

# Product Development in Today's Environment



Steffen Herz, Forvia

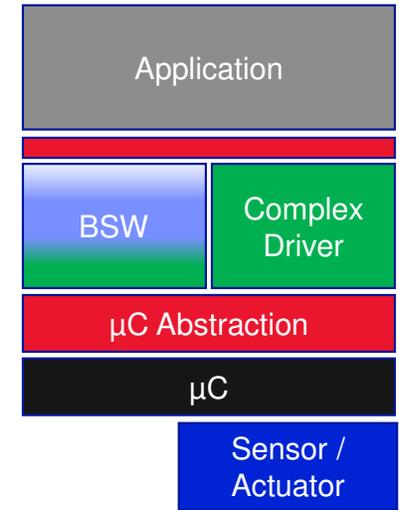
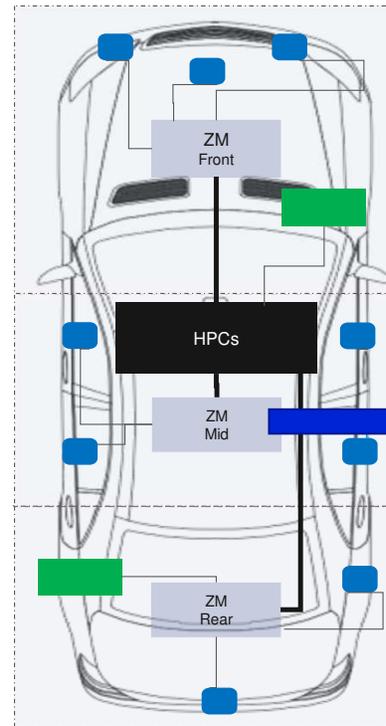


# The Context: Standard Product Development – Re-usable System represented on a Reference

## Classic Automotive Feature/ Product

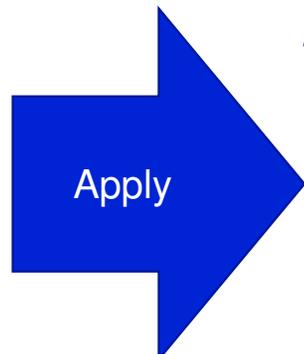
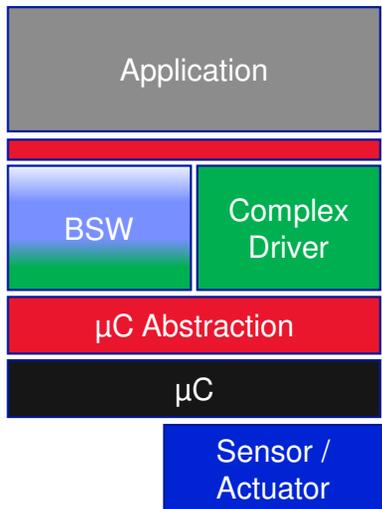
A Feature in an Embedded Systems as a part of Zonal Vehicle E/E Architecture:

-  A part of a **Zonal Architecture** as Zone Module/ Sensor or Actuator
-  Linked to a certain **Sensor or Actuator** as real Hardware component
-  Integrated in a **AUTOSAR classic Framework**
-  **Real time** demands: ~ 1 to 100 ms,  
**ISO 26262**: min ASIL B up to ASIL D,  
**Limited  $\mu$ C** resources: less 2-8 Mbyte Code Size,
-  **Represented on a Reference System**, certain  $\mu$ C, AUTOSAR BSW Version, A-SPICE,  
Functional Safety: System Element out of Context... → Industrialized Feature



# The Challenge: Apply Product to Customer Projects – Quick and Easy?

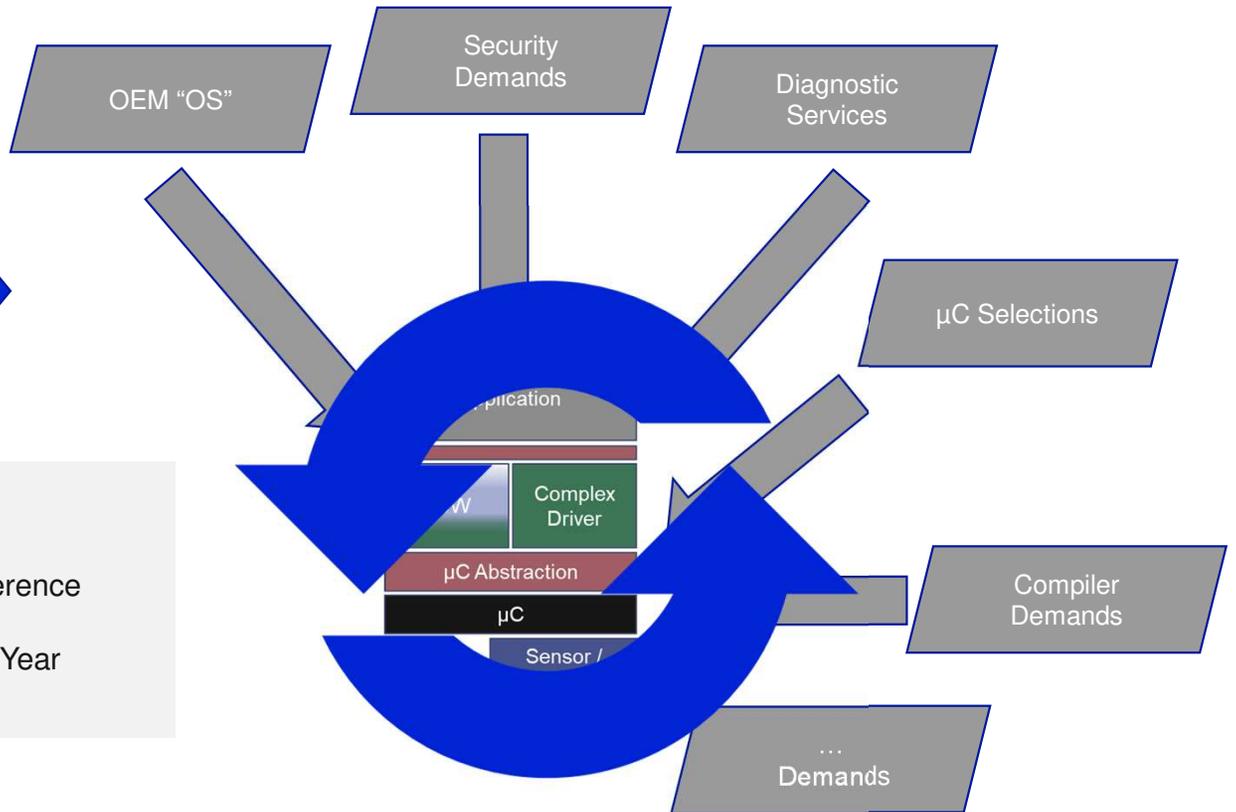
## Reference System



**Expectation:**

- Quick and Easy adaptation of Reference
- “Just integration”
- Time to market ½ Year

## Customer X Context



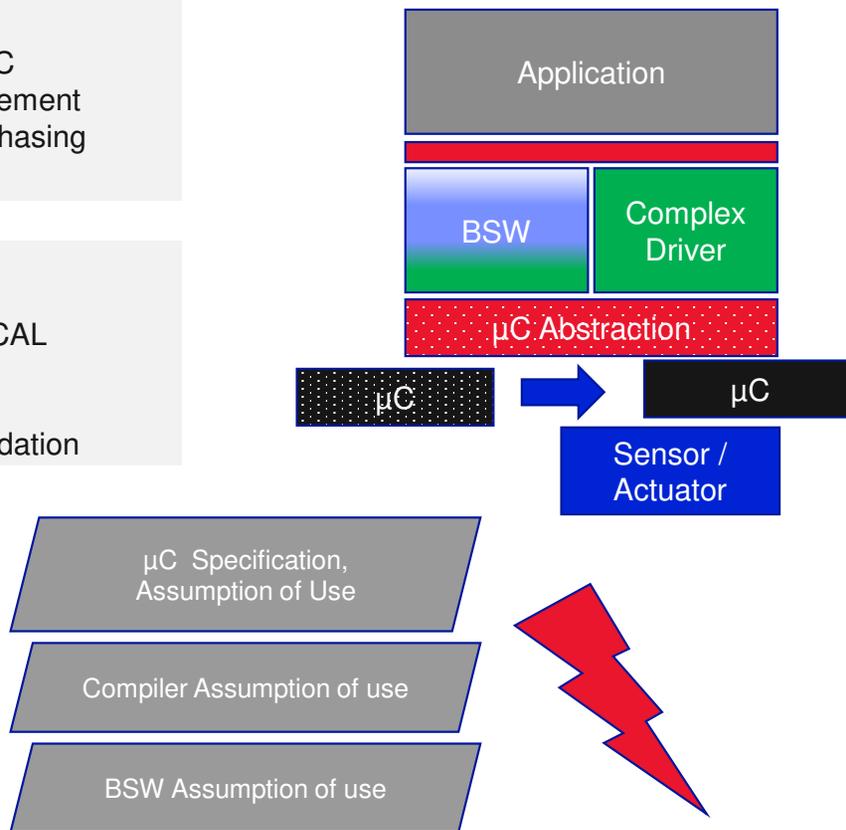
# The Challenge: Apply Product to Customer Projects – Example: Need to exchange $\mu$ C

## Motivation:

- Preferred OEM  $\mu$ C
- Crisis risk management
- Flexibility on purchasing

## Expectation:

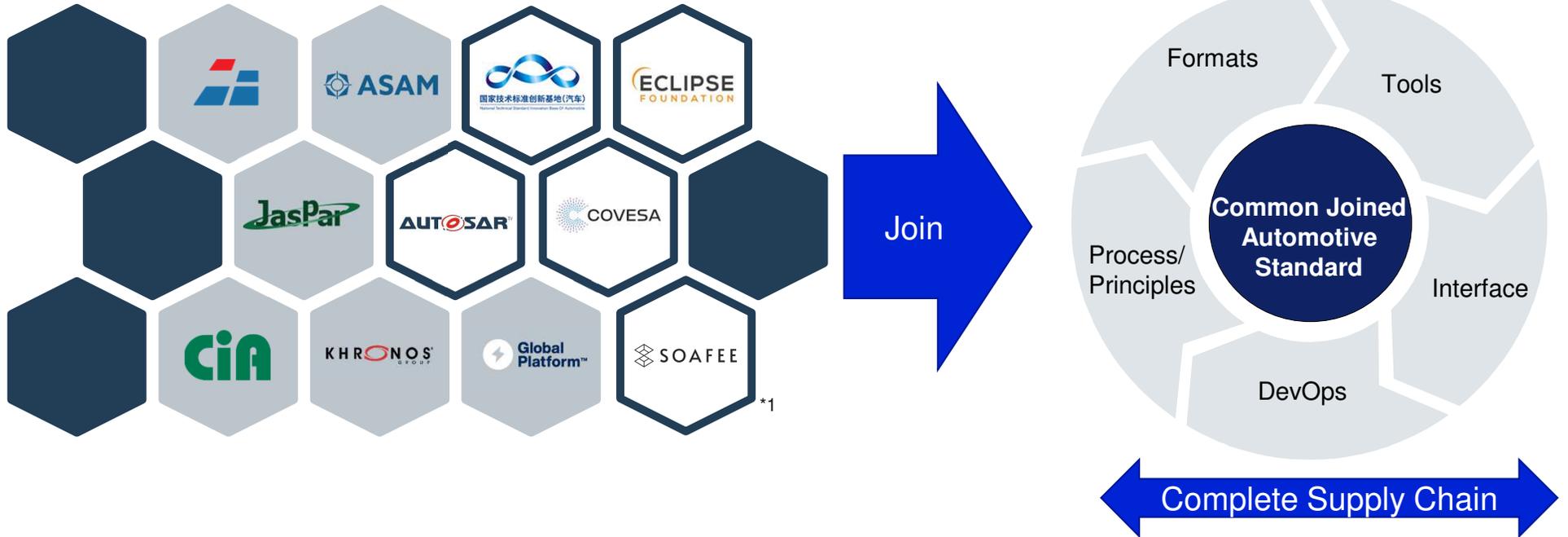
- Exchange  $\mu$ C, MCAL
- Adaption of Basic Software
- Verification & Validation



## Reality:

- Complete exchange of Basic Software
- Adapt to special  $\mu$ C demands: e.g. Start-up, Build in Self test, Security,...
- Re-do/ Re-configure of entire Software
- Re-do all Safety Analysis
- Different formats of Suppliers Requirements (Assumption of Use)
- Generators & Configurators are different
- Generated out-put need to be re-checked again
- Updateability very low
- E.g. Sum of Assumption of Use + 800 Requirements

# Solution Space: United Automotive Standards



**FORVIA**

