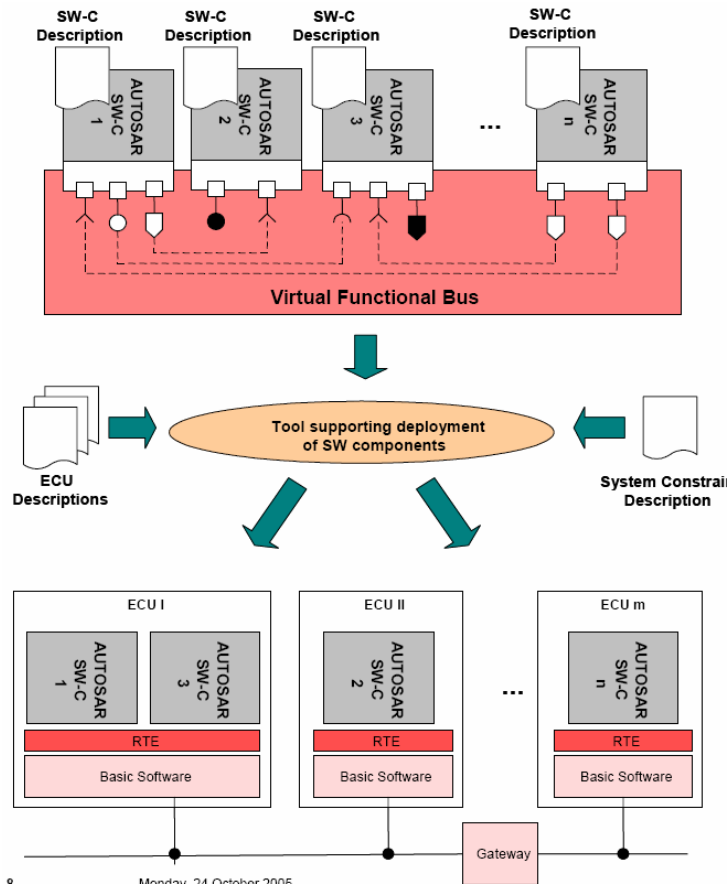
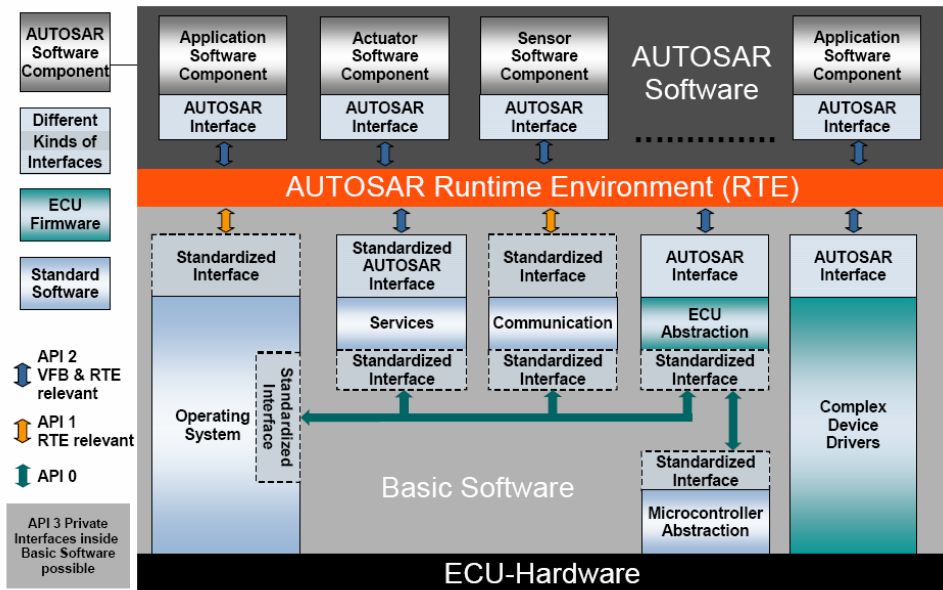


Key AUTOSAR "Methodology and RTE"

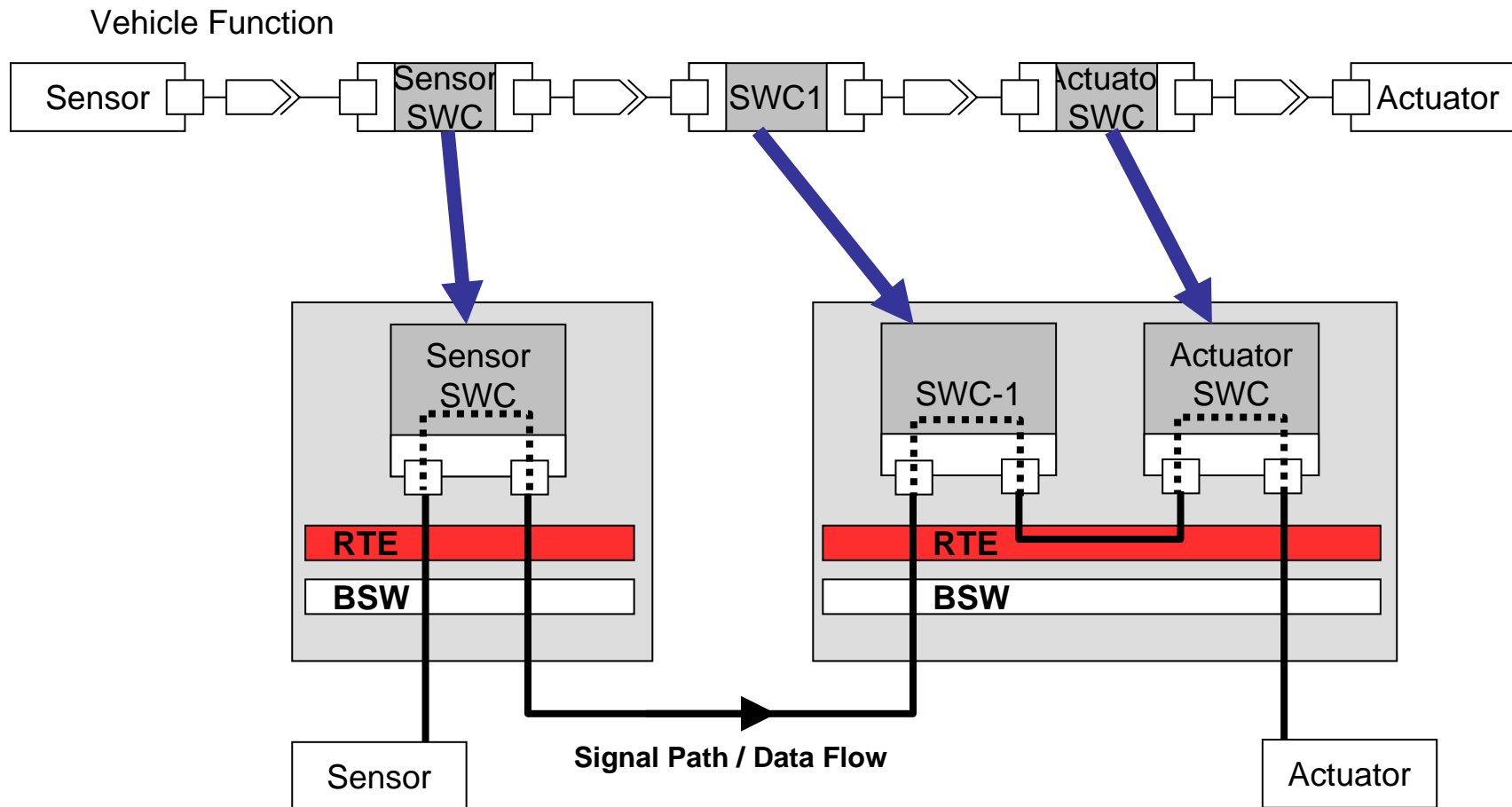
Flexible mapping of software components ...



... enabled by standardized run-time environment (RTE)

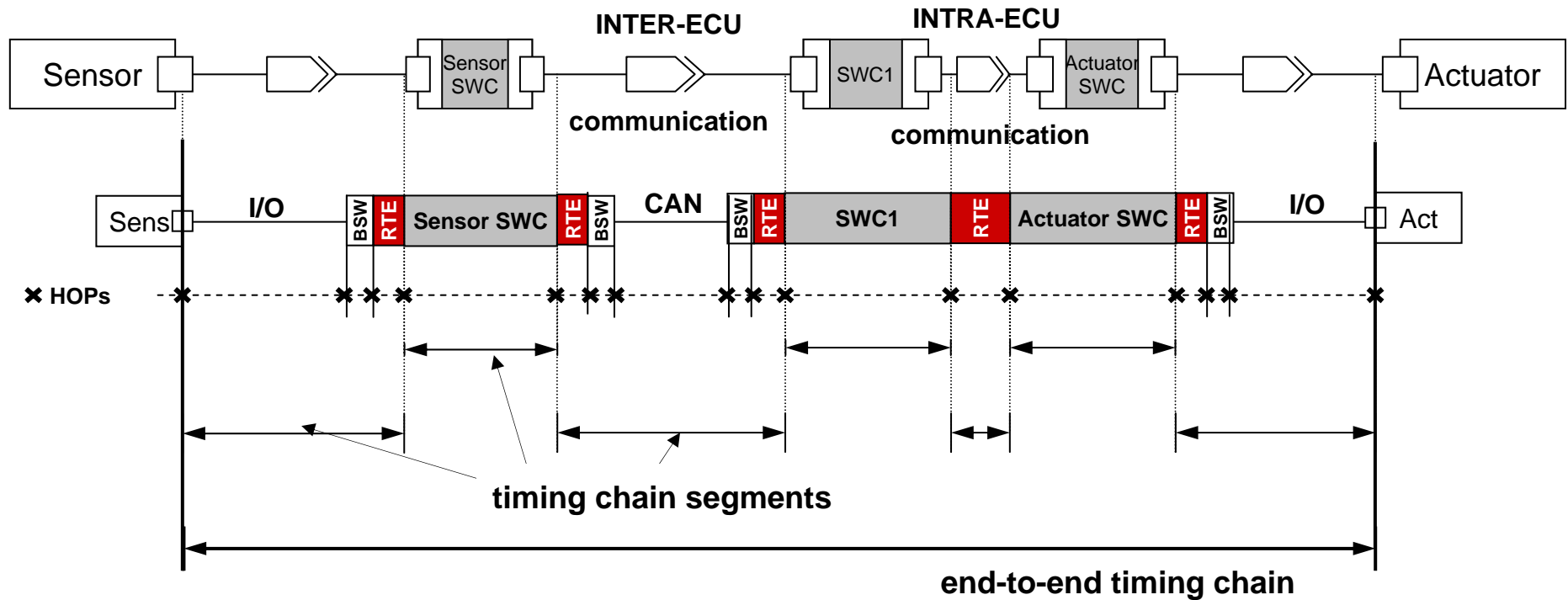
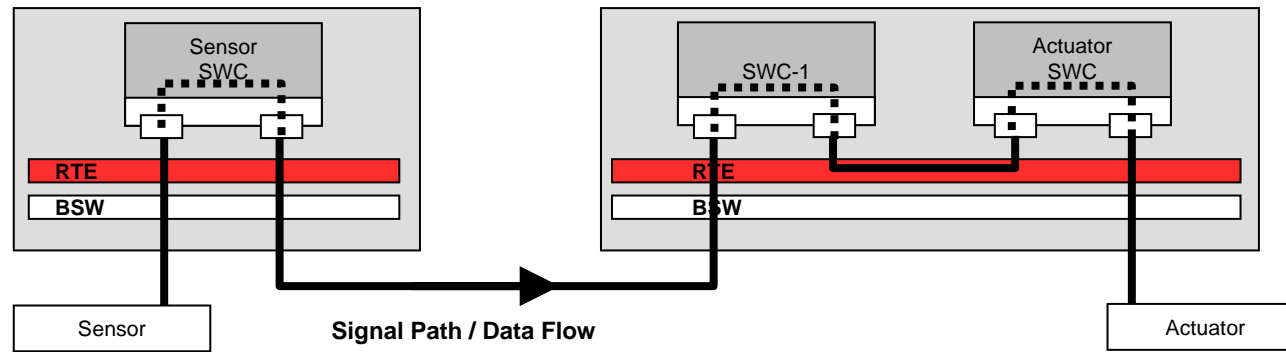


Mapping in More Detail: SW Component Structure and Execution Platform



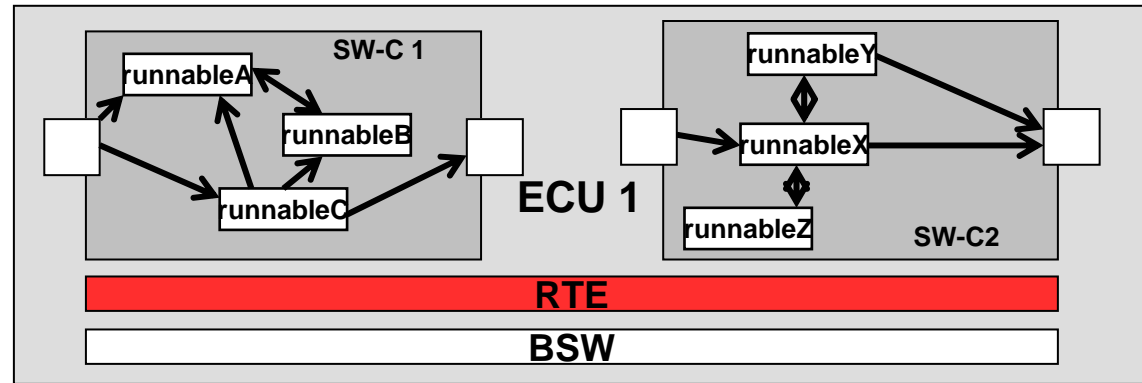
- Standardized RTE eases compiling & linking together several SW components from different teams/vendors/...

Timing Chains and Hand-Over Points (HOPs)



SW-Components vs. "Runnables" and Tasks

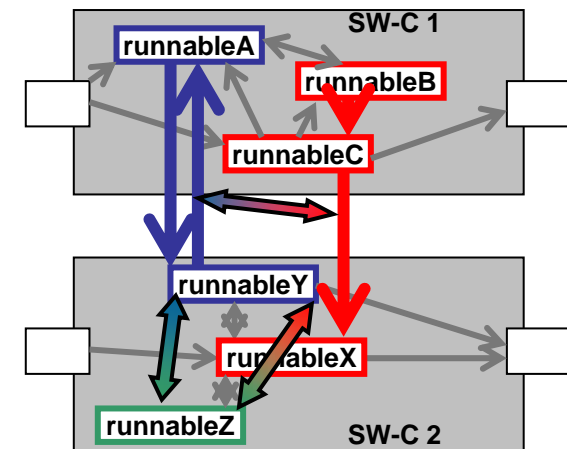
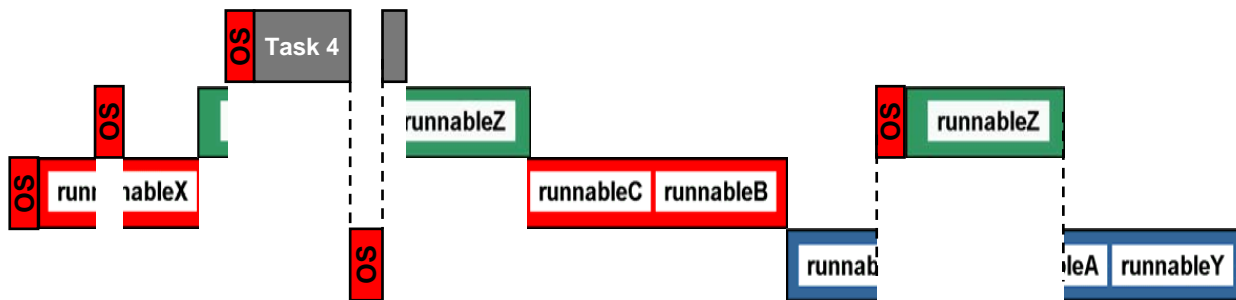
- SW architecture:
2 SW components,
6 runnables



- Implementation: 3 Tasks



- Schedule and timing dependencies



Challenge: Associating Schedules with Timing Chain Segments

□ software component w/ 3 runnables

□ sequential model

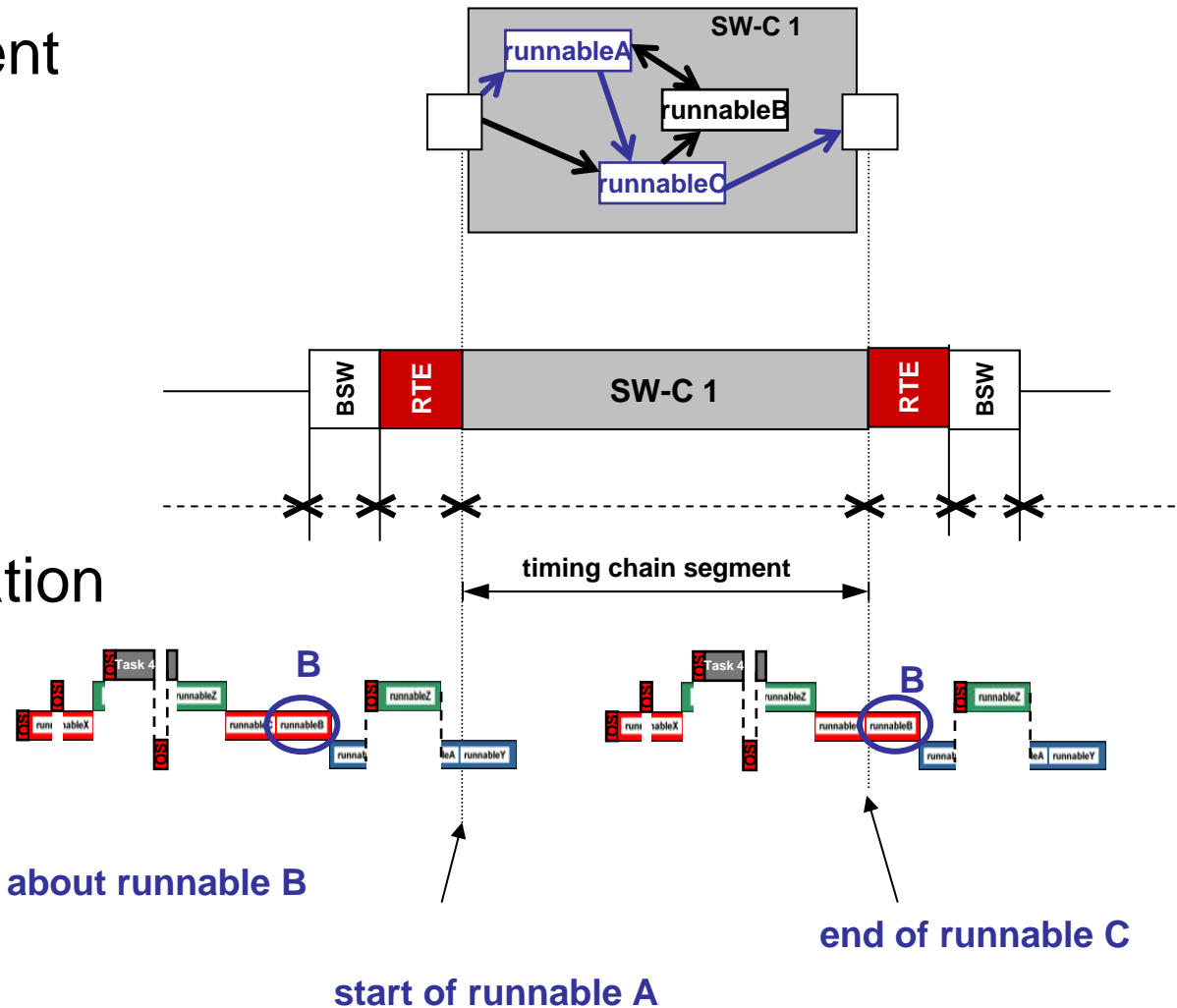
□ actual implementation

□ *meaning ?*

what about runnable B

end of runnable C

start of runnable A



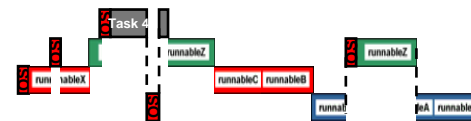
Summary: Local Timing Effects

Complex timing

❑ is not directly reflected in the **software architecture**

❑ is induced by the **execution platform!**

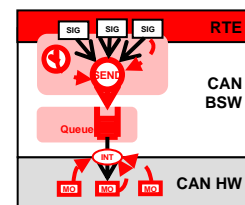
❑ runnables and tasks



❑ timing dependencies and communication semantics



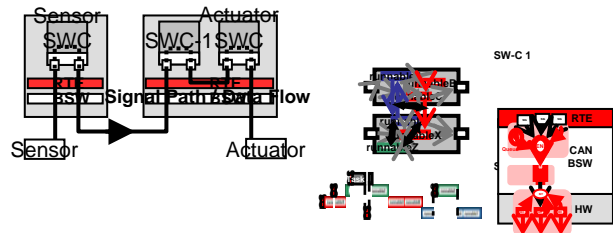
❑ non-standardized drivers and middleware (BSW)



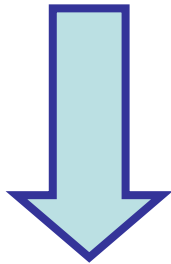
❑ etc...

Industry-Research Mismatch ???

Automotive Industry

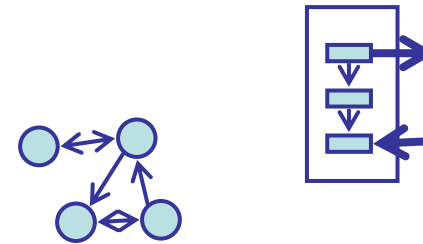


**complex systems,
manifold dependencies**

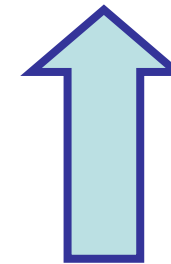


revolutionary problems

Research Community



**clear semantics,
well-defined interactions**



revolutionary solutions

