

# New Volkswagen Golf Mk. 8 Deliveries Stopped Over eCall Software Issue

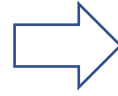
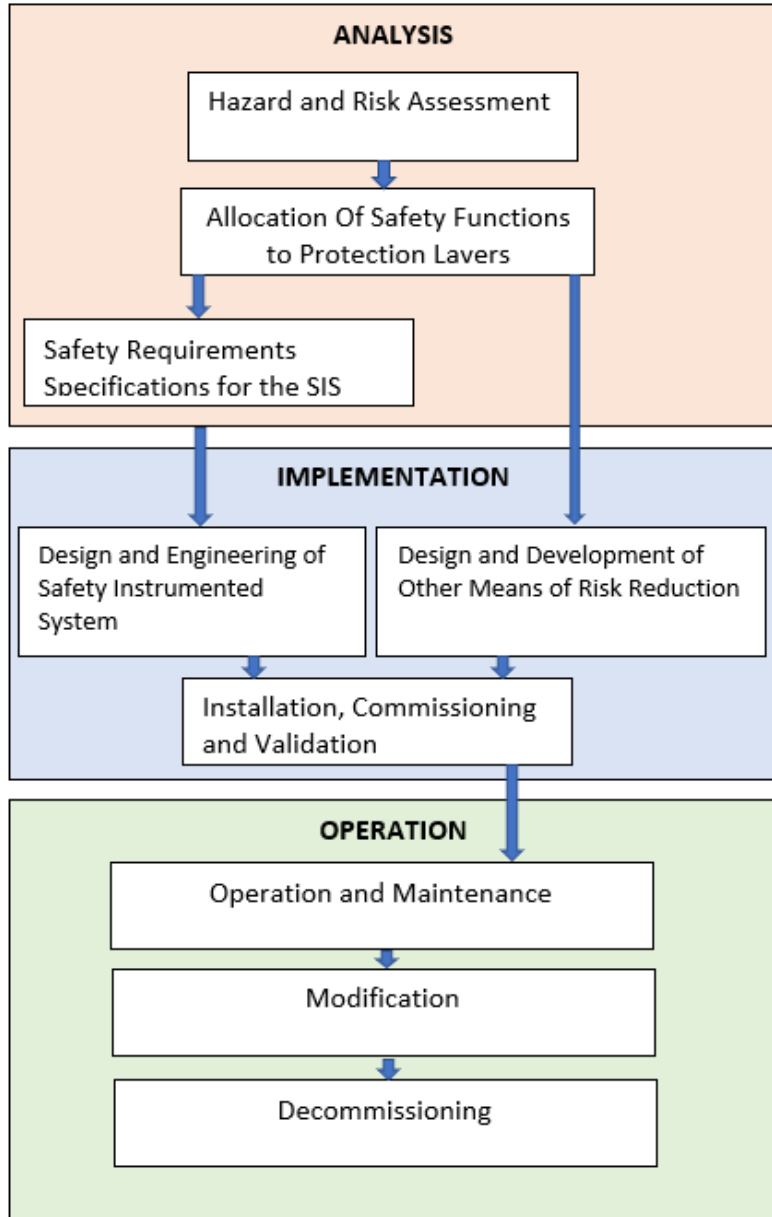
17 May 2020, 15:25 UTC

Software issues have plagued Volkswagen as of late. These problems were reported on more than 20,000 units of the ID.3 electric hatchback in December 2019 as well as on the Golf Mk. 8 before it premiered at the 2019 Frankfurt Motor Show.

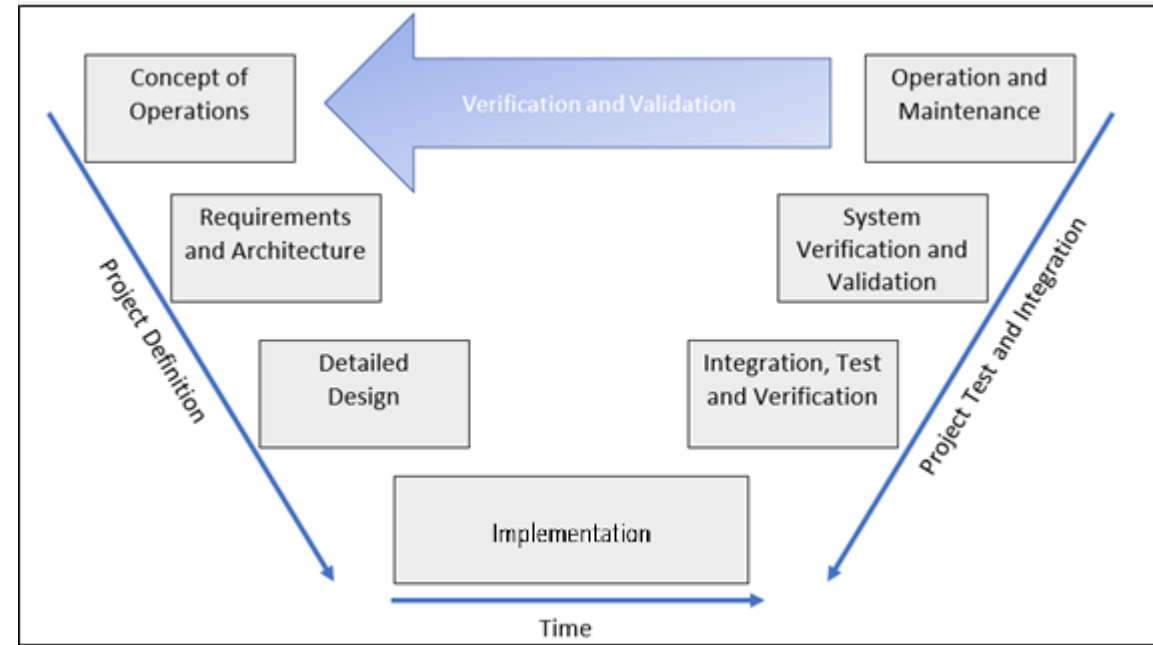


Presentation:  
**Root Causes** and **Solutions**  
for the miserable  
**Safety/Quality**  
in Embedded Systems

# Functional Safety Process and V-Model



Any identified risks are eliminated through proper architecture (*functions and signals*) and test measures

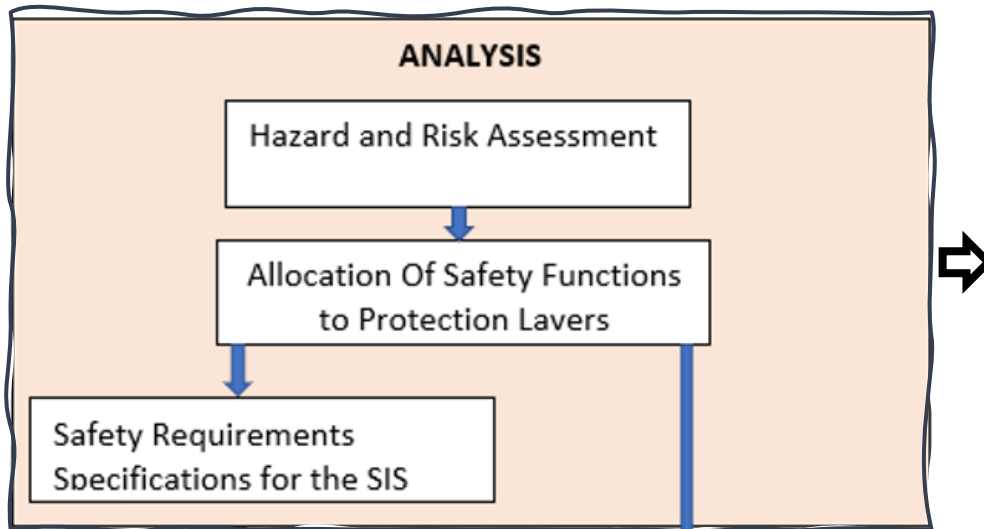


Any requirement or architecture is verified or validated (*metrics*)

**What is the problem ?**

# Root Cause

**The Major Risk of Embedded Systems is NOT eliminated:**



It is NOT secured, that the **signal processing** of all functions is **specified completely and clearly (unambiguously)** in any **potential situation**

- I/O-Signal combinations
- Errors
- Modes
- Configurations and Variants

*Because, so far no techn. process is existing therefore !*

If a situation is **not specified**, it **can't be tested**

→ Errors are detected by customer



# Solved Problems

1. Missing “**Single Source of Truth**” in V-Model work products (*ambiguity*)
  - ✓ Tool Chain for **Model Based Development** and **System** to **Subsystem** synchronization
  - ✓ **Object-oriented** Requirement Engineering
2. Missing or exceeding “**Contents** or **Detail-Level**” of work products (*inconsistency*)
  - ✓ **Generic System Kit** for embedded systems → **Fixed** requirement specification **structure**
3. Missing requirements for “**specific situations** or **signal combinations**” (*incompleteness*)
  - ✓ Automatism for **Interface-Architecture**, **Modes** and **Signal-Handling**
  - ✓ **Logic Tables** and **Completeness-Checker** for potential situations and signal combinations
  - ✓ Automatic **Specification-**, **Code-** and **Test-Generation**

⇒ **Reduction of errors in electronic units > 70% !**

## *More Information*

More detailed information about the **Functional Requirement Checker** and the **Model Based Development** can be downloaded from our home page <https://visioneer.info/>

Please let us know, if you have any questions:

Gerhard Schilling

Tel. +49 179 3245588

[schilling@visioneer.info](mailto:schilling@visioneer.info)