BY Technology

AUTOSAR

ISO 26262 SECURITY ECOSYSTEM

Agenda:

- Autosar Architecture
- Suppliers Pyramid
- Non-Autosar Methodology
- Autosar Methodology

Core Partner and Members:

The 284 AUTOSAR Partners

9 Core Partners

BMW Group, BOSCH, Continental, Ford, DAIMLER, PSA GROUPE, GM, TOYOTA, VOLKSWAGEN AG

2 Strategic Partners

DENSO Crafting the Core, LG Life's Good

55 Premium Partners

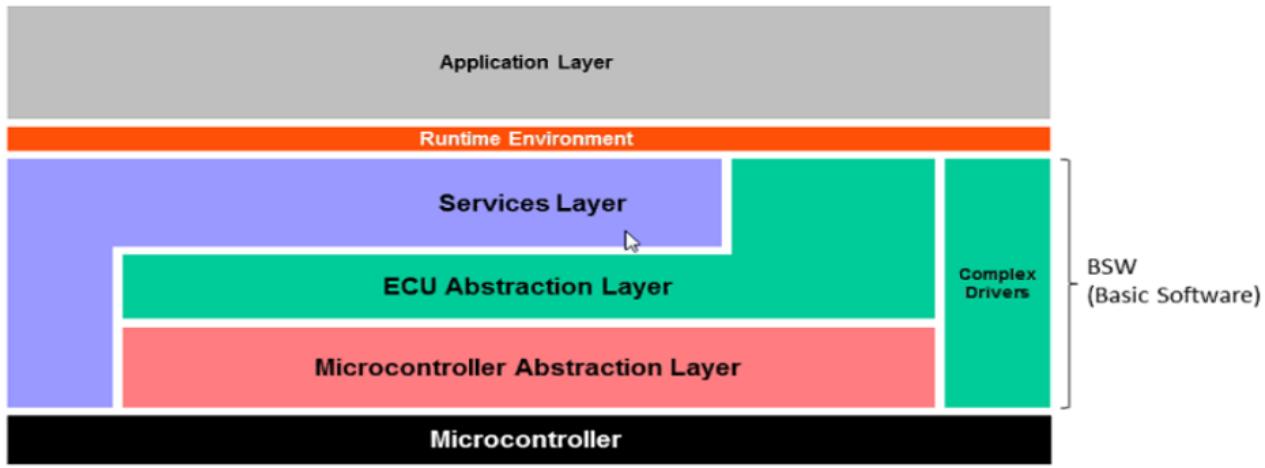
altran, APTIV, APTJ, assystem, Autoliv, Baidu 百度, cea, BlackBerry, DASSAULT SYSTEMES, Deloitte., dSPACE, EB, Capgemini, ETAS, Fraunhofer FOKUS, Great Wall, Green Hills SOFTWARE, HCL, HELLA, eSOL, HYUNDAI MOTOR GROUP, HUAWEI, infineon, itk ENGINEERING, CETC, JTEKT, HONDA The Power of Dreams, iav, intel, ixia, KPIT, L&T Technology Services, LEAR CORPORATION, LUXOFT, MathWorks, Mentor Graphics, MITSUBISHI ELECTRIC Changes for the Better, NEC, NVIDIA, Panasonic, RENESAS, SCSK, NISSAN, sodius, NXP, SUMITOMO ELECTRIC, RENAULT, TATA CONSULTANCY SERVICES, TATA MOTORS, TATA ELXSI, thyssenkrupp, Valeo, ST life.augmented, VECTOR, VOLVO, WIND, ZF see. think. act., intron

51 Development Partners

ABUP 艾拉比, avelabs, AVIN Systems, ESR LABS, BASELABS, C2A, codeplay, eJad, EVIDENCE, évo, excelfore, easycore, FPT, Freetech, GAIO TECHNOLOGY, GLIWA, HANECS, HSAE, HINGE, INCHRON, incQueryLabs, INTREPID, IP Camp, i SYSTEM, itemis, ixia, KRONO-SAFE, NCES, nordsys, LAUTERBACH, MATRICKZ, REACH, The AUTOSAR Experts, pls, OPENSYNERGY, PopcornSAR, PRQA, rti, REE TECHNOLOGY, RTAE, RTst, seneos, softing, SYSGO, Timing Architects, TTTech, VALIDAS, VEROLT, wafer space, SAFERIDE TECHNOLOGIES, SEMDRIVE

145 Associate Partners
22 Attendees

Autosar Architecture 1-5:



Five Layers:

Application : Functionalties of the ECU.

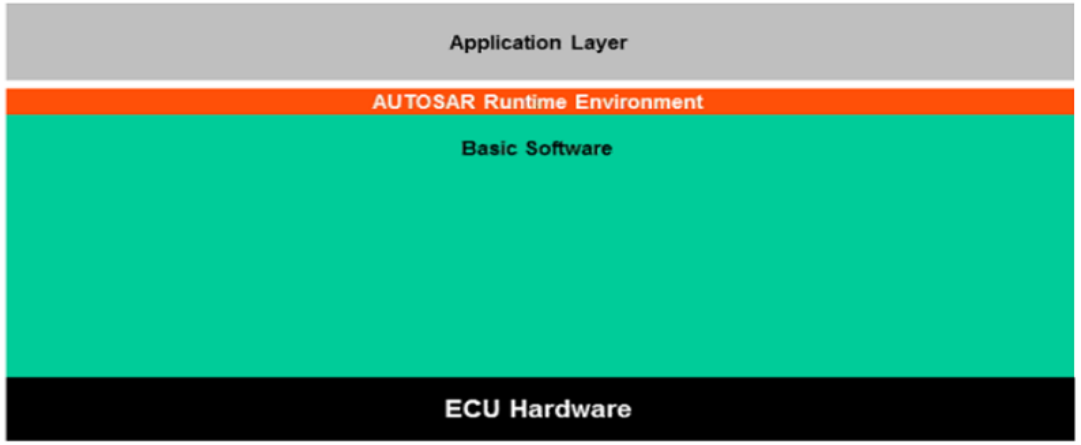
RTE : Run Time Envirenemet.

Services : Services if the basic software to the application Layer.

ECU Abstraction : Abstraction of the number and types of the existing devices.

Microcontroller Abstraction : Abstraction of the real physical HW

Autosar Architecture 2-5:

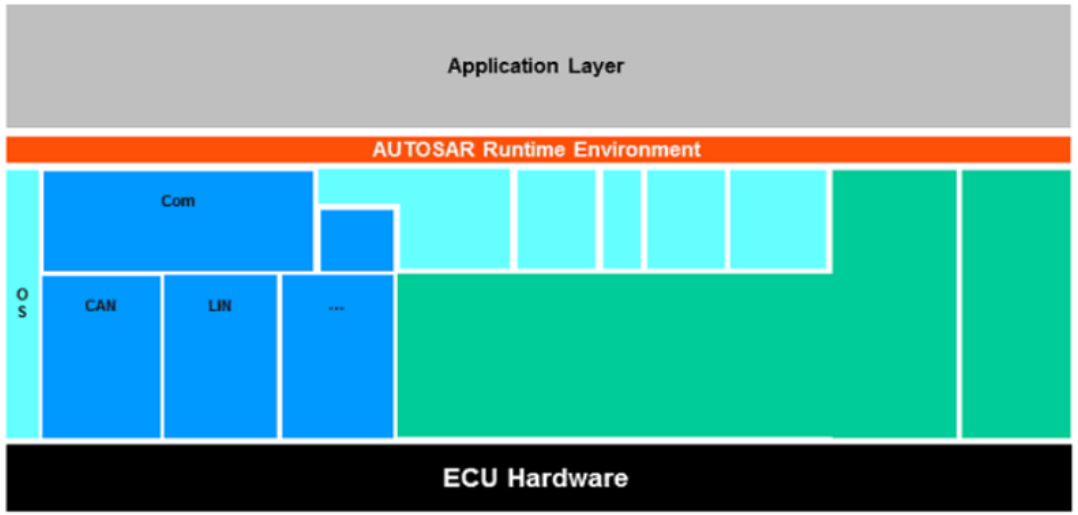


First class of implementation conformance ICC1:

- Inner structer of BSW is not defined.
- Importent Interfaces
    * RTE <-> Application Layer
    * messages on communication bus

Presentation last saved: Sat at 11:33 PM

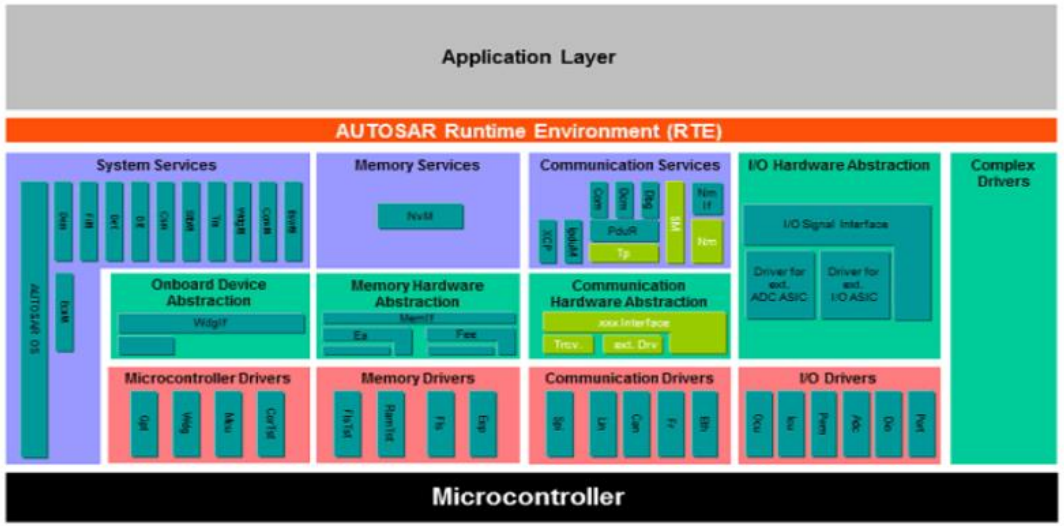
Autosar Architecture 3-5:



Second class of implementation conformance ICC2:

- Clusters inside the BSW are defined.
- Clusters Consist of modules that belong together.
- Interfaces of the cluster are defined.

Autosar Architecture 4-5:

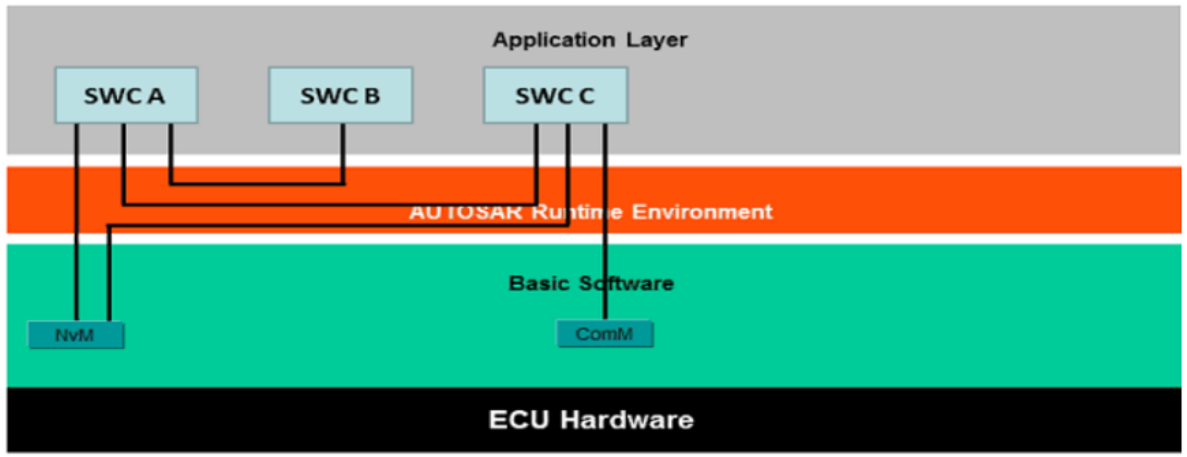


Picture is not complete and does not show all BSW modules!

Third class of implementation conformance ICC3:

- All BSW modules with all interfaces defined.
- Every BSW module is allocated to exactly one cluster .

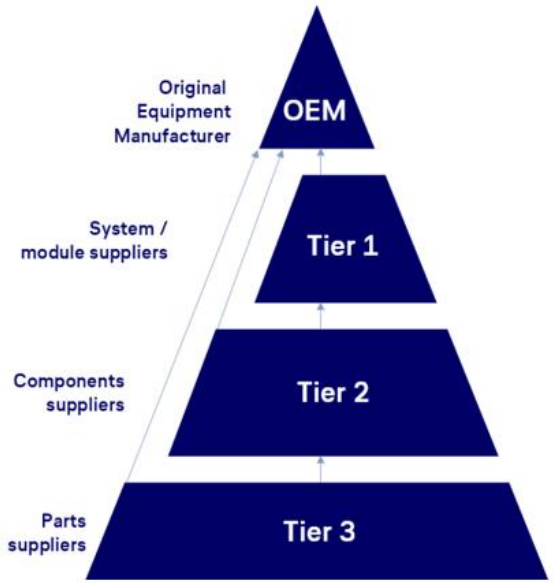
Autosar Architecture 5-5:



Application Layer:

- SWCs are defined here.
- SWCs contain applications (ECU functionalities).
- All Communications over connected ports realise via RTE layer.

Suppliers Pyramid :



In a modern supply chain like the ones used in the automotive industry, suppliers are organized in sequential levels called tiers.

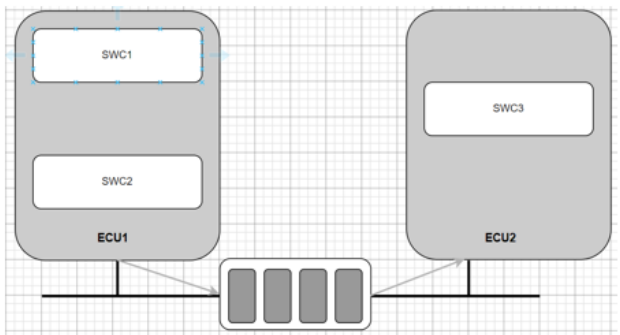
OEM: Ex: VolvoCars, PSA Group, Ford .....

Tier1: Lear Corporation, Continental.....

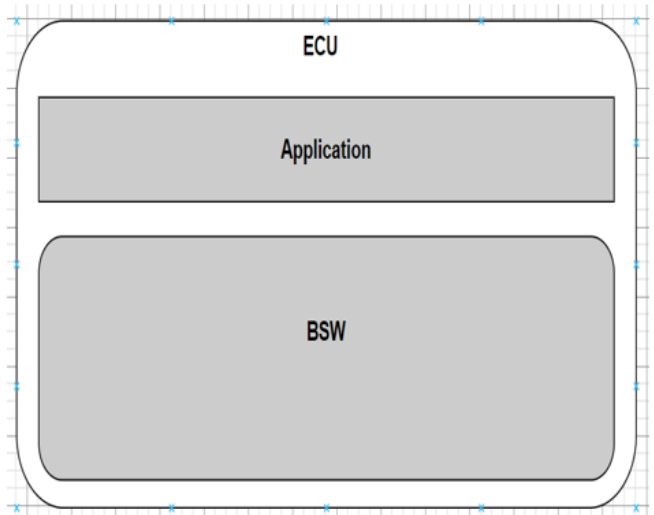
Tier2: Vector Informatik, Elektrobit.....

Tier3: infineon technologies .....

Non-Autosar Methodology :

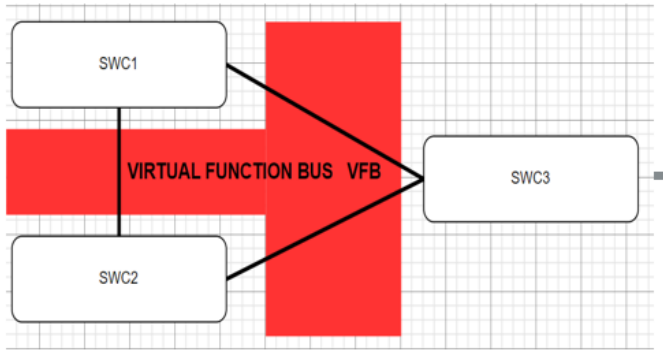


Network communication of the vehicle
is specified in (DBC,FIBEX,LDF) format file

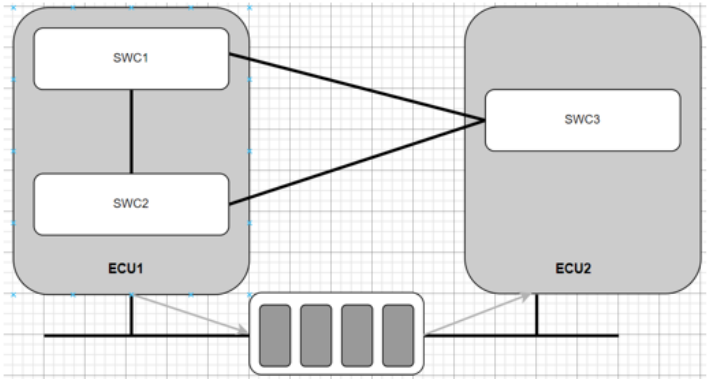


The ECU is configured based on the
DBC,FIBEX,LDF file

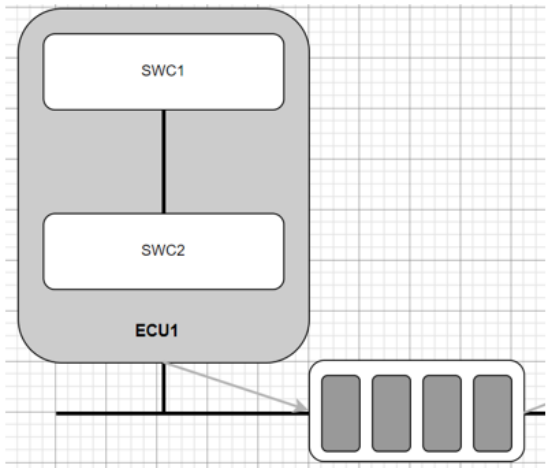
Autosar Methodology :



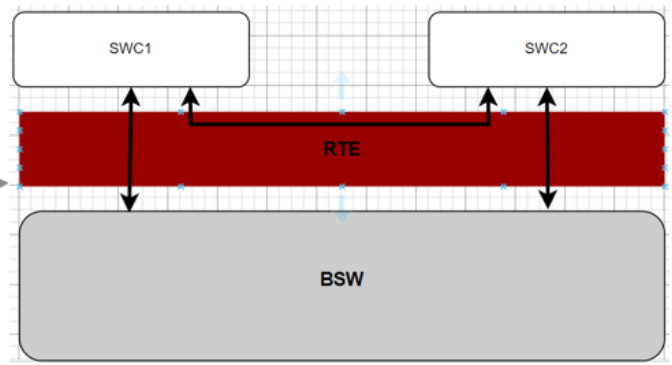
Software Component Description



System Description

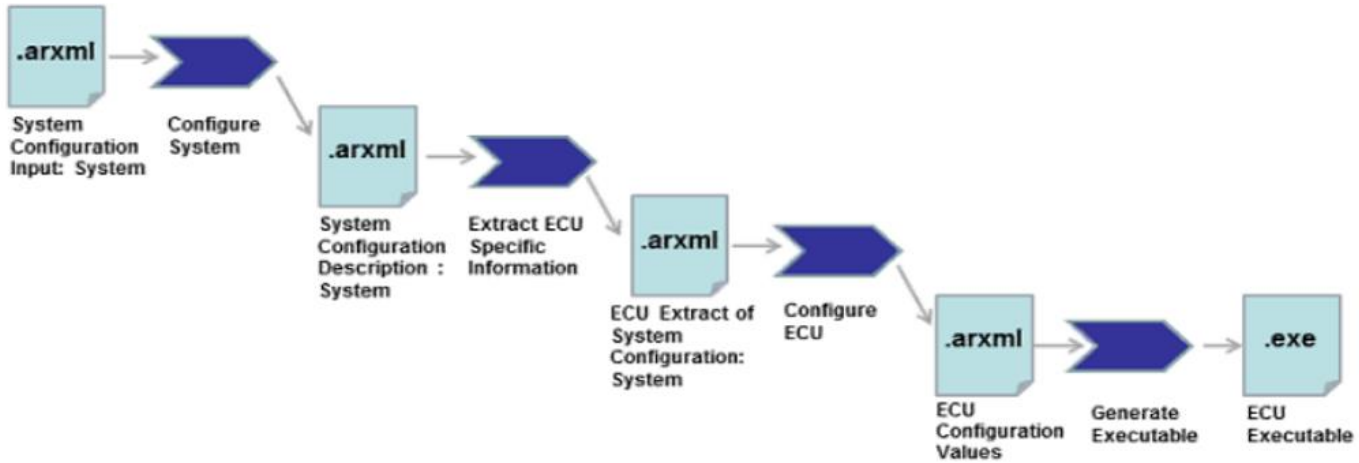


Extract of System Description



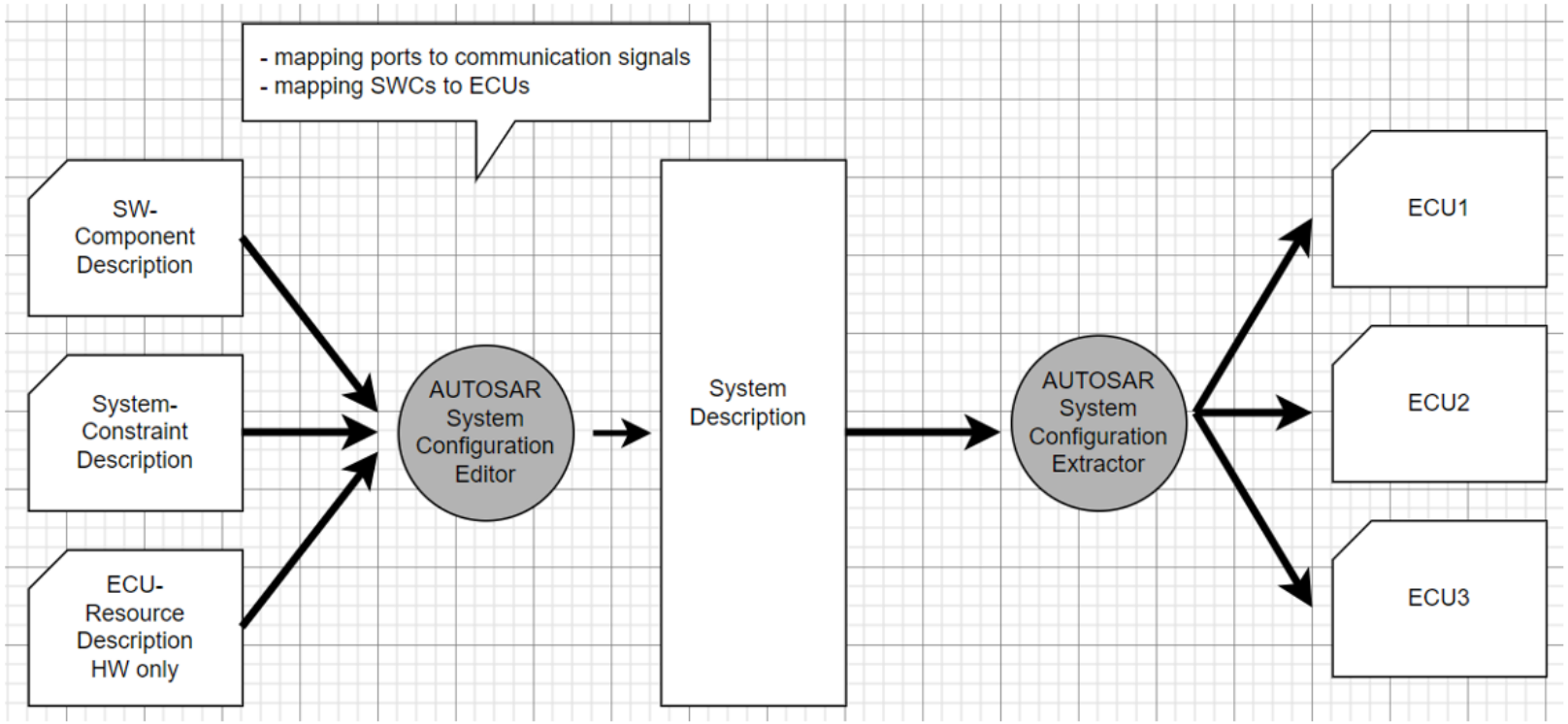
ECU configuration Description

Autosar Methodology



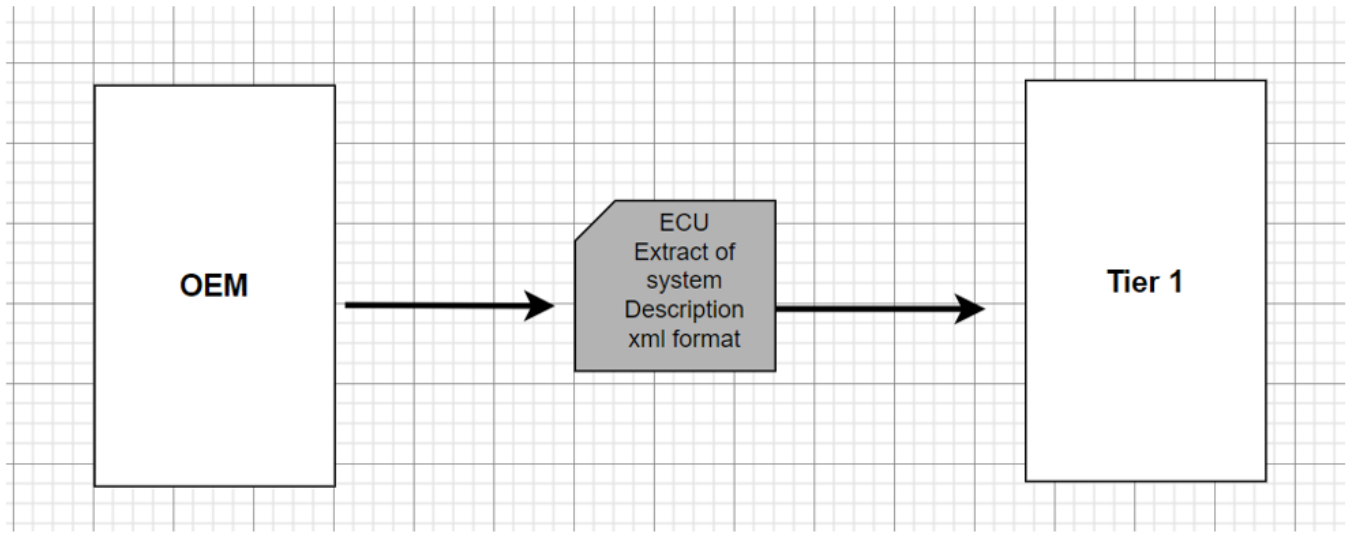
- AUTOSAR defines a Methodology
- not a complete process description
- a common technical approach for some steps of system development
- AUTOSAR defines ARXML as standardized format for data exchange

Autosar Methodology



System Description

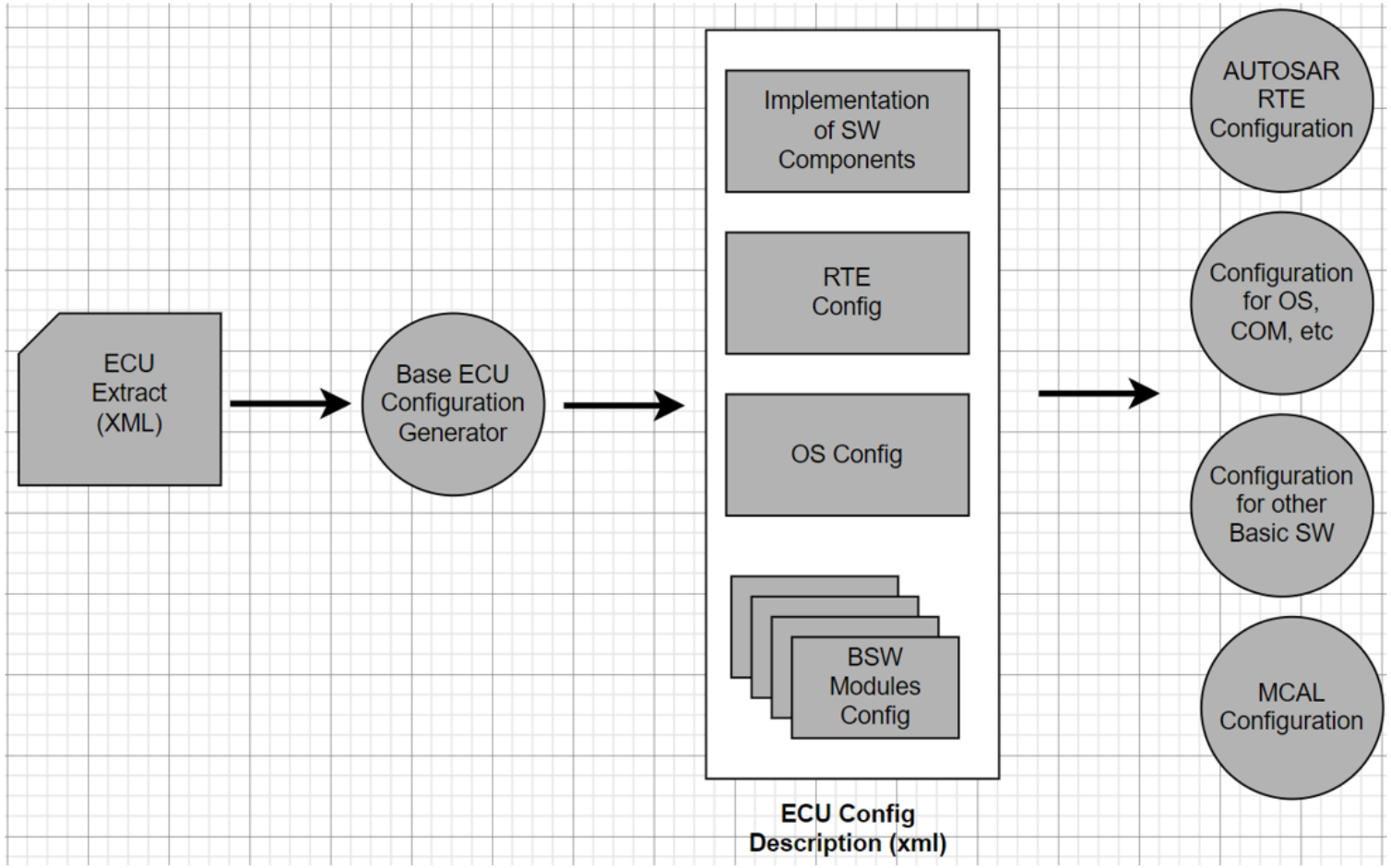
Autosar Methodology



AUTOSAR Workflow between OEM and Tier1.

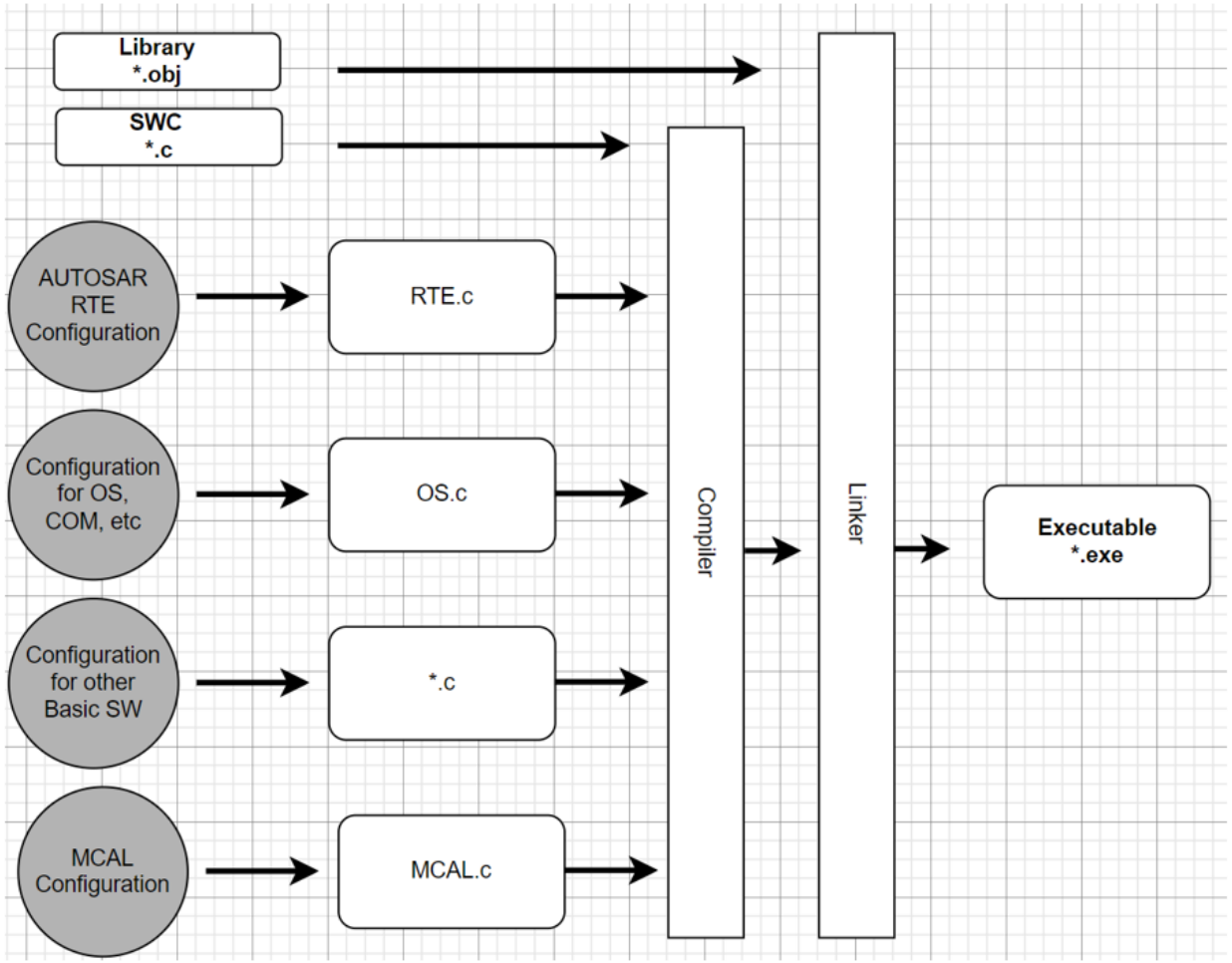
- Interface betwen OEM and Tier1: ECU Extract of system Description ECUEX
- OEM Creates ECUEX based on vehicle system design
- TIER1 configures AUTOSAR ECU based on ECUEX

Autosar Methodology



ECU Configuration

Autosar Methodology



Executable ECU

Q/A?