride the waves of consumer tastes with perfectly targeted products.



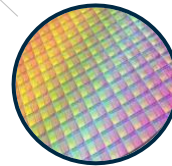
## SMARTER, FASTER, LIGHTER

Perfect multi-discipline orchestration to deliver innovative HT Products  
Exquisite Coordination is Beautiful Art



## SILICON THINKING

Turn Technical Complexity into Market Profitability  
Semiconductors in the age of Systems On Chip and IP Management



## New Solutions

- Adaptive Experience - Services Innovation through software, in the age of IoT
- Eco-Tech. Sustainability & Compliance



# Delivering Value to the High-Tech Industry



A selection of 3DS unique assets in this industry

- True multi-disciplinary collaborative platform.
- Deep understanding of and solutions for Semiconductors.
- Cross-industry consulting, engineering, marketing and services
- Strong connections to the entire value chain.
- Highly differentiated solutions.
  - Systems engineering (eg Robotics)
  - Support in the definition of new materials and new form factors (eg flexible PCB)
  - Digital assets management for Go To Market planning and execution
  - Design for sustainability and eco-compliance.
  - ...

# Innovation

## Ideation & Concept Design for High-Tech



example of a HT consumer product engineering done with HT body



# BEAMY

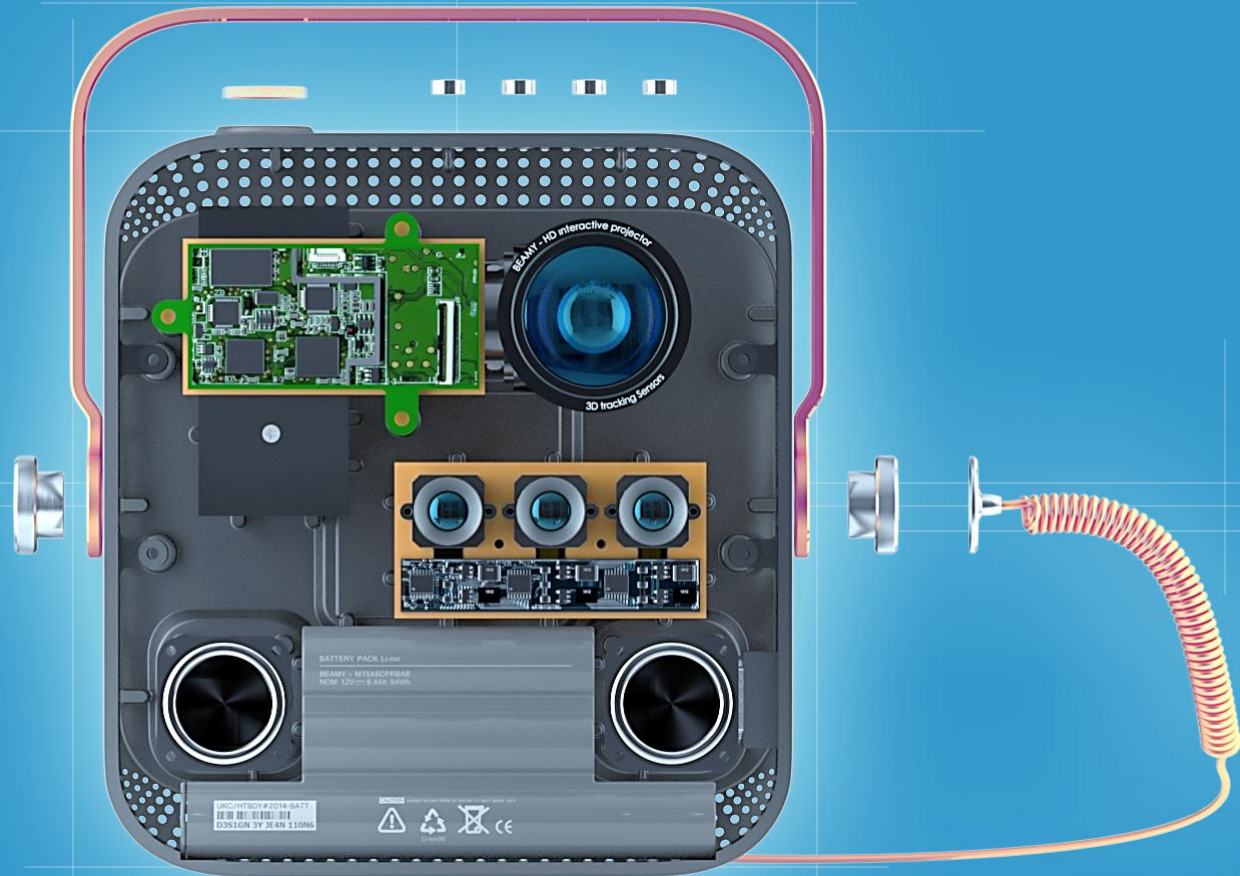
Interactive Mobile Projector

*Beamy is dedicated to urban travelers who want a maximum display for interactive presentation, collaboration, entertainment... It is able to connect devices simultaneously and project medias. Thanks to 3D tracking, you will able to interact and control any object.*

# MATERIALS



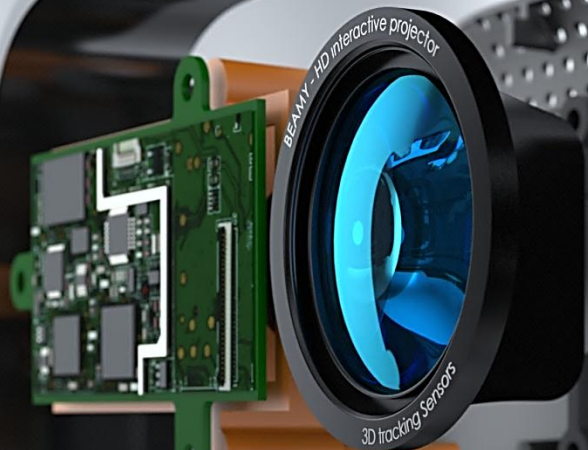
1. Front panel customized / colors & materials  
Hard Plastics/ Aluminium / Finishings / Anodized / 3D textures & patterns
2. Natural & Technological materials  
Bamboo / Paper / Fabrics
3. Natural & ecological materials  
Bamboo / Paper / Cotton / Traceability
4. Front panel 3D printed



C  
O  
M  
P  
C  
O  
N  
E  
N  
T  
S  
M  
P  
O  
N  
E  
N  
T  
S  
S

HT BODY R2014X

A  
S  
S  
E  
M  
B  
L  
Y



H I B O D Y R 2 0 1 4 X



HT BODY R2014X

High-Tech Industry Team

**SIMULATION**



HT BODY R2014X



# Transportation and Mobility is.... a High-Tech Industry

*“... to cars that don't run on oil. That will not crash. That can drive themselves.*

*I get a bit annoyed when I hear people talk about 'high tech' industries and they don't include cars! ....*

***This is a high-technology industry, I can assure you!” \****

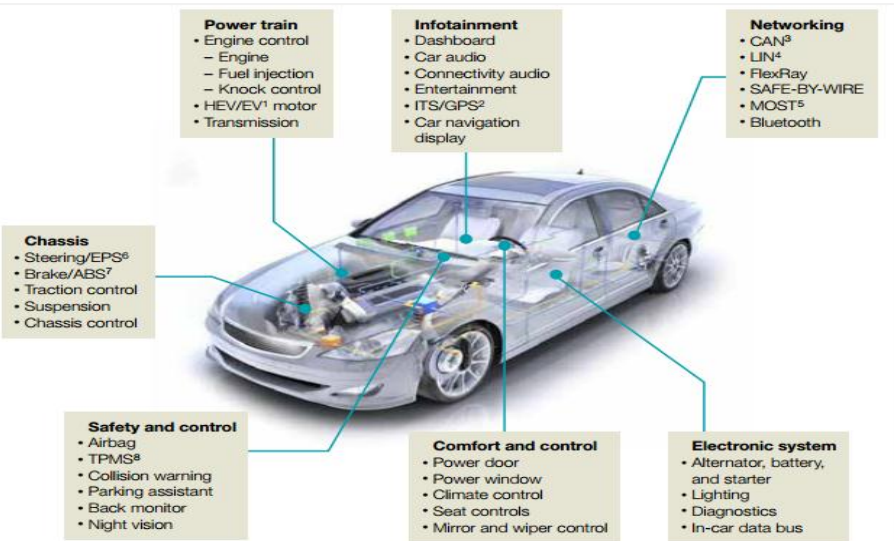


*Ian Harnett, Director of Purchasing*

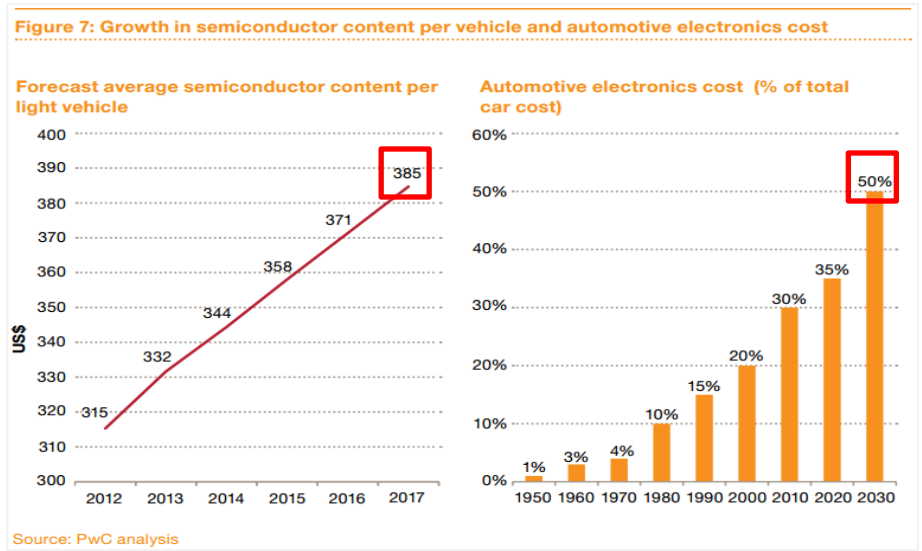


*(\*) International Automotive Summit keynote*

# Electronics in Automotive

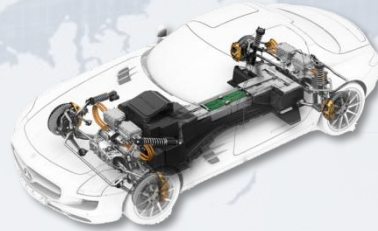
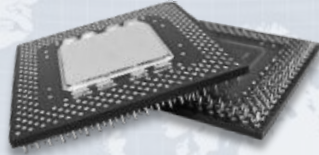


One Car → 70 Electronic Control Units  
 150 Sensors, 7,000 functions, 20 million lines of code.



400\$ of semiconductors in a car  
 Electronics will represent 50% of total car cost in 2030

# Connecting the Automotive Electronics Eco-System



Dream It



# Connecting the Automotive Electronics Eco-System



# Connecting the Automotive Electronics Eco-System



Dream It

Invent It

# Connecting the Automotive Electronics Eco-System



Dream It



Invent It



Specify It

# Connecting the Automotive Electronics Eco-System



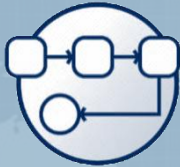
Dream It



Invent It



Specify It



Architect It

# Connecting the Automotive Electronics Eco-System



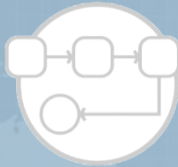
Dream It



Invent It



Specify It



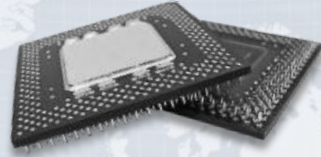
Architect It



Design It



# Connecting the Automotive Electronics Eco-System



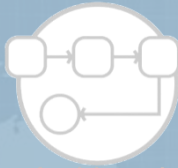
Dream It



Invent It



Specify It



Architect It



Design It



Optimize It

# Connecting the Automotive Electronics Eco-System



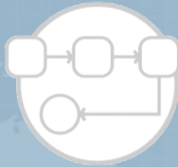
Dream It



Invent It



Specify It



Architect It



Design It

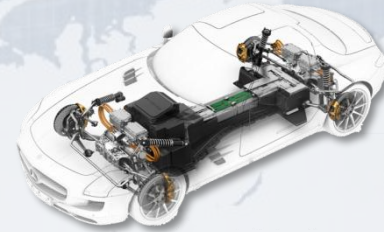


Optimize It



Validate It

# Connecting the Automotive Electronics Eco-System



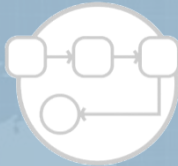
Dream It



Invent It



Specify It



Architect It



Design It



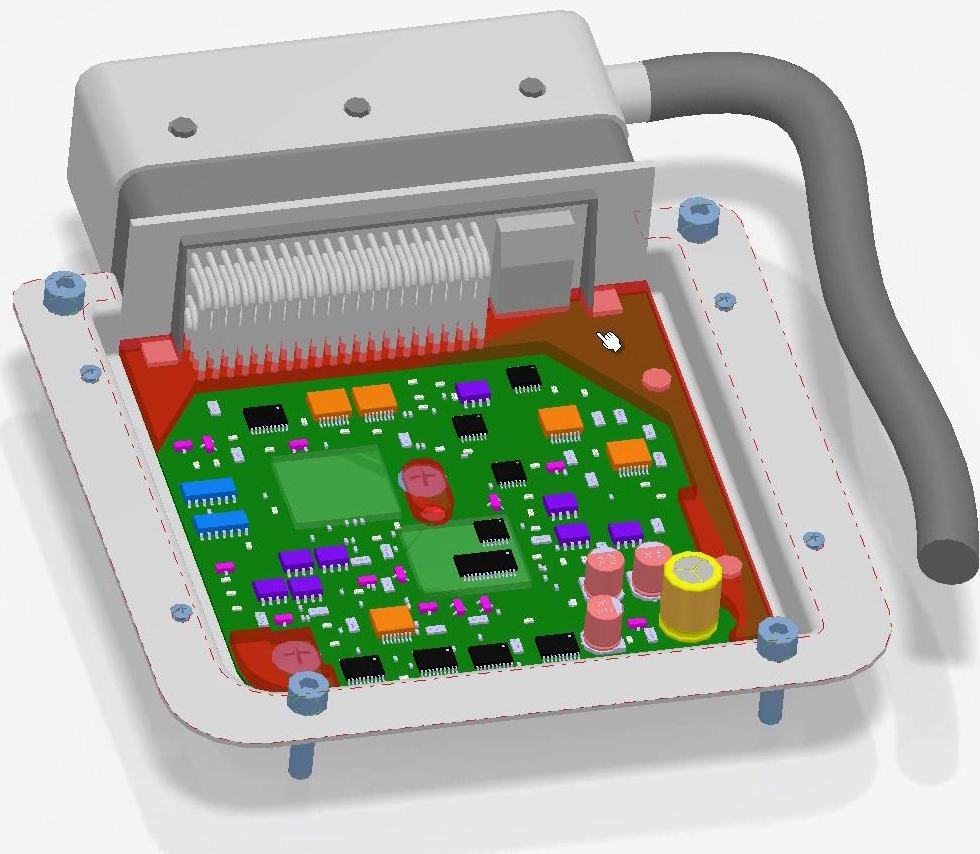
Optimize It



Validate It



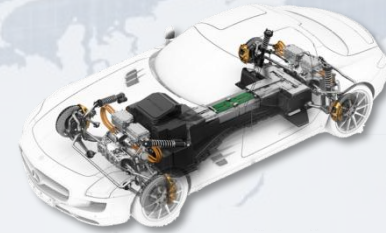
Integrate It



- DAC2014\_PCB A.1
    - Housing A.1 (Housing.1)
      - Bottom A.1 (prd00004227.1)
      - Top A.1 (prd00004229.1)
      - ISO\_7047\_COUNTERSUNK\_RAISI
      - ISO\_7047\_COUNTERSUNK\_RAISI
      - ISO\_7047\_COUNTERSUNK\_RAISI
      - ISO\_7047\_COUNTERSUNK\_RAISI
      - ISO\_4762\_HEXAGON\_SOCKET\_H
      - ISO\_4762\_HEXAGON\_SOCKET\_H
      - ISO\_4762\_HEXAGON\_SOCKET\_H
      - ISO\_4762\_HEXAGON\_SOCKET\_H
      - \_2ISO\_7047\_COUNTERSUNK\_RA
      - \_2ISO\_7047\_COUNTERSUNK\_RA
    - Conector A.1 (Conector.1)



# Connecting the Automotive Electronics Eco-System



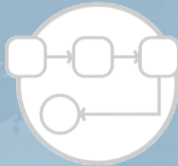
Dream It



Invent It



Specify It



Architect It



Design It



Optimize It



Validate It

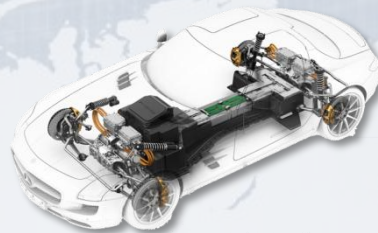
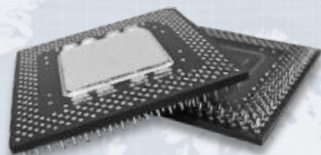


Integrate It



Code It

# Connecting the Automotive Electronics Eco-System



Dream It



Invent It



Specify It



Architect It



Design It



Optimize It



Validate It



Integrate It



Create It




Experience It


New Tab 1 New Tab 2 x

AEBS Simulation Model A.1

Driving Scenario A.1



AEBS A.1



logical Connection00000194 - input 1 A.1

logical Connection00000195 - input 7 A.1

logical Connection00000196 - input 7 A.1

logical Connection00000197 - input 7 A.1

logical Connection00000197 - input 7 A.1

logical Connection00000198 - input 1 A.1

brake - reqD S.A.1

GAS - reqD S.A.1

v - reqD - reqD S.A.1

v - reqD - reqD S.A.1

W - reqD S.A.1

req - reqD - reqD S.A.1

W - reqD S.A.1

Brake reqD - Req D A.1

GAS reqD - reqD S.A.1

AEBS reqD - reqD S.A.1

reqD - reqD S.A.1


W reqD - reqD S.A.1

Without AEBS


AEBS\_VDL

AEBS\_RSU

Vehicle\_001 A.1



AEBS Simulation Environment A.1



App Options

2D3D View

Select



# System Engineering

## Mastering Requirements and Test Management





