



AURIX™ Knowledge Lab 2021

Battery Management Project Basics

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Battery Management Project Basics



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Every project starts with an idea



source: Fotolia

Expertise out of customer projects with our partners

DC/DC converters **Safety integration & certification**

Implementing security requirements

Emulator for special micro controllers

IoT implementation and integration

eDrive development

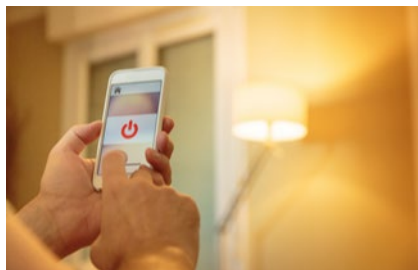
Functional Safety process consulting

Battery management

ECUs for powertrain & combustion engine



source: shutterstock



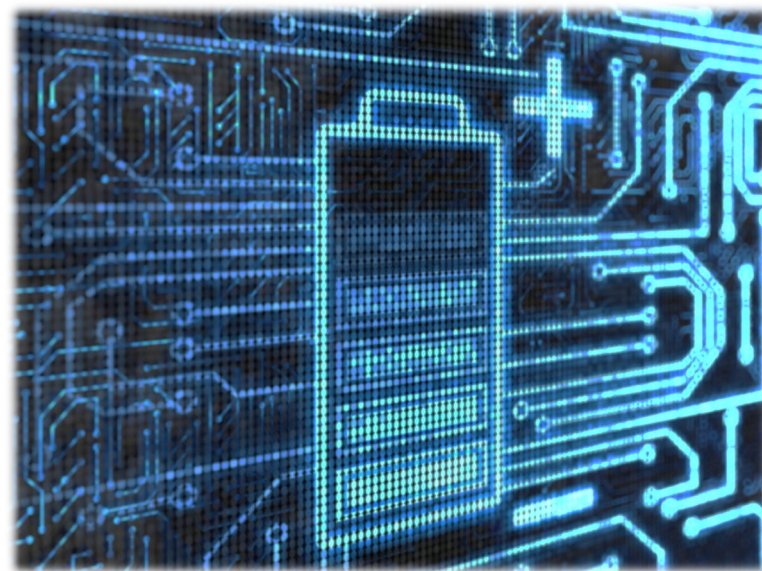


source: shutterstock

- A customer (Tier1) was in the acquisition phase of a new project: the development of a Battery Management System (BMS)
- Hitex was consulted to discuss the first details:
 - Suitable safety controller
 - Functional Safety Questions
 - Implementation of cybersecurity requirements
 - Project support

Top Level Requirements

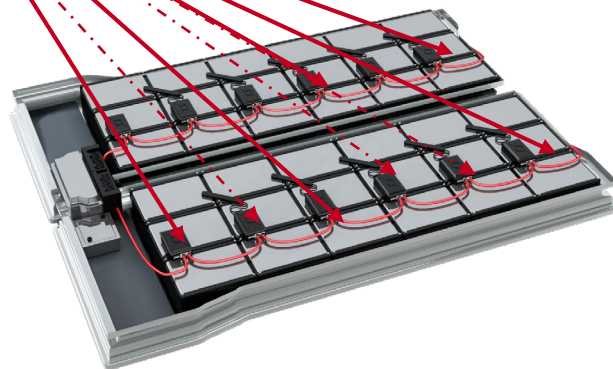
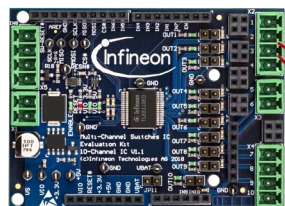
- Long term availability of devices
- ISO 26262 & ISO 21434 compliance
- AUTOSAR
- Safety controller
- Secure communication, HSM available
- Professional software tests
- HIL-tests in the early project stage



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Overview Battery Management Systems

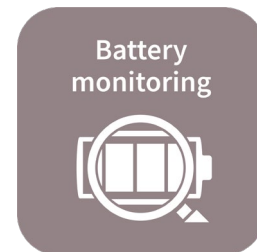
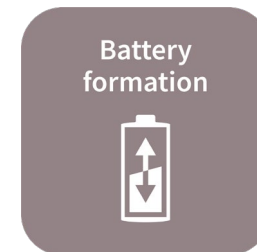
- Up to 20 boards per battery block



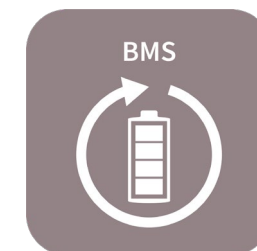
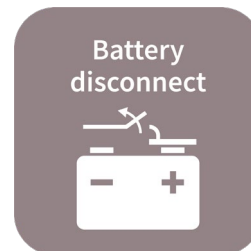
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- Key functionalities

- ☐ Battery management

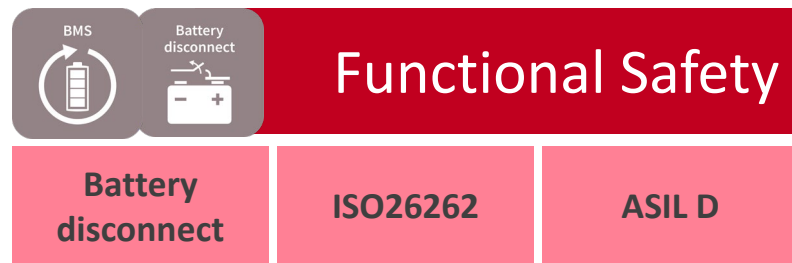
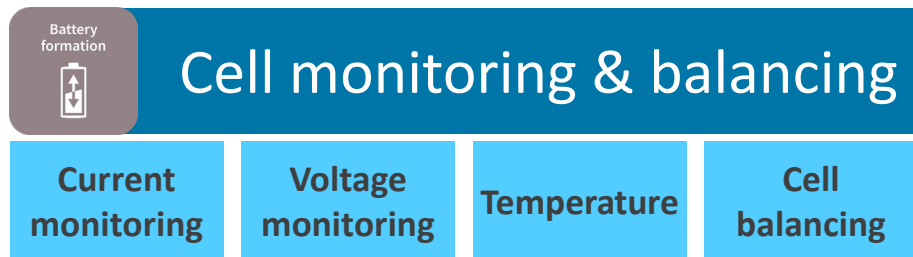
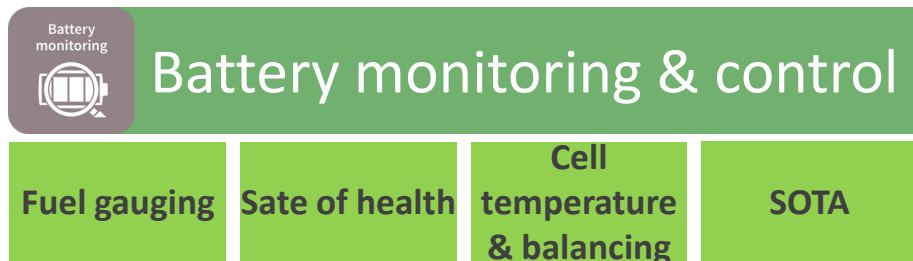
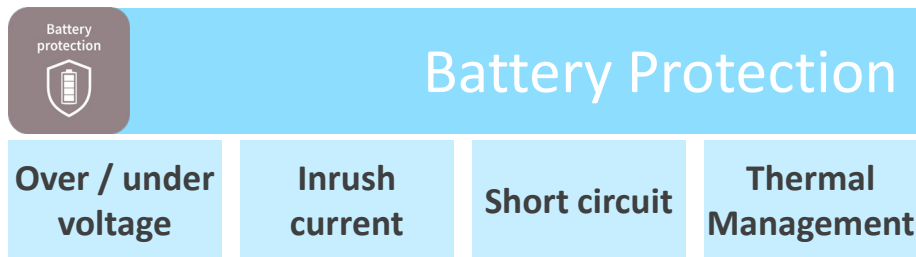


- ☐ Safety & Security

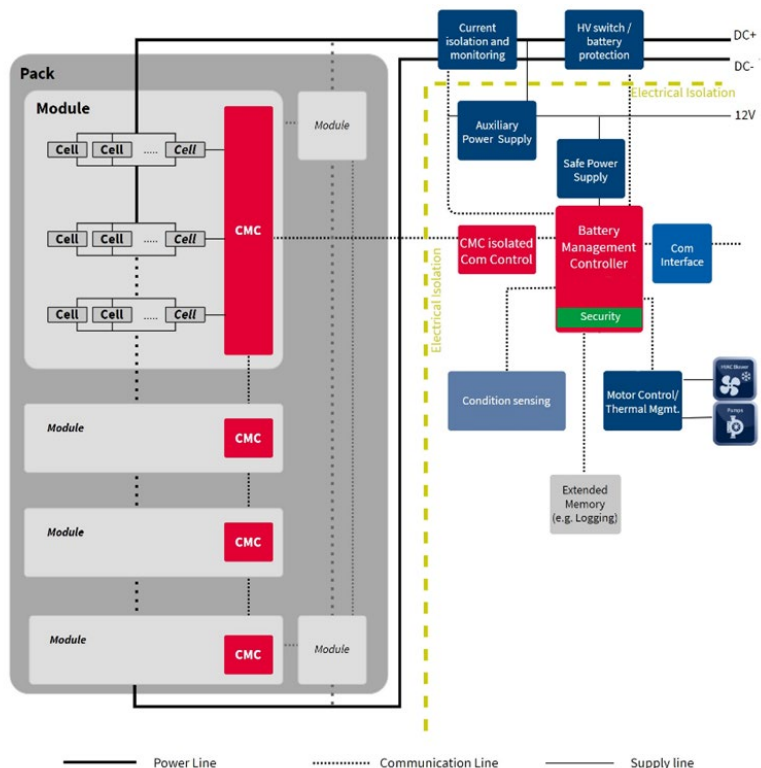


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A detailed look into BMS functions

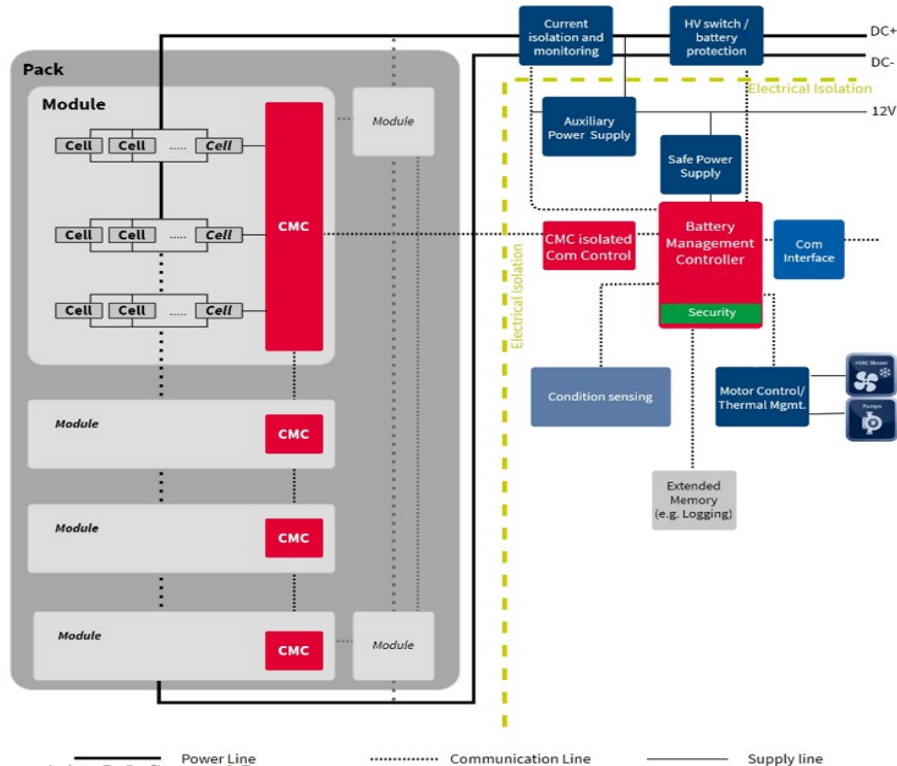


First draft: block diagram for requirements



- **Main Components:**
- Batterie Management Controller
 - AURIX™ TC3xx
- Security
 - On-chip AURIX HSM
- Safe Power Supply
 - TLF35584
- CMC - Cell management controller
 - TLE9012
- CMC Com Control
 - TLE9015

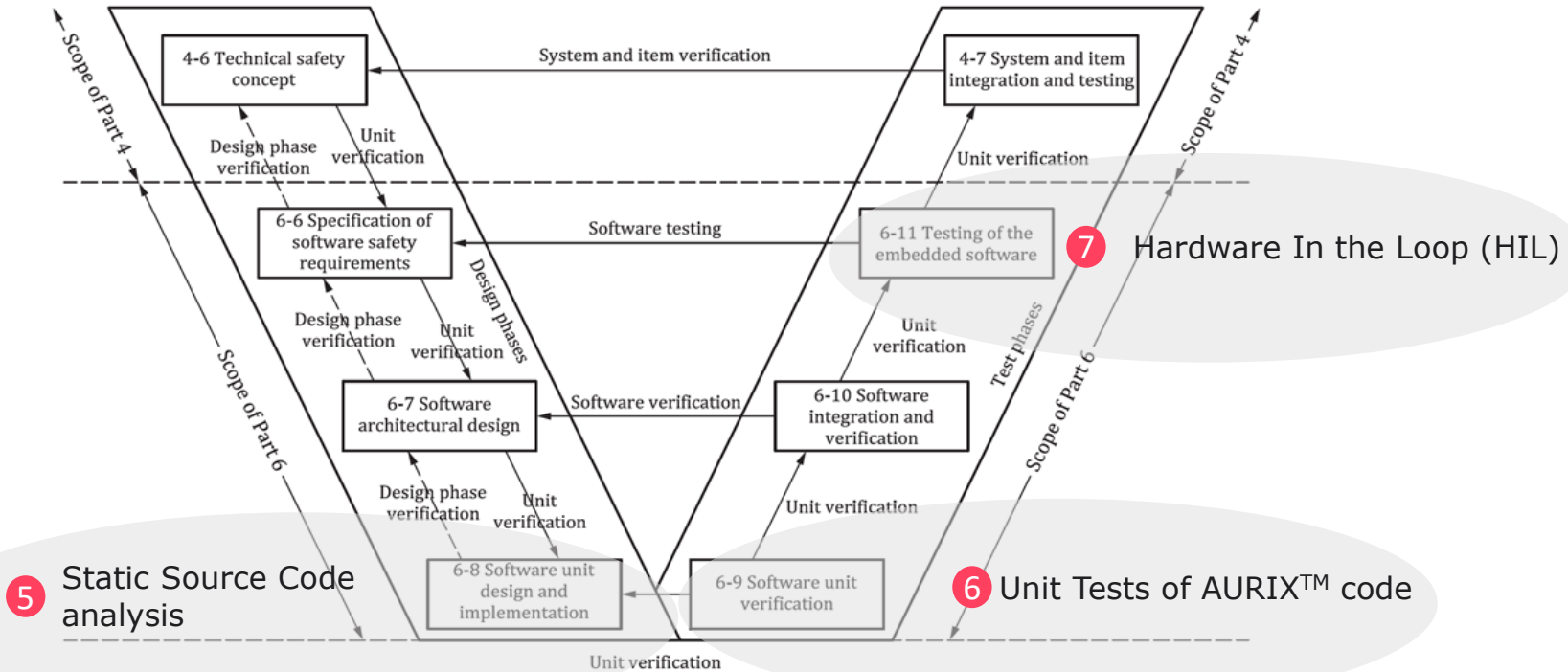
Next presentations to come: Safety & Security with AURIX™



- 1 Device selection
- 2 Why AURIX™
- 3 Safety with AURIX™
- 4 Security with AURIX™



Next presentations to come: Software and system quality



Any questions?

Thank you
for your attention!
Please contact me ...



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