

# Integrating Safety & Security: the HASELNUSS platform

## **Stefan Katzenbeisser**

Universität Passau, Lehrstuhl für Technische Informatik  
Sprecher „Passau Institute of Digital Security“

&

INCYDE GmbH  
Co-Founder & Wissenschaftlicher Berater





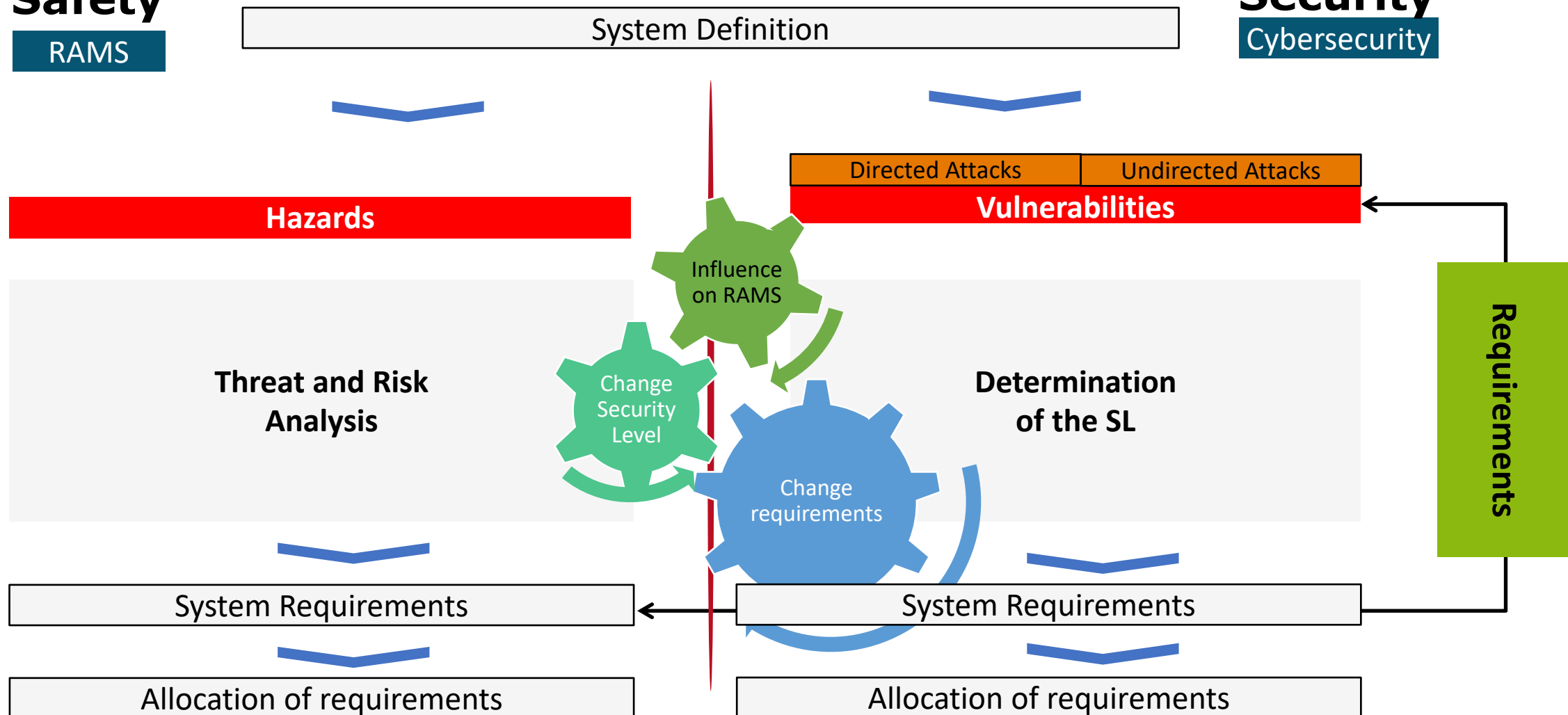
# Interplay of Security & Safety

**Safety**

RAMS

**Security**

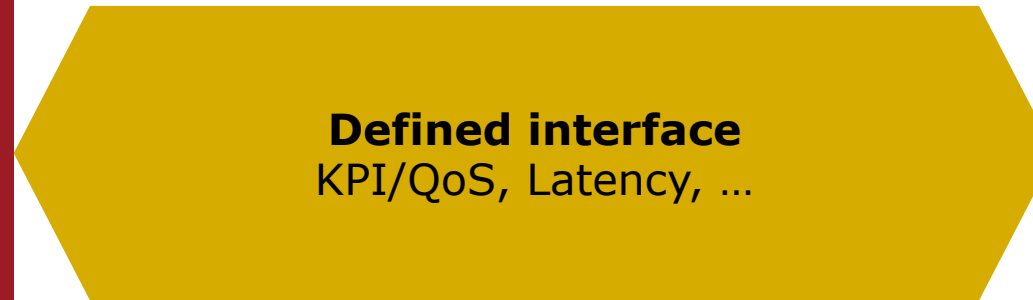
Cybersecurity



# Security & Safety: The „shell concept“

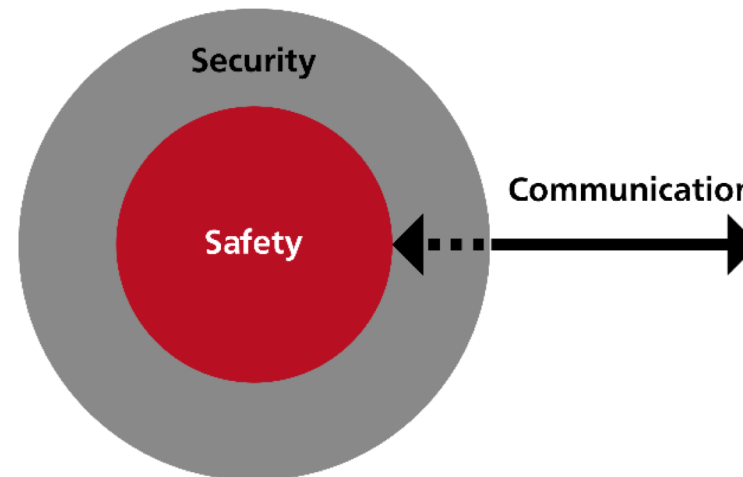
## Safety

- Everlasting properties
- Changes only necessary in long time periods



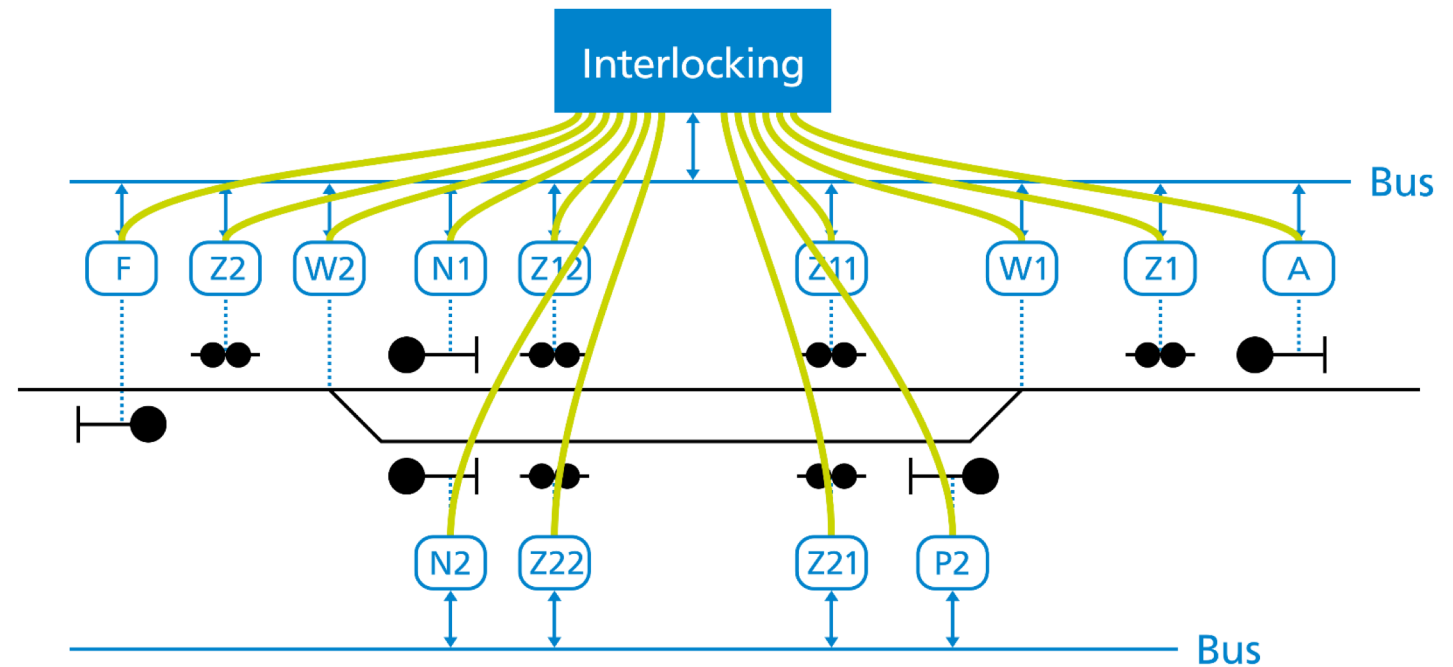
## IT-Security

- Reaction to security incidents
- Fast patch cycles
- Independent of safety certification

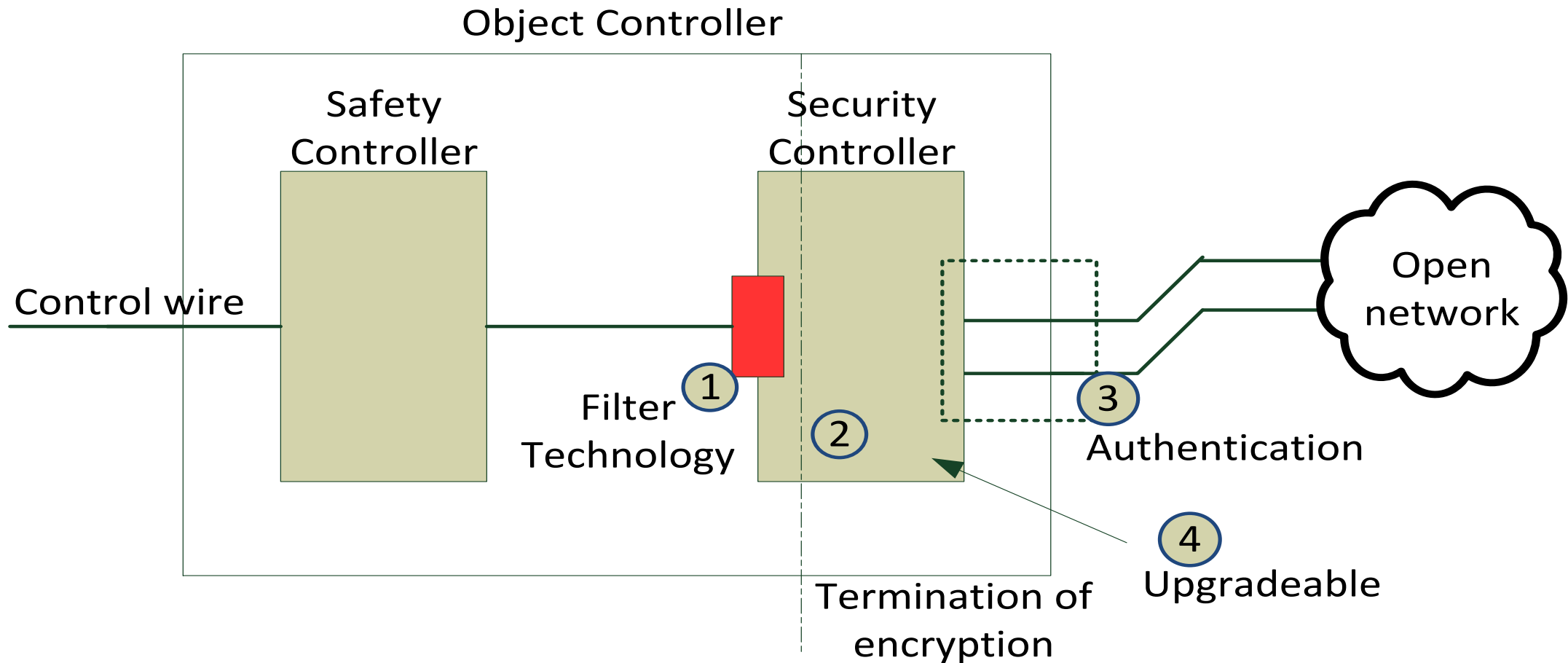


# Required Functionalities of an Object Controller

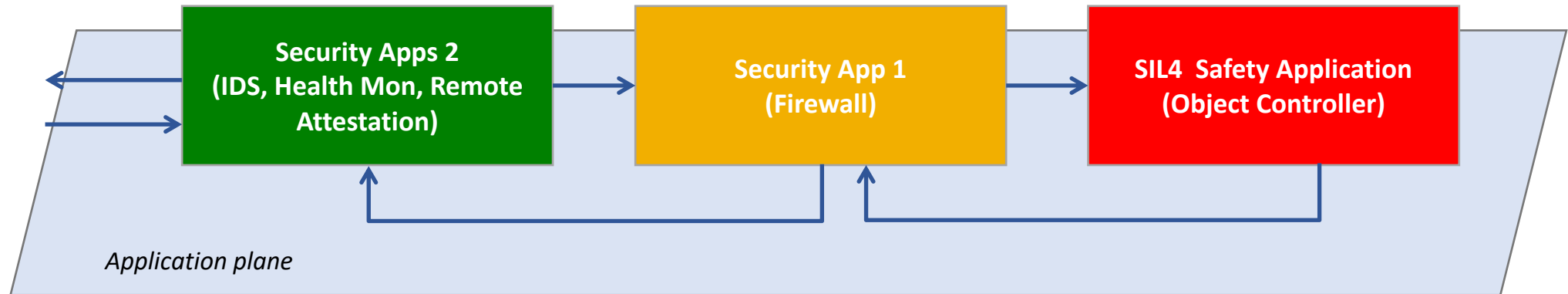
- Setting safe train routes: no collisions, no derailment
- Object controllers steer field elements: signals, point machines, ...
- Communicate commands to object controllers
- Collect reports from object controllers



# Example: Object Controller

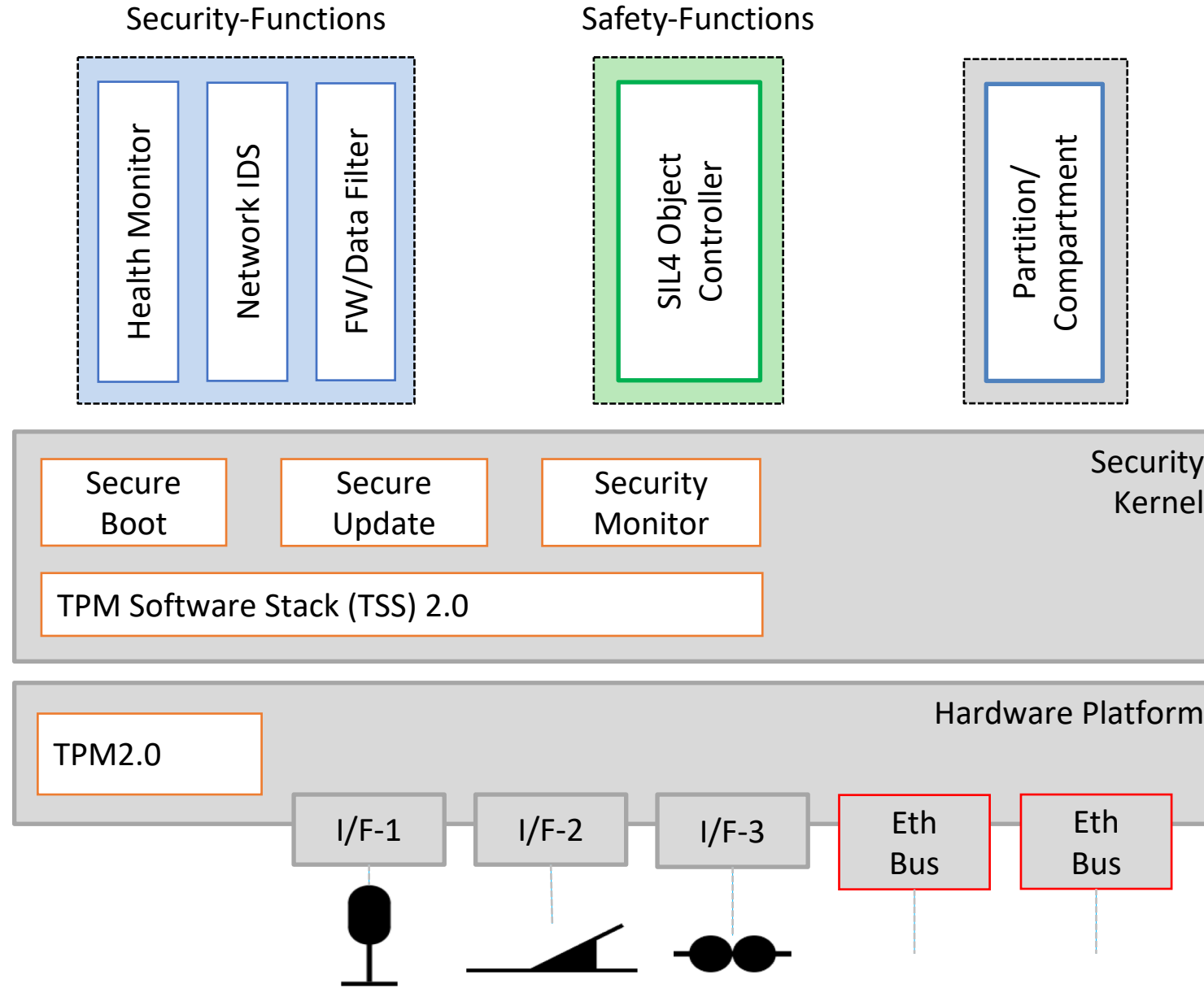


# BMBF Research Project: HASELNUSS (1)



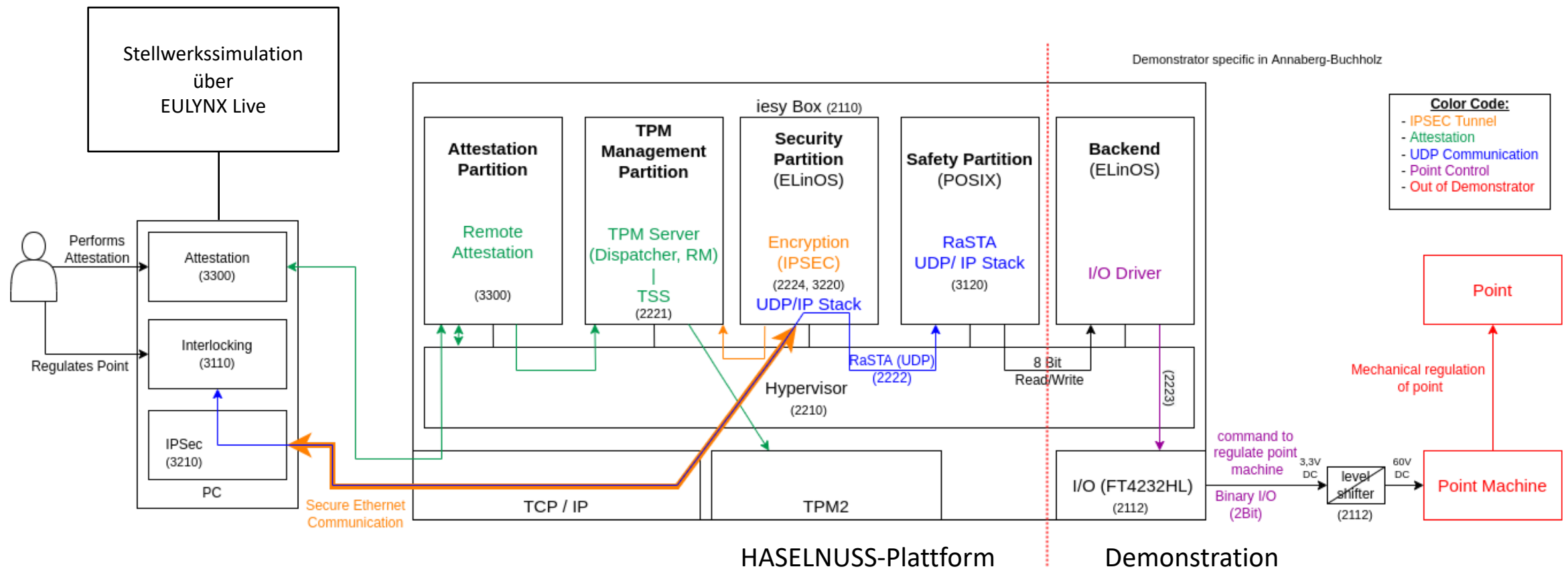
- Integration of Object Controller application (Safety) together with security applications (Non-Safety) on one hardware platform with shared resources.
- Requirements for integration of safety with security applications.
  - Safety application shall be separated from security applications
  - Information flow to safety application shall be only via pre-defined and controlled channels
- Prototype expected for 2021

# BMBF Research Project: HASELNUSS (2)





# Prototype expected for Q4/2022



# Integrating Safety & Security: the HASELNUSS platform

## **Stefan Katzenbeisser**

Universität Passau, Lehrstuhl für Technische Informatik  
Sprecher „Passau Institute of Digital Security“

&

INCYDE GmbH  
Co-Founder & Wissenschaftlicher Berater

