



Instrument Cluster EG

4th F2F

5/08/2019

Functional Safety

If ASIL-B is the target for the Cluster AGL system, it is difficult to achieve by only AGL. Achieve ASIL by installing a safety mechanism in AGL (Non-Safety). What should be done to share functions between Non-Safety and Safety?

ASIL-B achieved as a system



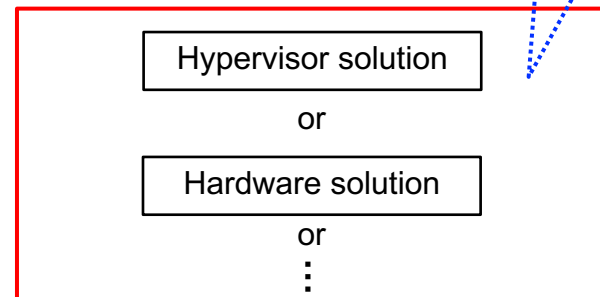
Should we work on solutions through collaboration with Virtualization EG and others?

QM(Non-Secure)



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ASIL-B(Secure)



Functional layout

EG target



Non-Safety(AGL)

Safety

Automotive Services

- Camera
- Configuration Services
- Tuner Services
- Multimedia
- Smartphone Link
- PIM
- Vehicle Bus
- Diagnostics
- Speech services
- Telematics
- Navigation Service

Platform Services

- Bluetooth
- Persistent storage
- WiFi
- Telephony
- IPC
- Window System
- Graphics
- Network Services
- Location Services
- Health Monitoring
- Resource Management
- Error Management
- Lifecycle Management
- Power Management

App FW

- Application Manager
- Sound Manager
- Window Manager
- Input Manager
- User Manager
- Policy Manager

- Rendering
- CAN
- Illumination control
- Power status control

Functional layout

EG target



Non-Safety(AGL)

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e.g.)



Rendering



Except ASIL telltale

ASIL telltale

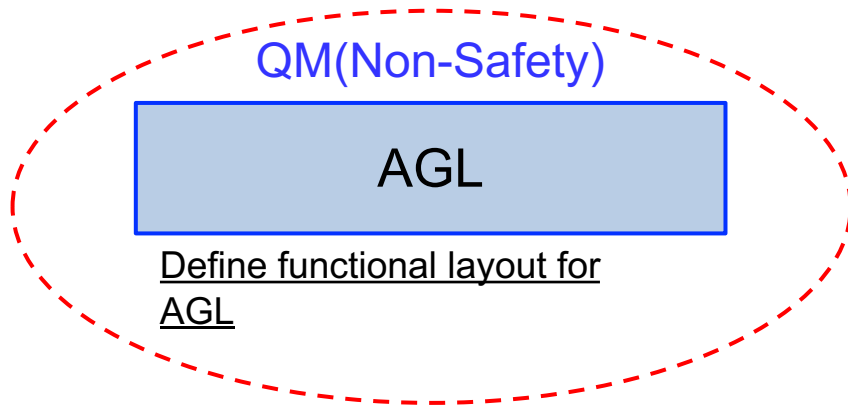
Safety

- CAN
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- Power status control

App FW

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How to proceed with architecture design



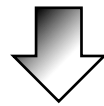
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ASIL-B(Safety)



Is it necessary to define the Secure side? Each company has different implementation methods.

e.g.) When rendering all in AGL (including ASIL telltales), In this case, the Secure side needs to monitor the output of rendering.
Is it necessary to define a specific example of monitoring?



Architecture blueprint



- Design architecture based on container technology.
--> We will proceed with the design separately so that the next AGL F2F can be previewed.
- Creating an easy-to-develop environment such as IC service
-->Continue discussions at a small WG centered on Cluster Tier1.

Working image



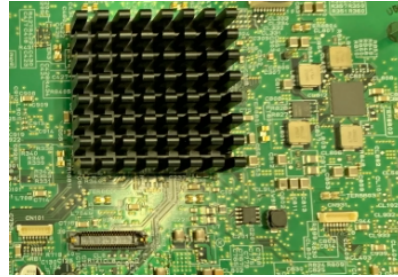
Architecture blueprint



Target performance



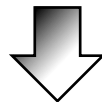
Requirement spec (Spec EG)



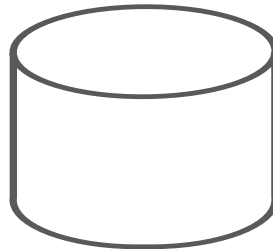
Reference hardware (R-Car E3)



Reference design



Develop code including community based on the above information



Source code

Schedule

2019							2020				
Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
EG F2F	ALS (F2F)	F2F	AGL F2F	AMM			CES				
	Sample code release		Review								
			↓								
	Target spec release	New architecture release									
				Spec release							
									Code release based on new architecture		