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)

Timing Chain Segments

End-to-End Timing Chain
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

start of runnable A

end of runnable C
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