

Craft #LikeABosch online hackathon

Hardware development challenge

Introduction

Bosch is one of the market and technology leaders in automotive industry. We provide solutions, systems, and hardware in nearly all areas connected to vehicles and transportation to our partners. This is even more true in driver assistance and infotainment systems. Bosch is amongst the few companies who have a complete product portfolio like video, ultrasonic and 77GHz radar sensors, central ADAS computing unit, display and infotainment clusters.

The evolution never stops. Therefore, we are always focusing on how we can provide more advanced hardware solutions, furthermore, solve problems first in the world.

Challenge your idea

Now it is your turn to show how do you think about the future of transportation, driver assistance and infotainment systems related hardware and how you want to shape the future of hardware-related solutions in this area!

Describe a problem that hasn't been solved yet related to autonomous vehicles or passenger infotainment systems! For example, do you just simply want to provide a completely new function for the users? Like a new human-machine interface between the vehicle and passengers, such as monitoring passengers' life signatures with radars? Here is the chance to show your hardware solution.

The challenge is open to ideation and experimentation, you just need to describe

- What is your idea to further improve or bring new solutions regarding driver assistance and passenger infotainment? What is the key functionality which provides an answer for the problem? How impactful is the problem and the proposed solution?
- What is the physics behind? How does your hardware work? Show the basic operation principle of your solution.
- Create the hardware architecture, building blocks and interfaces which are realizing the functions. If your solution contains software modules, please also provide a brief description about them.
- Design your circuit! Select the components, but also show the calculations behind. What are the key parameters, how do you choose them? Also create the schematic and bill of material of your hardware.

We support you

You can provide your solution in .pdf format, or you can use any tool which is comfortable for you. Our only wish is that it needs to be straightforward, structured and concrete. We also like visual explanations! 😊

Our mentors are available with their huge experience from the automotive hardware design field.

What are the most typical requirements, challenges, electrical issues in a vehicle? What should a detailed design look like? They will help you think about it!

Evaluation criteria

Value of the idea - innovativeness, impact:

- Is it offering a real solution for a real problem? How is the functionality influencing the users? What does the real value add?

Sustainability

- Do they consider environmental challenges? Is the idea connected directly or indirectly to power efficiency, long lifetime, material usage?

Feasibility

- On which operational principle is the HW based on? Can it really work or has feasibility issues amongst real conditions? The main goal is that the solution can work.

Hardware architecture

- Have they considered either in implementation or in the architecture plan the complete hardware system until the last building block? Does it contain all necessary elements or even more? If it contains software modules, is the description also available (SW modules, interfaces, functions)?

Prototype

- How detailed is the design? Is it still a concept or an implemented hardware design with selected components? Based on what calculations they have selected the components? Are there considerations regarding key parameters, tolerances, environmental influence, and price? Is the circuit schematic and bill of material available?

Presentation

- Visual, straight forward, structured, self-explaining and understandable for all of the audience