



AUTOSAR Overview and Classic Platform

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BMW Group



BOSCH

Continental



DAIMLER



PSA PEUGEOT CITROËN



TOYOTA

VOLKSWAGEN

AKTIENGESELLSCHAFT

Overview

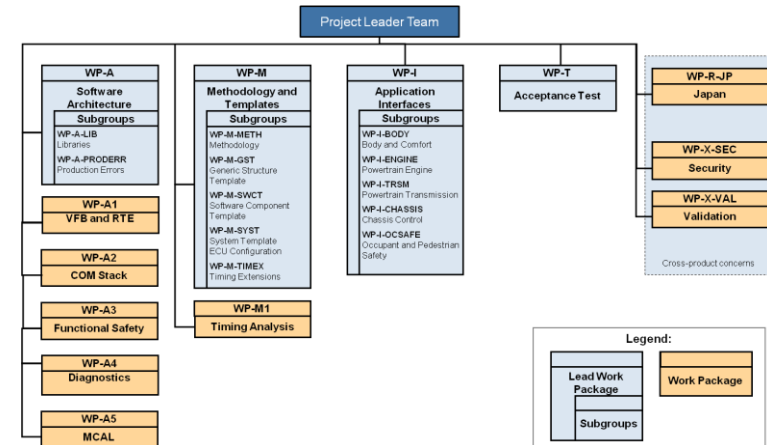
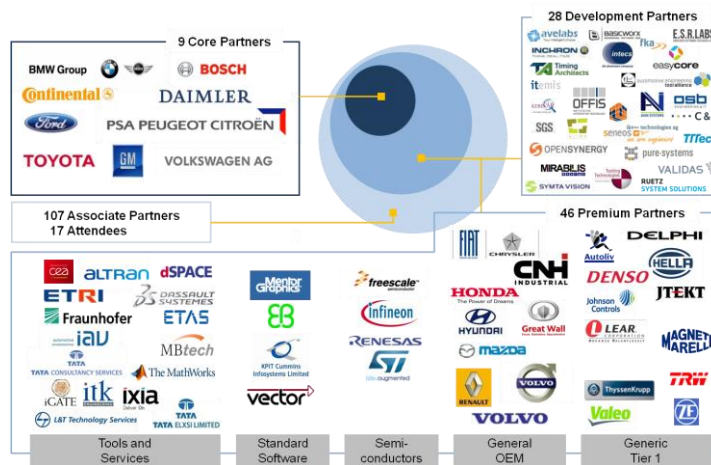
AUTOSAR Overview and Classic Platform

- The AUTOSAR Development Community

- AUTOSAR Classic Platform - The Release 4.2
 - Concepts overview
 - Major achievements

- Future developments
 - AUTOSAR Products Overview
 - Releases Roadmap
 - Release 4.3

AUTOSAR Development Community



70

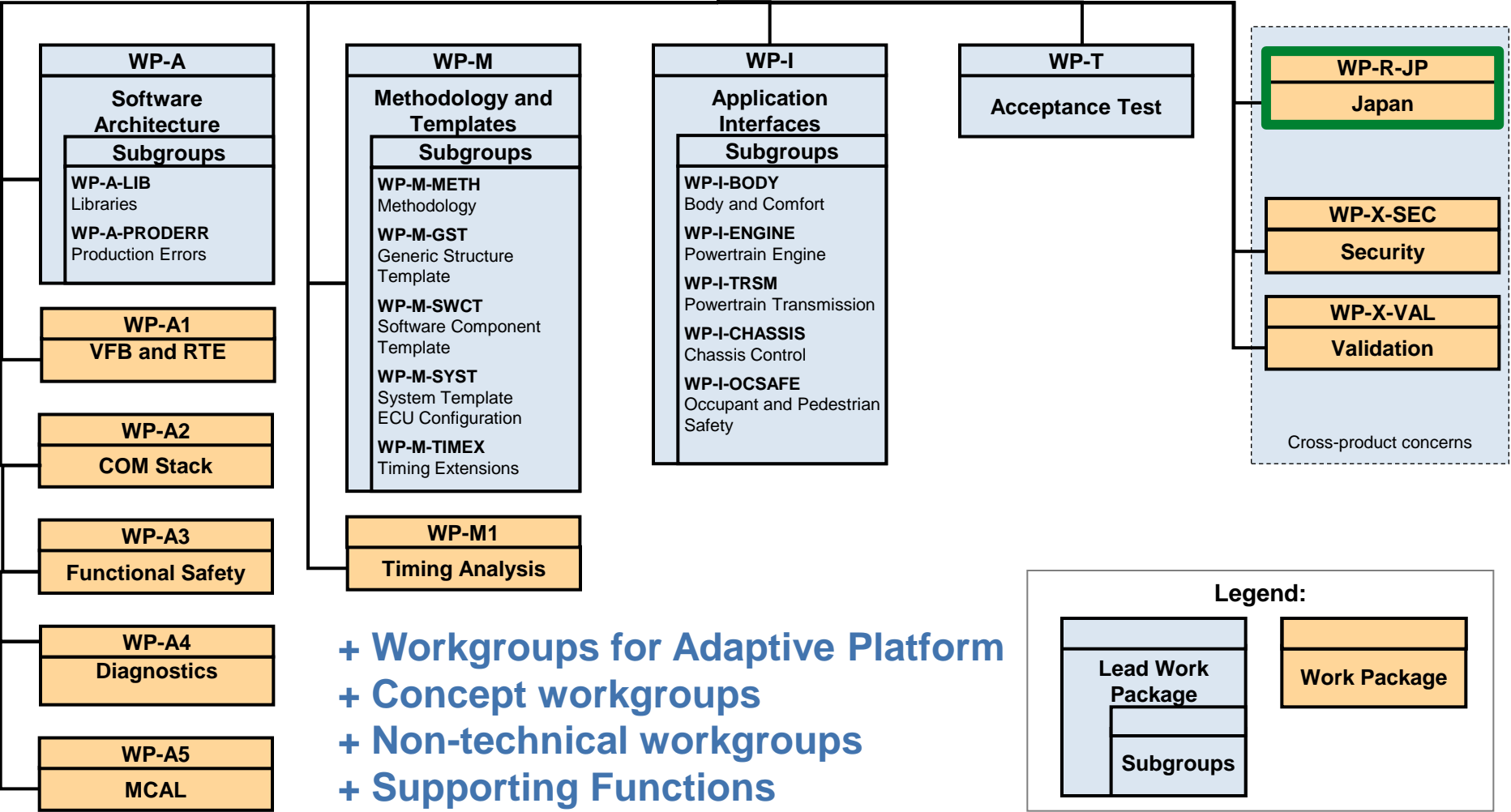
More than 70 companies active in the development of the standard

250

More than 250 persons active in technical workgroups

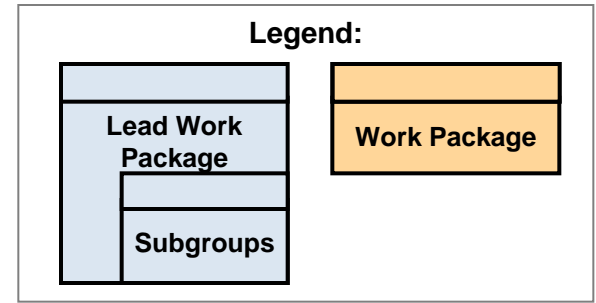
AUTOSAR Development Technical workgroups

Project Leader Team



- + Workgroups for Adaptive Platform
- + Concept workgroups
- + Non-technical workgroups
- + Supporting Functions

...



AUTOSAR Classic Platform

Release 4.2.2

218

Specification
documents

26.000

Requirements and
specification items

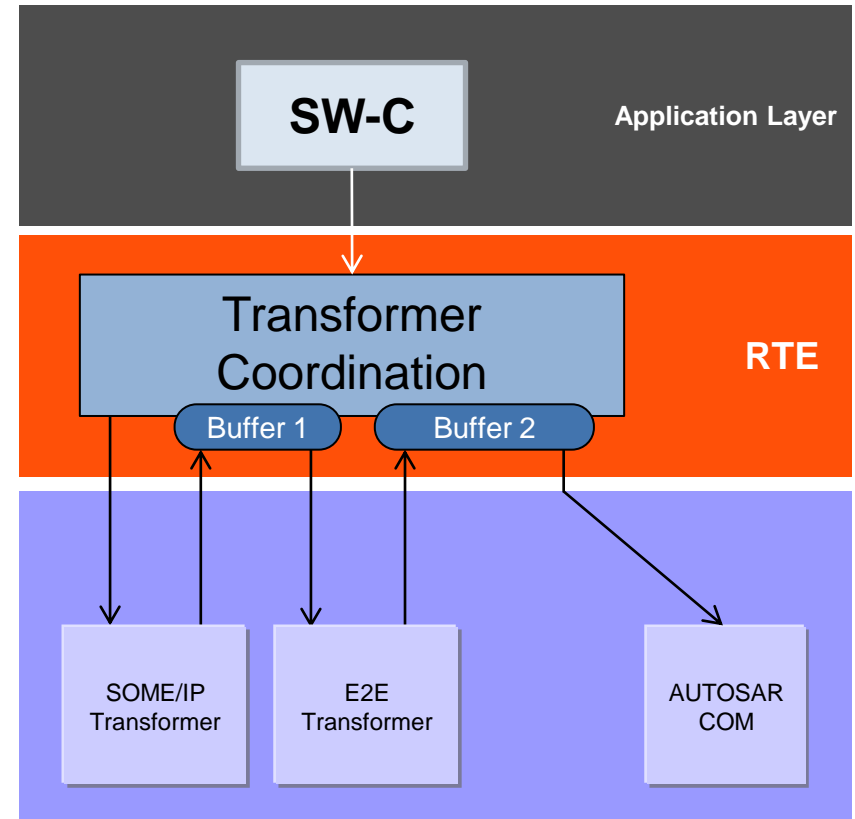
19.600

Specification
pages

Release 4.2

Enhanced support for IP / Ethernet communication

- Introduction of transformers to support serialization/de-serialization of large and complex data.
- E2E and SOME/IP standard transformers.
- New approach for efficient handling and transmitting of large data blocks.
- New features for configuring and controlling Ethernet switches
- IPv6 support

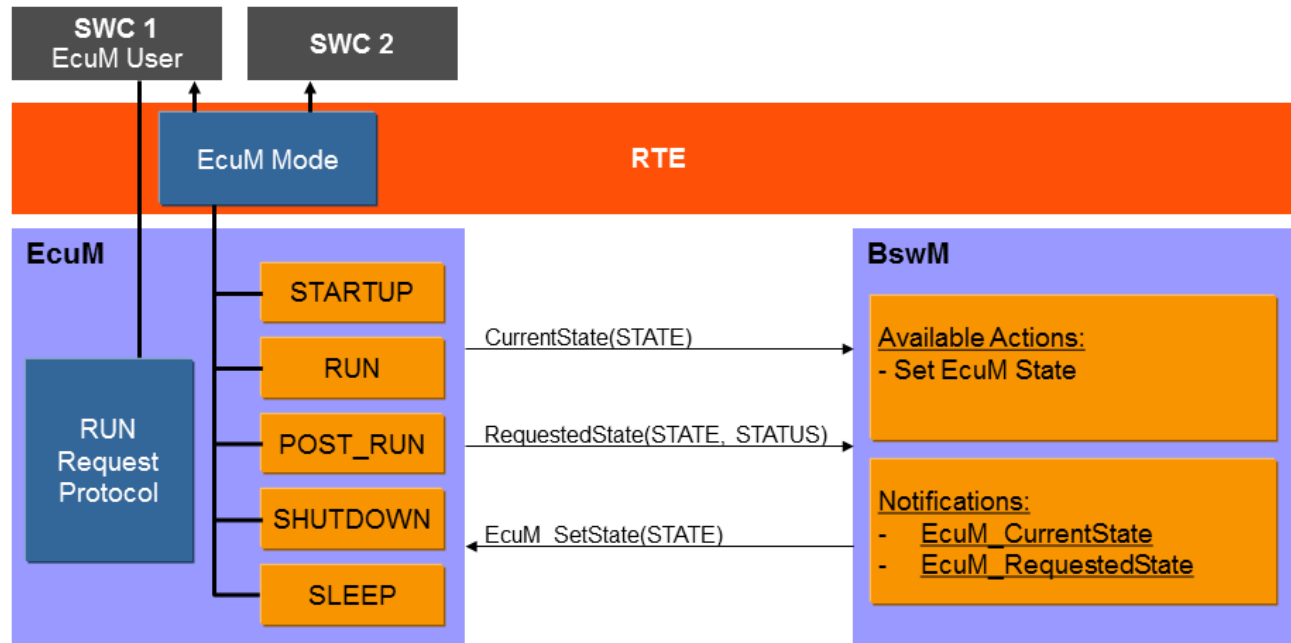


Ethernet / IP

Release 4.2 Improved usability

- Reduced configuration and integration effort
- Enhanced support for software re-use
- Enhanced support for multi-core software architectures

Usability



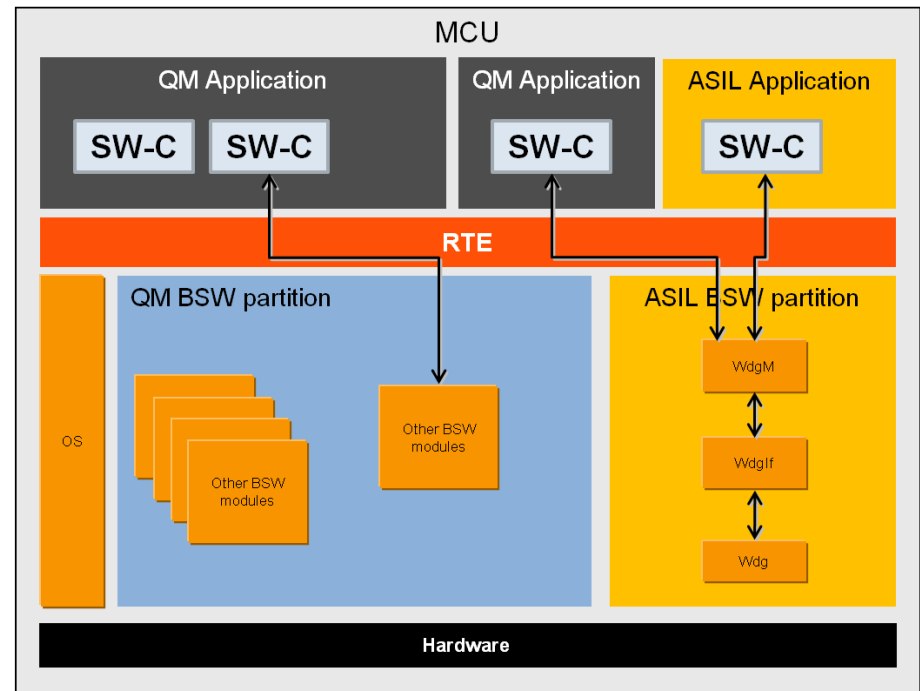
Example: ECU State Manager Flex and Fixed have been improved for utilization multi-core projects

Release 4.2

Enhanced support for Functional Safety

- Improved handling of Basic SW distribution through different partitions
- Protection of software in ASIL partition against failure of QM software
- New E2E profiles to protect communication of large data.
- Extensions to support the documentation necessary for Functional Safety.

Functional Safety

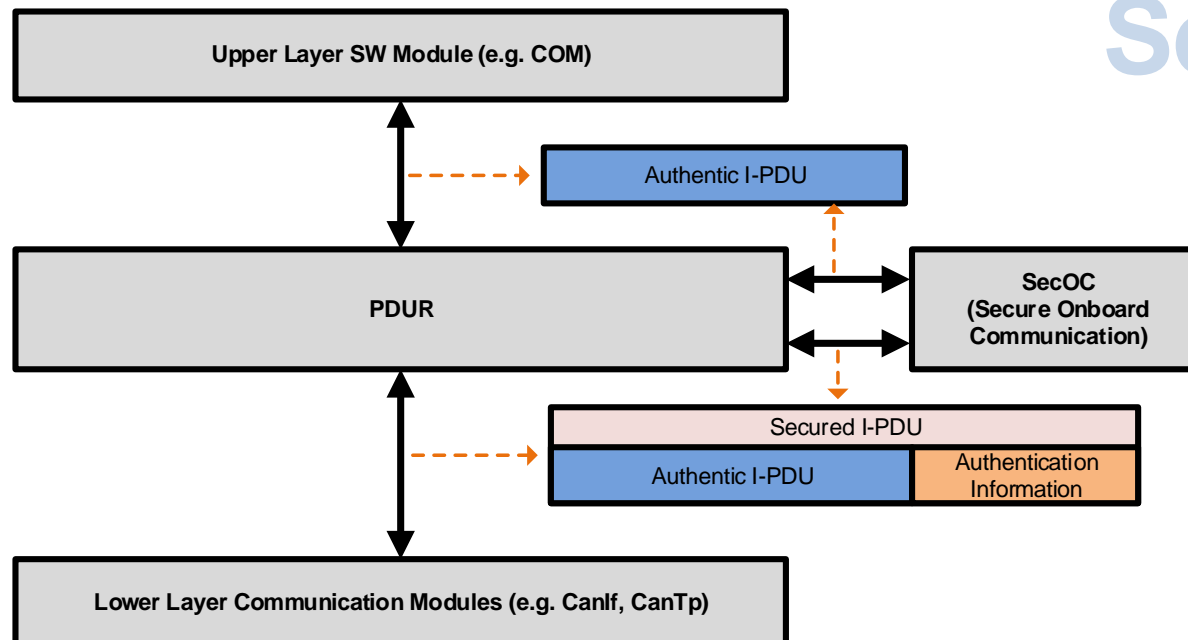


Release 4.2
Enhanced support for Security

Secure on-board communication

- Introduction of security mechanisms to identify attempts of data manipulation.
- Secure Onboard Communication (SeOC) provides means to verify data authenticity, integrity and freshness in PDU based communication.

Security

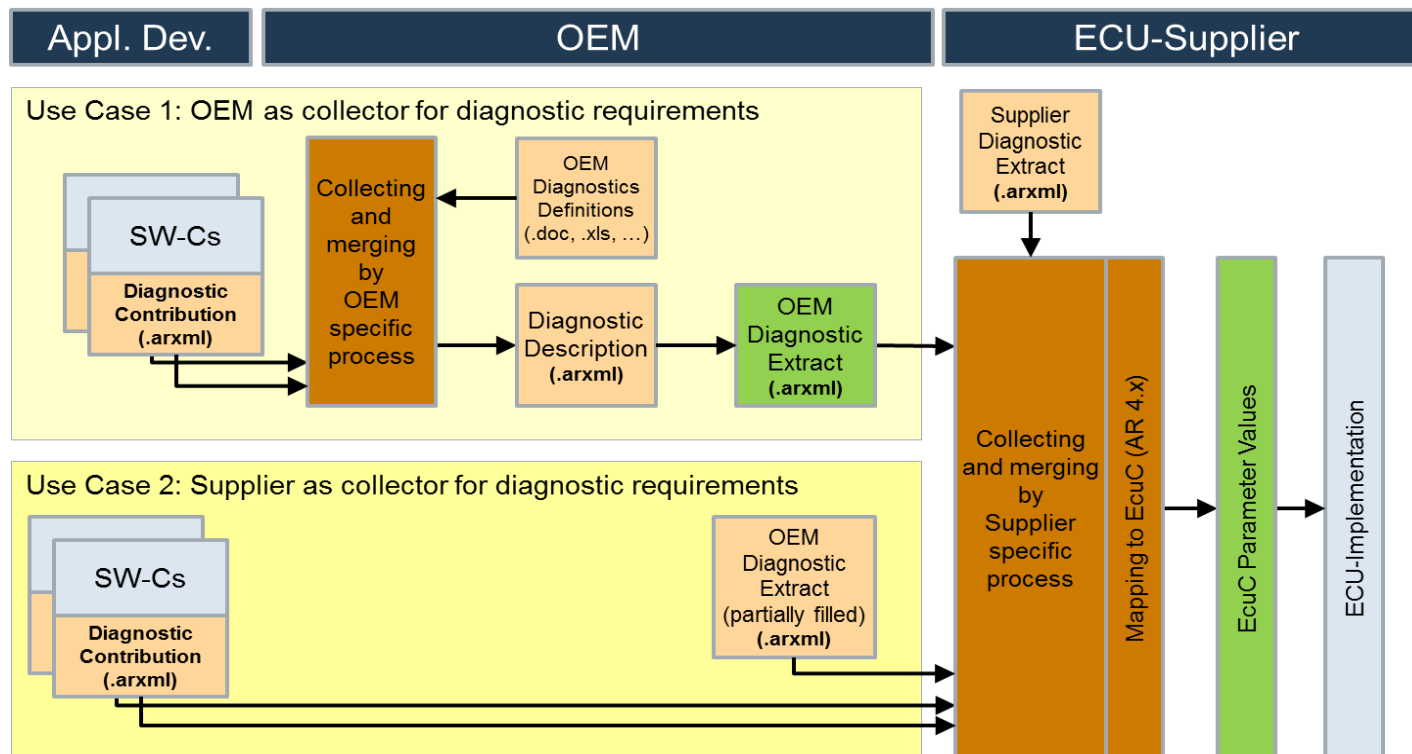


Release 4.2

Enhanced methodology support for distributed development

Distributed diagnostics configuration

- Enables common exchange format for diagnostic information in an AUTOSAR project

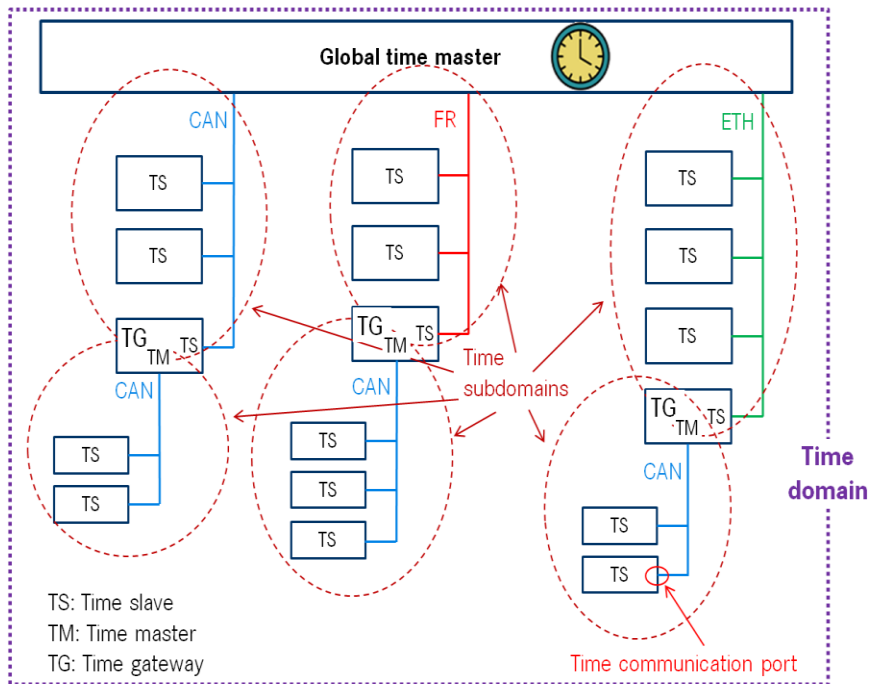


Distributed development

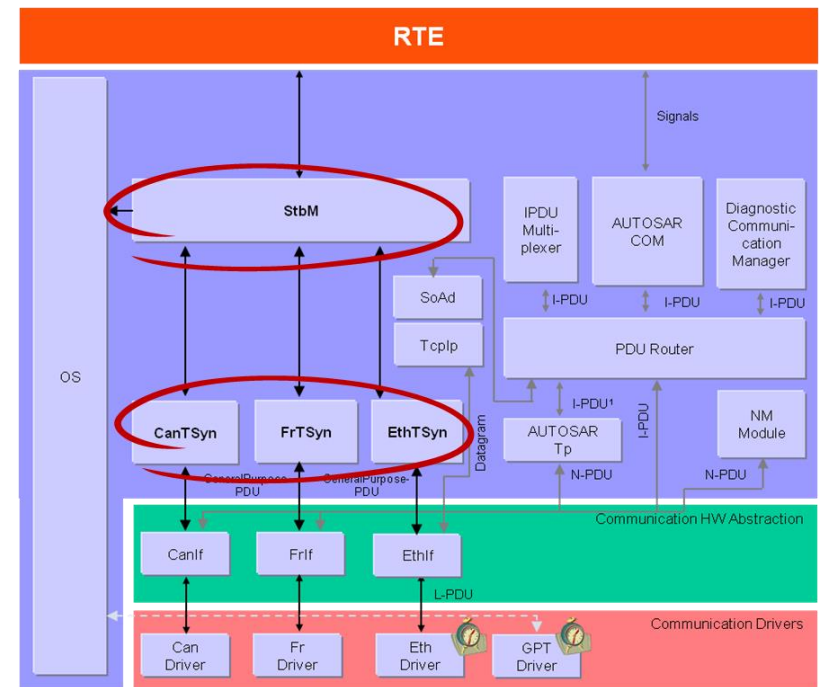
Release 4.2

Global Time Synchronization

- High precision local time base synchronized with the global time base.
- Synchronization between different ECUs over multiple in-vehicle networks.



Simplified example for clock hierarchy within a vehicle network architecture



Features enrichment

Evolution of AUTOSAR Classic Platform

The Release 4.2

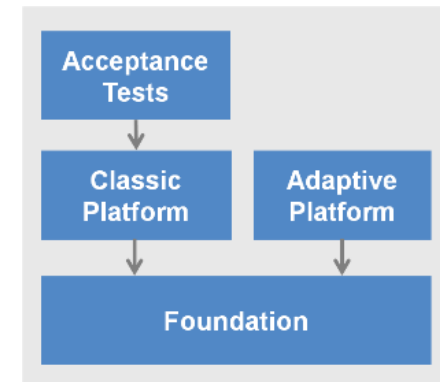
- Increased quality of existing specifications
- Improved usability for multi-core architectures
- Enhanced support for safety and security
- New features for IP / Ethernet communication and CAN FD
- Support distributed diagnostics configuration
- Improved support for software re-use
- Integration of non-AUTOSAR systems

The Release 4.2 is a major achievement for the AUTOSAR Classic Platform

AUTOSAR Products

To keep the growing standard manageable, AUTOSAR introduces the notion of Products:

- AUTOSAR Classic Platform (CP) available, R4.2.2
- AUTOSAR Acceptance Tests (TC) available, R1.0.0
- AUTOSAR Foundation (AF) planned
- AUTOSAR Adaptive Platform (AP) planned



AUTOSAR *Classic or Adaptive?*

AUTOSAR Classic Platform

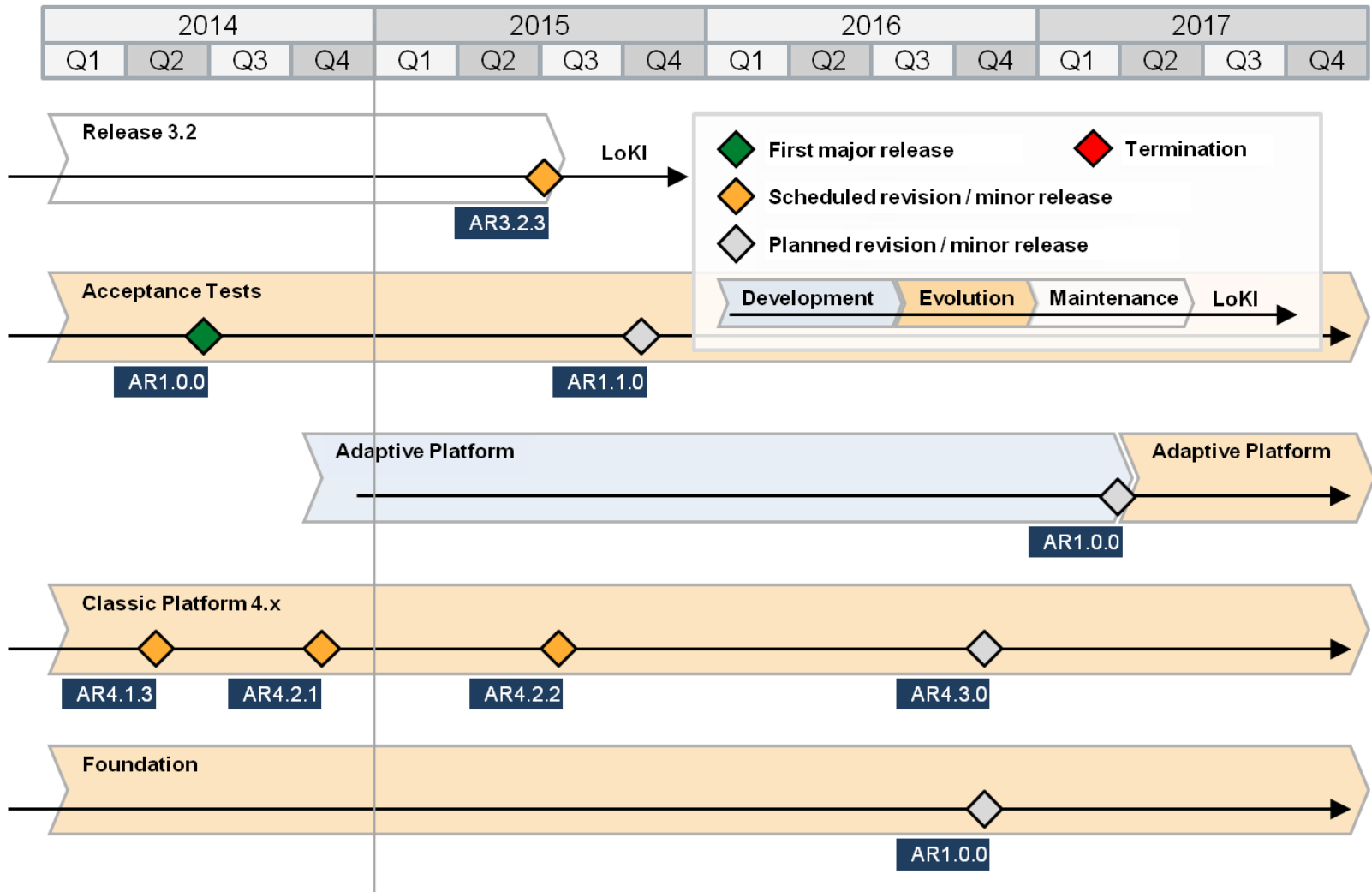
- Remain the first choice for deeply embedded ECUs with high demands regarding safety and deterministic execution
- Targets small and medium sized microcontrollers.

AUTOSAR Adaptive Platform

- Complements AUTOSAR Classic Platform
- Targets at high performance microcontrollers with several cores and a large amount of memory.

- Adaptive Platform **does NOT** substitute the Classic Platform, which addresses different types of ECUs and use cases.

AUTOSAR Products Roadmap



AUTOSAR Classic Platform - An Outlook: The Release 4.3

Concepts under elaboration*:

- Security policy management
- V2X Support
- Crypto Interface
- Error Detection and Correction for Communication
- Profile for Data Exchange Points
- Ethernet testability
- Decentralized Configuration (Extension)
- Extended Buffer Access Method for Rapid Prototyping
- Remote Event Communication Manager
- Hardware Test Management on Startup and Shutdown

Release 4.3 will continue the evolution of the AUTOSAR Classic Platform to **sustain its long-term exploitation** for series developments.

*Candidate concepts for incorporation to Release 4.3

Thank you!