HECTOR

Hector Embeddeden Softwaren and Systemsen, Nein!

Example project “HMI protocolen”

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Basis:

- Modern vehicle functions are usually distributed across multiple ECUs and are implemented throughthe interaction of these ECUs
- ECUs communicate over vehicle networks and information is exchanged using suitable communication protocols

Boundary conditions for the example project:

- The system is comprised of multiple “application ECUs” and an “HMI ECU”
  - Application ECU: An application requires interaction with the driver for certain functions (e.g. navigation)
  - HMI ECU: Implements interaction with the driver (comprised of a display and input buttons)
- All application ECUs are to use the HMI ECU for interaction with the driver
- There are no timing specifications for using the HMI ECU, i.e. all application ECUs can send quasi-simultaneous requests to the HMI ECU at the same time

Task:

- Design an “HMI protocol” which,
  - enables quasi-simultaneous communication between the application ECUs and the HMI ECU
  - ensures assignment of data to the respective application ECU (every response by the driver must be assigned to the right question of an application ECU)
  - manages access to the HMI ECU (the request of only one application ECU can be processed at atime)

Implementation:

- Prepare a presentation of your solution
  - duration: 15 – 20 min.
  - media: projector, white board, handout etc.