



**KEYSIGHT**  
WORLD 2019

# Accelerating Tomorrow's Innovations

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# Change is constant

But technology is changing the world  
more than ever before





# We Are at the Heart of the Digital Revolution

ACCELERATING INNOVATION TO CONNECT AND SECURE THE WORLD

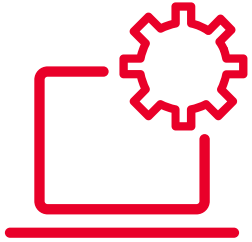


# We are Committed to Accelerating Your Innovation

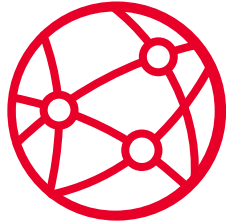
## KEYSIGHT LEADERSHIP MODEL FOR CUSTOMER SUCCESS



# And Enabling Your Success



Shifted to  
**software-centric  
solutions**



**Reorganized**  
around end markets



Amplified  
investment in **R&D**



Made **strategic  
acquisitions**

**THE RESULT: FIRST-TO-MARKET SOLUTIONS, WORKFLOWS, AND  
SERVICES FOR EVERY STEP IN YOUR LIFECYCLE**

# The 5G Race Is On...

## AROUND THE WORLD

### **Deployments are accelerating**

More mobile operators launching 5G networks to capture new business models

### **Standards are evolving**

New use cases driving new standards evolution

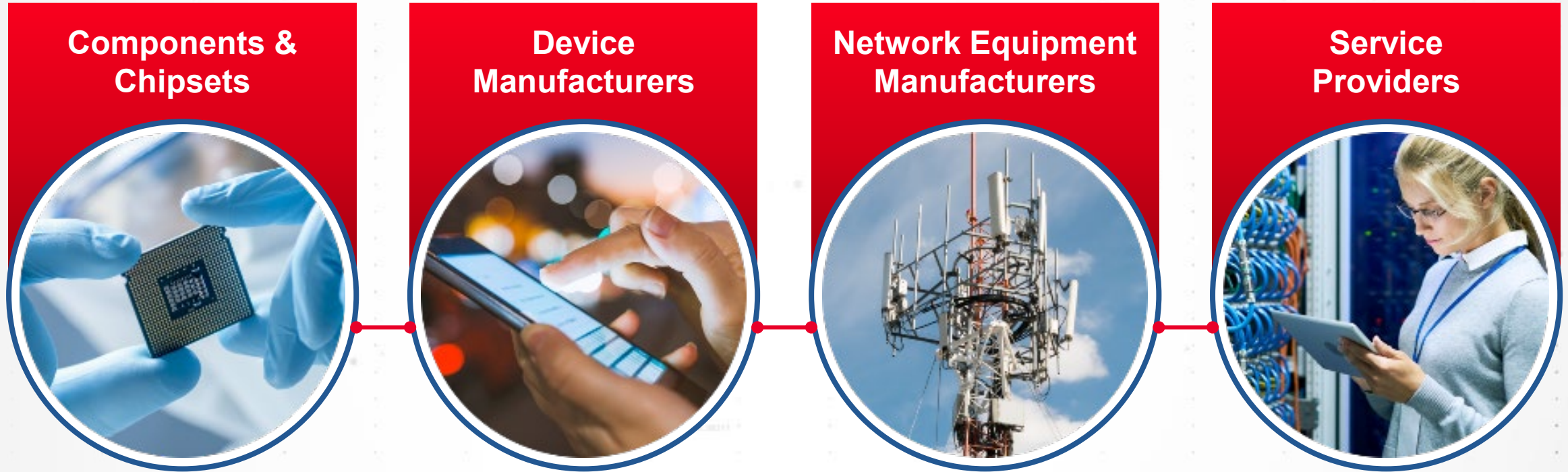
### **Technical complexity is high**

Diversity driven by multiple regional ecosystems progressing in parallel



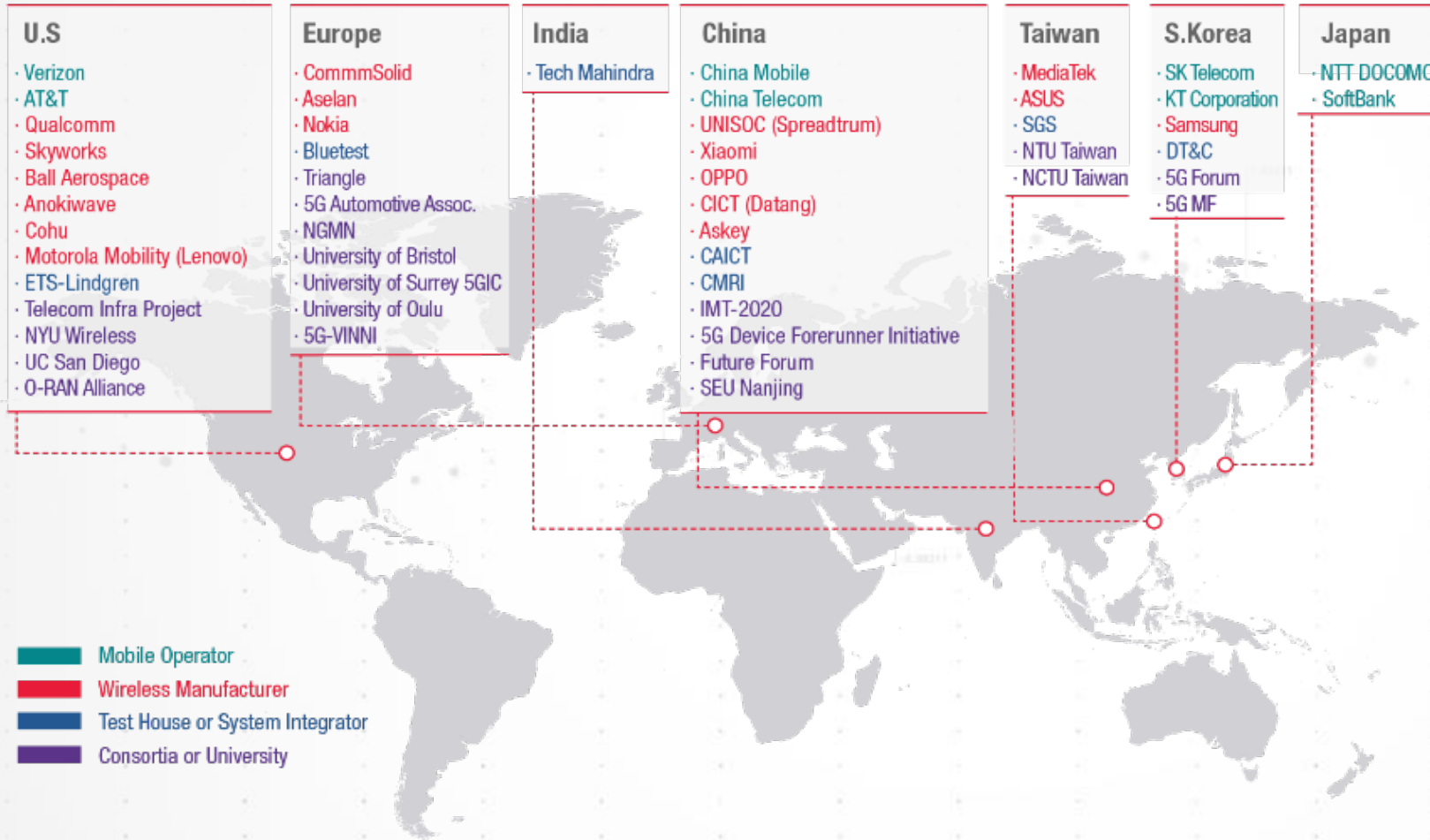


# We Engage Across the Entire Ecosystem



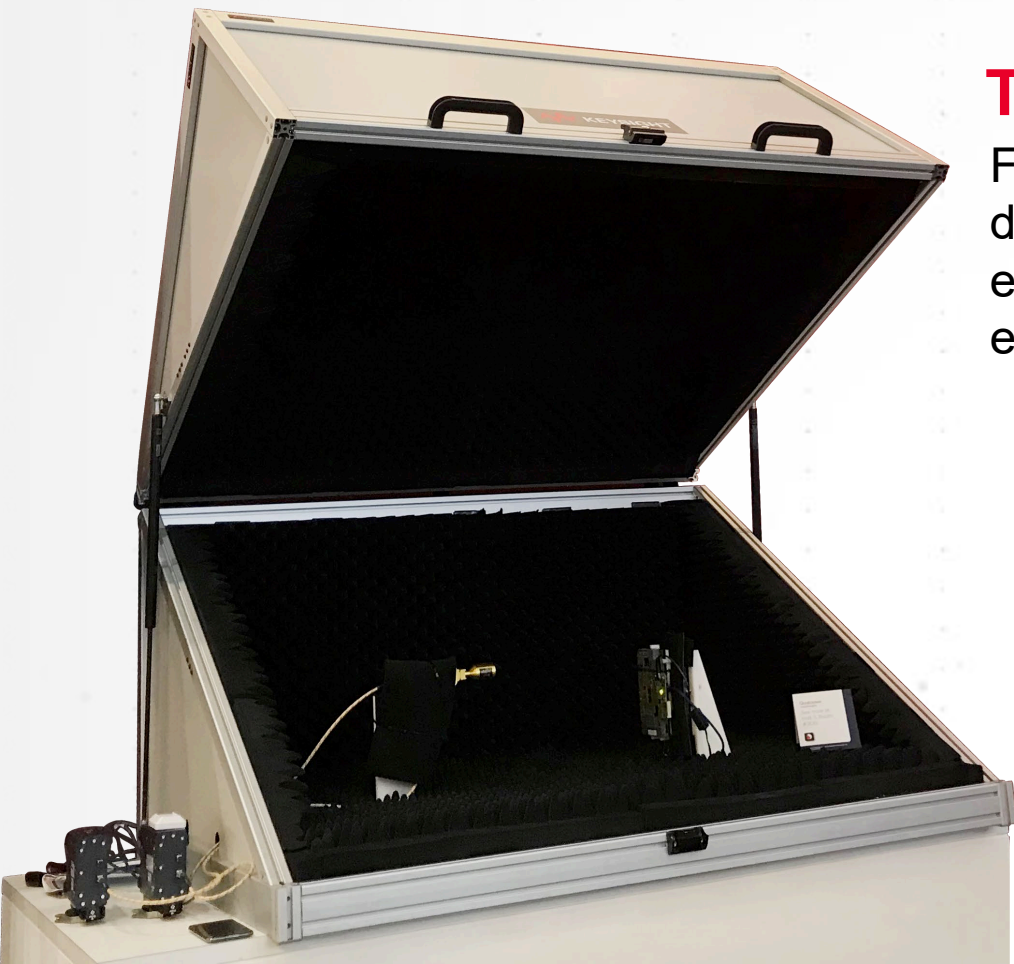
# We Collaborate Around The World

## ACCELERATING 5G COMMERCIALIZATION



- Engaged early with 5G industry leaders across the connected ecosystem
- Delivered end-to-end 5G solutions to accelerate workflow





## THE CHALLENGE

First-to-market 5G modem chipset design validation required network emulation capability that didn't exist

## THE SOLUTION

Over-the-air test solution and chamber capable of validating 5G performance at mm-wave frequencies

## THE RESULTS

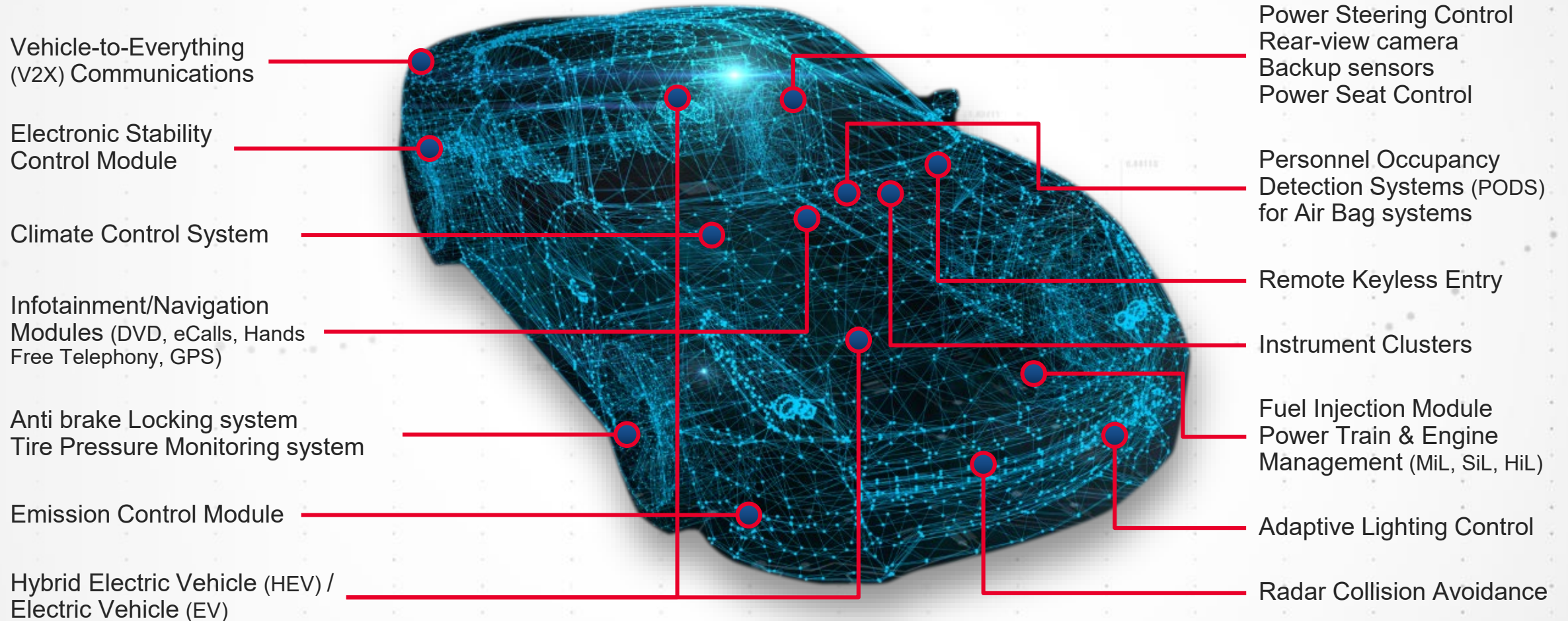
- Measured **OTA at 28GHz**
- Number of aggregated 100MHz carriers: **8**
- Demonstrated throughput of **4+ Gbps**

Global Semiconductor  
and Telecommunications  
Equipment Company

Case Study

# The Future of the Automobile is Here

## INNOVATIONS THROUGH MULTIPLE TECHNOLOGY DOMAINS





# Automotive Technology Requirements Keep Advancing

MORE ELECTRONICS, MORE EFFICIENCY, MORE CONNECTIVITY, MORE AUTONOMY



## Electronics

- More systems
- Better diagnostics
- Automotive Ethernet



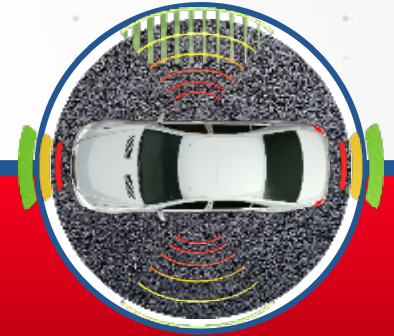
## E-Mobility

- More eco-friendly
- Higher density
- Longer range



## Connectivity

- More infotainment
- Better safety
- Easier navigation



## Autonomy

- More sensors
- Driver vision
- Electro-mechanical

# We Drive for First-to-Market Solutions in Automotive

INDUSTRY'S BROADEST AND MOST RELIABLE SOLUTIONS PORTFOLIO

## Autonomous Driving Test



77 / 79GHz with 4GHz  
BW Signal Generation  
and Analysis

**Radar Testing**

## EV and Battery Test



**Battery Test**



**Charging**

## Connected Car Test



Fast, accurate, and  
scalable Cellular  
and Wireless  
Connectivity Test

**Automotive  
Wireless,  
DSRC, V2X**



Rapid testing of  
automotive  
network devices

**Automotive  
Ethernet**



# We Bring Experts Close to You

AUTOMOTIVE MEASUREMENT CENTERS AROUND THE WORLD

Novi, MI



Boeblingen, Germany

Nagoya, Japan



Shanghai International Automobile City (SIAC)



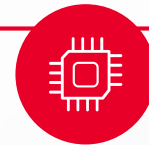
**Automotive  
OEMs**



**Electronic  
Component  
Suppliers**



**Battery  
Manufacturers**



**Chipset  
Vendors**



**Infrastructure  
Providers**

## THE CHALLENGE

Car manufacturer needed to upgrade older CAN network test to Ethernet IEEE AVB test in order to reduce BOM

## THE SOLUTION

Keysight L1 test suite plus Ixia automotive IEEE testing suite (L2-7)

## THE RESULTS

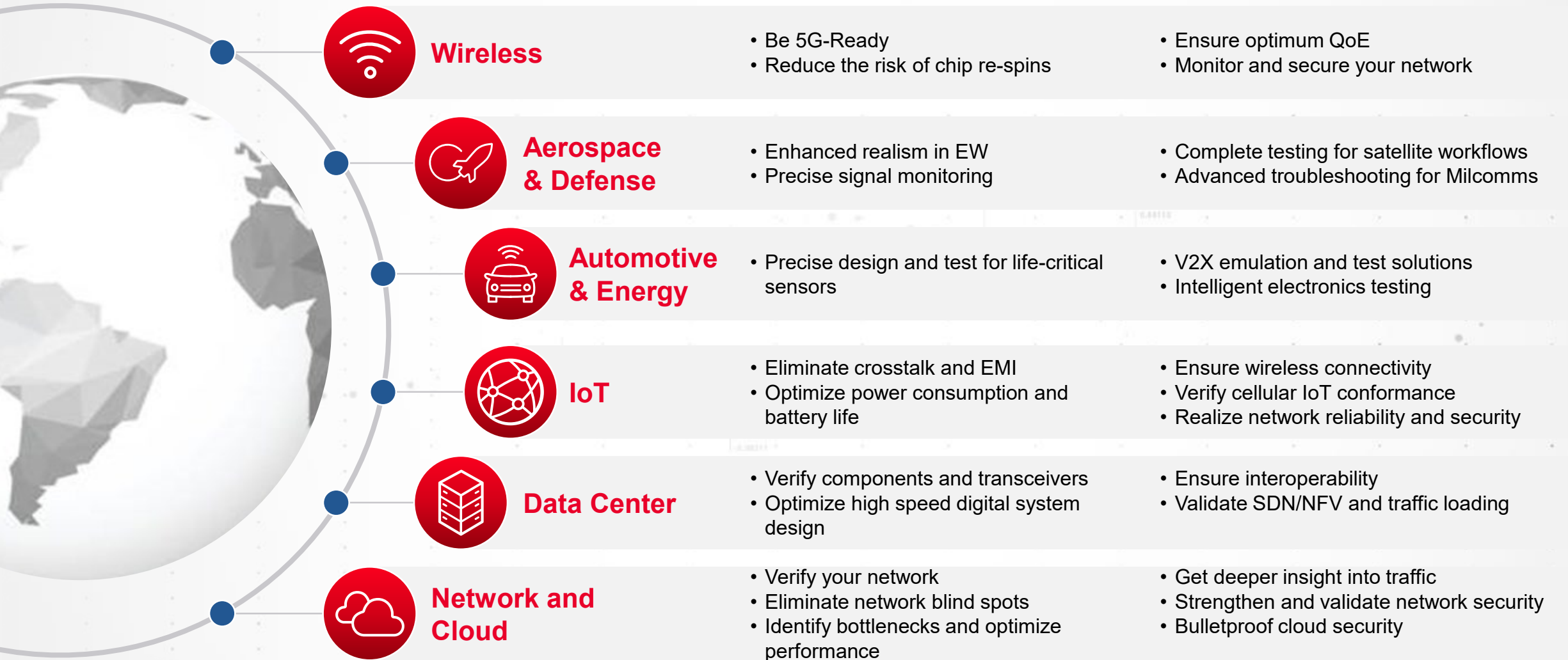
- — **135x** Accelerated measurement throughput
- — Shift to IEEE standard **reduced BOM**
- — Layers 1-7 end-to-end test made testing **faster**



**Chinese  
Automotive  
Manufacturer**



# We Partner With You Across Industries



# Innovation Processes Impact Speed

**MOST ORGANIZATIONS USE STANDALONE PRODUCTS**



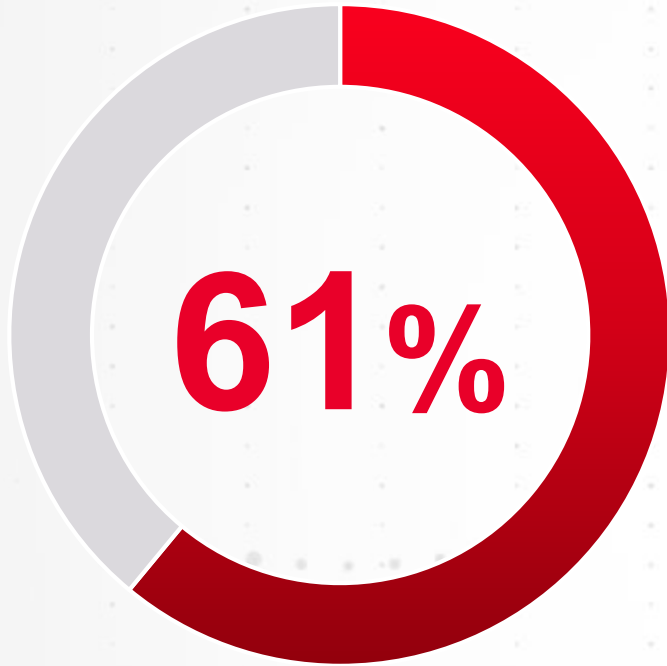
Siloed datasets

Disconnected workflows

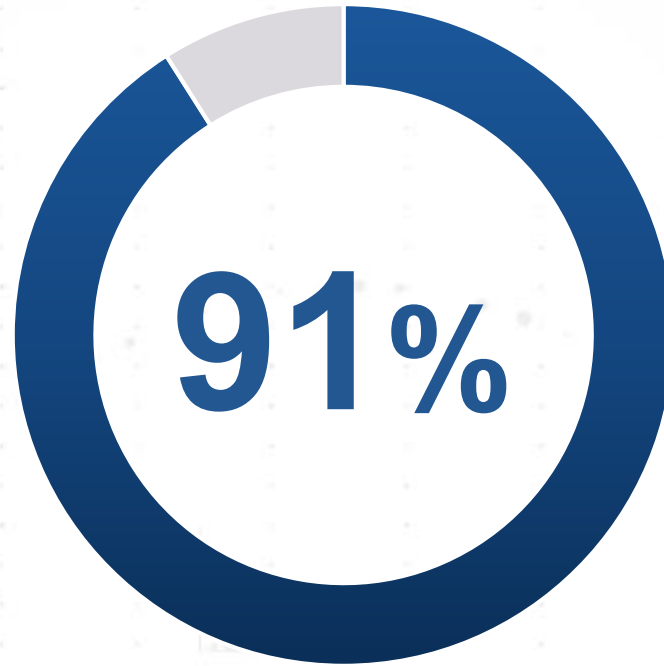
Higher risk of errors



# Silo'd Toolsets are Biggest Contributors to Project Delays



Engineers use 5+  
design tools



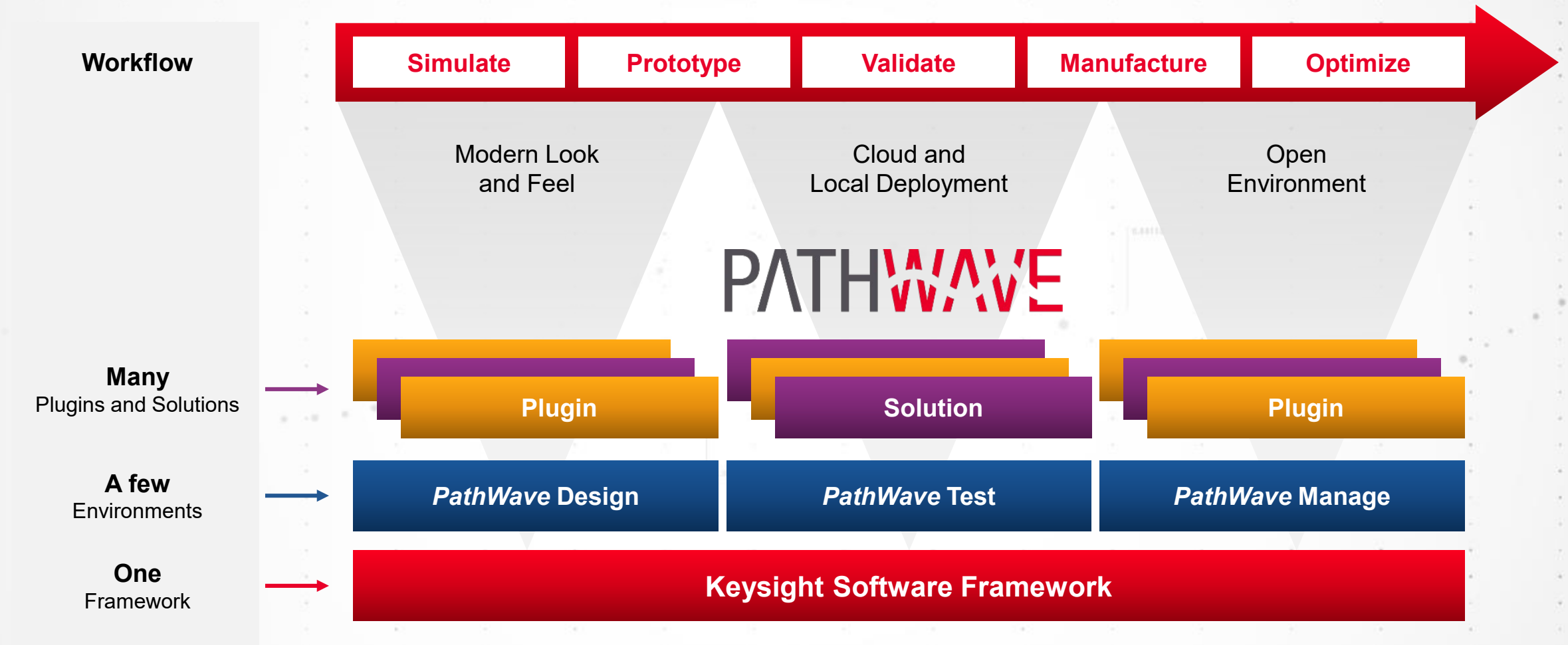
Engineers use 3+  
test tools



2+ hours fixing tools &  
software integration gaps

PATHWAVE

# The PathWave Platform

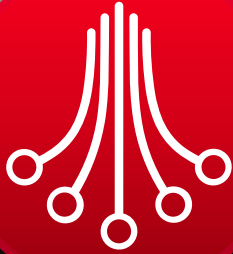




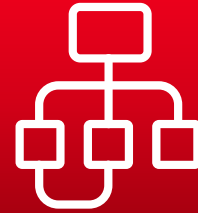
# Let's Get Started at Keysight World!



First to Market  
Solutions



A Wide Range of  
Test Capability



One Architecture to  
Connect your  
Lifecycle



Access to the best  
calibration and  
support services





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