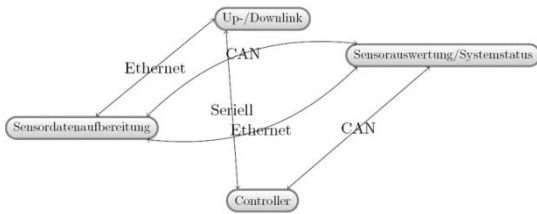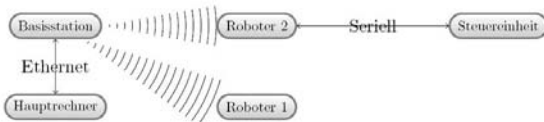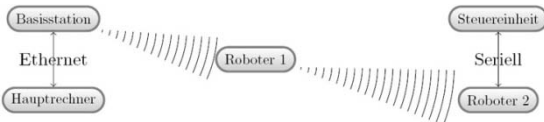# CoHoN

Communication in Heterogeneous Networks

Example of a supported network

Direct message forwarding over different communication hardware

Supporting automatic message relaying, if the destination is not directly available

With CoHoN, a solution for robotic systems will be created. CoHoN is designed to connect any system with different communication hardware, wired as well as via radio links. The user will be given access to a communication method easy to use and with little configuration effort. Speed and reliability are automatically guaranteed by CoHoN and the linking of the network can be carried out with redundant and diverse data lines. CoHoN will automatically detect the available data paths and their properties that are possible within the heterogeneous network, and will use them accordingly.

The goal of the project CoHoN is to develop a lightweight communication library for distributed software on embedded systems and powerful workstations. The message-oriented, event-driven communication paradigm constitutes the basis for a transparent distribution of messages. CoHoN will combine the following characteristics:

- Parallel use of different communication cables: e.g., Ethernet and bus systems in combination with radio links

- Hardware-independent communication: Data from a bus system will be redirected to pure Ethernet nodes. Also, a transparent communication over radio links is possible

- Automatic evaluation of the system state and the communication characteristics (e.g., latency, bandwidth)

- Simple, consistent interface: CoHoN decides the data path and which hardware to use based on the importance of the communication packet

- Zero configuration: the communication participants will be found automatically

- Automatic data redirection in case of an error or problem: If lines are disturbed, CoHoN intends to switch to other, less disturbed channels

- Safe and correct data transmission with optional concurrent use of redundant lines

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