



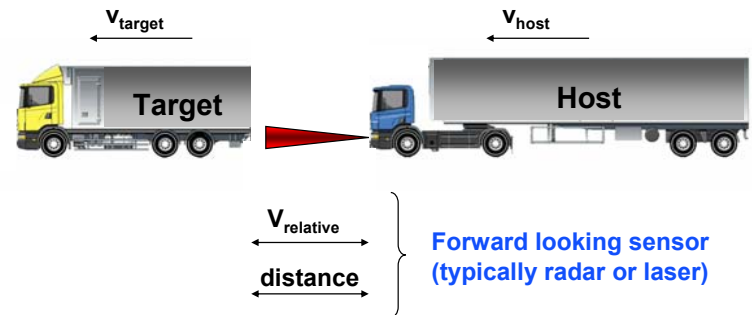
Adaptive Cruise Control: Control strategy and architecture

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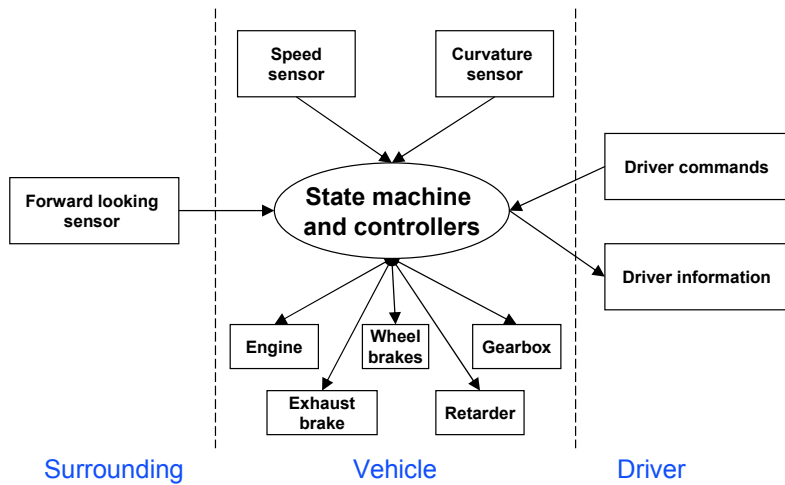


Basic ACC-functionality:

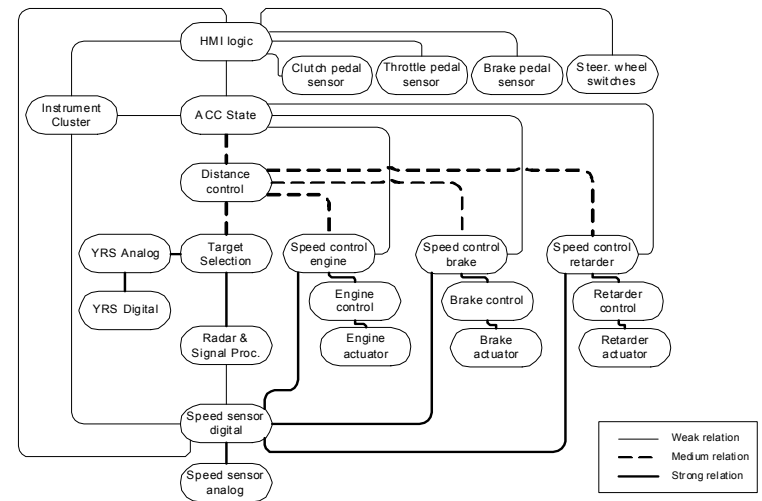
- As conventional CC when there are no relevant vehicles ahead
- Adapt speed and distance when there are relevant vehicles ahead



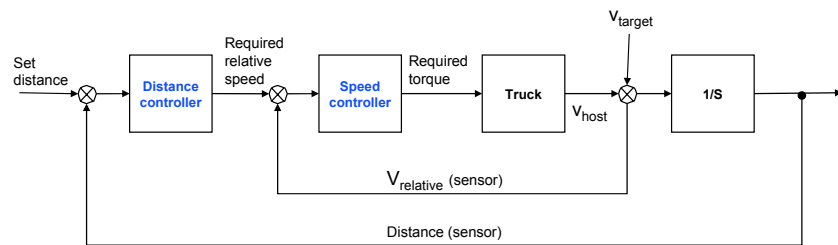
Functional elements for ACC in trucks...



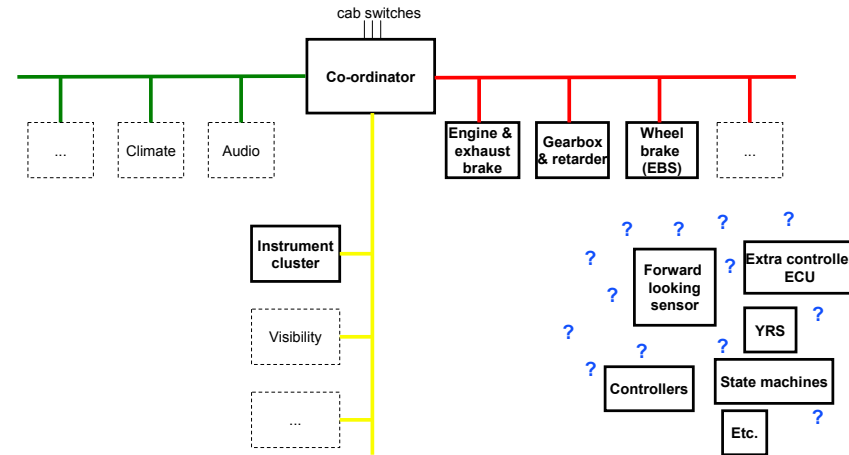
...which may further detailed...



...e.g. the controllers may be described by a distance and a speed control part.



Where to locate the physical and logical elements and what interfaces are suitable?



Functional factors constrain the architectural solution space but...

- Bandwidth
- Bus load
- Bus criticality
- ...

Functional factors



Quality



...development “strategic” factors decides the architecture.

- Standard CAN messages
- Legacy
- Reuse
- Organisation/communication
- Make-or-Buy
- De-coupling of project plans
- Product configurations
- Product variety
- Rate of technology change
- Future upgrades
- Unit cost
- ...

Strategic factors



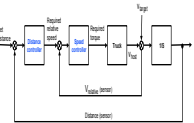
Cost
TTM



Both functional and strategic factors need to be analysed in the early development phases.

Architecture design - Modularisation

Functional factors



Dependable



Strategic factors



*Cost efficient
In time*

