

**OPTIMAL+**

Lifecycle analytics you can trust

# Lifecycle analytics for reliable electronics

2019



# It's a changed world

Technological innovation has transformed our lives.

Products and devices are more intelligent and connected.

These products rely on thousands of electronic components.



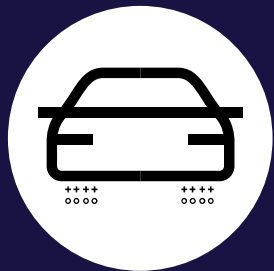
# Electronics reliability is critical

Components must be more reliable than ever before.

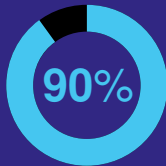


# Automotive innovation exemplifies the challenge

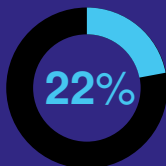




## Automotive innovation reliability challenge



**car innovations** & new features are driven by electronics<sup>2</sup>



**warranty costs** related to electronics & semiconductors<sup>3</sup>



**car recall increase** from 2014-2016 due to electronics<sup>4</sup>

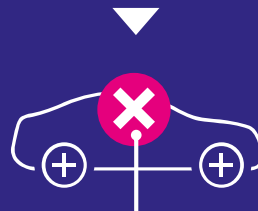


**Toyota's** gas pedals recall  
**Ford's** failure-to-park recall  
**Takata's** air bag recall

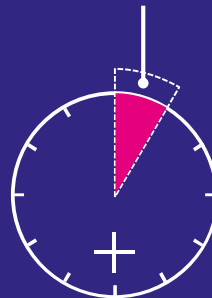


**15x Drive per day<sup>1</sup>:**  
1.5hr traditional car vs.  
22.5hr autonomous car

Audi says



1 car failure  
every hour<sup>1</sup>



# Reliable electronics is a must



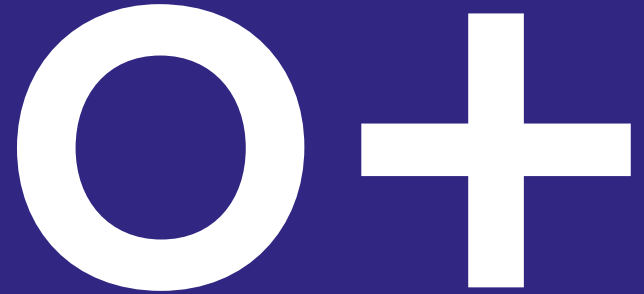
1) Audi, DVCon Munich, 2017  
2) Automotive change drivers for the next Decade, EY, 2016  
3) BMW - AEC Automotive electronics reliability workshop, 2017  
4) NHTSA Recall Data

# Our role

We deliver unprecedented manufacturing efficiency and reliability to the Automotive, Semiconductor and Electronics supply chains.

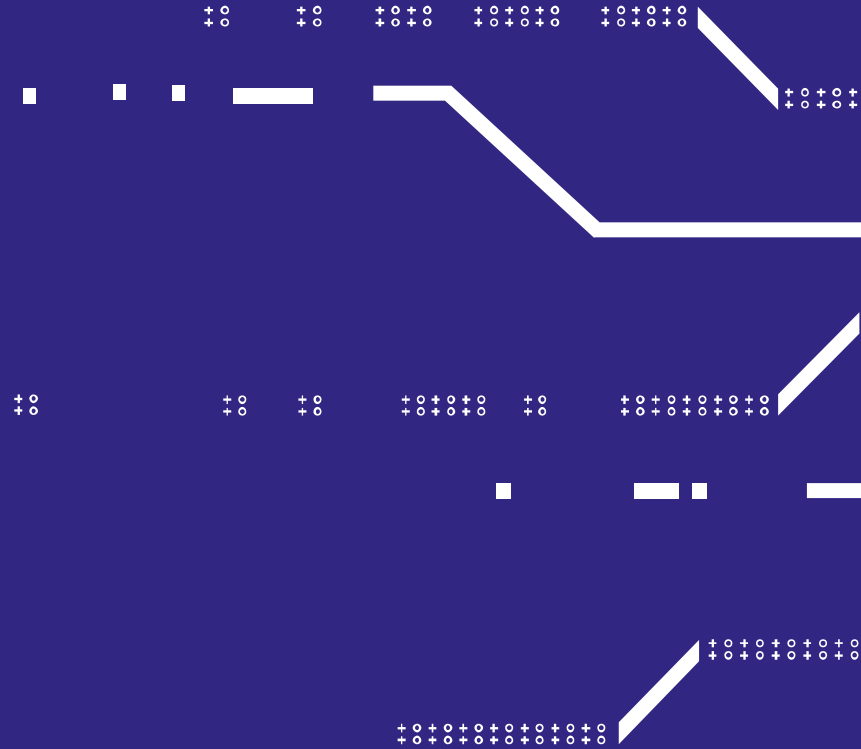
We provide actionable insights through unique data analytics to prevent bad products from reaching the market.

We call it **lifecycle analytics**



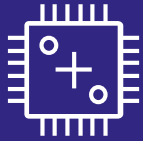
# Analyzing huge volumes of data

**100bn+**  
devices per year



# Our expertise

---



Semiconductor



Automotive Electronics



Consumer Electronics  
& Computing



# Significant business impact

---

## Reliability

50% case  
avoidance

## Yield

increase  
up to  
**10% NPI**  
**2% HVM**

## Efficiency

up to **25%**  
cost savings

## Speed

from weeks  
**to days**  
NPI, TTM, RCA



# We help our clients transform data into automated actions

---



## Collect

- Data harmonization
- Product, machine and process data

## Detect

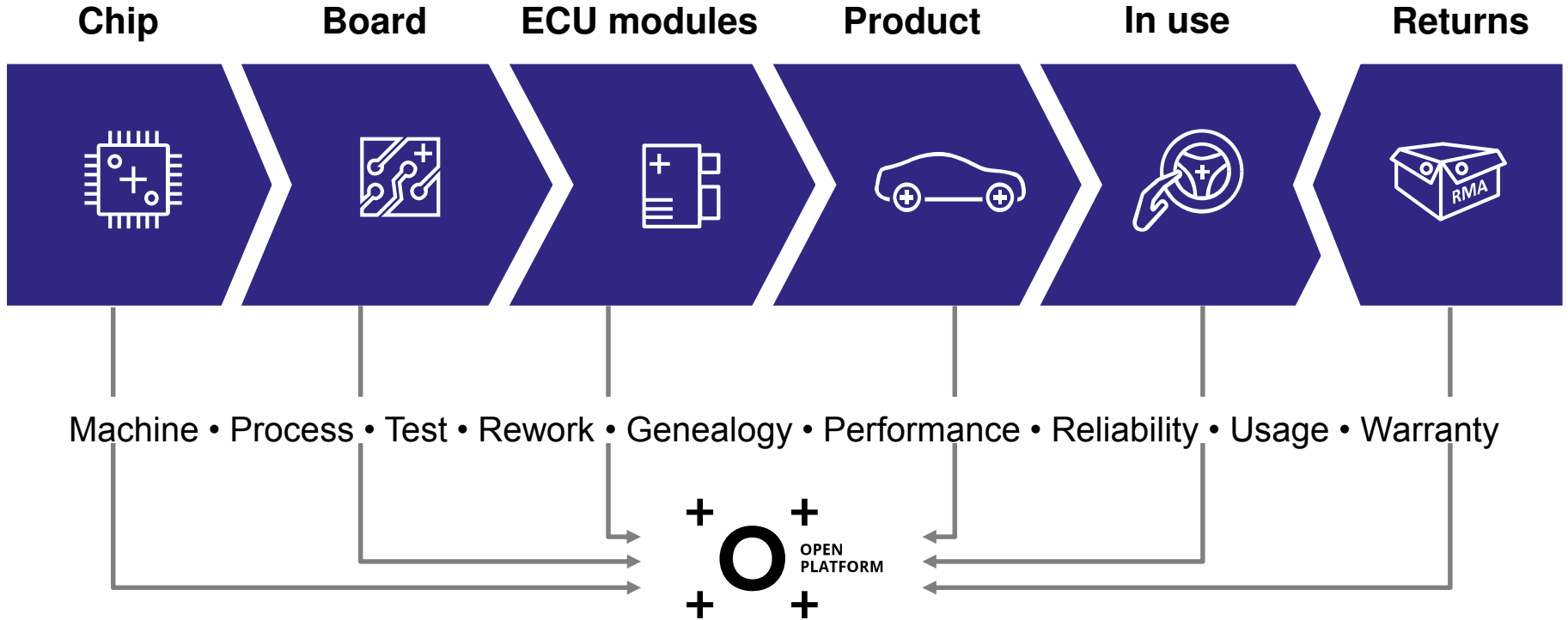
- Prescriptive analytics
- AI / Machine learning
- 24x7 analytics engine
- Real-time

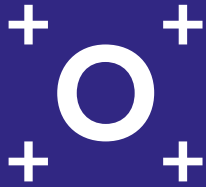
## Act

- Automatic
- Distributed
- Controlled



# Lifecycle analytics – Following the product journey





Accelerating innovation

# Open platform synergetic with any big data strategy

Machine learning | Artificial intelligence | Prescriptive analytics



# Trusted by leading brands

---

## Customers

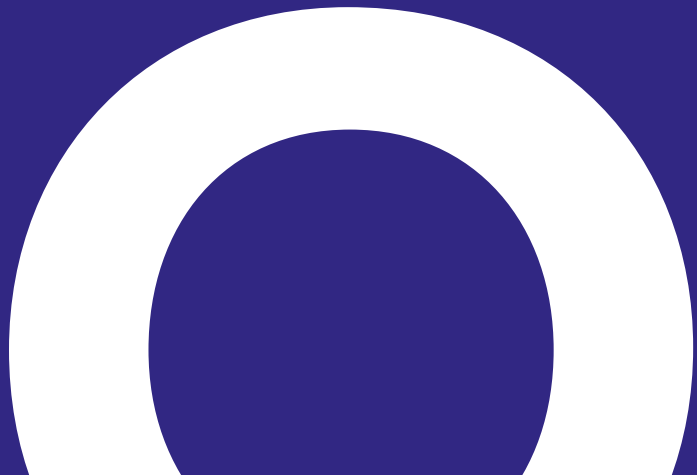
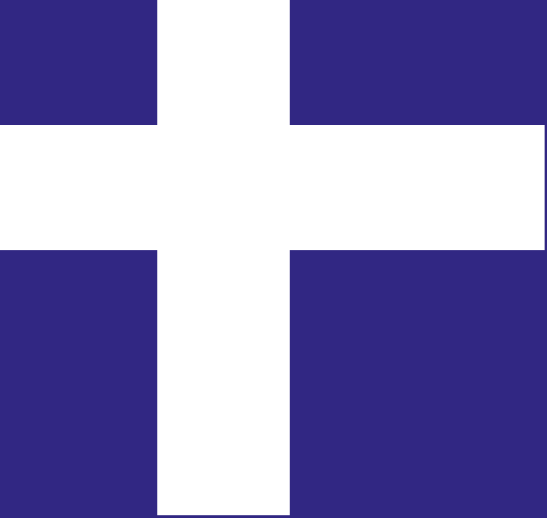


## Supply chain



Open platform + Data science + Domain expertise = O+





Thank you

**OPTIMAL+**  
Lifecycle analytics you can trust