



# Infineon Functional Safety



Infineon  
Automotive  
Dependability



✓ Quality  
🔒 Cybersecurity  
🛡️ Functional Safety

Dependable Electronics



# Megatrends shaping the automotive market

## Infineon products are enabling automotive safety



Automated Driving

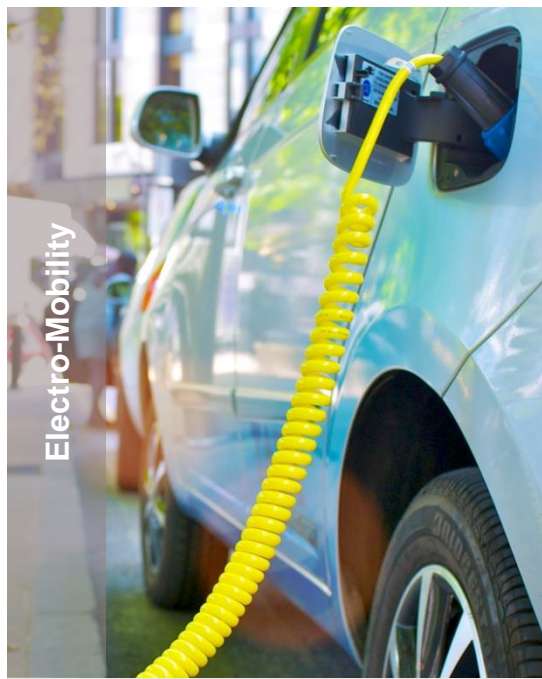


ISO 26262



Enabling safety towards Vision Zero

Electro-Mobility



Enabling CO<sub>2</sub> reduction

Connectivity



Enabling the communication of cars

Security

AUTOMOTIVE SECURITY



Enabling security in connected cars

## We simplify the integration of safety features

**Mission:** We shape the future of mobility with microelectronics enabling clean, **safe**, smart cars.



ISO26262-compliant



ISO26262-ready

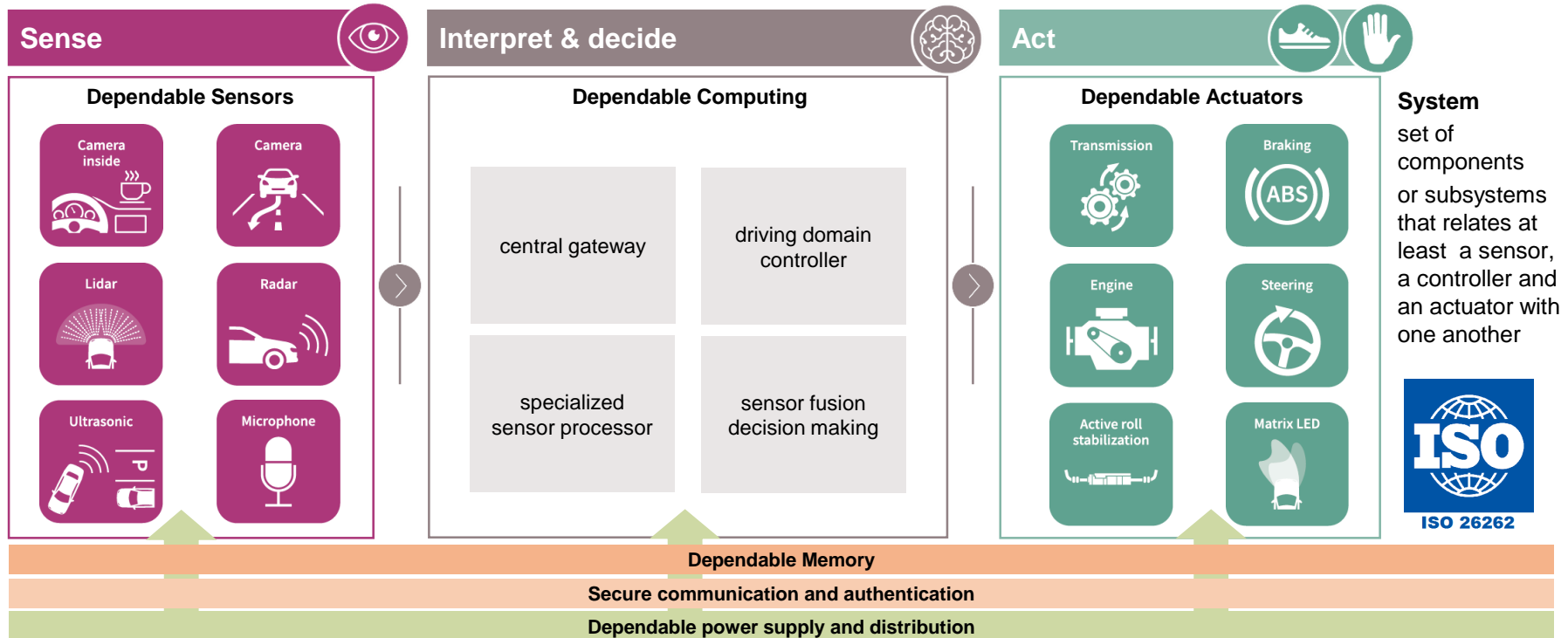


Dependable  
Electronics  
Functional Safety



Infineon electronics are a foundation for safe and autonomous driving customers can trust in

# Trust requires dependable systems which are always available Infineon supports with safe semiconductors




Our profound system understanding makes us a competent partner in safety-critical applications providing safe semiconductors in conformance to ISO26262

# Dependable systems are highly available, safe and secure systems, increasing the need for more dependable electronics



 ISO26262-compliant

 ISO26262-ready

**Fail-Safe** | in the event of a failure, system enters safe state



**Fail-Operational** | Mitigate potentially hazardous effects by ensuring critical operations in the event of a failure



**High Availability** | Ensure high availability beyond critical operations; a safe and secure system, that operates in all conditions



**Yesterday**  
(operating time until failure)

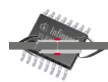
**Today**  
(operating time after failure)

**Tomorrow**  
(extended operating time after failure)

**Sense**



Integrated safety and diagnostic functions



Broad ISO26262 compliant product portfolio, incl. dual die products to provide redundancy



Measurement diversity coming from multiple technologies

**Compute**



Safe computing supported by safety library



First microcontroller certified acc. ISO26262:2018 with increased built in diagnostics.



Increased performance through integrated accelerators with holistic safety

**Act**



Gate drivers and switches supporting safety applications



Gate drivers and switches Pro-SiL(TM) ISO26262-compliant



Drivers and switches with functions dedicated for DC/DC / Battery Management

**Supply Distribute**



Safe supplies for microcontrollers and switches for relays and fuse replacement



ISO26262-compliant PMICs and ISO26262-ready switches for relays and fuse replacement

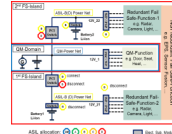
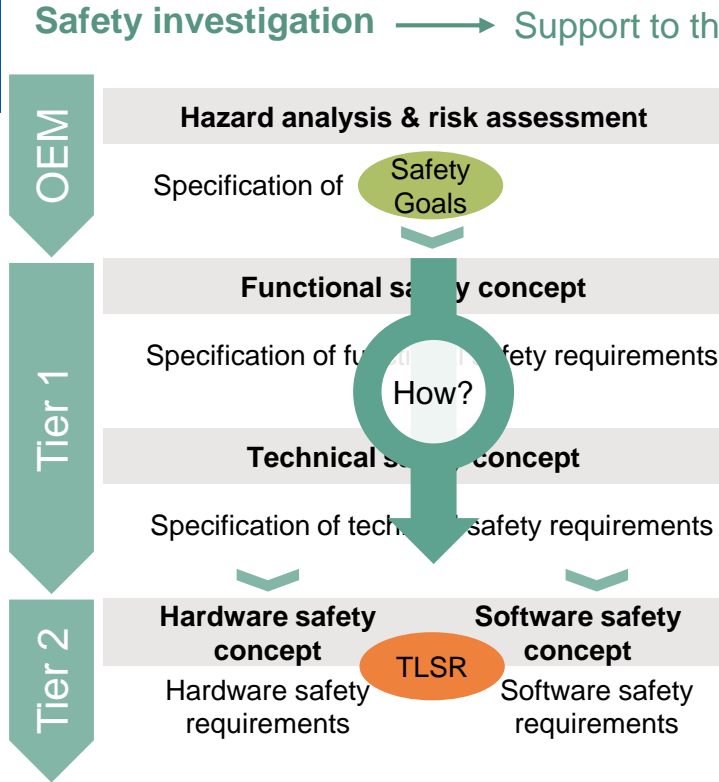


ISO26262-compliant application specific PMICs and switches for fail operational power supplies

# From Safety Goals (SG) to Top Level Safety Requirements (TLSR) The “Infineon Safety Investigation” a supporting process



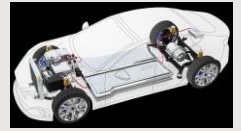
Classical Approach



Item and system level



OEM



Tier 1



Marketing  
Field Application Engineering

**Safety Application Community**

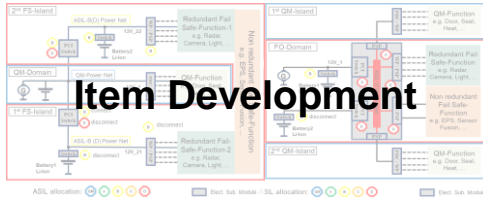
Application and Concept Engineering

**Product Development**

# The product Top Level Safety Requirements (TLSR) are derived from the "Safety Investigation"

## OEM & Tier 1

### Hazard & Risk Analysis - Safety Goal



## Product Development

### Device Level

### HW / SW Top Level Safety Requirement (TLSR)



ISO26262-ready



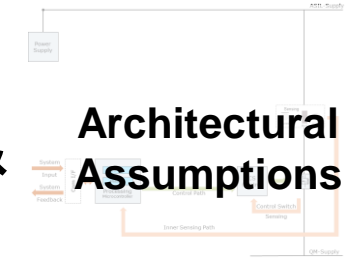
ISO26262-compliant

## Infineon Safety Application Group

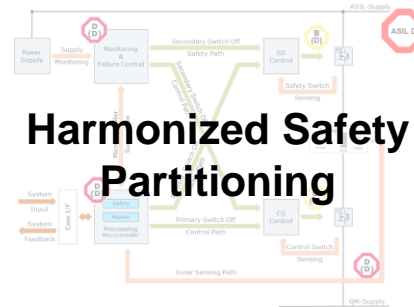
### Sub-System el. HW Level



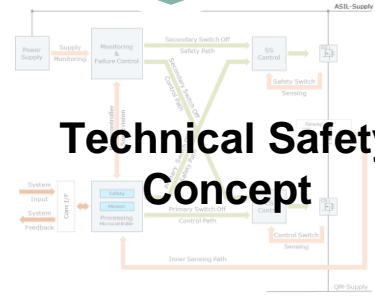
### & Architectural Assumptions



### Harmonized Safety Partitioning

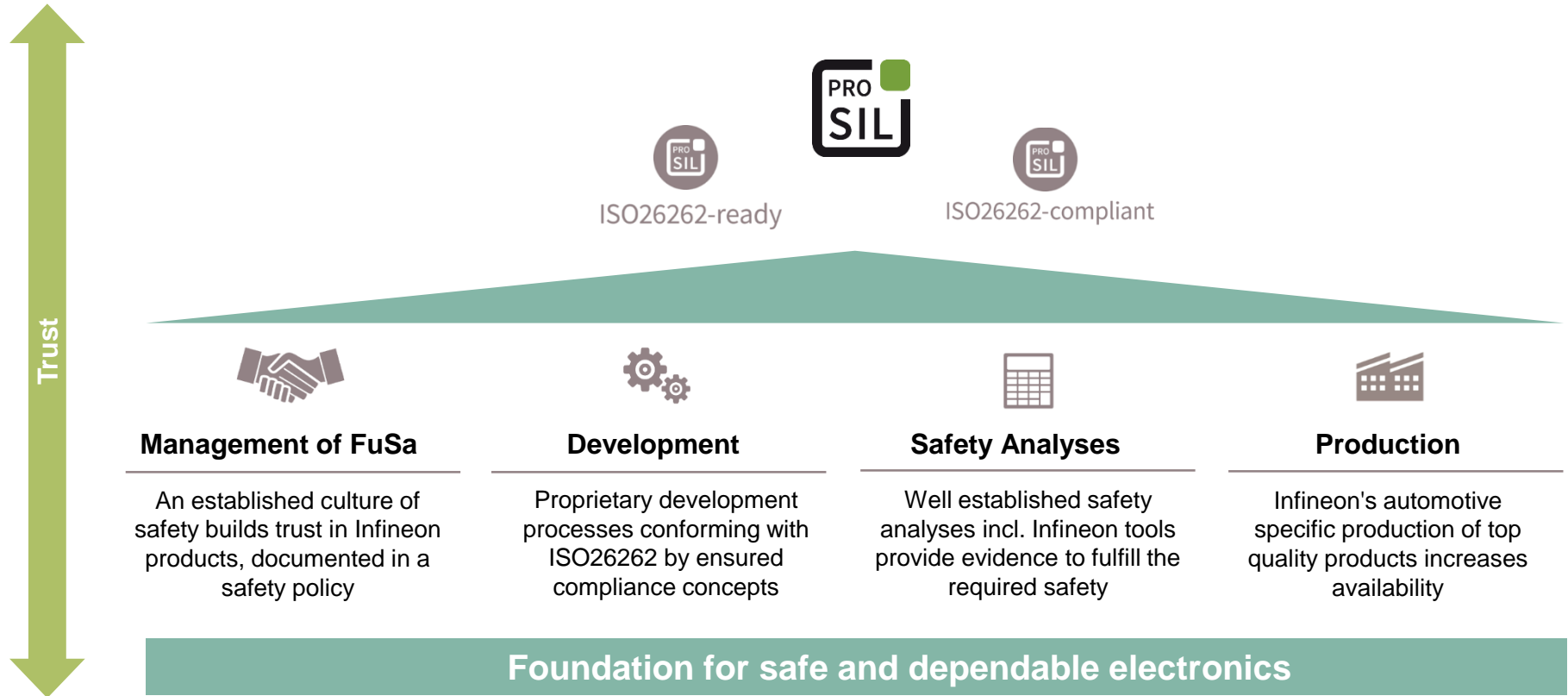


### Technical Safety Concept



# The Holistic Functional Safety approach of Infineon

## A foundation for dependable electronics














# With our strong Functional Safety experience we provide building blocks for integrating safety features



## ProSIL™ products support a safety use case

Customer use case	System Integration Efforts	Documentation	Safety Feature Description	Infineon Label
Design with safety product to develop its own safety system	 Use case specific	 Use case specific	Product with diagnostic or safety features	
Hardware integration using products developed with Infineon automotive processes	 Medium	 Safety App. Note	Safety analyses and customer documentation supporting ISO26262 system integrations	 ISO 26262 ready
System designed around Infineon components developed specifically for safety relevant applications	 Low	 Safety Manual	Product developed according to ISO26262 process with required documentation	 ISO 26262 compliant



Experienced Functional Safety semiconductor supplier with comprehensive system understanding supports complete safety lifecycle



## Your #1 partner in Safe Systems

Infineon components support your safety requirements and are easy to integrate



Automated Driving enabled by dependable electronics from Infineon based on our comprehensive system understanding to support all safety-relevant automotive systems



Certified Products



Project Launch Support



Quick Start & Prototyping



Trouble shooting



Training



In Field Maintenance

# Infinion is your trusted partner for Functional Safety

## Committed to enable dependable solutions



**Mission:** We shape the future of mobility with microelectronics enabling clean, **safe**, smart cars.



ISO26262  
ready



ISO26262  
compliant

- › The **emphasis on safety** at Infineon, enables us to develop and provide products for the automotive market, for all safety-relevant applications
- › With our **passion for innovation and quality**, we develop products for the growing Functional Safety market
- › In an ever-changing automotive market, **Infineon Pro-SIL™ products** enable safety-relevant systems to achieve their safety goals



Part of your life. Part of tomorrow.

For more information click on the respective image below

