



TU Clausthal

# Insights in Debug & Trace at Volkswagen HFD

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## About Volkswagen HFD

- division developing the whole steering system for some car models
- proportion of Software- and ECU-development is steadily increasing

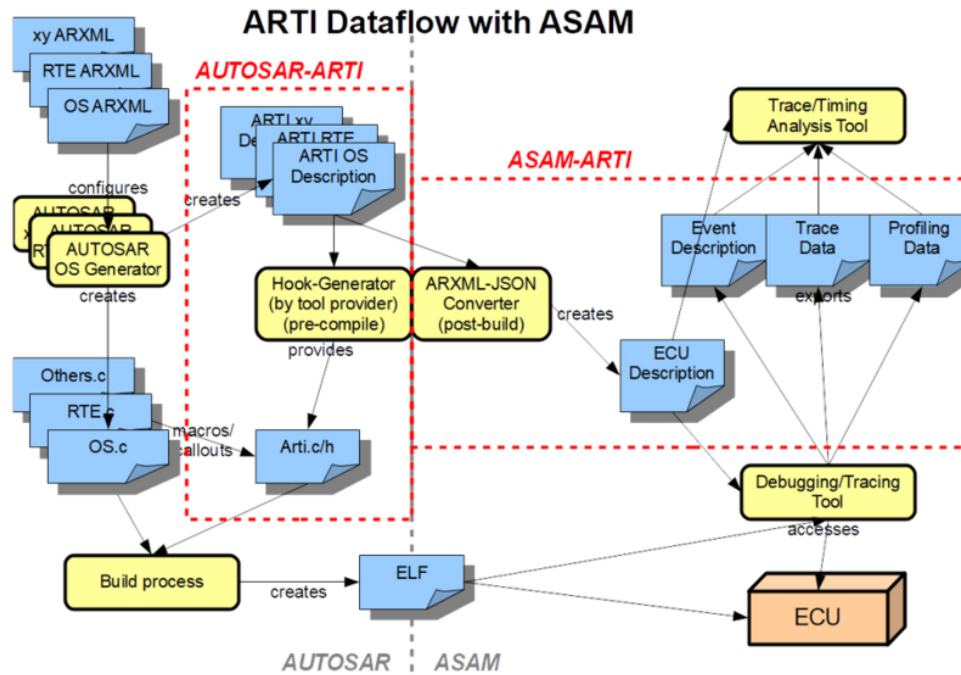
## About me

- PhD Student (Informatics/Computer Science) since 2017 at TU Clausthal
- Interested in:
  - Formal Methods
  - Verification
  - Runtime-Analysis (WCET, ...)
- Supporting VW HFD in verification of their runtime-behaviour

## A new Vision arises..

- full autosar (later maybe adaptive autosar)
- functional correctness proof by formal verification
  - try to reduce amount of testing
  - full Asil D (especially no QM)
- focus in testing: timing & nonfunctional

## Scope of ARTI



Source: <https://www.asam.net>

## UseCases on Trace/ARTI

- we want to trace all autosar entities declared in static architecture (or at least categorically subsets)
- we are interested in tracing redundant, but synchronised ECUs (identifier problem)



## Project Needs

- Trace-configuration can be derived from ARTI
- non intrusive tracing of autosar entities
- tool-compatibility
- performance (continous & endless trace)



## Our Goals & Questions

- understanding and getting used to ARTI
- support for
  - our tracing needs
  - multi-ECU
  - adaptive AUTOSAR
  - hybrid Analysis