VECTOR

Release Notes

Vector SLP4

Content

Release 21 ..... **5**
General 5
Communication 6
Diagnostics 7
Ethernet 11
IO 12
Measurement and Calibration 12
Memory 12
Runtime Environment 12
Security 15
State Management 17
Watchdog 18
Tooling 19
Release 20 ..... **28**
General 28
Communication 28
Diagnostics 32
Ethernet 36
Gateway 38
Inter Process Communication (IPC) 38
J1939 42

Measurement and Calibration 42
Runtime 42
Security 43
State Management 44
V2G 44
vVIRTUALtarget 45
Watchdog 45
Tooling 46
Release 19 ..... **67**
General 67
Communication 67
Diagnostics 67
Ethernet 71
Gateway 71
IPC 72
J1939 72
Measurement and Calibration 73
Nv Memory 76
Rte 77
Security 79
Time Synchronization 80
V2G 82

Tooling 83

Release 21

General

Type	Description	Change ID
Breaking Change	A new BSW module for general settings has been introduced: vSet. The module is mandatory for any BSW configuration and will be activated automatically when creating a new project. For the moment the settings are synchronized automatically from the related parameters of the AR EcuC module. So, there is no need for additional configuration. In the next releases vendor specific parameter will be removed from the EcuC module. **Additional Information** The goal of this feature is to enable usage of MICROSAR modules with third party EcuC modules that do not provide the MICROSAR specific vendor parameters. **Migration notes for existing projects:** Activate the module manually within DaVinci Configurator Pro -> Project Settings.	FEAT-2949

Information	The usage of Technical References and User Manuals that are provided with a MICROSAR SIP has been redefined.
	
	> Technical References are now used for module specific documentation only.
	> User Manuals are now used for topics that affect multiple modules (e.g. Identity Management or vVIRTUALtarget). The scope of the document can be both:
	  > introduction level: first overview on a subject
	  > expert level: gives a detailed description on the subject
	> Application Notes will be used to describe non-typical use-cases and may not always be adapted to the latest MICROSAR release.
		DOCU-70

Type	Description	Change ID
	Additional Information The transition has been started with R21 and will be continued in the next releases.	
Information	The comments that justify MISRA violations of MICROSAR components are migrated to MISRA 2012 (QAC tool based). Previously MISRA 2004 was supported. The migration will be performed step wise and will be continued in the next releases.	FEAT-3506

Communication

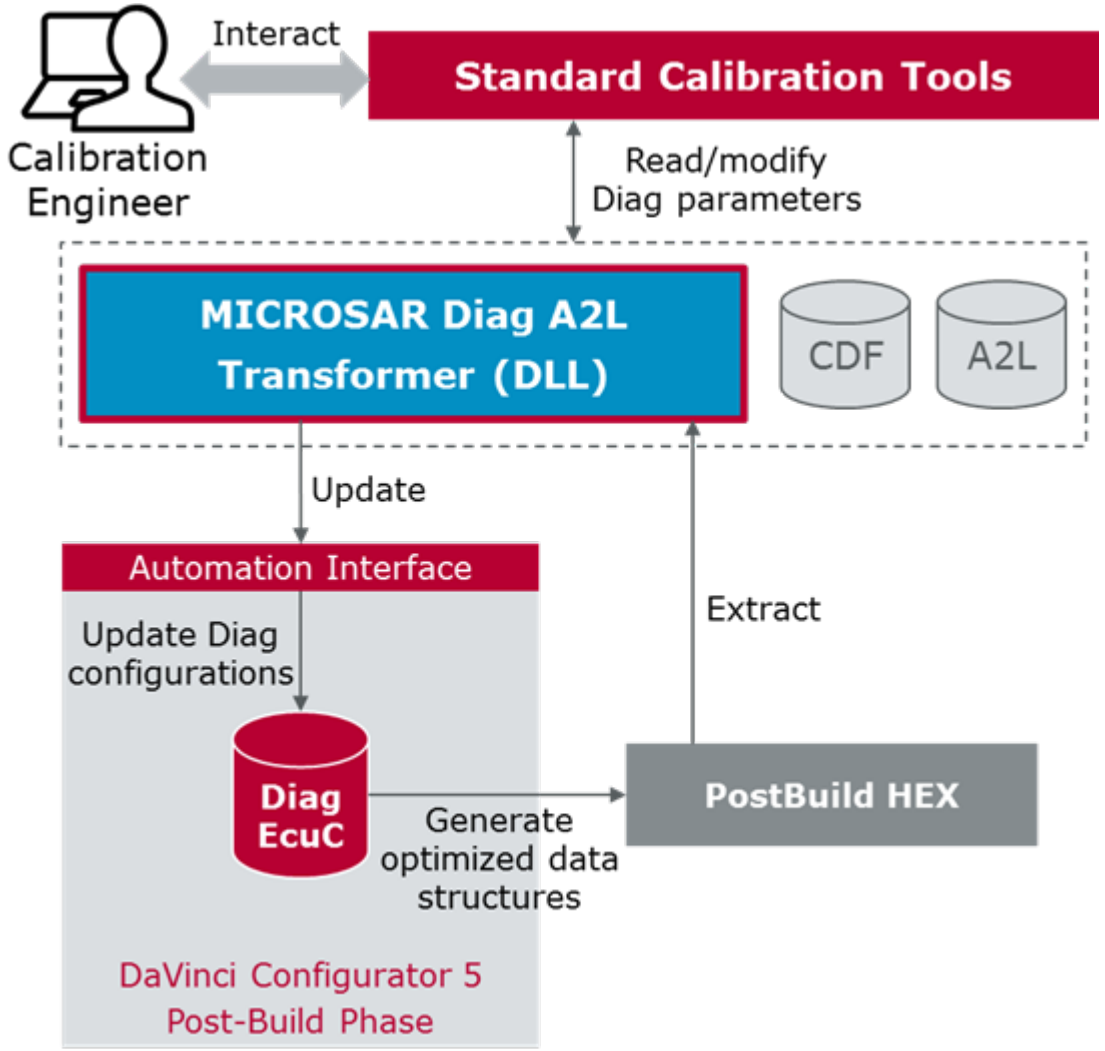
Type	Description	Change ID
Extension	The J1939Nm and J1939Rm were extended to supports routing of the relevant J1939 messages within shared address spaces and over gatewaying relations: > J1939Nm ensures that all necessary addresses are claimed, and that CommandedAddress and NameManagement Parameter Groups are forwarded to the relevant channels. > J1939Rm routes Request, Request2 and Acknowledgement Parameter Groups to all relevant channels.	FEAT-2881
Extension	To free CPU time on the main BSW core, the Ethernet stack can now be moved on a dedicated core. The PduR therefore supports cross core routings between the Ethernet stack and upper layer modules. **Important Information** Due to the wide range of possible use-cases we recommend consultation with Vector before planning the usage of this functionality. **Additional Information** This feature requires dedicated licensing.	FEAT-3063
Extension	The Com module now considers ComTxModeTimeOffset time after a Tx mode is changed by the application. This is relevant to avoid bursts of Tx messages after a mode switch.	FEAT-3304

Type	Description	Change ID
	The change has been triggered by AUTOSAR RfC #77936 .	
Extension	MICROSAR Can driver now support Tx FiFo queues provided by the CAN hardware. This feature allows e.g. the transmission of several CAN messages within one Tx polling transmit cycle. **Additional Information** This feature requires licensing of the "Can High-End Features" and is only provided for selected driver implementations. **Additional Information** In a first step the feature has been realized for Renesas RH850 RSCAN.	FEAT-3419
Extension	The StbM now avoids accessing uncertain ethernet based clock sources by checking EthIf_GetControllerMode() before accessing the Ethernet clock. As long the mode is not ACTIVE, the functions SetGlobalTime() and GetCurrentTime() now return E_NOT_OK.	FEAT-3859
Information	BSW modules for time synchronization (StbM, CanTsyn, FrTsyn) are now available for SafeBSW projects up to ASIL D.	FEAT-2483
Information	Accuracy of StbM has been improved by several fixes. Most notably: > Support of time base specific time difference calculation according to AUTOSAR 4.3.1 > Schedule table synchronization for different counter resolutions including counters with a tick duration < 1us.	FEAT-3603
Information	The accuracy of time synchronization stack (StbM, CanTSyn, FrTSyn) has been improved by a rework of the exclusive areas used internally in these modules.	FEAT-3628

Diagnostics

Type	Description	Change ID
Extension	The SafeBSW implementation of Dcm has been finalized.	FEAT-2505

Type	Description	Change ID
	Additional Information Since R20 the following major services are now safe: > DID Services (0x24, 0x2E. 0x2F) > (WWH-)OBD - Mode 0x01, 0x02, 0x03, 0x04, 0x06, 0x07, 0x08, 0x09, 0x0A > Service 0x86	
Extension	The FiM implementation (AR4.3 based) now provides a master/satellite based multi-core implementation that allows distributing the FiM runtime across different cores. **Important Information** The implementation of the multicore handling is with R21 BETA only. Production release is planned for R22.	FEAT-2740
Extension	The Dem module allows the event info port creation to be optional. The goal was to reduce the number of unconnected ports in case the info port is not required. The creation of even info ports can be enabled and disabled using the configuration switch DemConfigSet/DemEventParameter.DemEventCreateInfoPort.	FEAT-2751
Extension	Calibration engineers can now update the (OBD) diagnostic configuration of MICROSAR Dem and FiM at post-build time using ASAM tools such as vCDMStudio.	FEAT-2799

Type	Description	Change ID
	Diagnostic parameter calibration workflow 	

Type	Description	Change ID
	Additional Information Prerequisites for using this vPblCalib: > The calibration tool must support transformers as defined in ASAM MCD-2 MC 1.7.0. > This feature requires post-build loadable (PBL for DIAG) to be licensed. **Documentation in SIP** Details on the workflow can be found in TechnicalReference_vPblCalib.pdf.	
Extension	The Dem IUMPR group configuration (relevant for OBD related projects) has been extended with the AUTOSAR 4.3 literals > DEM_IUMPR_AFRI1 > DEM_IUMPR_AFRI2 > DEM_IUMPR_PF1 > DEM_IUMPR_PF2	FEAT-3572
Extension	The upstream mapping implemented by DaVinci Configurator Pro now considers the Diagnostic Extract DiagnosticSession.jumpToBootLoader information. The information is derived to the MICROSAR Dcm EcuC configuration.	FEAT-3650
Extension	If a CANdela Studio CDD file is imported to DaVinci Configurator Pro, an integral datatype having a byte length of 8 is converted into a byte array with 8 bytes. This conversion is applied to DID parameters, routine signals and parameters of extended data records.	FEAT-3897
Extension	DaVinci Configurator Pro now considers the parameter DemDebounceCounterUnconfirmedThreshold provided by the VCC input DIAG-EcuC file. [[Note:The parameter will be converted to the MICROSAR parameter DemDebounceCounterPreconfirmedThreshold]].	FEAT-4185

Ethernet

Type	Description	Change ID
Extension	The SoAd BSD API now also supports Integrity as operation system. **Additional Information** The BSD API of SoAd now supports Linux, QNX and Integrity	FEAT-2971
Extension	The precision of ARP timeout calculation implemented by the TcpIp module has been improved and is now defined by the MainFunction cycle time. Previously the granularity was fixed to 1s.	FEAT-3234
Extension	DoIP now supports IPv4 and IPv6 in parallel and thus transmits vehicle announcements with both IP versions if configured. If IPv6 socket connections are configured accordingly, the IPv6 vehicle announcement is sent immediately with the link-local address. Once an IP address has been assigned additional vehicle announcements can be send with the dynamically assigned address.	FEAT-3259
Extension	The BSD socket API of SoAd considers the frame priorities according to IEEE 802.1Q-2011, which are defined by the data definition.	FEAT-3755
Information	The most common MICROSAR Ethernet stack modules will be available as SafeBSW modules for projects up to ASIL B until end of 2018. **Additional Information** ASIL B can be provided for the following BSW modules: Eth, EthIf, EthSm, UdpNm, EthTSyn, TcpIp (IP v4), Soad, DoIP, Sd. Additional modules and use-cases can be provided on request.	FEAT-2469 FEAT-2463 FEAT-2521 FEAT-2452 FEAT-2471 FEAT-2507 FEAT-2876 FEAT-2877 FEAT-3295

IO

Type	Description	Change ID
Information	A new application Note is provided that describes how a complex driver could be developed that interacts with MCAL and Rte. **Documentation in SIP** AN-ISC-8-1228_How_to_create_Cdd_IoHwAb.pdf	FEAT-3253

Measurement and Calibration

Type	Description	Change ID
Extension	Using vDbg it is now possible to access internal runtime variables of StbM, CanTSyn and FrTSyn using Xcp or Vx1000.	FEAT-3629

Memory

Type	Description	Change ID
Extension	The Fee (Standard) now supports asynchronous cancel operations of underlying Fls module.	STORY-6501

Runtime Environment

Type	Description	Change ID
Extension	SafeBSW release of SomeIpXf for projects up to ASIL D.	FEAT-2508
Extension	Release and feature completion of the SomeIpTp module introduction: > SomeIpXf based communication using the SomeIpTp is now supported by the Rte for S/R and C/S communication. > QM release of the SomeIpTp component will be provided in Q4 2018	FEAT-2543
Extension	Rte mode users can now be distributed across multiple cores and BSW partitions.	FEAT-2544

Type	Description	Change ID
	Additional Information Modes are provided by multiple service SWCs such as EcuM, WdgM or Dem.	
Extension	The Rte now supports n:1 port connection for external signal based communication. In the past only intra ECU communication has been supported with n:1 relations. With this feature it is now possible to connect ports of multiple SWCs to the same delegation port and finally map to one SystemSignal. **Additional Information** Some features such as TxConfirmation are not supported with external n:1 port connections.	FEAT-2747
Extension	If the Com module returns COM_SERVICE_NOT_AVAILABLE because the service is currently not available, the Rte now returns RTE_E_COM_STOPPED to the calling SWC runnable. > Applicable for inter ECU communication > Based on SWS_Rte_06830	FEAT-3534
Extension	The Rte now allows to configure the implementation way (macro or function) of exclusive areas in a module specific way. Previously this has been a global option only. This feature allows fine tuning of the implementation to optimize runtime (by using the macro implementation where possible). **Documentation in SIP** The implementation is defined by the parameter Rte/RteBswModuleInstance/RteBswExclusiveAreaImpl/RteExclusiveAreaGenerateFunction.	FEAT-3762
Extension	The Rte now supports the fan-out for E2E protected signals using E2eXf with Profile 4,5,6 and 7.	FEAT-3767
Extension	The Rte now supports scalling in combination with ComXf transformer. However, the supported use-cases are yet limited and will be extended in the next releases.	FEAT-4115

Type	Description	Change ID
	Currently scaling is supported if: > the record has one level of primitive elements > explicit sender-receiver communication is used	
Information	The Rte generator now operates with a 64bit implementation. This allows loading of larger ECU configurations. **Additional Information** To make use of the Rte, update the latest version of the external component setup (version >= 2.10) must be installed. **Additional Information** Download Center - DaVinci External Component Setup	FEAT-3327
Information	The generation time of the Rte has been improved. The optimization applies when calling the generation via command line and no changes to Rte related configuration elements have been made since the last code generation. **Additional Information** In this case the Rte generator detects that no changes have been made and skips parts of the code generation. A similar optimization was already implemented when code is generated via user interface.	FEAT-3351
Information	The Rte now implements a check, that ensures that the init values of different receivers have the same value. A new info is now shown when different receivers use different init values. This may be a problem as the Rte only uses a single init value for all receivers. The info indicates the init value that is used in the generated code.	FEAT-3499

Security

Type	Description	Change ID
Breaking Change	A new BSW module vSecPrim has been introduced that replaces the previous SecMod component. The module includes the security algorithm primitives that are e.g. used by Crypto (Sw) module. > The APIs and file names of primitives have not been changed. This applies also to the primitive implementation > A new module (vSecPrim) including BSWMD file and generator has been introduced: vSecPrim > Using this module it is possible to activate or deactivate the required algorithms. > The delivery now includes all algorithms and no longer the subset that is required for a specific delivery. **Migration notes for existing projects:** If you use Cry (Sw) or Crypto (Sw), the following steps are required: > Enable the module vSecPrim in DaVinci Configurator Pro > Configure the required security primitives for your project. > Validators help synchronizing the algorithm selection with the Cry/Crypto requirements > Generate code to configure vSecPrim > As the location of the files in the SIP has changed (from SecMod -> vSecPrim) the build environment may have to be adapted.	FEAT-3330
Extension	The SHE key update protocol implemented by Crypto (Sw) now provides support for UID, FID and counter.	FEAT-3157
Extension	vFvM has been extended with new functionalities for the JASPAR FvM algorithm: > The trip counter can now be stored in NvM and loaded during ECU initialization > Before a synchronization message is received vFvM now behaves as follows. This is independent from the start acceptance window: > Trip- and Reset counter are set to the initial value > Message Counter is initially set to zero and incremented afterwards > Trip counter flag support: > The trip flag is the least significant bit of the trip counter. It is used for synchronizing the freshness	FEAT-3313

Type	Description	Change ID
	value. > The flag is configured using the parameter FvMTripFlagBitSize.	
Extension	The existing SecOC development mode now also ignores FvM errors and Csm errors such as an empty KeySlot. This allows end of line tests where the key has not yet been programmed to the ECU.	FEAT-3515
Extension	DaVinci Configurator Pro is now able to derive the SecOC configuration based on the AUTOSAR 4.3.1 system template. > Support AUTOSAR 4.3.1 SecOC configuration > Support transmission of authenticator and payload part in two separate messages	FEAT-3583
Extension	The AUTOSAR 4.3 based Crypto module now supports additional algorithms: > ECDSA 384 > AES 256 The algorithms are accessible using Csm and are implemented in software.	FEAT-3609
Extension	SecOC now provides optional callout functions that allow the application to process the security details of PDUs that have been received resp. that will be transmitted. > SecOC_GenerateAuthenticationInfo() > SecOC_VerifyAuthenticationInfo() The feature can be enabled by the configuration switch SecOCGeneral/SecOCEnableCustomAuthenticationAPI **Documentation in SIP** Additional information on the API can be found in the SecOC technical reference (TechnicalReference_SecOC.pdf.	FEAT-3647
Extension	The Csm (AR4.3 implementation) now allows to store keys in an encrypted way in NvM. The module therefore now provides pre- and post job callouts which can be used for decryption a key respect-	FEAT-3858

Type	Description	Change ID
	ively a decrypted key can be deleted or overwritten. **Documentation in SIP** The callout hooks are configured by the parameters: > Define callout function names: > > Csm/CsmCallouts/CsmCallout/CsmPreJobCalloutFunc > > Csm/CsmCallouts/CsmCallout/CsmPostJobCalloutFunc > Link job with callout function: > > Csm/CsmJobs/CsmJob/CsmJobCalloutRef	
Extension	SecOC provides a new callout function SecOCVerificationStatusCalloutWithSecuredPdu that provides the PDU payload and the freshness verify value along with the verification status. **Documentation in SIP** Using the configuration option SecOC/SecOCRxP-duProcessing/SecOCVerificationStatusWithSecuredPduPropagationMode it is possible to set when the callout is invoked: > BOTH: 'True' and 'False' verification status will be propagated. > FAILURE_ONLY: Only 'False' verification status will be propagated, > NONE: No verification status will be propagated.	FEAT-3891
Information	The Crypto (Sw) implementation now provides the algorithm AES-GCM and SipHash as SafeBSW implementations for safety related projects up to ASIL D.	FEAT-2447

State Management

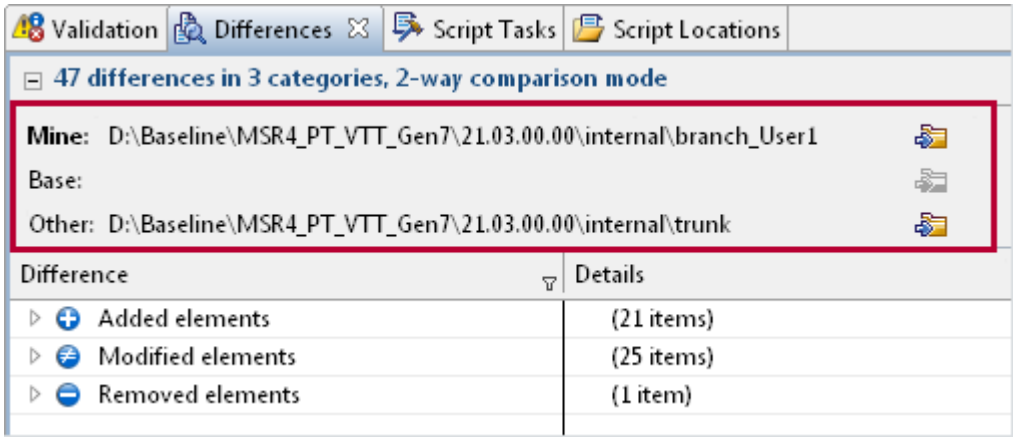
Type	Description	Change ID
Extension	EcuM now supports the startup and shutdown of more than one partitions.	FEAT-2721

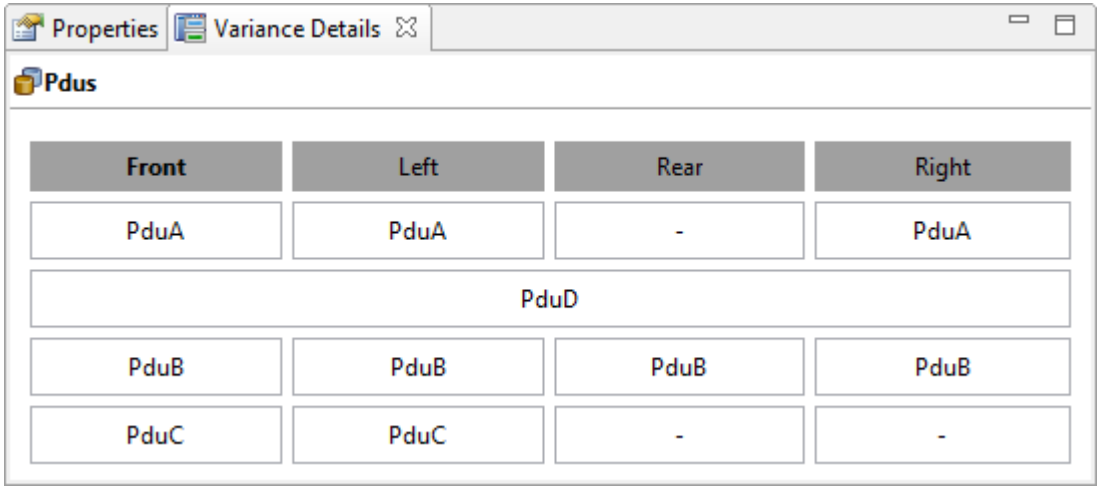
Type	Description	Change ID
	In the past only core specific initialization was supported but no partition specific initialization.	
Extension	Using the BswM auto configuration assistants in DaVinci Configurator Pro it is now possible to configure a so called rapid ECU shutdown sequence for EcuM Flex use-cases. A typical use-case is the shutdown for ECU reprogramming. > the shutdown is performed independent of the communication state (ComM/Nm) and ECU state. > Nonvolatile data is stored before shutdown > wake up events during the shutdown are ignored > run & post run requests are ignored **Additional Information** Rapid shutdown is not supported by EcuM Fix use-case.	FEAT-2782
Extension	For wake ups during the UP/RUN phase, EcuM currently considers communication channel wakeup sources only - as defined by AUTOSAR. In some use-cases this is not sufficient. EcuM therefore now provides the option to consider wakeup sources which have no dependency to a communication channel. **Documentation in SIP** The option can be enabled through the configuration switch EcuMGeneral/EcuMNonChannelWakeupInRun.	FEAT-3268

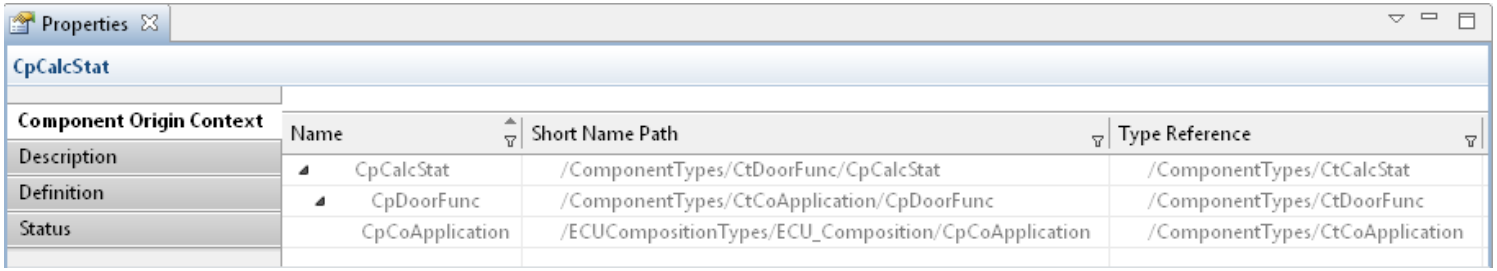
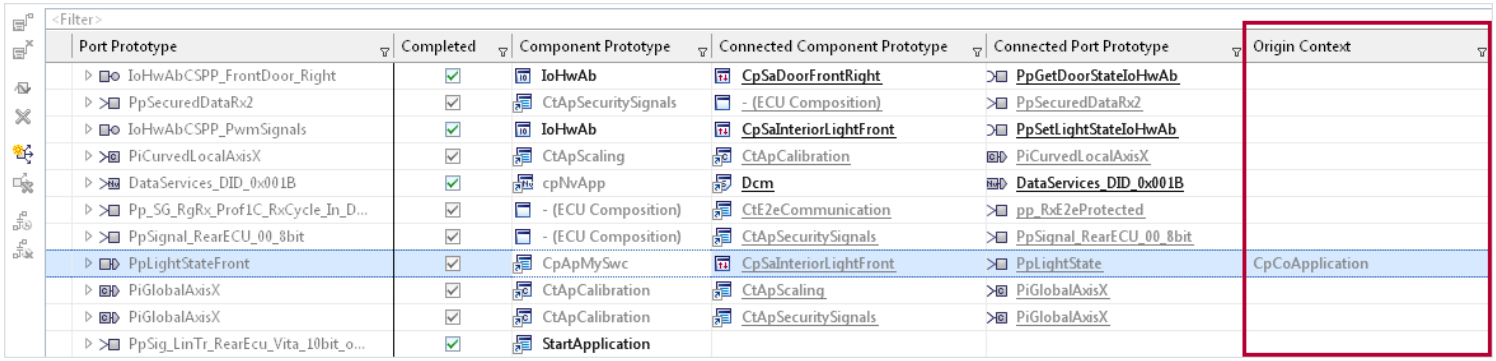
Watchdog

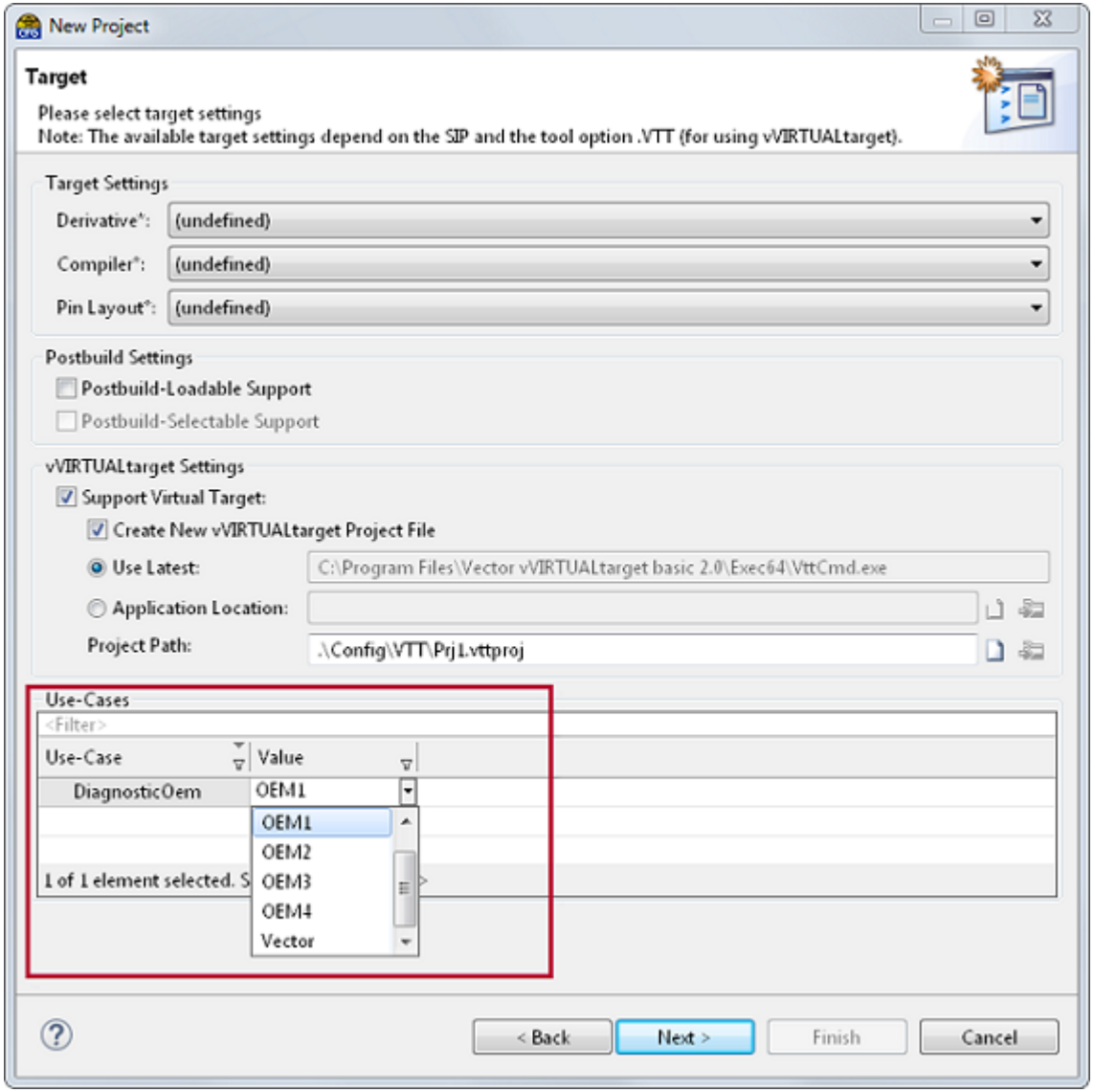
Type	Description	Change ID
Extension	WdgM now allows status reporting via callback functions (C functions), Client-Server-Ports (via Rte) and Mode-Switch-Ports (via Rte) in single and multi core usage. In previous version such configuration caused compiler and linker errors.	FEAT-3497

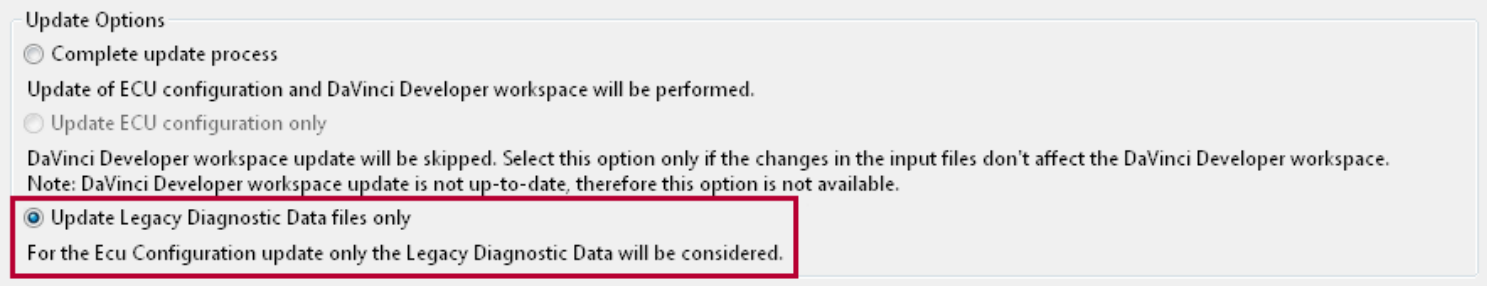
Tooling

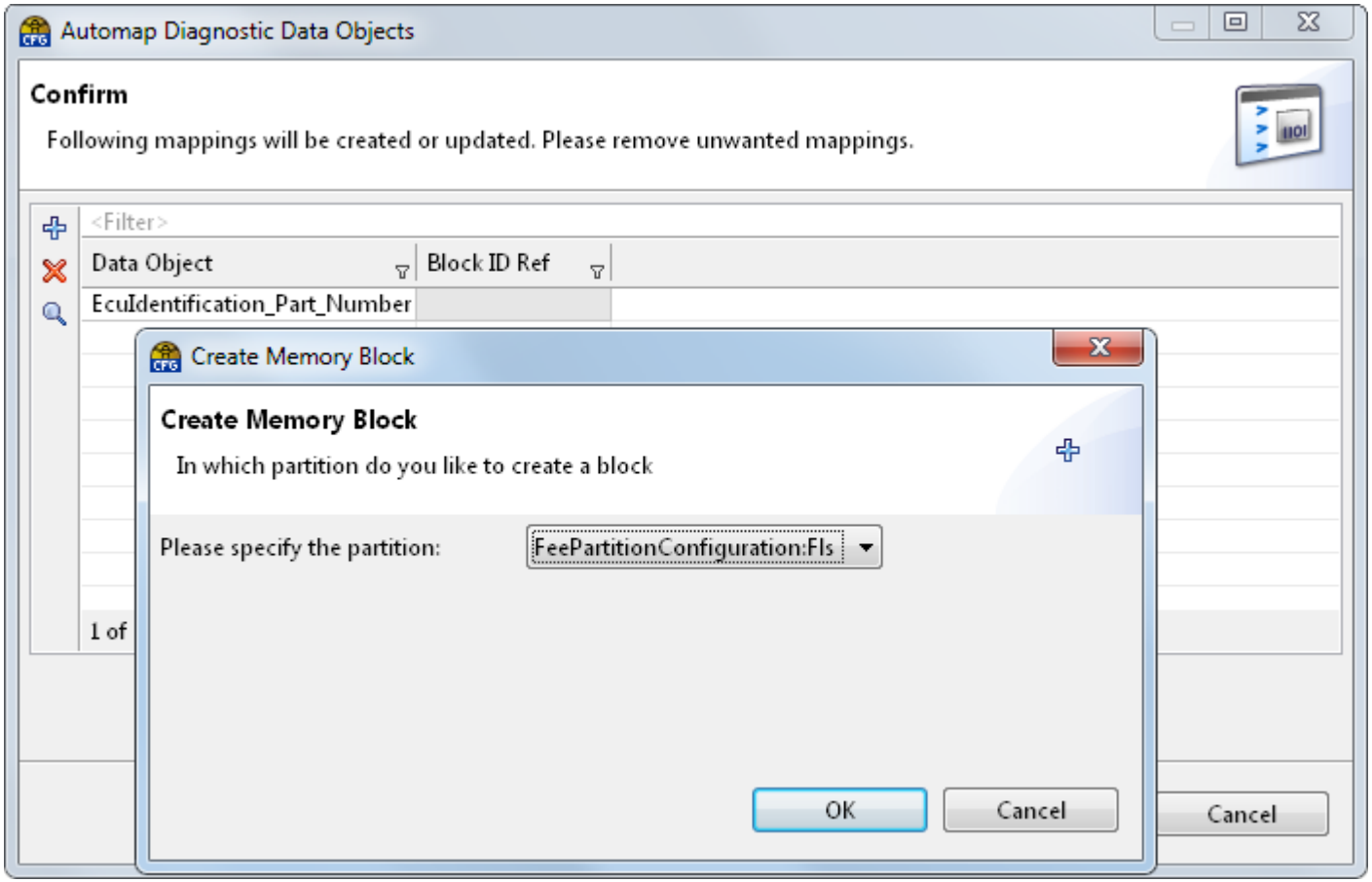
Type	Description	Change ID
Breaking Change	The runtime of code generators for the SWC template file generation has been reduced for setups with multiple output folders (i.e. one folder per SWC template). **Migration notes for existing projects:** The Rte contract phase header files are no longer gererated to the <GenData>\ContractPhase folder. Instead the files are now generated into the folder defined in the DaVinci Configurator Pro "SWC Templates and Contract Phase Headers" settings. This requires either an adaption of the project settings or a modification in the build environment to the new contract phase header location.	FEAT-3352 FEAT-3351
Extension	The Difference Details view of DaVinci Configurator Pro shows now the path to the projects that are used for comparison. 	FEAT-2449
Extension	DaVinci Configurator Pro now allows pasting EcuC configuration items in the Mode Management use-case editors.	FEAT-2481
Extension	To illustrate differences in BSW variances (MICROSAR Identity Manager) in a better way, DaVinci Configurator Pro now provides a new Variance Details View. The view highlights the variant specific settings for containers, parameters and data mappings and is available	FEAT-2553

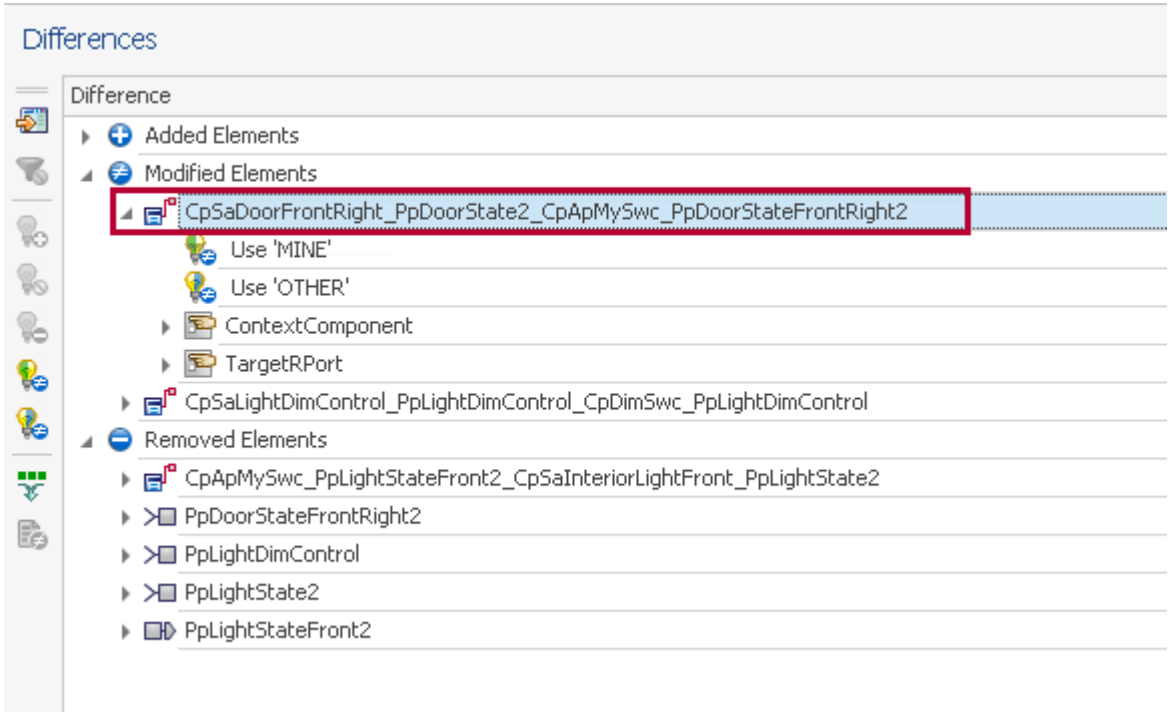
Type	Description	Change ID
	in basic and use-case editors. The view can be opened in the View menu. Choose Variance Details. New DaVinci Configurator Pro Variance Details 	
Extension	The ECU Software Components Editor of DaVinci Configurator Pro shows now the origin context of a SWC prototype or port prototype. The origin context is the path to the SWC prototype in the input system extract (DaVinci Developer workspace), that may include a composition hierarchy. Available also in Component Connection Assistant and automation interface.	FEAT-2857

Type	Description	Change ID
	Origin context in the Properties View of a SWC prototype. The tree shows the inverse parent path through the composition hierarchy  Origin context in the Application Ports List View of a SWC prototype. Shows the top-level composition prototype 	
Extension	DaVinci Configurator Pro supports now use-case specific preconfiguration. If such preconfiguration is defined in the SIP, the use-case can be selected in the New Project Assistant and in the Project Settings Editor. The Eparm tool (part of DaVinci Configurator Pro Option MD) supports the definition of use cases and according values to be offered for selection.	FEAT-2886

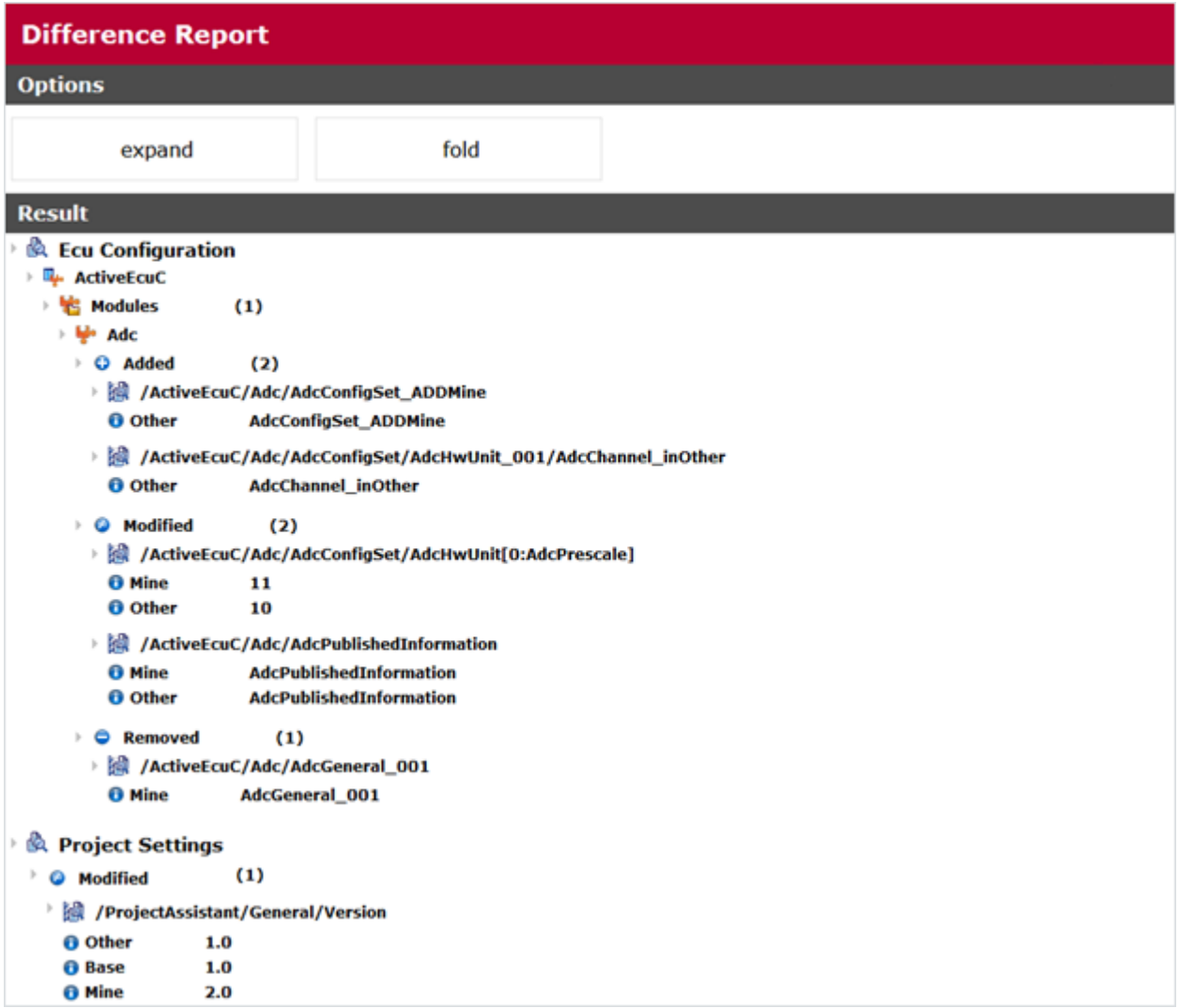
Type	Description	Change ID
	Use-case selection in New Project Assistant 	

Type	Description	Change ID
Extension	A preprocessing of input files (system template) with DaVinci Configurator Pro is now possible using Groovy Scripts that are known from the automation interface (option WF). The existing VASE Script is still supported but considered to be deprecated.	FEAT-3027
Extension	In DaVinci Developer, the IsService flag can now be modified after the port interface creation.	FEAT-3339
Extension	DaVinci Configurator Pro now provides a link that allows to open the documentation folder of the SIP. The folder includes BSW related documentation such as the Technical References.	FEAT-3345
Extension	DaVinci Configurator Pro supports now a selective update of diagnostic module configurations (only in combination with CDD or PDX files). 	FEAT-3349
Extension	The Automap Diagnostic Data Objects Assistant of DaVinci Configurator Pro supports now the creation of new memory blocks.	FEAT-3367

Type	Description	Change ID
		
Extension	The Difference View of DaVinci Developer allows now individual merge decisions also for SWC connectors.	FEAT-3400

Type	Description	Change ID
		
Extension	DaVinci Configurator Pro now raises a warning if at least one user-defined parameter is present in the configuration. This is vital as using the user-defined setting may overwrite relevant pre-configurations provided by e.g. validation routines or the OEM. Thus setting a parameter to user-defined may resuslt in malfunction of the ECU or compile errors.	FEAT-3426
Extension	DaVinci Configurator Pro has been improved to better cope with E2E protections defined in a DaVinci Developer 4 workspace. Includes a validation rule and solving actions for automatic correction of the ECU extract model.	FEAT-3646
Extension	The DaVinci Configurator Pro automation interface has been extended with new high level functionality: > An API has been introduced that allows easy definition of the order with which runnables are mapped to a task.	FEAT-3945

Type	Description	Change ID
	> Simplified the possibility to complete missing SWC connections in the system extract > Background: Some delegation ports on compositions are connected to inner atomic SWCs but do not forward the connection to delegation ports of the toplevel composition. We call these delegation ports OriginContextPorts. > The OriginContextPort is now offered as additional info and filtering criteria for the existing selection APIs. > A new selection API for the OriginContextPorts has been introduced. **Additional Information** To make use of the powerful automation interface the option DaVinci Configurator Pro.WF is required. **Additional Information** More details on DaVinci Configurator Pro and its option .WF	
Information	The performance and browser compatibility of reports generated by DaVinci Configurator Pro has been improved for the following reports: > Diff&Merge Report > Update Report > Generation Execution Report	FEAT-3545

Type	Description	Change ID
	Difference Report 	
Information	DaVinci Configurator Pro supports now the processing of "VAL_BLK" ApplDataTypes in input files by conversion to an uint8 array.	FEAT-3659

Release 20

General

Type	Description	Change ID
Information	Several MICROSAR BSW modules make use of float datatypes. The usage of a "nofloat" compiler option is therefore no longer supported.	-

Communication

Type	Description	Change ID
Breaking Change	The time synchronization stack has been extended with more AR4.3 features: > StbM now supports > > Virtual local time: Rate correction based on the network time > > Pure local time base: Time base derived from a local clock / counter > > New API StbM_GetTimeBaseStatus() > > StbM_SetGlobalTime() can now also be used for offset time bases > CanTSyn and FrTSyn now support the AR4.3 defined message format which is incompatible to the message format defined by AR4.2.2. > > The message format is configurable to support OEMs that require AR4.2.2 message format on the network. > EthTsyn is now able to detect Master / Slave conflicts. > > The slave node reports runtime DET error if SYNC messages from multiple master nodes are received. > > The slave node detects the first Master and ignores messages from other master nodes. > > The master node reports a runtime DET error if SYNC messages are received from other master nodes. **Migration notes for existing projects:** If the OEM requires time synchronization according AR4.2.2 (message format) set the configuration parameter CanTSynMessageCompatibility resp. FrTSynMessageCompatibility to TRUE.	FEAT-2461

Type	Description	Change ID
	Additional Information Typically Vector will preconfigure this item according to the OEM the SIP has been ordered for.	
Breaking Change	The MICROSAR COM Stack is now able to handle PDU fan-outs in the PduR. This reduces resource consumption in the Com module as the signals exists only once even if being transmitted on multiple networks. The PDU fan-out must be modelled in the system template. **Important Information** In order to realize this feature the naming rules of the upstream mapping have been changed. > Names of PDUs and signals that are created by DaVinci Configurator Pro based on the System Template are changed during the first database update. > Due to internal improvement in our tooling there have also been other changes with respect to names that are created by the upstream mapping (System Extract -> EcuC). Note: This change affects all elements even if no fan-out or fan-in is used. **The implementation has some limitations** > If a Com I-PDU Group is assigned only to PDUs with a fan-out or fan-in relation the BswM is currently not able to switch these PDU groups based on the rules created by the auto configuration. > This is a absolutely untypical use-case and we are currently not aware that such databases are provided by OEMs. > Enabling and disabling these PDU Groups have to be done manually in the BswM configuration as otherwise the PDUs will not be processed. Future release will improve this handling. **Migration notes for existing projects:** Due to the fan-out/fan-in realization and due to the associated renaming of items we have a high impact on the ECUC configuration:	FEAT-3109

Type	Description	Change ID
	> We recommend a ECUC database update when updating to the new SIP. After the update rework may be required. The extend of the rework is expected to be low as an automatic conversion has been implemented. > After the update, delete all Com*Notification parameters with the value "Rte_COMCbk*". Otherwise the Rte will not update the notifications properly. Once this is done the Rte update mechanism will work properly again for future updates. > You can use this as a search query in the Find View using the query "Rte_COMCbk*" to see if you have not missed any parameter. > Use the find view to jump to the related item and use the multi select feature in grid view to remove all parameter instances with such a value. > The affected parameters are /MICROSAR/Com/ComConfig/ComSignal(Group)/Com*Notification > The correct Com*Notification values will automatically written within the next calculation phase of the Rte > Check connection of Service Ports to your SWCs as some names have changed (especially for ComM) > Existing configuration items that are created by the upstream mapping will be removed and new items will be added during the first database update. Vector has implemented a set of rules that take over most configuration settings. > Manual changes to the global PDU in the EcuC module cannot be migrated. If manual changes have been done to the global PDU collection (we expect that this is a rather untypical use-case) these must be redone. > As the new items have changed names, symbolic name values that are used in the application code have to be adapted. SWCs are not affected as the Rte handles the change. > The global PDU in the EcuC module has been split. In the past there was one global PDU that was used for several BSW module interactions (e.g. CanIf to PduR and PduR to Com). Now there is one global PDU for each BSW module interaction (e.g. one PDU for CanIf to PduR and another PDU for PduR to Com). > This change allows more freedom in the global PDU settings but requires selecting the correct global PDU instance when configuring global PDU references manual (e.g. when using complex drivers).	
Breaking Change	The MICROSAR specific tracing feature has been removed from the CAN stack (<MSN>_ENABLE_TRACING). The feature is not defined by AUTOSAR and deprecated since some time now. **Migration notes for existing projects:**	FEAT-3167

Type	Description	Change ID
	Extend the code individually in case runtime measurement or tracing is required. This is possible since typically source code is delivered.	
Breaking Change	The Meta Data handling for Tx CAN PDUs now also covers the CAN-FD and extended CAN-ID flags and now have 32bits instead of 29bit as before. **Migration notes for existing projects:** To continue to have the old behavior the CanIfTxPduCfg/CanIfTxPduIdMask must typically be extended to 32bits and the upper 3 bits have to be masked with 1. If the mask is not extended the meta data will be used to define the Tx message with respect to CAN identifier format (standard/extended) and CAN2.0/CAN-FD message type. **Additional Information** Please Note: > The change does not affect standard CAN PDU Tx objects handling fixed and static PDU ID. It is relevant for J1939 PDUs and specific gateway PDU configurations where the CAN ID can be set dynamically by the upper layer. > MICROSAR modules will provide solving actions to correct the settings to the new mask. A rework is mainly required if the setting has been done by hand in the past.	FEAT-3173
Breaking Change	The state machine of the E2E library has been updated to comply with AUTOSAR 4.2.2 > Introduction of a new status E2E_P_NONEWDATA > Check status E2E_P_NONEWDATA was formerly mapped to state machine status E2E_P_REPEATED **Migration notes for existing projects:** Check if and how the new check (E2E_P_NONEWDATA) status result shall be handled by the application.	FEAT-3401
Extension	The Com module and the Rte now support signals with the (application sided) datatype float32 and float64.	FEAT-2680
Extension	The IpduM now supports the static PDU Layout for contained PDU as defined in AUTOSAR 4.3.1 - RfC76543.	FEAT-3072
Extension	The VASE script that optimizes the signal routing by creating description based routings (instead of standard signal routing relations) now also supports signal groups.	FEAT-3134

Type	Description	Change ID
Extension	GeneralPurposeIPdus can now also be secured using SecOC. In the past this was limited to ComIPdus. Implementation based on AR4.3.1 - RfC77428.	FEAT-3155
Information	ASIL D release of E2eXf and ComXf is now available.	FEAT-2498
Information	QM release of vIpc is now available.	FEAT-2936
Information	The runtime of the "Can over SPI" module was improved.	FEAT-3308

Diagnostics

Type	Description	Change ID
Breaking Change	FiM has been reworked to AR4.3 architecture. The FiM Technical Reference provides in chapter 3.2 (Major Changes in AUTOSAR 4.3 version of FiM) a summary of the changes. > Usage of Dem monitor status bits for calculating the FID states instead of using the UDS status bits > FIDs that should be blocked depending on an event's pending status now need to be configured separately. Previously, the pending status of any event that was connected via a normal Inhibition configuration was considered. **Migration notes for existing projects:** The configuration is taken over from the previous FIM version. In case of OBD projects, please rework your configuration: > Set the container structure FimInhibitionConfiguration with the parameter FimInhInhibitionMask to FIM_PENDING for all IUMPER ports.	FEAT-2745
Breaking Change	**Important Information** Only relevant for diagnostic extract (DEXT) users that were using th R20S2 development (sprint) delivery. The names of diagnostic entities such as DTCs, DIDs and related datatypes derived from DEXT had been	FEAT-3109

Type	Description	Change ID
	changed from R19 to R20S2 by accident. With the final R20 version the names are again in line with the rule set that was used with R19 and before. **Migration notes for existing projects:** Only relevant if DEXT has been used in combination with a R20S2 (or later) sprint delivery: > Adapt the port mapping for DCM and DEM ports according to the new names and datatypes > If Dem and Dcm are used without Rte APIs, the interface has to be adapted. In general the new names are the old names without the added hash values. The new names are now equal to the names that were derived from the DEXT with R19 deliveries.	
Extension	The diagnostic extract workflow supports the automatic connection between SWCs and Dem/Dcm ports. This feature is now available for: > DCM IO control ports > DEM freeze frame data ports (require implementation data types on SWC) > DEM event monitor and info ports.	FEAT-2514
Extension	Release of Dcm S/R communication as it was introduced by FEAT-371, FEAT-1899 and FEAT-2962. This includes the usage of vDiagXf. **Documentation in SIP** Usage of the DiagXf in combination with Dcm is described in AN-ISC-8-1218_Atomic_Dcm_S-R_Interfaces_with_Diagnostic_Transformer.pdf that is delivered as part of the SIP.	FEAT-2563
Extension	A new SWC vDem42 is provided that is able to wrap some of the AR4.3 specific DEM APIs. The module is intended to serve as wrapper layer in case a SWC expects AR4.2 DEM interfaces that are no longer provided by the new AR4.3 DEM. The following APIs are wrapped: > Dem_ClearDTC	FEAT-2894

Type	Description	Change ID
	> Dem_SetDTCSuppression > Dem_GetDTCSuppression > CallbackEventStatusChange > GeneralCallbackEventStatusChange > GetEventFreezeFrameData > GetEventFreezeFrameDataEx > GetDTCOfEvent > GetDebouncingOfEvent > GetEventExtendedDataRecord > GetEventExtendedDataRecordEx > GetEventFailed > GetEventTested > GetEventStatus > GetFaultDetectionCounter > ApplicationErrors vDem42 is realized as SWC and generated by DaVinci Configurator Pro once the related module has been enabled. The module will be part of all deliveries that include the new AR4.3 based DEM. **Additional Information** Quality status is QM. The component is therefore not suitable for usage in a safety partition.	
Extension	The J1939Dcm now supports the new AR4.3 based Dem.	FEAT-2897
Extension	Support of PR-Ports for Dcm for: > DIDs with configured DcmDspDidRead and DcmDspDidWrite (DIDs for ReadDataByIdentifier and WriteDataByIdentifier) > DIDs with configured DcmDspDidControl (DIDs for InputOutputControlByIdentifier)	FEAT-2924

Type	Description	Change ID
	Additional Information In most programs the usage of PR ports is disabled to be compatible with existing projects. The feature can be enabled with the option DcmSenderReceiverPRPortsEnabled for all Dcm S/R interfaces.	
Extension	The DID signal handling now provides a backward compatibility to the combined signal structure that has been used with MICROSAR3 and older (<R19) MICROSAR4 releases. The backward compatibility simplifies a takeover of existing software as the DID signal granularity can remain unchanged. Data identifiers to be combined to one signal only must have the CANdela Studio attribute ASR3_Legacy_Combine_DID set to 1. > Without this setting signals are not combined. This is the default for AUTOSAR4 based projects. > If set, the signals are combined to a single signal as it was done by MICROSAR3. The data type of the combined signal is a byte array. **Additional Information** The attribute (ASR3_Legacy_Combine_DID) must be defined in the CDDT. So it may be necessary to contact the CDDT owner (e.g. OEM) and request the addition of the attribute.	FEAT-3212
Extension	Provisioning of the Dem_SetEventAvailable port.	FEAT-3283
Information	Additional performance optimizations for diagnostic data import into DaVinci Configurator Pro.	FEAT-2470
Information	Additional Services of the Dcm are now Safe and can be used in SafeBSW projects. > DID Service 0x22 > Memory Services 0x23, 0x3D > RID Services 0x31	FEAT-2505

Type	Description	Change ID
	Additional Information Additional services will be made safe with R21 (Q4 2018).	
Information	DiagXf, the transformer module used for S/R interaction with Dcm, is now available for projects up to ASIL D.	FEAT-2510
Information	QM release of the Dcm OBD major monitoring feature including DTR functionality.	FEAT-2572 FEAT-1724 FEAT-2635 FEAT-1723

Ethernet

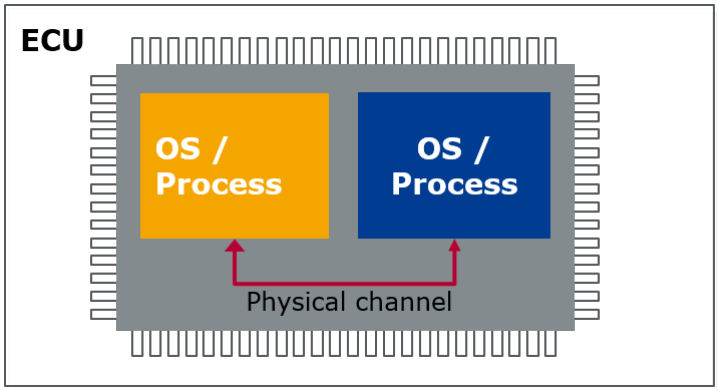
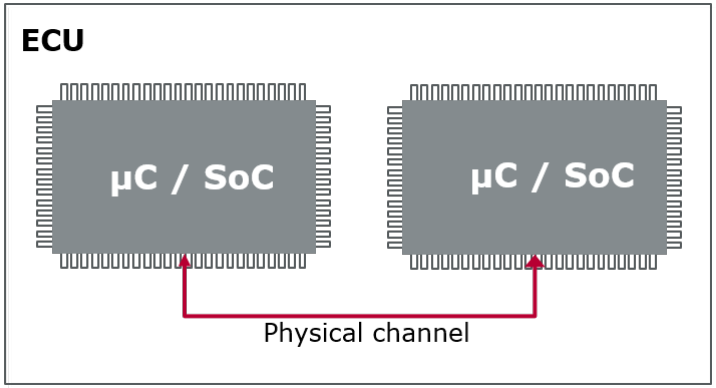
Type	Description	Change ID
Breaking Change	The support of DoIP draft standards have been discontinued: DIS/FDIS. From now on only the final standard (IS, 2012) is supported.	FEAT-3362
Extension	The SomeIpTp (Transport protocol for SOMEIP) has been realized and is available for development deliveries. Using the SomeIpTp very large data (up to 4GB) can be transmitted which cannot be handled using IP fragmentation. **Important Information** SomeIpTp interaction with the Rte will be provided in Q2 2018. Until then SomeIpTp can be evaluated standalone without SomeIpXf and Rte interaction. We plan the release of SomeIpTp with R21 (Q4 2018).	FEAT-2543
Extension	The Soad BSD API option now supports multiple Linux ETH interfaces (e.g. VLANs).	FEAT-2697
Extension	Support "ANY" in the system template as IP address wildcard. In the ECUC the existing implementation still expects "". The upstream mapping now transfers these two representations.	FEAT-2774
Extension	The BSD API of the SoAd now supports also QNX as host operating system.	FEAT-2971

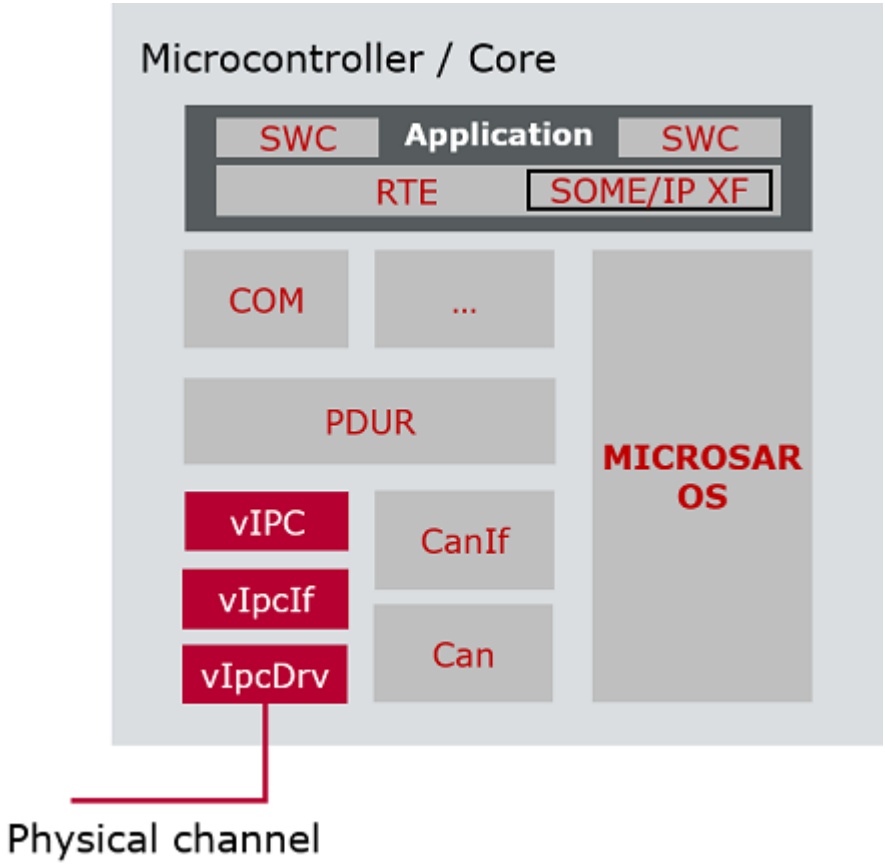
Type	Description	Change ID
Extension	It is now possible to use only one SoAd Socket Connection (Multicast local address, listen-only) for receiving multicast events from multiple servers. When receiving a SD SubAck message Service Discovery sets the socket remote address to the servers unicast address. By deactivating the configuration option SdGeneral/SdSetRemAddrOfClientRxMulticastSoCon it is now possible to disable the SetRemoteAddress-call for multicast-endpoints per SD Instance. By default this new option is enabled which represents the old behavior and only the first server is configured correctly.	FEAT-3326
Extension	IPv4 and IPv6 dual stack use-cases are now supported by the DaVinci Configurator Pro upstream mapping.	FEAT-3378
Extension	DaVinci Configurator Pro now provides the upstream mapping for the System Template element pduCollectionSemantics for SocketConnectionIpduIdentifier. The result is mapped to the ECUC parameter SoAdIfTriggerTransmit.	FEAT-3388
Extension	The DHCP client is now able the request that same IP address after a reboot. Therefore the IP address can be included into the DHCPDISCOVER message. The IP address must be stored by the application in non volatile data and provided to the DHCP client after reboot. **Documentation in SIP** The required API is described in TechnicalReference_TcpIp.pdf chapter "DHCPv4 Requested IP Address Callout”.	FEAT-3441
Extension	The DoIP component now supports more that 255 target addresses as defined by AUTOSAR RFC 79727.	FEAT-3472
Information	Wakeup line based activation is now released in the MICROSAR Ethernet transceiver.	FEAT-2465 FEAT-705
Information	The runtime of Sd_RxIndication() has been optimized.	FEAT-2989

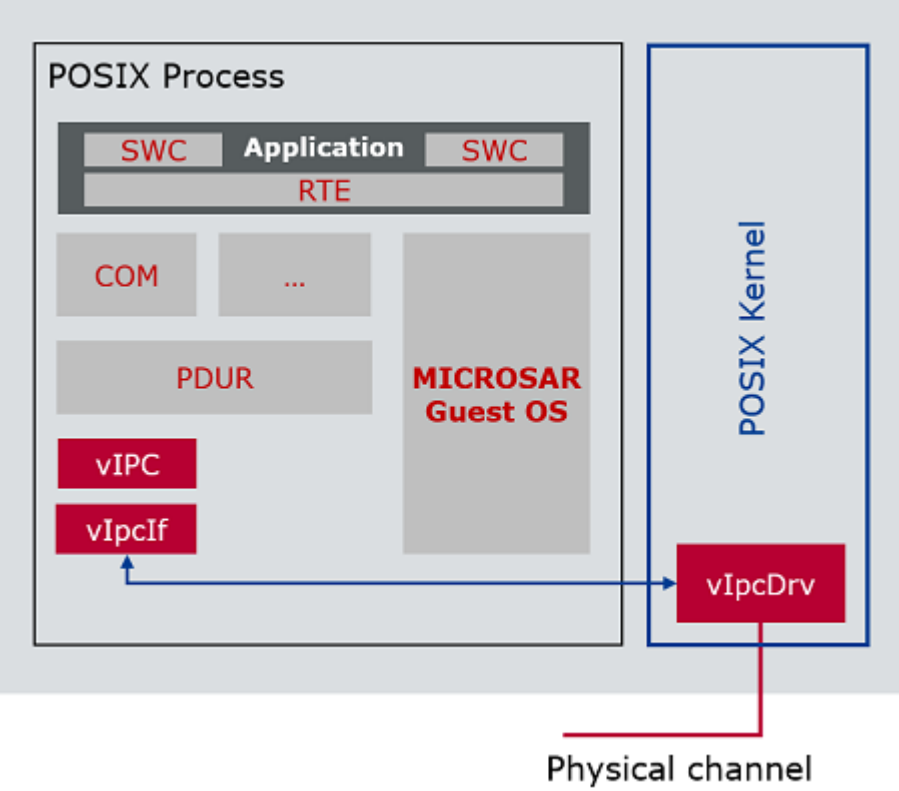
Gateway

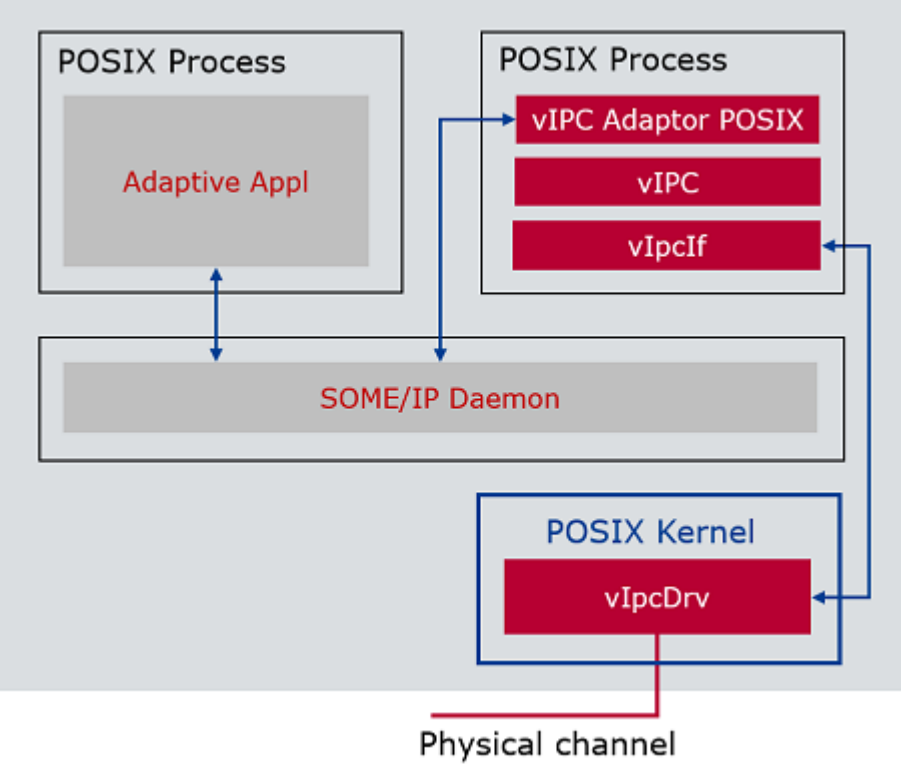
Type	Description	Change ID
Information	The RAM consumption of the PduR was reduced. The reduction becomes significant if there are many low-level interface routings configured.	FEAT-3285

Inter Process Communication (IPC)

Type	Description	Change ID
Extension	The MICROSAR IPC (Inter Processor Communication) has been completely reworked. A new set of modules (vIpc...) has been introduced which allows transmission and reception of data packets of configurable size between different cores of a microcontroller or different processes of a POSIX OS. With this release MICROSAR IPC supports inter core communication via shared memory for MICROSAR and POSIX based operating systems.  	FEAT-2937

Type	Description	Change ID
	MICROSAR integration: 	

Type	Description	Change ID
	POSIX integration with MICROSAR: 	

Type	Description	Change ID
	Planned AdaptiveMICROSAR integration:  **Additional Information** The solution will be extended in the near future by the following capabilities: > Support for communication with AdaptiveMICROSAR and MICROSAR guests in POSIX systems. > Inter-microcontroller communication via SPI and UART.	

J1939

Type	Description	Change ID
Extension	The upstream mapping for J1939 NAME messages has been implemented for DBC based configurations. In the DBC file, NAME messages are identified as NM messages with PGN 0x9300. Such messages trigger the ECUC parameter J1939NmAcceptsCommandedName to be set for the sending and receiving J1939NmNode. **Additional Information** The messages (PGN 0x9300) themselves are not derived to the ECU configuration as this is not required by the embedded software.	FEAT-2862

Measurement and Calibration

Type	Description	Change ID
Extension	The a2l file that is generated by the Rte now includes the display format that has been defined on DataPrototype level in the SWC design.	FEAT-3159
Extension	Introduction of a new API Xcp_SetStimMode() that allows modification of the STIM handling: > Single Shot Mode (default and the old behavior): A newly received STIM list is written when Xcp_Event is called for the corresponding Event channel and invalidated afterwards. > Continuous mode (new behavior, can be activated by Xcp_SetStimMode()): A newly received STIM list is written when Xcp_Event is called for the corresponding channel. Its state is kept so that it is written again after the Xcp_Event function is called again for the same Event channel.	FEAT-3275

Runtime

Type	Description	Change ID
Extension	The Rte now supports external SWC triggers (ExternalTriggerOccurredEvent) with the RTE API Rte_Trigger for ECU internal SWC interaction.	FEAT-2476
Extension	To simplify multi core projects a new validator has been added by the Os. In the EcuC module configuration is now ensured that AUTOSAR cores have logical IDs from 0 to n and Non-AUTOSAR cores from n+1 to m when m	FEAT-2733

Type	Description	Change ID
	cores are configured in the Os.	
Extension	The Os core has been extended with several new features. > Support shared stack for tasks with same internal resource > Support shared stack for non-preemptive Basic tasks > Reference to OS_APPMODE_ANY outside OS configuration shall result in a validation error > If missing, the Os now creates the core definition in the ECUC module automatically > The Timing Hooks can now be used in serial production up to ASIL D	FEAT-2815 FEAT-2816 FEAT-3190 FEAT-3204
Extension	The Rte now supports inter-partition communication of NvRAM S/R ports.	FEAT-2974
Extension	The Rte supports the API Rte_IrvIWriteRef.	FEAT-3182
Extension	The Rte now recognizes the usage of Rte API types as internal datatypes that are used by SWCs internally. In the past this caused compiler errors due to type redefinitions.	FEAT-3335
Information	The Rte C/S communication use case using SomeIpXf use-case has been released. This includes the release of the E2E profiles 5 and 6 of E2eXf.	FEAT-2586 FEAT-2484

Security

Type	Description	Change ID
Extension	Crypto (SW) now supports additional algorithms: > RSA for generating and verifying signatures with PSS and PKCS#1 v.1.5 - Prehashing Variants: SHA-1, SHA-256 > RSA encryption and decryption with PKCS#1 v.1.5 > RSA CRT DSA Verification with PKCS#1 v.1.5 - Prehashing Variants: SHA-1 and SHA-256 > ECDSA with curve ANSIp256r1, NIST P-256, SECp256r1 for generating and verifying signatures - Prehashing Variants: None, SHA-1, SHA-256 > HMAC with SHA1 and SHA256 > ECDHE with curve ANSIp256r1 and SECp256r	FEAT-2735 FEAT-3143

Type	Description	Change ID
	> Concatenation KDF (Nist special publication 800-56A) > Certificate installation and update according to ISO15118 > CTR-DRBG using AES-128 according to NIST SP 800-90A with and without Derivation Function	
Extension	It is now possible to configure a secured area with a PDU. The SecOC has been extended to support such secured areas based on AUTOSAR RfC 77090.	FEAT-3073
Extension	The SecOC retry mechanism has been improved to fasten up response time. If the current freshness value did not lead to successful MAC authentication the FvM will be queried immediately for new freshness value and a new authentication attempt will be started. Previously the second attempt was executed in the next MainFunction.	FEAT-3079
Extension	The handling of the key update in the Crypto (SW) has been improved. Key can now only be updated by itself or a configured Master Key.	FEAT-3157
Information	The runtime of Crypto (Sw) has been optimized by caching AES round keys in the driver. The optimization can be enabled with the switch CryptoGeneral/CryptoMacPrimitives/CryptoCmacAesRoundkeyReuse	FEAT-3420

State Management

Type	Description	Change ID
Extension	The CanNm now supports the retry of the first message transmission request as specified in the AUTOSAR 4.2. The functionality is optional and configurable.	FEAT-3390
Extension	The CanNm settings RepeatMsgInd, NodeDetection and NodeId are now configurable per channel and support post-build selectable (IDM).	FEAT-3405
Information	The runtime of the BswM module has been improved.	FEAT-3172

V2G

Type	Description	Change ID
Extension	The Smart Charging solution of Vector now supports the energy transfer mode WPT (Wireless Power Transfer)	FEAT-2765

Type	Description	Change ID
	according to ISO/IEC 15118 ED2 CD2. Please note: This feature is provided by a dedicated vScc add-on.	
Information	QM release of the GB/T 27930 charging component vCanCcGbt.	FEAT-2534

vVIRTUALtarget

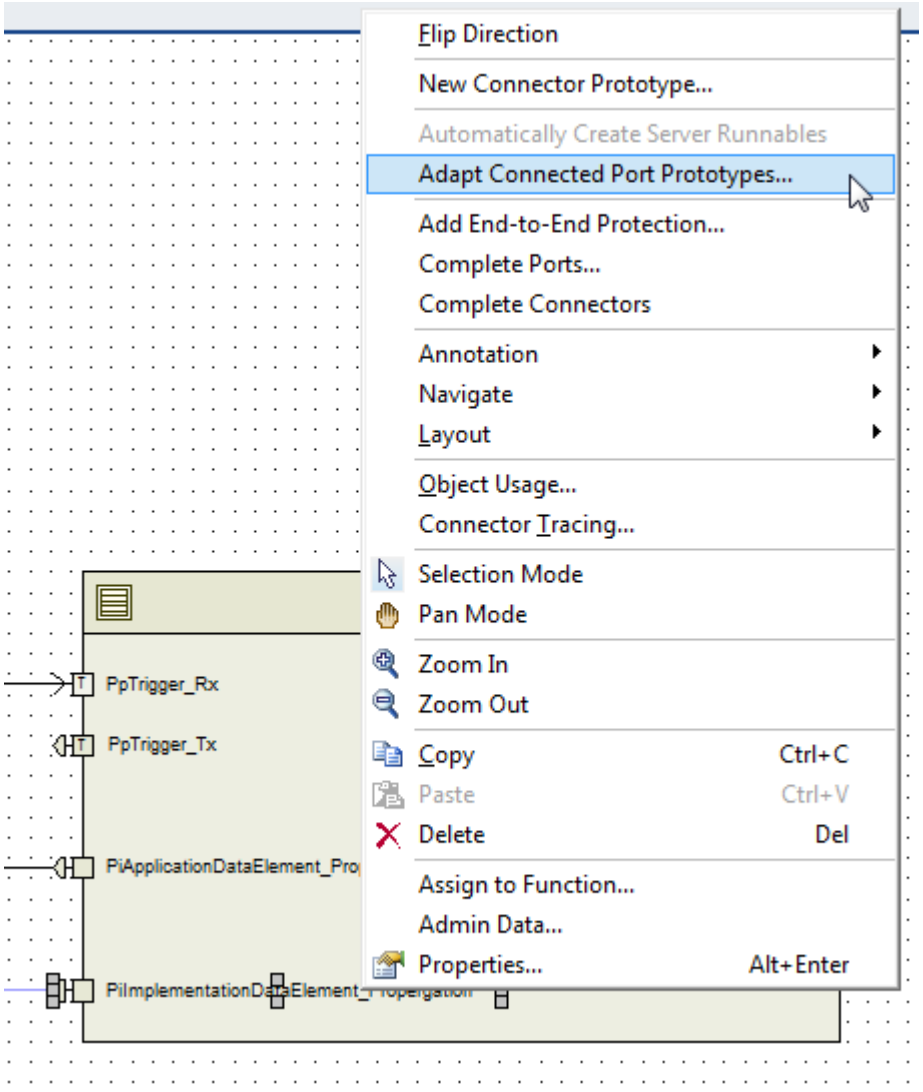
Type	Description	Change ID
Extension	AUTOSAR 4.3 based Crypto (Hw) modules are now simulated by a dedicated vVIRTUALtarget.Basic Crypto module. **Additional Information** The Crypto (Sw) module configuration is not considered as the algorithms are executed in software anyhow.	FEAT-2716 FEAT-3425
Extension	vVIRTUALtarget.Basic projects that are configured to generate code for both the real and the virtual target are now easier to handle: > The API Infix as it is used by many MCAL modules is now considered by the vVIRTUALtarget.Basic BSW modules automatically. This removes the need to adapt higher layer modules to the API names.	FEAT-3288

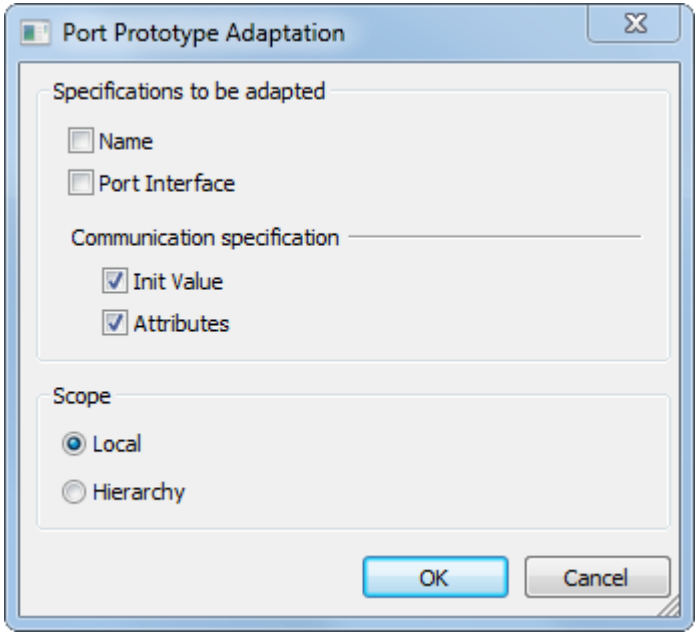
Watchdog

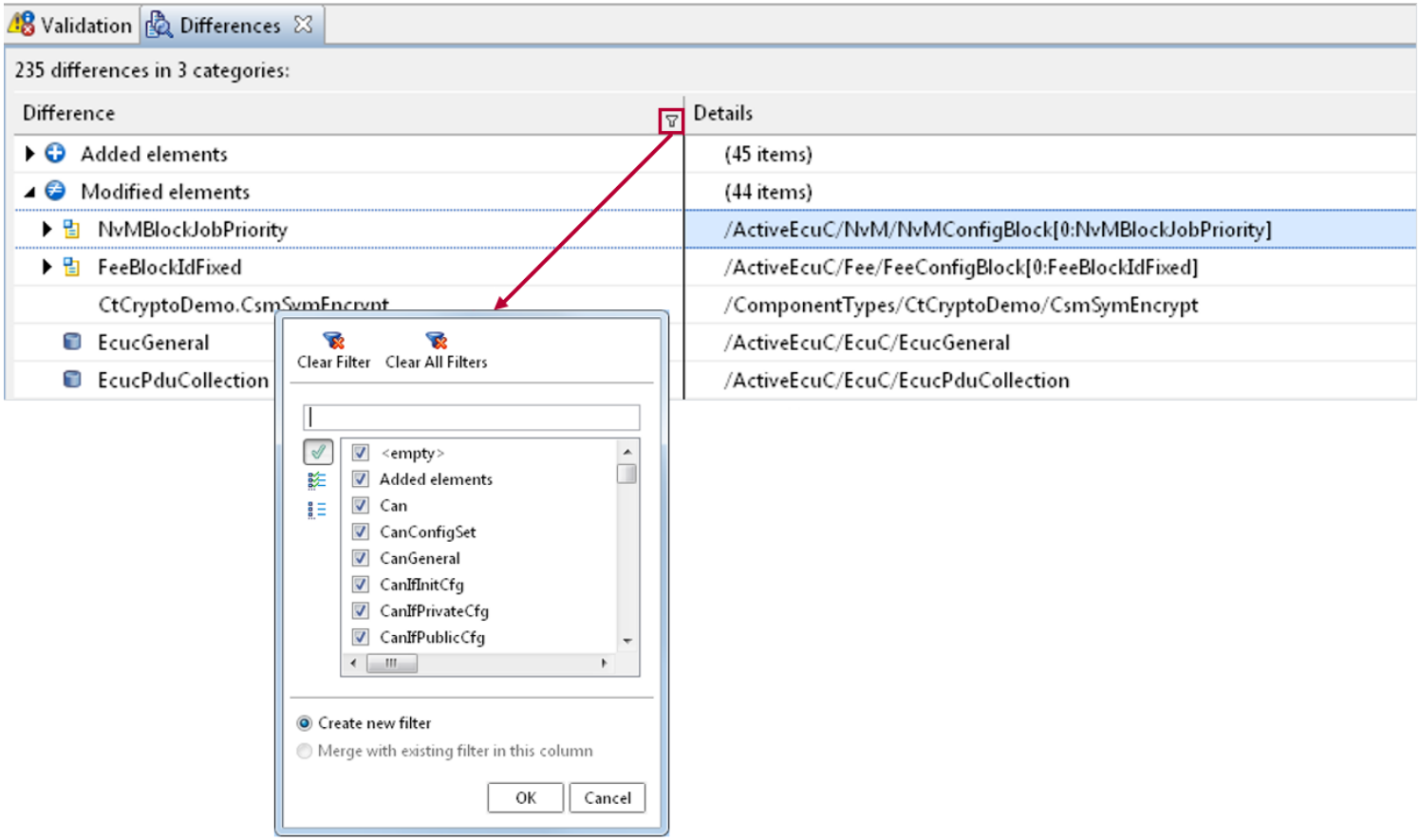
Type	Description	Change ID
Information	The TechnicalReference of WdgM has been updated with respect to the supported AR 4.2 functionality. Additionally, the module now also reports AR4.2.2 as supported AR version. No additional features have been realized.	FEAT-3029

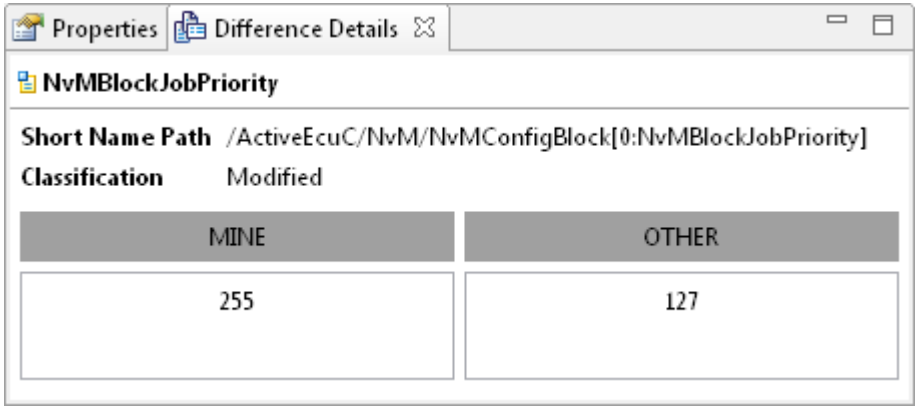
Tooling

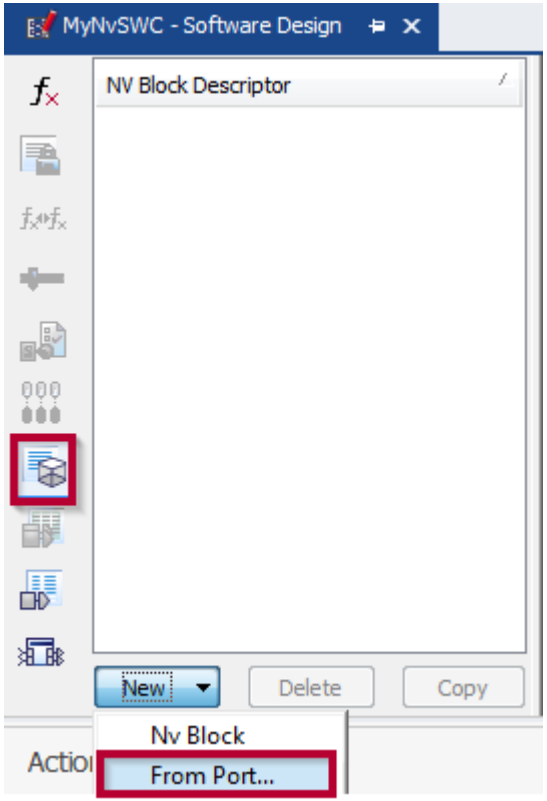
Type	Description	Change ID
Breaking Change	The compatibility evaluation of constants between application- and implementation data types is now more precise and allows more use-cases: > Several receivers of a port can now use application- or implementation data types with physical and internal init values, respectively. In the past this triggered error RTE40248. > The DaVinci Developer feature "Adapt Connected Port Prototypes" now creates constants that are compatible with the application data types that are used for the adapted port.	FEAT-3133

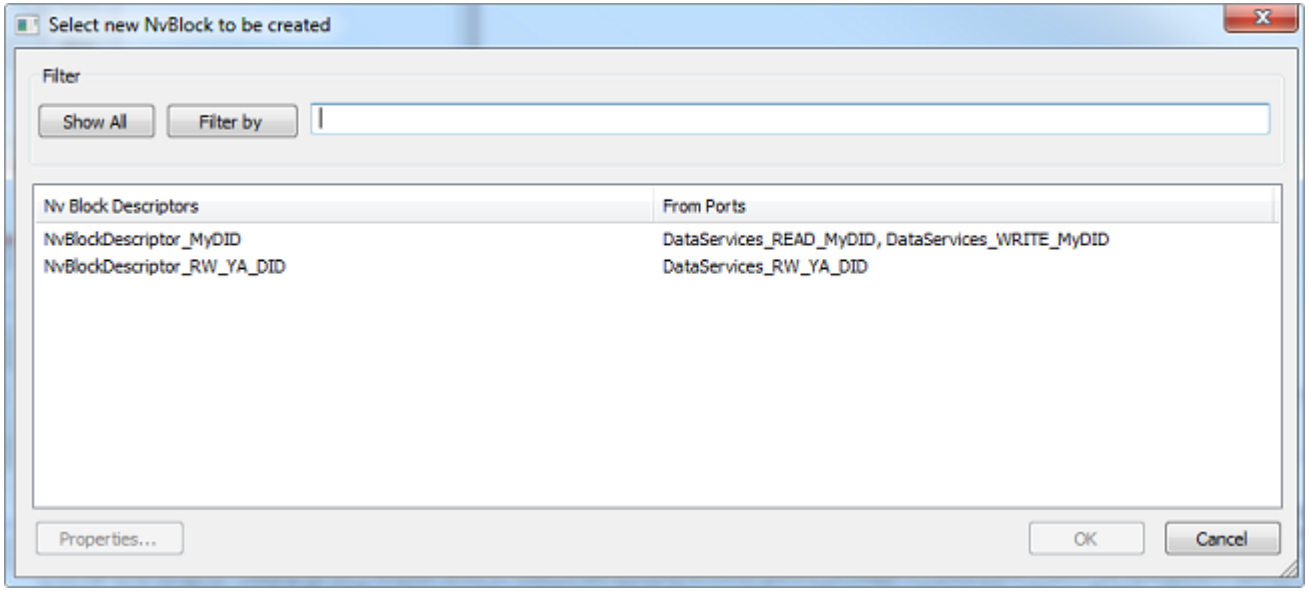
Type	Description	Change ID
	DaVinci Developer port prototype context menue: 	

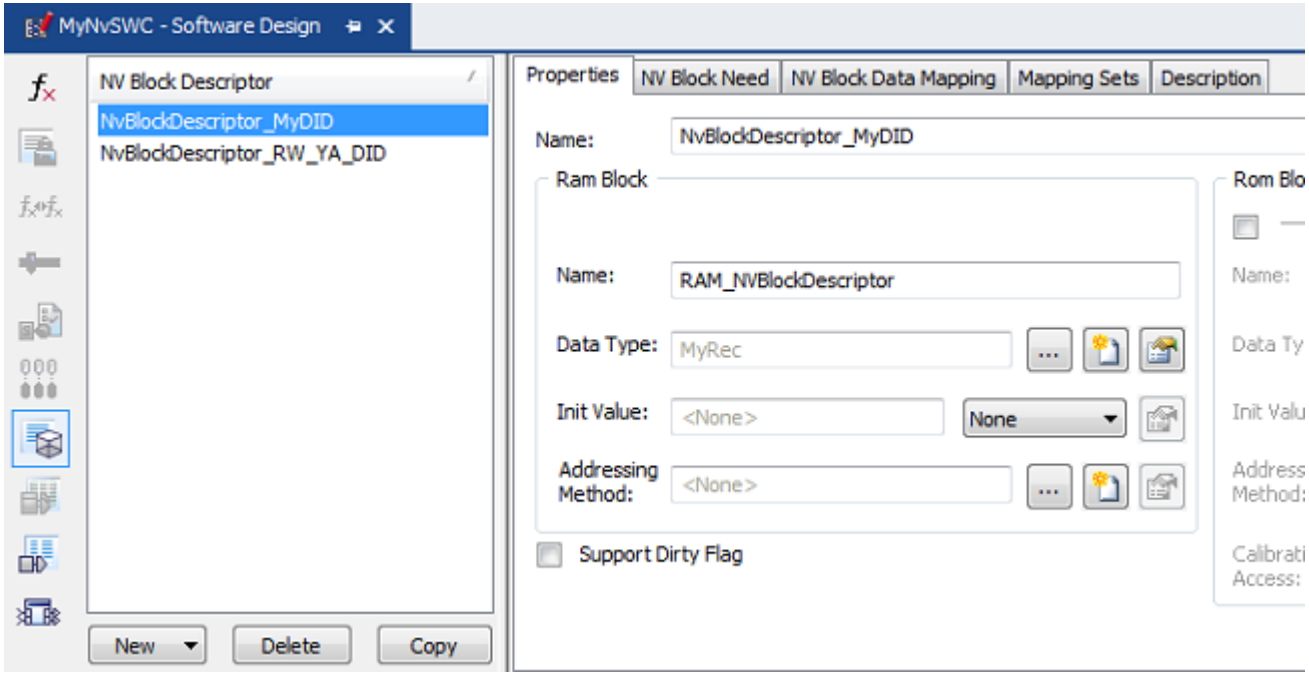
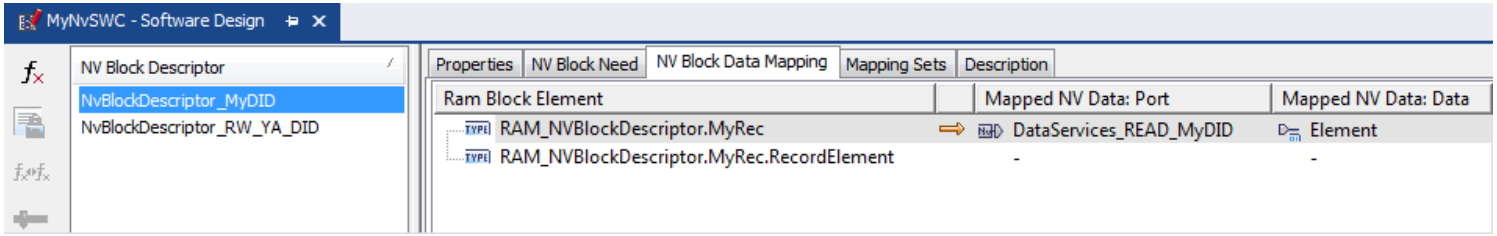
Type	Description	Change ID
	Select options:  **Migration notes for existing projects:** The Rte now throws RTE51035 in some projects that have been working with previous Rte versions. However the configuration used to be invalid in the past. This has not been relevant in the past as the Rte did not support that feature. The error RTE51035 is thrown if the application / implementation init values of 1:N connected ports do not match. To resolve the issue, correct the init value configuration according to the hints provided by error message.	
Extension	The difference view of DaVinci Configurator Pro allows filtering of differences e.g. for > show only diffs in CAN module > show only diffs of ComIPdus	FEAT-2449

Type	Description	Change ID
	This allows to focus on relevant topics during a Diff&Merge session. 	

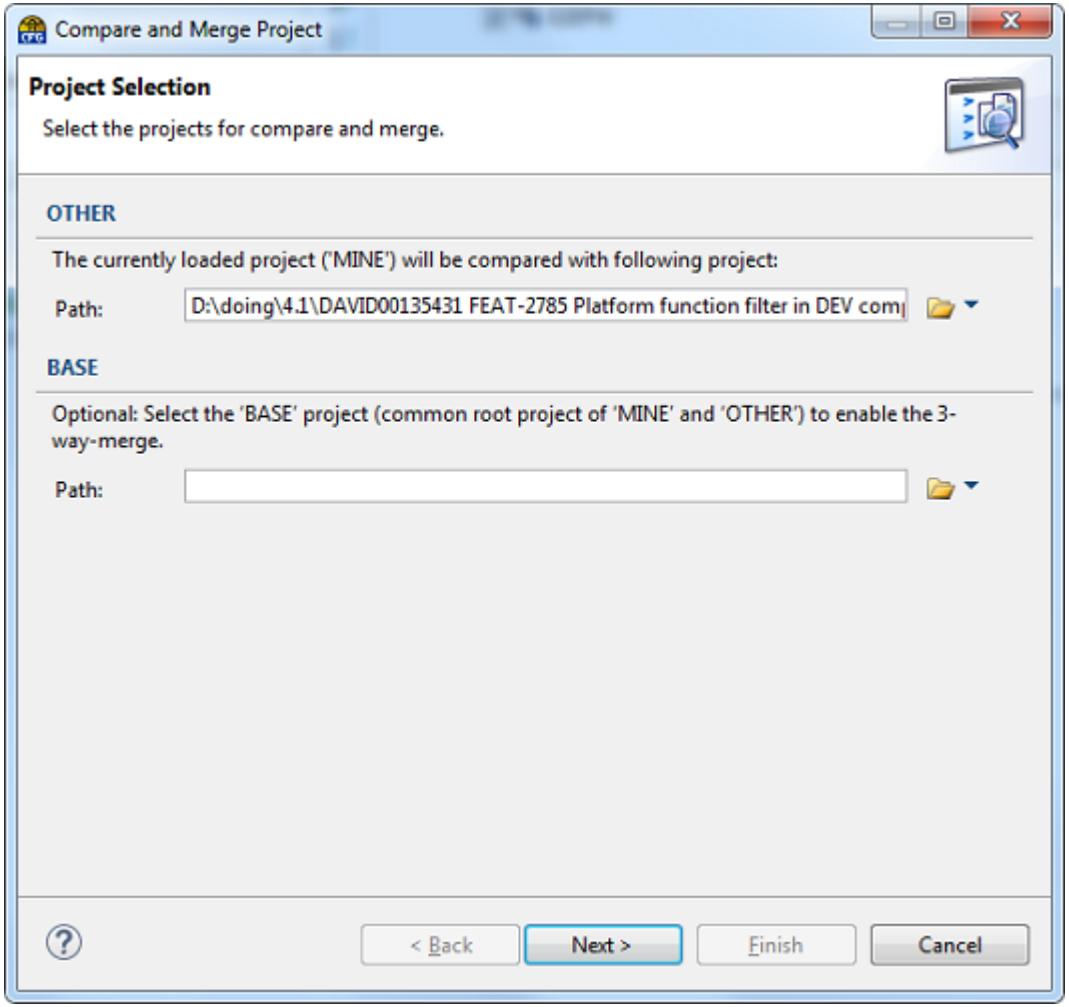
Type	Description	Change ID
	Improved layout of Difference Details View: 	
Extension	DaVinci Developer now provides a new convenience functionality that allows easy creation of a NvBlockSwc matching to given ports. NV Block Descriptors are automatically created and mapped to the ports.	FEAT-2485
Extension	DaVinci Developer provides a new convenience function that allows easy creation of a new NvBlock based on a existing NvPort including a 1:1 port mapping.	FEAT-2485

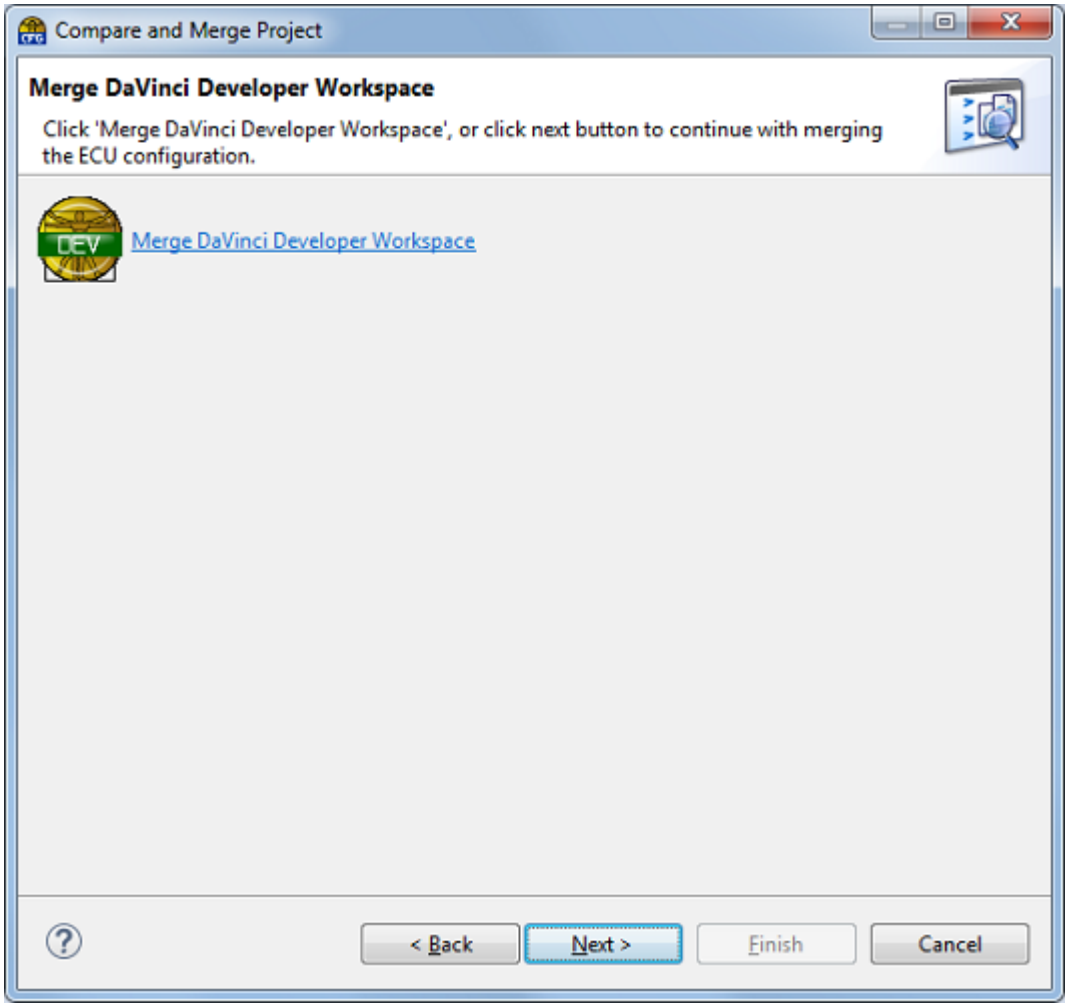
Type	Description	Change ID
	The assistant is launched from a NvSWC-T: New -> From Port... 	

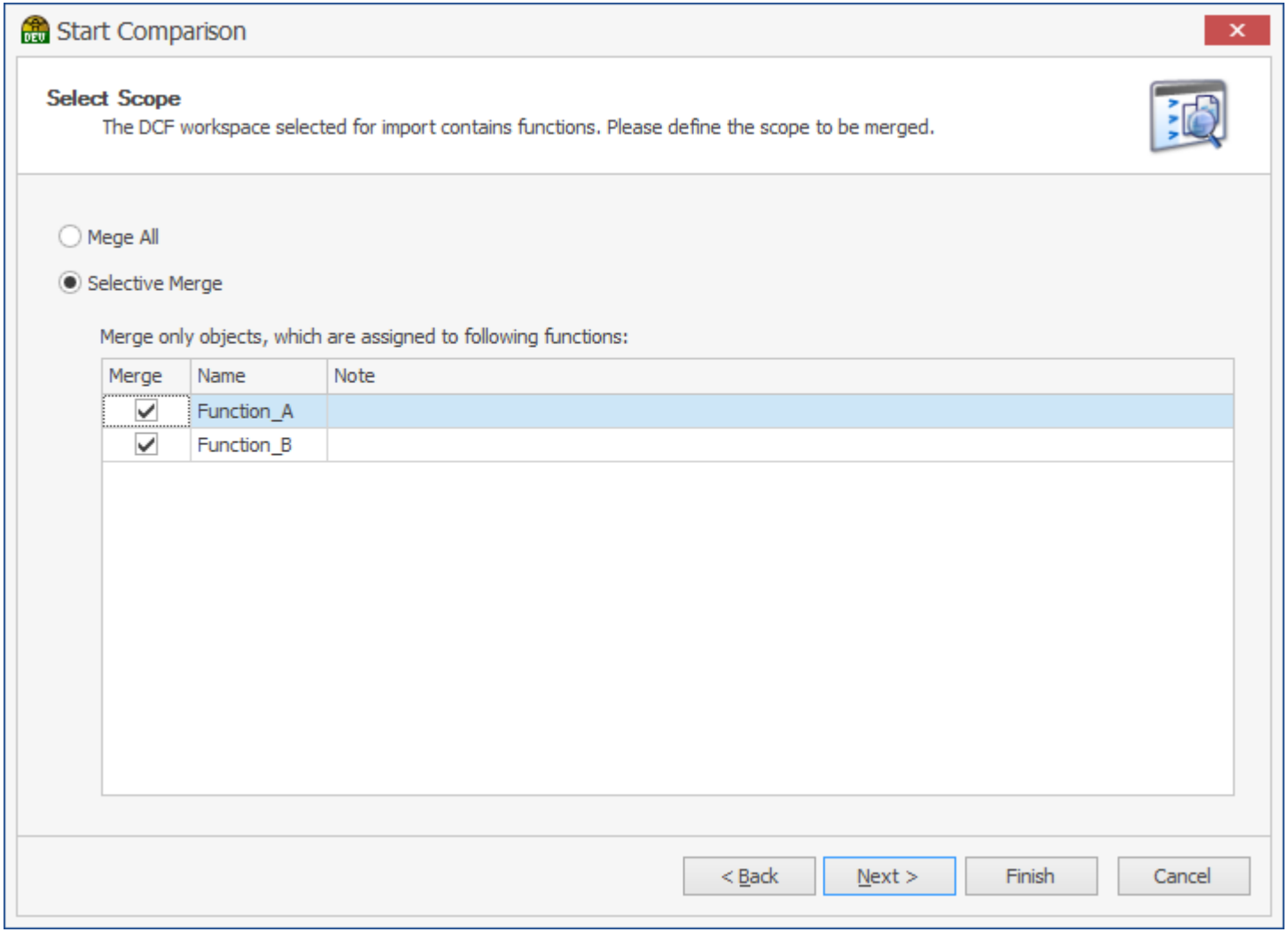
Type	Description	Change ID
	The wizard allows selecting the Nv blocks that shall be created. The assistant illustrates only NvPorts that do not yet have a mapping. 	

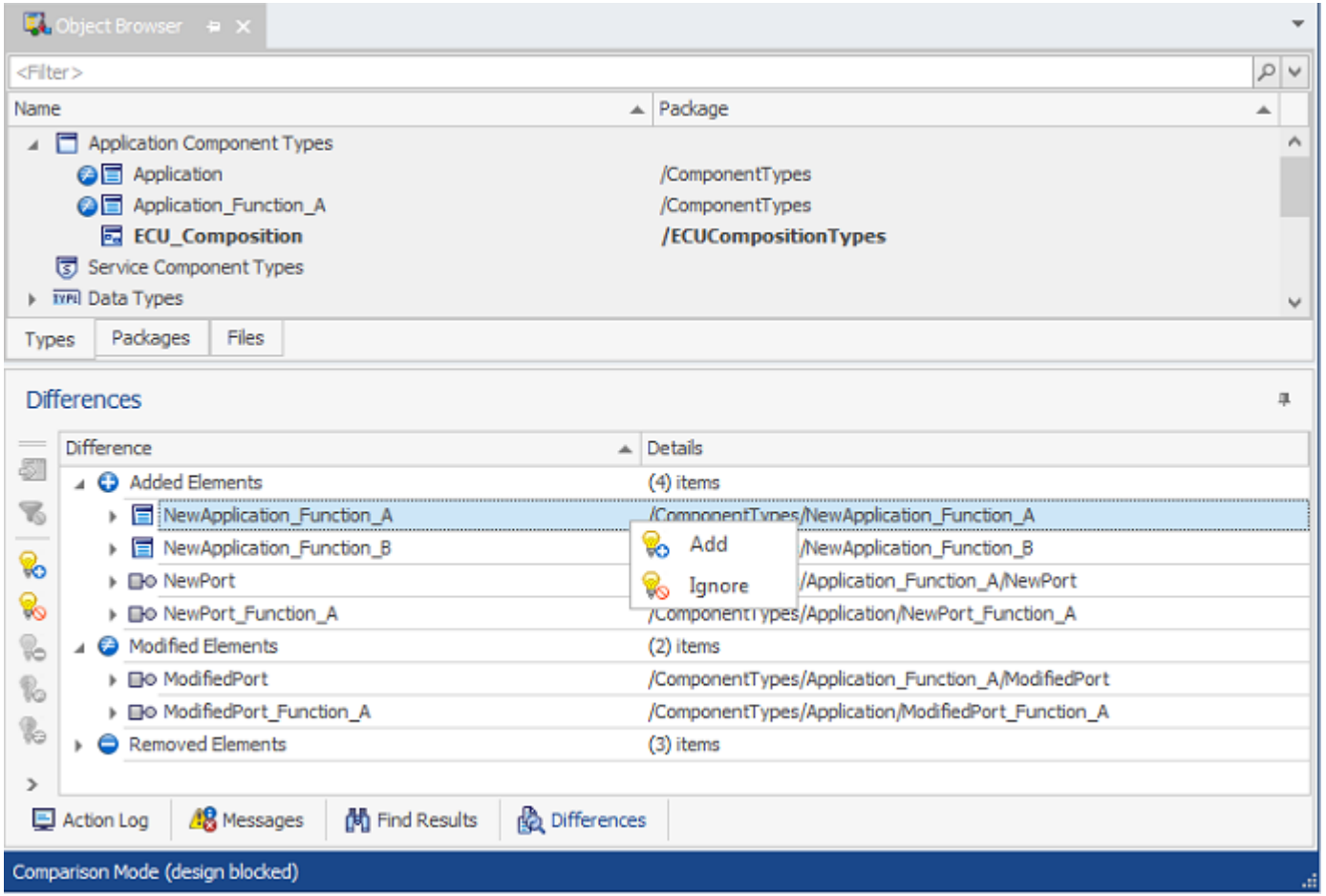
Type	Description	Change ID
	Once confirmed the assistant create the NvBlock for the selected NvPort:  Additionally the port mapping between the NvBlock and the NvPort is created:  	

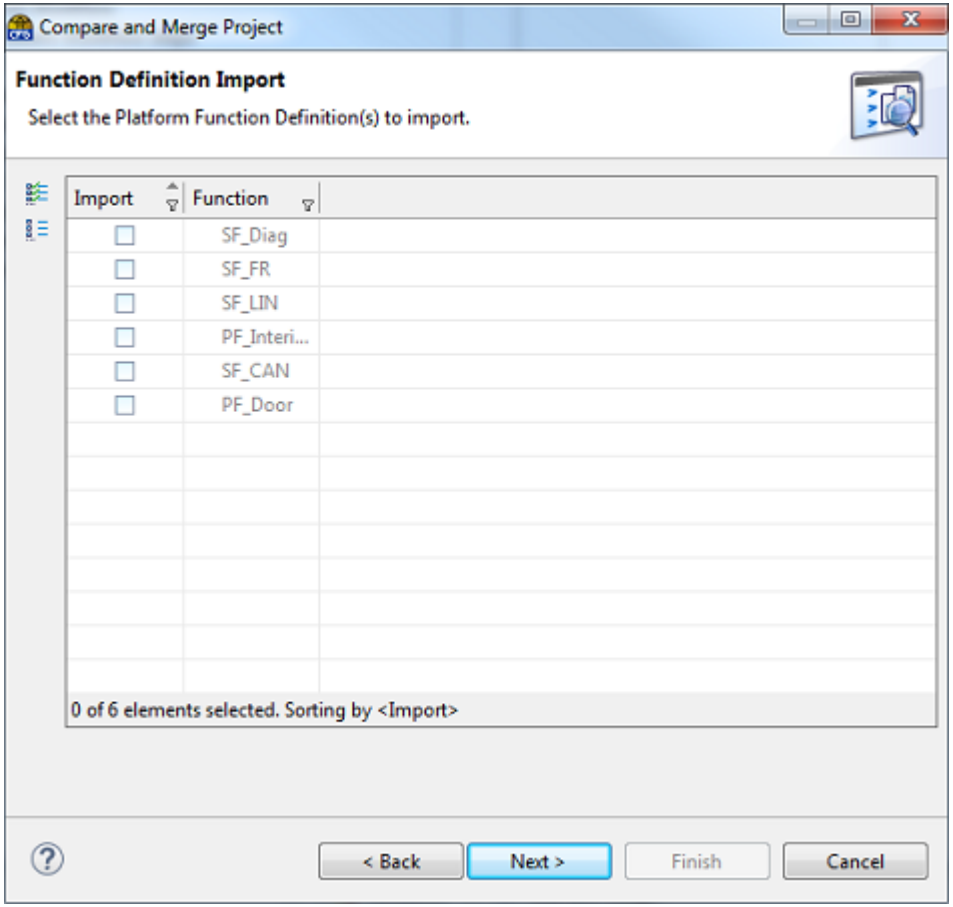
Type	Description	Change ID
	Additional Information read/write DIDs, which are provided by the transformed struct-interfaces	
Extension	The platform functions can now be used in DaVinci Developer and DaVinci Configurator for filtering of system template elements (such as SWCs and port mappings). Additionally, the usability of DaVinci Developer has been improved regarding assignment of objects to platform functions and selective merge of platform functions.	FEAT-2494 FEAT-2785

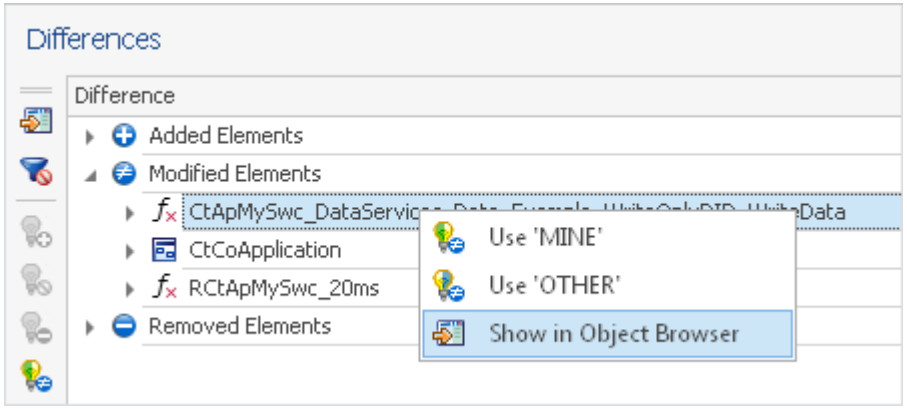
Type	Description	Change ID
	The DaVinci Developer platform function look and feel is now in-line with DaVinci Configurator Pro from where it is launched: 	

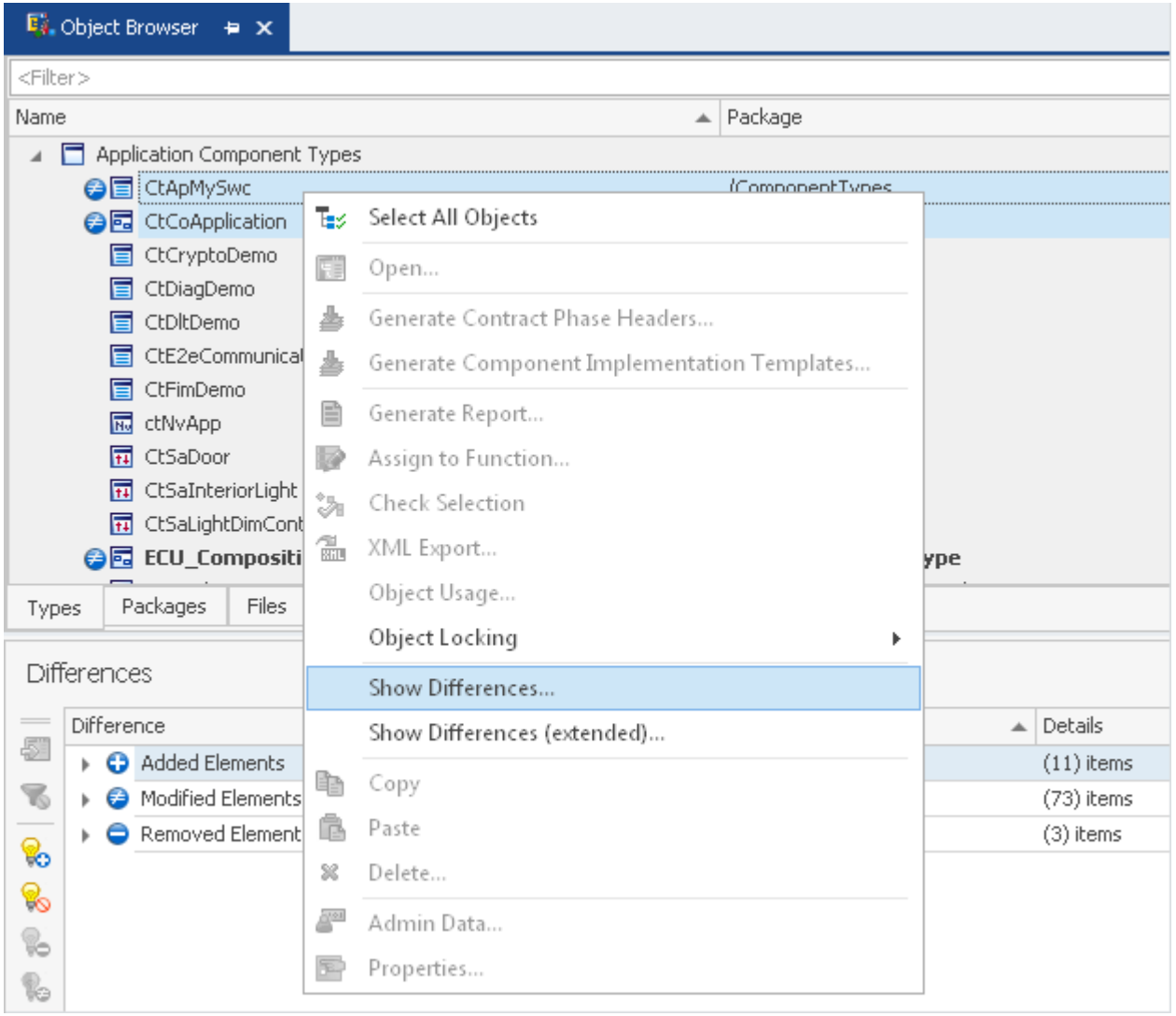
Type	Description	Change ID
		

Type	Description	Change ID
	Function selection that shall be considered during the Diff&Merge session in DaVinci Developer: 	

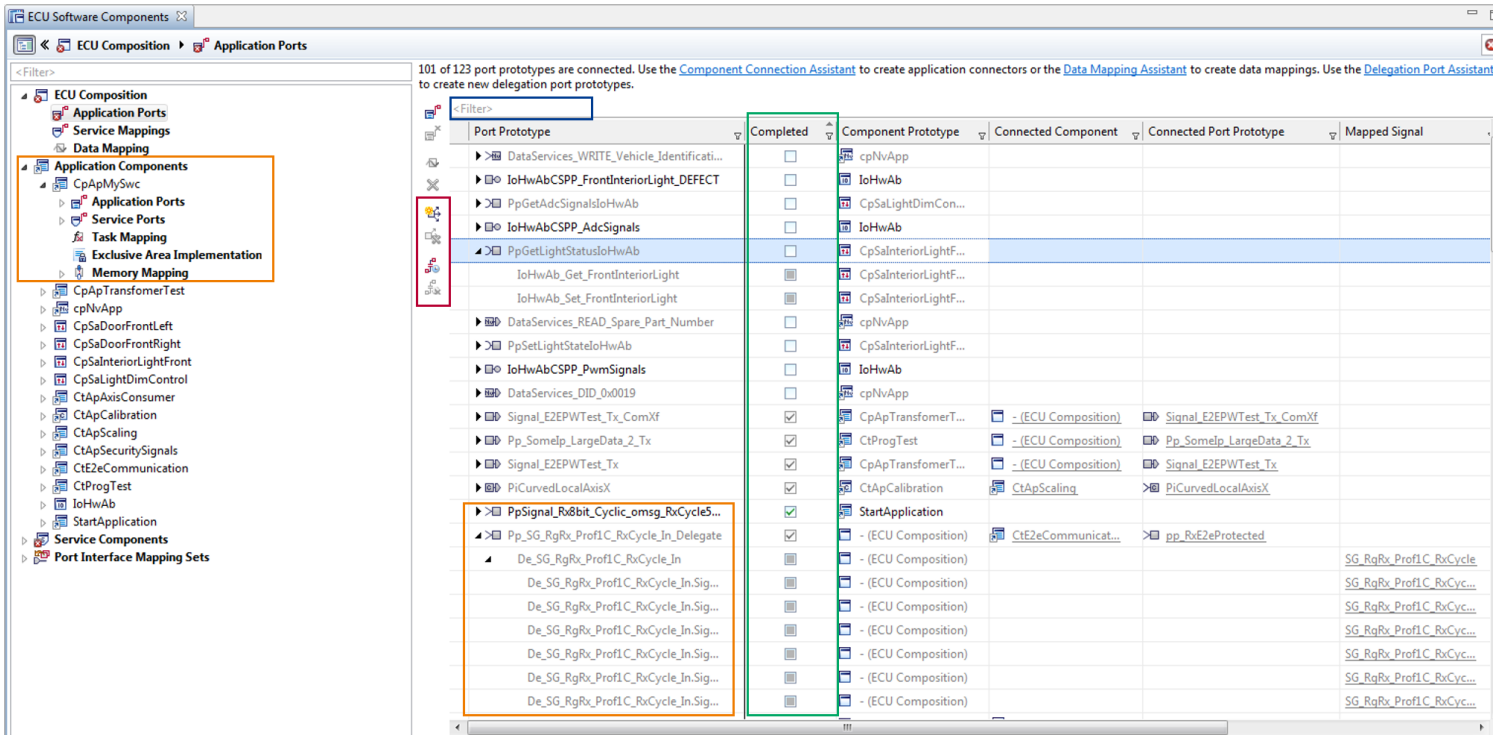
Type	Description	Change ID
	The DaVinci Developer difference illustration and merge control is now similar to DaVinci Configurator Pro (as introduced in R19): 	

Type	Description	Change ID
	The general concept of the function based Diff&Merge:  **Documentation in SIP** The usage of the platform support concept is explained in detail in AN-ISC-8-1208_DaVinciTeamAndPlatformSupport.pdf	

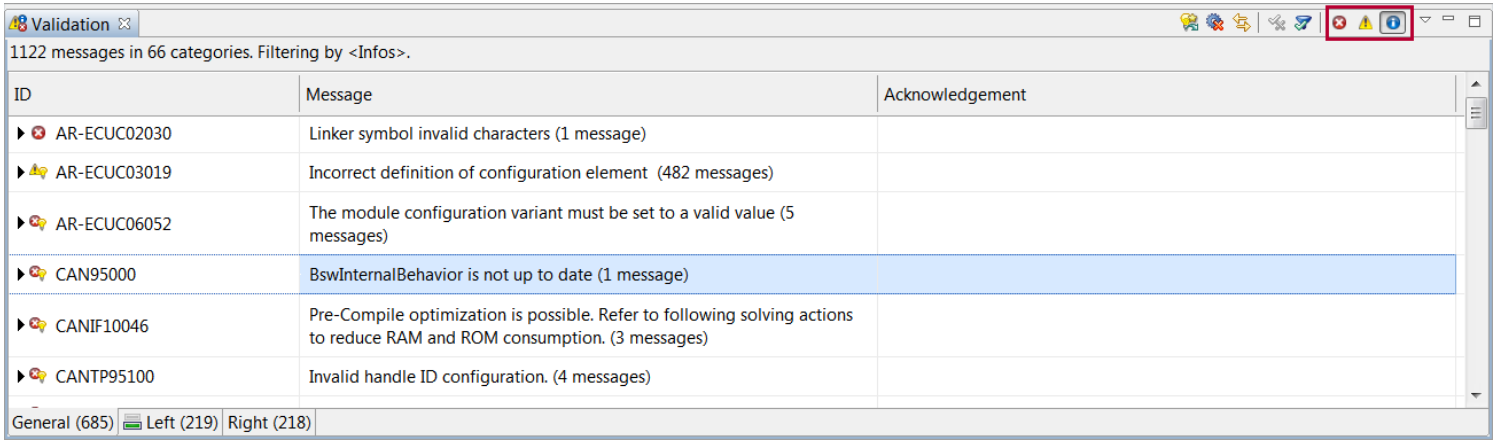
Type	Description	Change ID
Extension	Project diff/merge function of DaVinci Developer 4 has been improved: Navigation from Difference View to Object Browser is now possible 	FEAT-2494

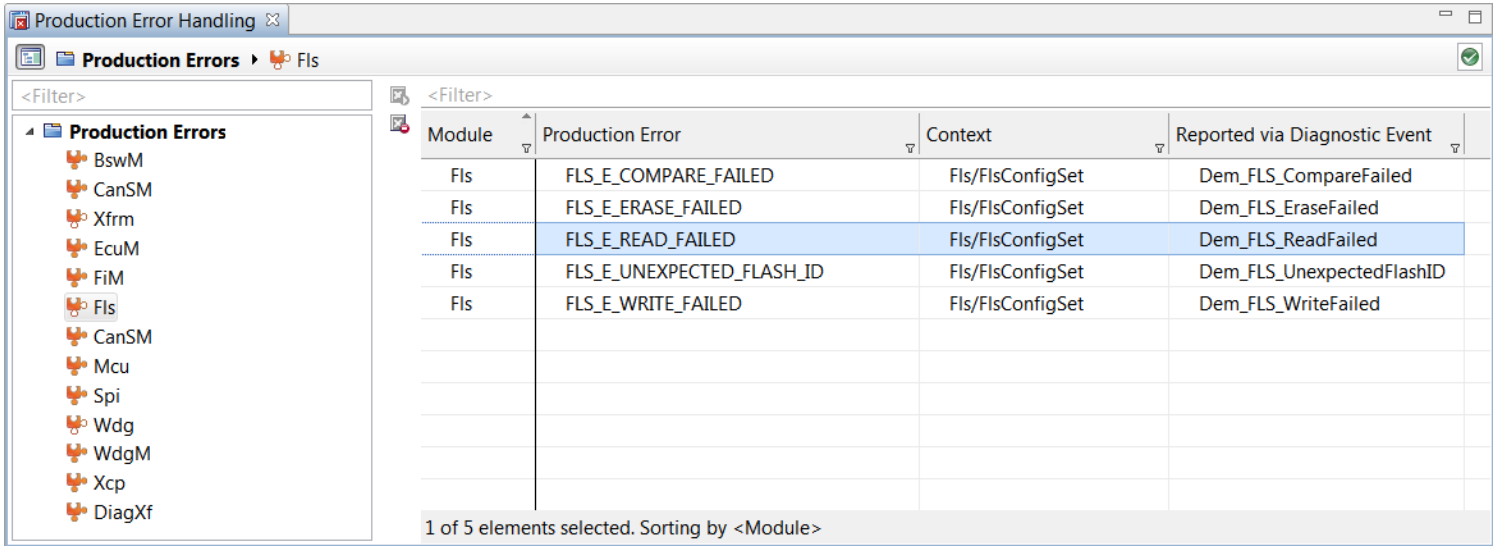
Type	Description	Change ID
	The Object Browser can now be used to compare two objects including sub-objects and references. 	
Extension	The user interface of DaVinci Configurator Pro has been improved with respect to the display of variant projects:	FEAT-2553

Type	Description	Change ID
	> Properties View: The 'Variant' tab is now shown for multi-instance parameters > In configuration reports, variant container and parameter are now only shown once with a column that indicates the value for each variant.	
Extension	It is now possible to start the DaVinci Configurator Pro configuration report generation from command line.	FEAT-2553
Extension	The layout of DaVinci Configurator Pro form pages was optimized so that existing space is used in a better way: > Controls on form pages are now wider for better display of long content/strings > Scrolling behavior has been improved especially in case of multiple nested trees or tables > Display option in the toolbar of the main window: toggles the way how references are displayed (complete path or short name only)	FEAT-2553
Extension	The Input File Assistant of DaVinci Configurator Pro has been reworked to improve usability and to allow the support of future use-cases.	FEAT-2594
Extension	Various usability and performance improvements in the user interface of DaVinci Configurator Pro: > Use-case editor expansion and selection state in grid is preserved during variant switch > Basic editor expansion and selection state in tree is preserved during variant switch > Automatic selection of newly created elements in grids > Performance optimization for large grids views	FEAT-2791
Extension	The ECU Software Components Editor of DaVinci Configurator Pro has been enhanced with better support of incomplete designs and usability improvements.	FEAT-2857

Type	Description	Change ID
	 ECU Software Components ECU Composition ▸ Application Ports <Filter> ECU Composition Application Ports Service Mappings Data Mapping Application Components CpApMySwc Application Ports Service Ports Task Mapping Exclusive Area Implementation Memory Mapping CpApTransfomerTest cpNvApp CpSaDoorFrontLeft CpSaDoorFrontRight CpSaInteriorLightFront CpSaLightDimControl CtApAxisConsumer CtApCalibration CtApScaling CtApSecuritySignals CtE2eCommunication CtProgTest IoHwAb StartApplication Service Components Port Interface Mapping Sets 101 of 123 port prototypes are connected. Use the Component Connection Assistant to create application connectors or the Data Mapping Assistant to create data mappings. Use the Delegation Port Assistant to create new delegation port prototypes. <Filter> Port Prototype Completed Component Prototype Connected Component Connected Port Prototype Mapped Signal DataServices_WRITE_Vehicle_Identificati... IoHwAbCSPP_FrontInteriorLight_DEFECT PpGetAdcSignalsIoHwAb IoHwAbCSPP_AdcSignals PpGetLightStatusIoHwAb IoHwAb_Get_FrontInteriorLight IoHwAb_Set_FrontInteriorLight DataServices_READ_Spare_Part_Number PpSetLightStateIoHwAb IoHwAbCSPP_PwmSignals DataServices_DID_0x0019 Signal_E2EPWTest_Tx_ComXf Pp_SomeIp_LargeData_2_Tx Signal_E2EPWTest_Tx PiCurvedLocalAxisX PpSignal_Rx8bit_Cyclic_omsg_RxCycle5... Pp_SG_RgRx_Prof1C_RxCycle_In_Delegate De_SG_RgRx_Prof1C_RxCycle_In De_SG_RgRx_Prof1C_RxCycle_In.Sig... cpNvApp IoHwAb CpSaLightDimCon... IoHwAb CpSaInteriorLightF... CpSaInteriorLightF... CpSaInteriorLightF... cpNvApp CpSaInteriorLightF... IoHwAb cpNvApp CpApTransfomerT... CtProgTest CpApTransfomerT... CtApCalibration StartApplication - (ECU Composition) - (ECU Composition) - (ECU Composition)

Type	Description	Change ID
Extension	There is a new type of validation result in DaVinci Configurator Pro that points out a license violation. License violations occur if a MICROSAR feature is used that has not (yet) been licensed. Please contact Vector if such a validation result pops up. **Additional Information** The MICROSAR Product Information provides more details on the usage of features that have not been licensed.	FEAT-2979
Extension	DaVinci tools now inform users on a imminent evaluation license expiration. The warning will be shown starting 14 days before the license expires and considers both, tool and SIP license.	FEAT-3041
Extension	DaVinci tools and code generators now support AUTOSAR 4.3.1 schema. **Additional Information** The schema support does not imply that additional AR4.3.1 features have been implemented.	FEAT-3078
Extension	DaVinci Developer now supports SERVICE-PROXY-SW-COMPONENT-TYPE.	FEAT-3113
Extension	Post-Build Selectable (MICROSAR Identity Manager) now also supports variant communication clusters without the need for a workaround in the upstream mapping process.	FEAT-3158
Extension	The Vector ARXML Editor now stores and restores the last user settings and window layout. **Additional Information** The tool is distributed and updated using the DaVinci External Components Setup. Please update your local installation. **Additional Information** DaVinci_ExternalComponentsSetup.*	FEAT-3231
Extension		FEAT-3254

Type	Description	Change ID
	It is now possible to add a new DaVinci Developer workspace to an existing .dpa project from within DaVinci Configurator Pro. 	
Extension	The DaVinci Configurator Pro reference selection dialog now shows the elements that make use of the items that can be chosen. This simplifies the selection of the correct reference targets especially when dealing with references on global PDUs.	FEAT-3263
Extension	In DaVinci Configurator Pro it is now possible to hide validation messages based on their severity. This allows focusing on the typically more relevant errors of the configuration. 	FEAT-3343
Extension	The SipModificationChecker now also considers changes in XML, PDF files as well as MSSV plugins for SafeBSW deliveries.	FEAT-3403
Information	The DaVinci tools now support the new Vector license model.	FEAT-2552

Type	Description	Change ID
	Additional Information The existing licenses (Flexnet and Keyman) remain valid and are supported also in future.	
Information	The Production Error Editor of DaVinci Configurator Pro supports now all production errors (Dem Event references) of all modules, including third party MCAL modules. In the past some Events have been missing. Additionally the user interface was reworked to improve usability. 	FEAT-2800

Release 19

General

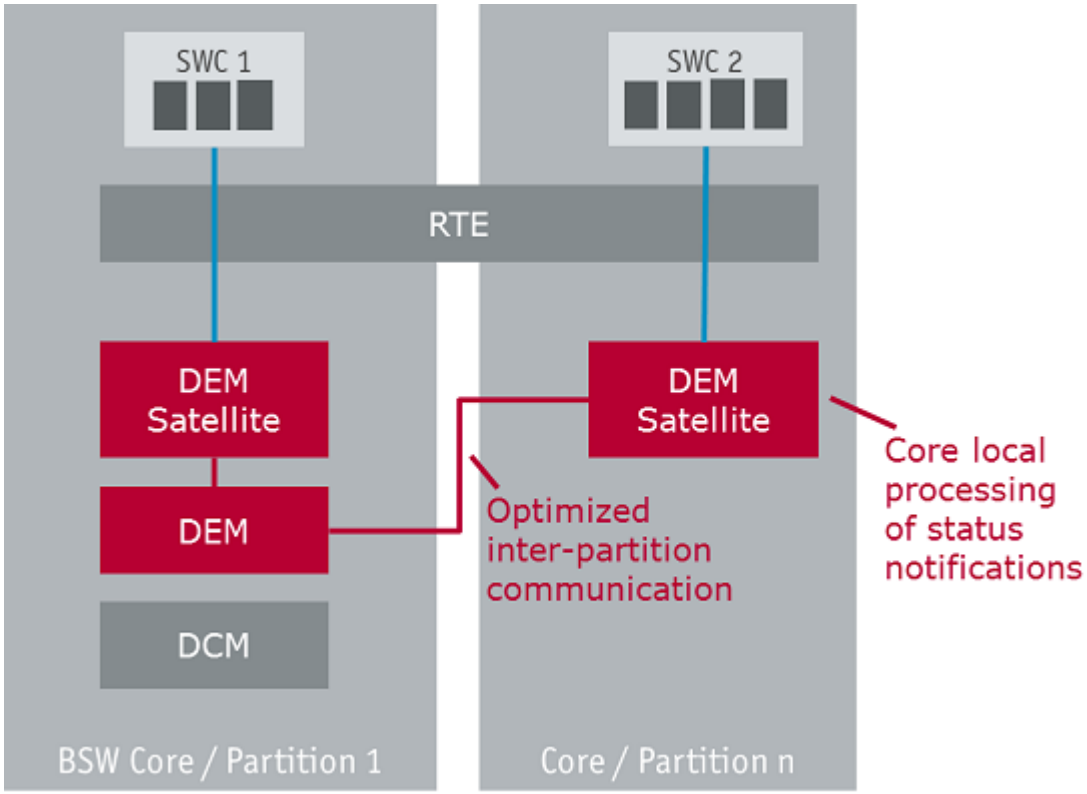
Type	Description	Change ID
Extension	The MemMap.h template now supports module specific MemMap files as defined by AR4.2	FEAT-2455

Communication

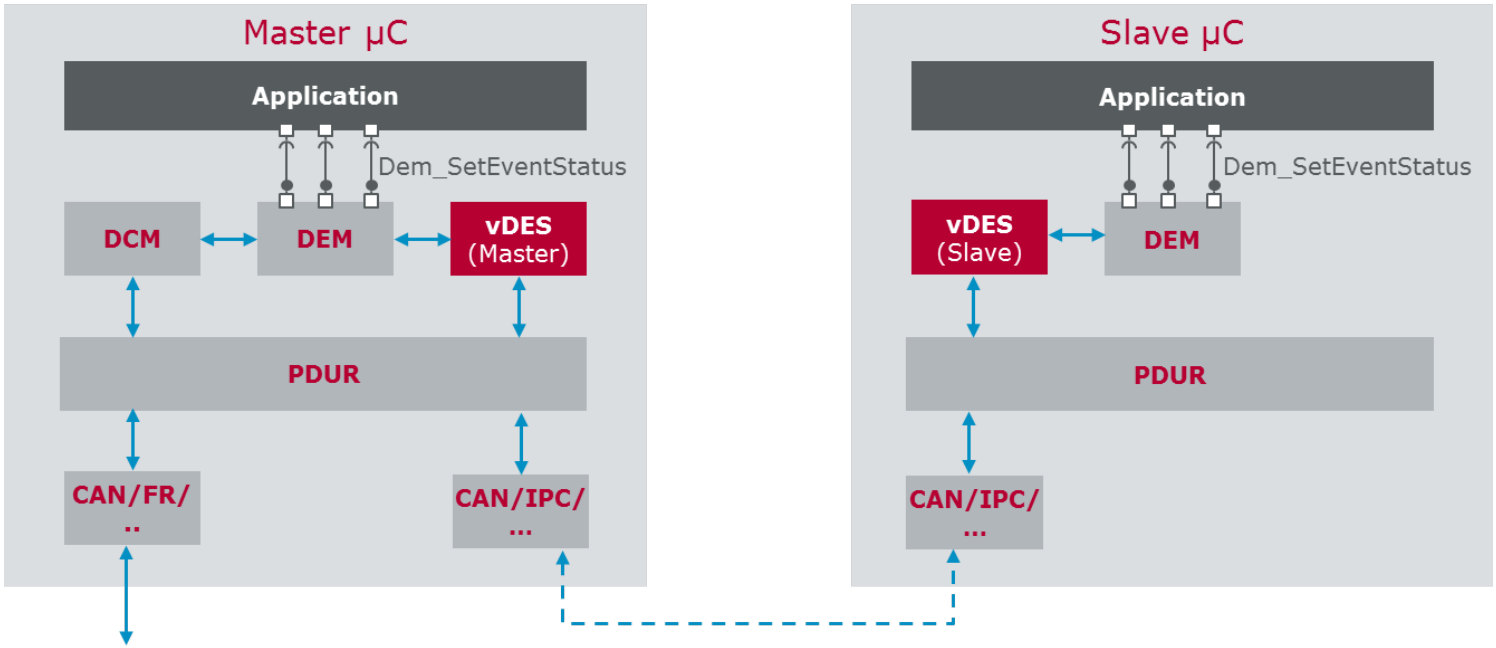
Type	Description	Change ID
Extension	The Com module now supports PDUs that are not mapped to a PDU group. In this case the PDU is now initially started and never stopped as defined by AUTOSAR.	FEAT-2726
Extension	The Com module now supports MASKED_NEW_EQUALS_X and MASKED_NEW_DIFFERS_X filters for Signal Group Arrays. This is relevant if the ComXf is used.	FEAT-2833
Extension	Signal groups that are handled by the ComXf module can now also be routed by the Com signal gateway.	FEAT-2864
Extension	IpduM now provides a request queue for TriggerTransmit of container PDUs according to AR4.2.	FEAT-2968
Extension	The CAN stack now supports Rx ranges for non- NM PDUs.	FEAT-3091
Information	The transformer modules ComXf and E2eXf have been released as QM.	FEAT-2498
Information	The FlexRay stack now supports multiple FlexRay controllers. This feature has been released. Note: For one cluster only a single controller can be used.	FEAT-2725

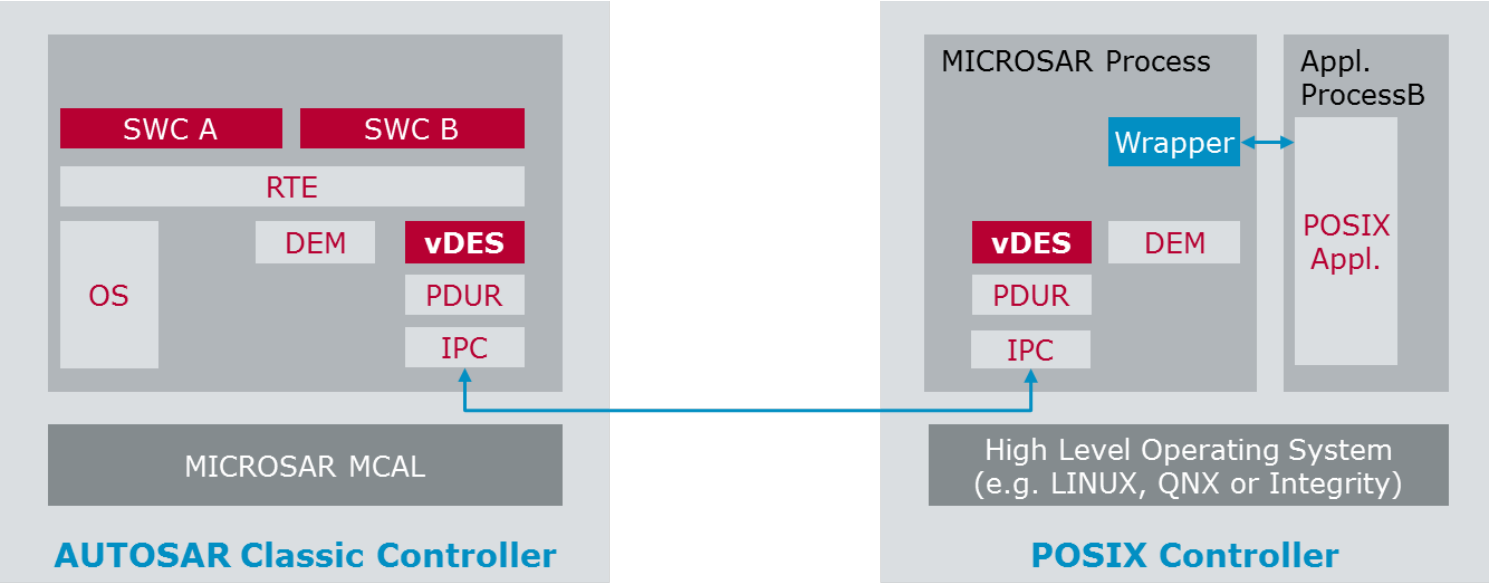
Diagnostics

Type	Description	Change ID
Breaking Change	The Dem has been reworked to support multi-core and safety projects in an optimized way. The DTC handling is processed on the core where the DTC status is updated. This reduces the costs for inter-core communication drastically. As part of the rework the APIs of the DEM modules have been updated to AR4.3 definition.	FEAT-2761

Type	Description	Change ID
	 Note: With R19 this feature may not yet be rolled out to all programs. **Migration notes for existing projects:** The DEM configuration need to be reworked mainly in order to define the application context of the master and the satellite instances. Due to AR4.3 API changes, the application may have to be adapted according to the updated APIs.	
Extension	The following services of the Dcm are now released for safety-projects: 0x10, 0x14, 0x19, 0x27, 0x28, 0x3E, 0x85	FEAT-2505

Type	Description	Change ID
	Note: Not all services are safe yet. These services must be disabled if Dcm is used in safety projects. More information can be found in the safety manual.	
Extension	Dem now supports the following new functionalities: > Dem_GetOperationCycleState > indicator state CONT_BLINKING for OBD MIL	FEAT-2783
Extension	Dem provides the API Dem_GetDTCSuppression(). The API returns the suppression status of a given DTC.	FEAT-2892
Extension	The Dcm S/R communication using vDiagXf now supports > array data types: uint8[], sint8[], uint16[], sint16[], uint32[], sint32[] > uint8 as Boolean data type	FEAT-2962 FEAT-2770
Extension	The Dem configuration workflow using a Diagnostic Extract now supports more than 255 DTCs without the need to manually assign dedicated DemFreezeFrameClass and DemEnableConditionGroups.	FEAT-3106
Information	The vDes module has been released as QM. The component allows synchronization of Dem DTC status information from a slave controller to the master controller that runs the diagnostic (MICROSAR) stack. A typical use-case is to allow a second processor (e.g. running POSIX OS to set DTC status. The communication takes place over the MICROSAR IPC solution.	FEAT-2492

Type	Description	Change ID
	 vDES can also be used to integrate POSIX based controllers:	

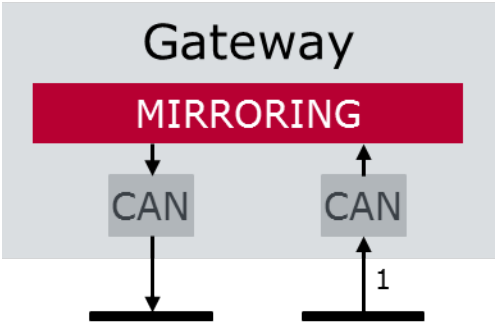
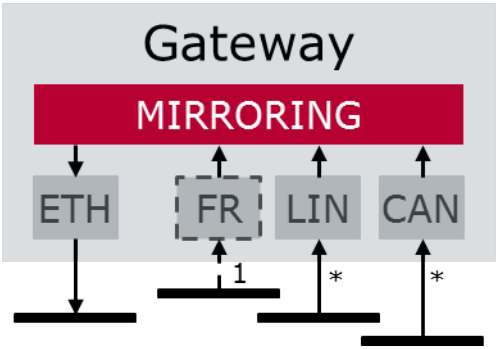
Type	Description	Change ID
		

Ethernet

Type	Description	Change ID
Extension	VLAN-based UdpNm can now be derived from a AR4.3 System Template.	FEAT-2522
Extension	Optimized modelling of (SOME/IP) client/server calls is now supported as defined by AR4.3. This allows to use the same pair of PDUs and System Signals for multiple clients, which use the same server service on the same Ethernet channel (VLAN).	FEAT-2666
Extension	Support more than 255 DoIP Target Addresses	FEAT-2985
Information	The feature IPv4 Fragmentation in the TcpIp module (FEAT-1481) has been released.	FEAT-2479

Gateway

Type	Description	Change ID
Information	The Mirroring module (vMirror) has been released as QM. It allows CAN to CAN mirroring	FEAT-2729

Type	Description	Change ID
	 As well as the mirroring of several internal networks to (diagnostic) Ethernet connector  FR support upon request	

IPC

Type	Description	Change ID
Information	The IPC communication CAN over SPI has been released. This special CAN driver allows a CAN like communication (with respect to upper layer modules and configuration) over an SPI channel.	FEAT-2746

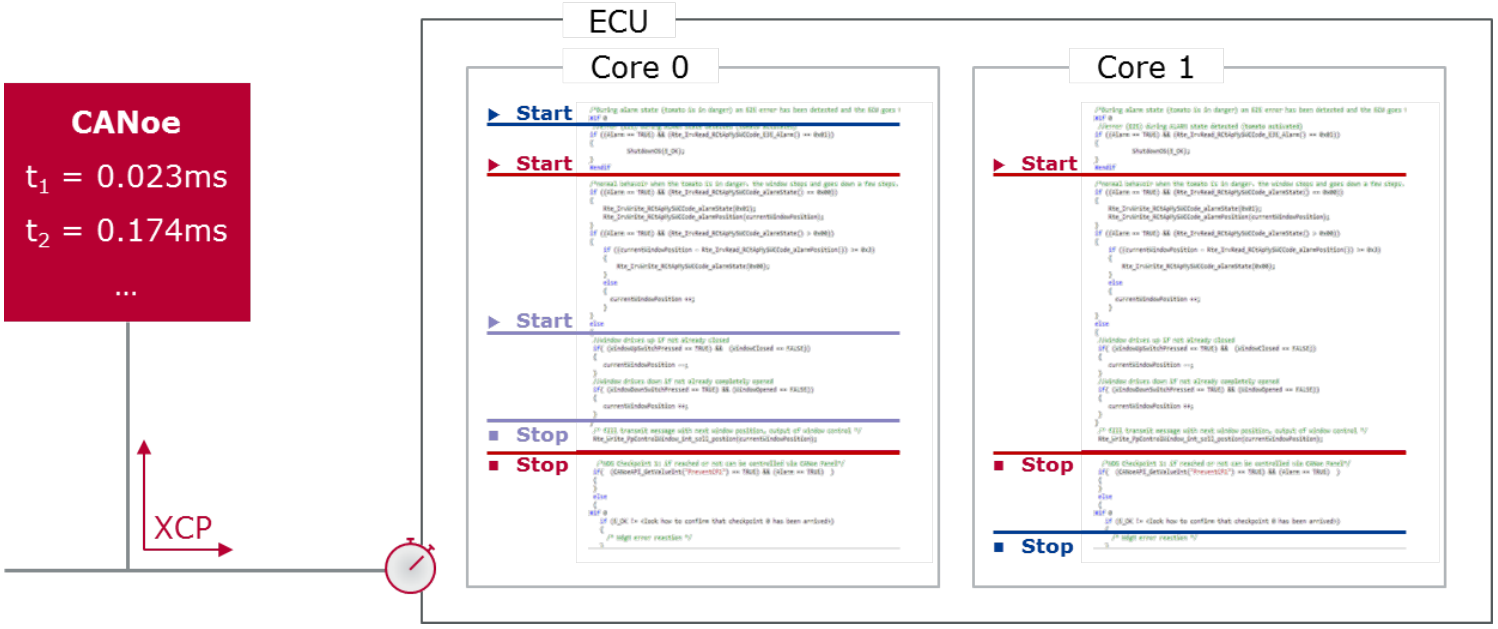
J1939

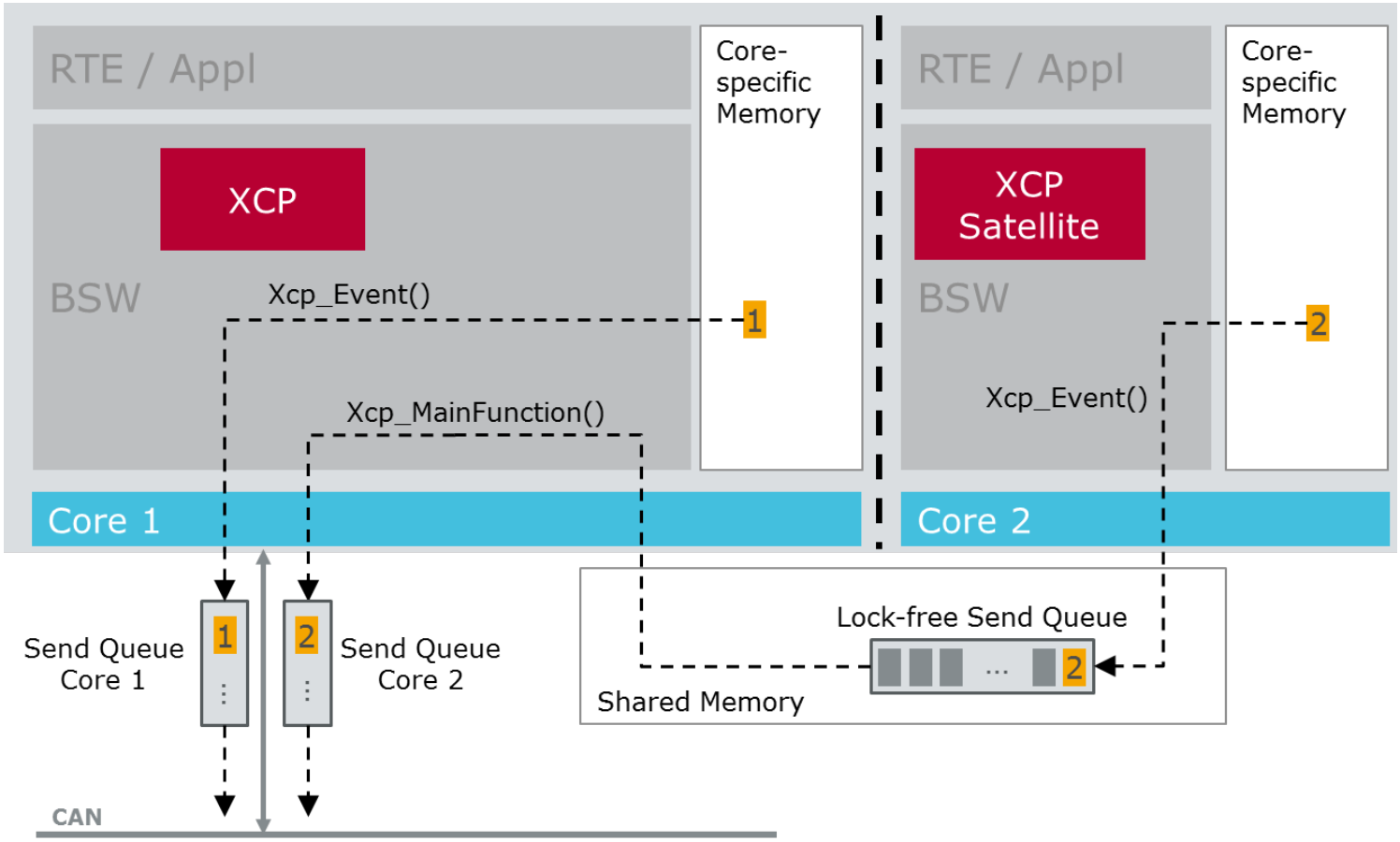
Type	Description	Change ID
Extension	The CAN stack now supports baudrate detection as it is defined by the J1939-16 standard.	FEAT-2738

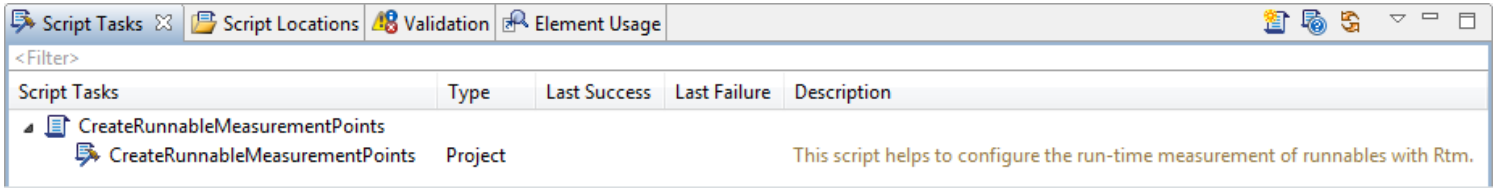
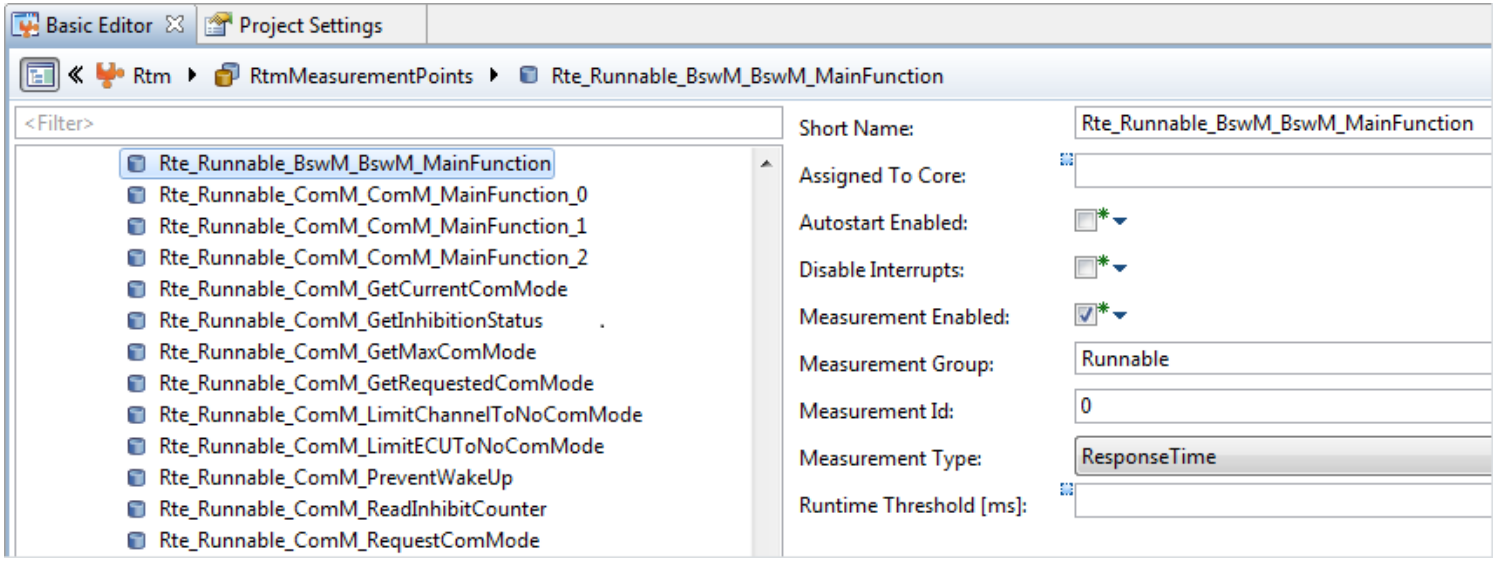
Type	Description	Change ID
	Note: This feature is available for selected CAN drivers only.	
Extension	J1939 Commanded NAME support is now provided.	FEAT-2862

Measurement and Calibration

Type	Description	Change ID
Extension	The vRtm net runtime measurement can now be used with the latest Gen7 MICROSAR Os. Net runtime measurement eliminates the runtime of tasks that interrupt the execution of the code that shall be measured.	FEAT-2789
Extension	The map and curve support of the Rte now supports plain array implementation data types in combination with shared Axis.	FEAT-3119
Extension	The a2l display format can now be defined on Data Prototype level for all kinds of MC relevant elements in the SWC design. The Rte will export this information to the generated Rte.a2l.	FEAT-3159
Information	The vRtm multi-core option has been released. This allows runtime-measurement on any core as well as cross-core communication response time measurements.	FEAT-2571

Type	Description	Change ID
		
Information	The multi-core option of XCP has been released. The multi-core option allows XCP to consistently access data that is accessed by an application that runs on a different core than the XCP module is executed on.	FEAT-2618

Type	Description	Change ID
		
Information	The script that allows vRtm to measure runnable runtimes has been released. The script not only configures vRtm and the Rte but also generates the required Rte hook functions. The script can be triggered within the DaVinci Configurator Pro "Script Tasks" View. Using the Script Task View the scripted can be launched:	FEAT-2692

Type	Description	Change ID
	 The script will realize all necessary items e.g. in Rte and vRtm configuration: 	
Information	The precision of vRtm has been improved additionally by a reworked overhead calculation.	FEAT-2845

Nv Memory

Type	Description	Change ID
Breaking Change	The Fee (Small Sector) as typically used for RH850 has been extended with an additional erase pattern in each dataset. This further increases the reset robustness of the component. **Migration notes for existing projects:**	FEAT-3025

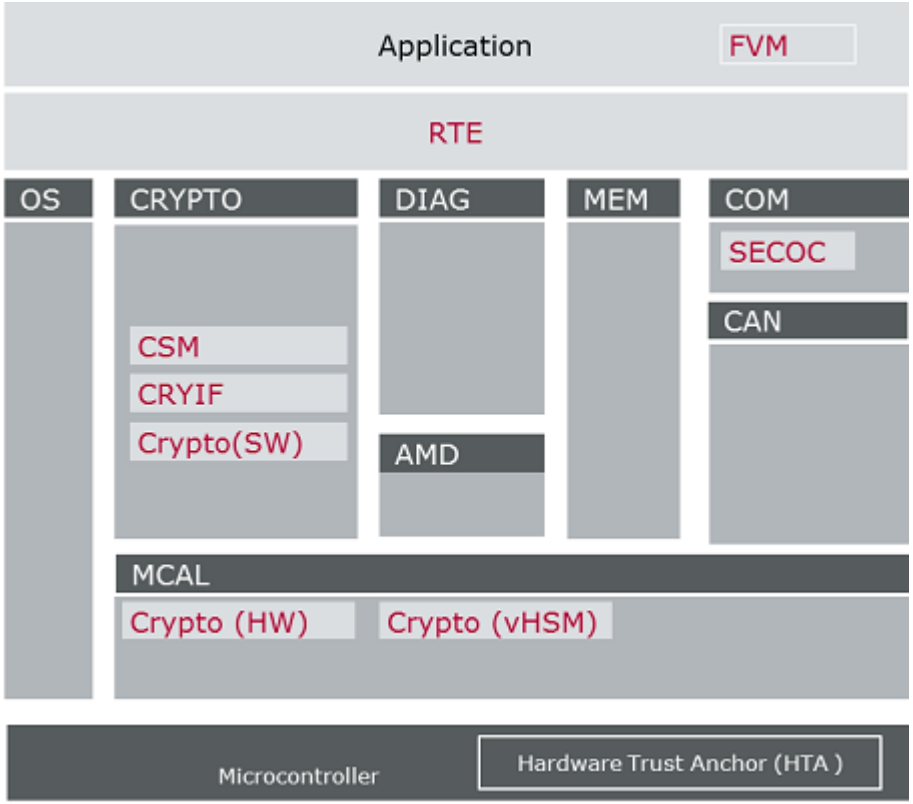
Type	Description	Change ID
	The breaking change affects projects only that shall be able to access flash data that has been written with the previous version of the Fee (Small Sector). The old Fee flash data are no longer compatible with the flash format of the new Fee. The new Fee reports existing data to be inconsistent. Existing flash data cannot be read by the new Fee. A manual update strategy is required such as: > use the old Fee (from the old SIP) to retrieve stored data from the ECU and store that data externally > update the SIP with the new Fee > download the old data with the new Fee A build in update mechanism is not provided.	
Extension	The CRC compare mechanism defined by AUTOSAR has been introduced in NvM. It may reduce the need to store data to NV memory in case no modifications have been made. Note: Since CRC might be insufficient to detect changes (different data, same CRC) using this feature might result in losing most recent data.	FEAT-2914

Rte

Type	Description	Change ID
Extension	The Rte now supports scaling (offset and factor) of data that is connected with a group signal.	FEAT-2998
Information	The MICROSAR RTE has been certified for safety related projects up to ASIL D.	FEAT-2768

Type	Description	Change ID

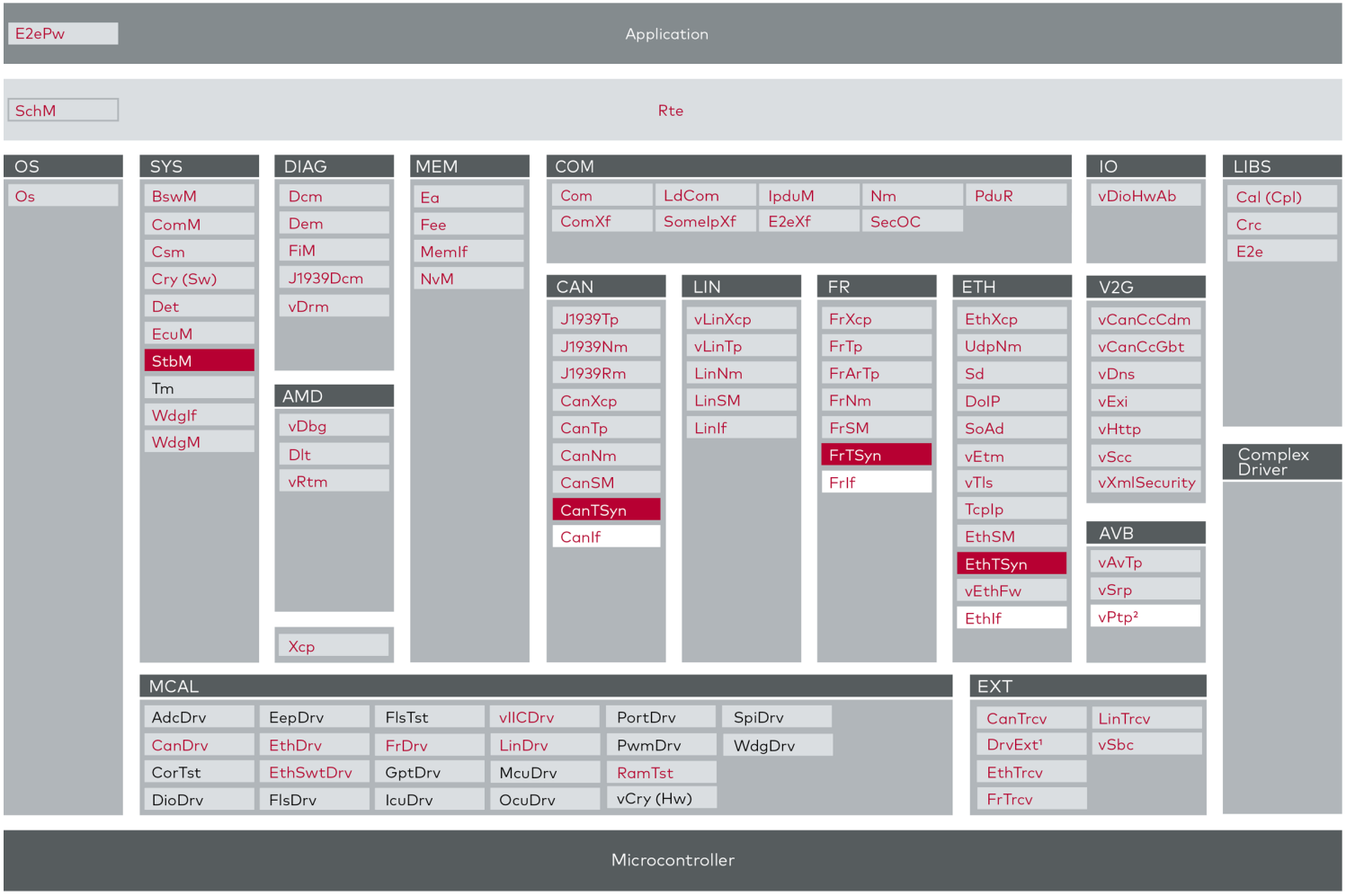
Security

Type	Description	Change ID
Information	The AR4.3 based CRYPTO stack is now available as ASIL. The stack includes the Crypto (SW), CryIf, Csm and, SecOC. Hardware based CRYPTO drivers are available on request. Please note: Some algorithms realized by CRYPTO (SW) are not fully verified yet and will be completed in the following release cycles.  Note: The AR4.3 based CRYPTO stack has not yet been rolled out to all programs.	FEAT-2447 FEAT-2500 FEAT-2502 FEAT-2767
Information	Crypto (SW) has now a better runtime performance due to the pre calculation of Sub Key and Roundkeys.	FEAT-2509

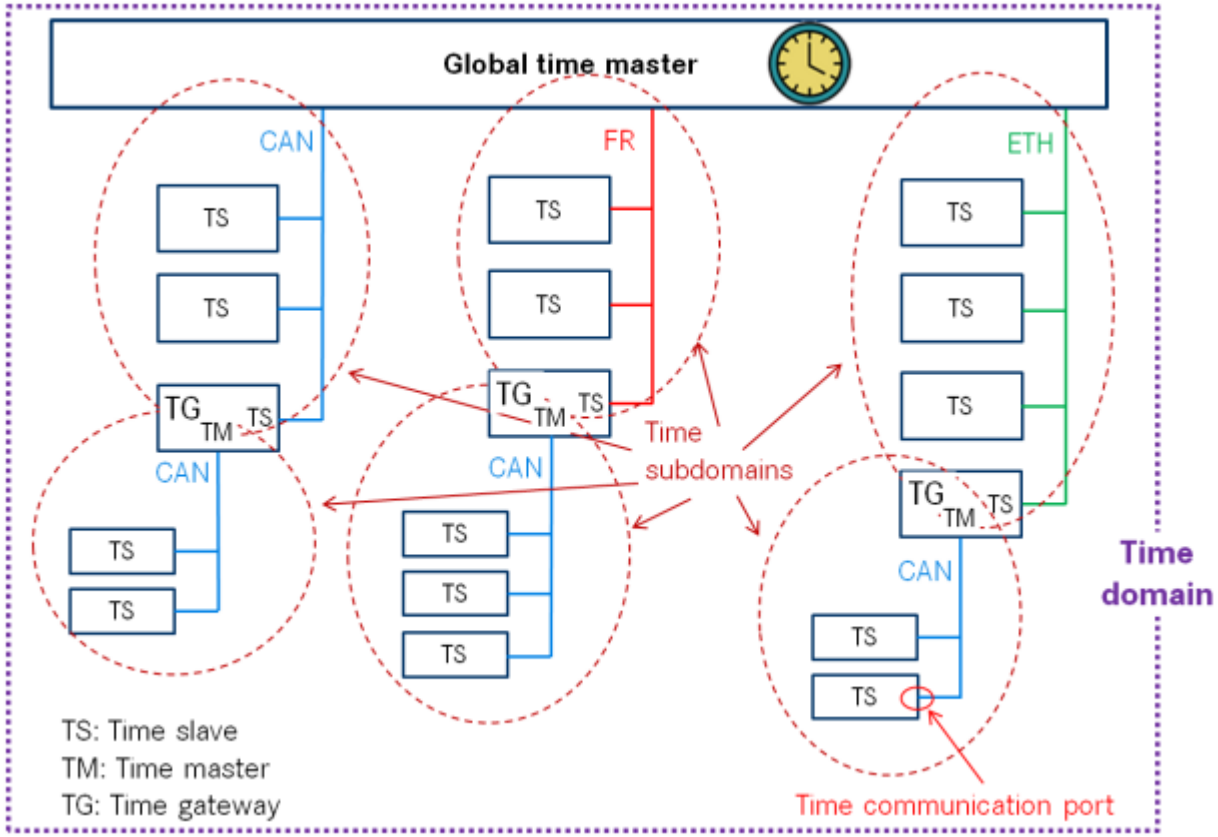
Type	Description	Change ID
Information	The BSWMD of CRYPTO stack modules have been reworked to be compliant with the final AR4.3 definition. No manual migration effort is to be expected. Note: The AR4.3 based CRYPTO stack has not yet been rolled out to all programs.	FEAT-3044

Time Synchronization

Type	Description	Change ID
Breaking Change	The time synchronization stack (CanTsyn, FrTsyn, EthTsyn and StbM) is now realized and released (QM) based on AR4.3 architecture specification. Currently the modules are still AR4.2 compliant on the network. Note: Not all AR4.3 features have been implemented yet. These will be completed in R20 including the possibility to switch the network compatibility between AR4.3 and AR4.2. Overview MICROSAR Time Synchronization Stack:	FEAT-2457 FEAT-2461 FEAT-2466 FEAT-2473 FEAT-2474

Type	Description	Change ID
		

Terms (Source: AUTOSAR SWS STBM):

Type	Description	Change ID
		
Extension	Time master nodes: Multiple timing domains are not supported by CanTsyn and FrTsyn within a single PDU. The past limitation was removed.	FEAT-2517

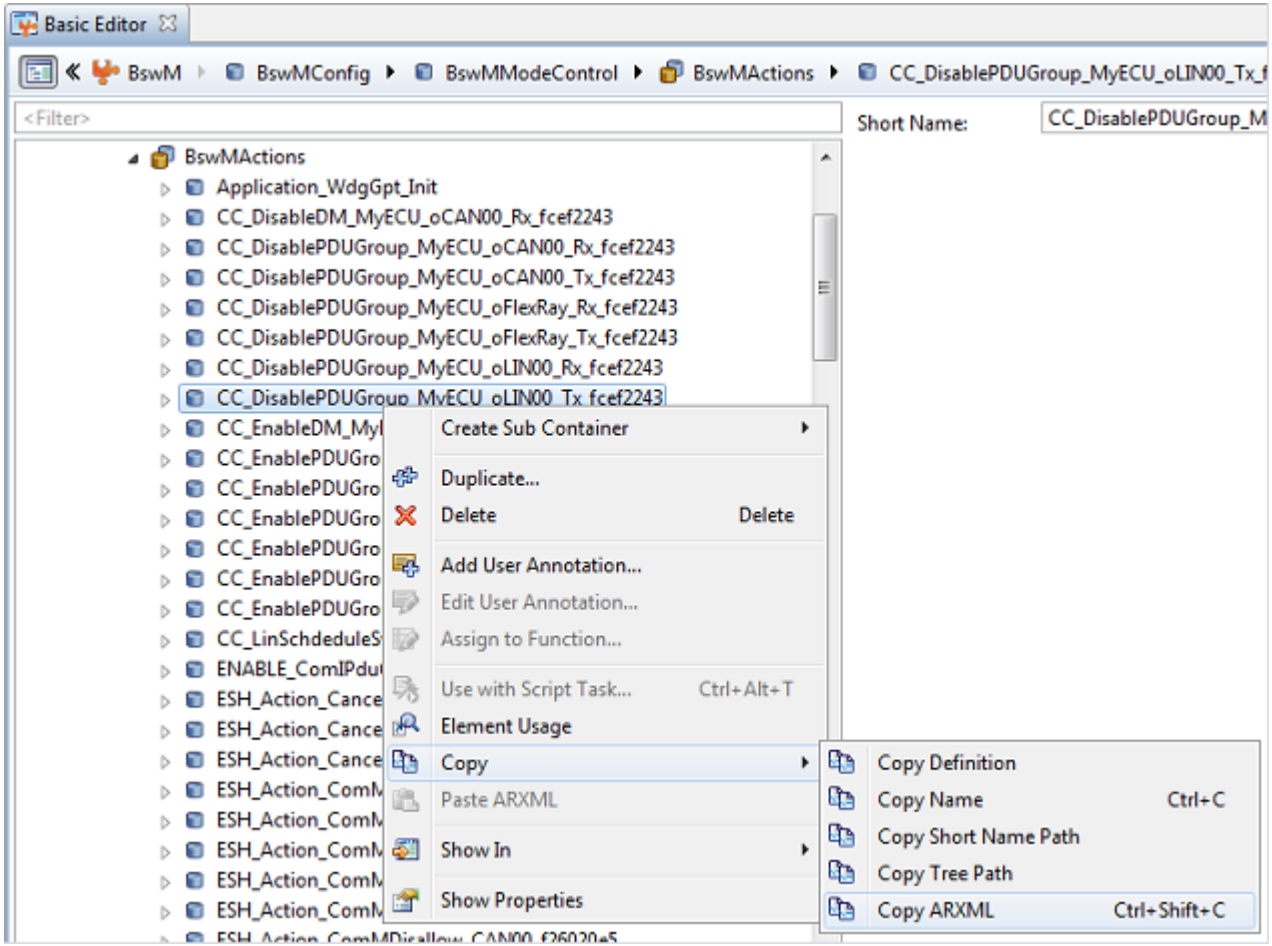
V2G

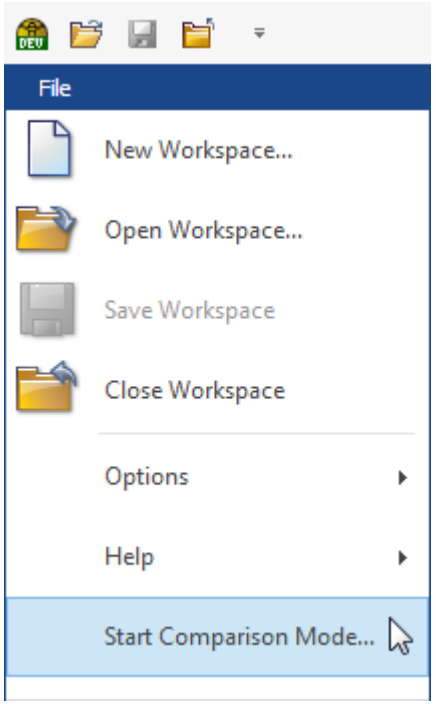
Type	Description	Change ID
Extension	The charging standard GB/T 27930 is now supported by a new MICROSAR component vCanCcGbt.	FEAT-2534
Extension	The charging standard CHAdeMO is now supported by a new MICROSAR component vCanCcCdm. Initially v1.1 of	FEAT-2752

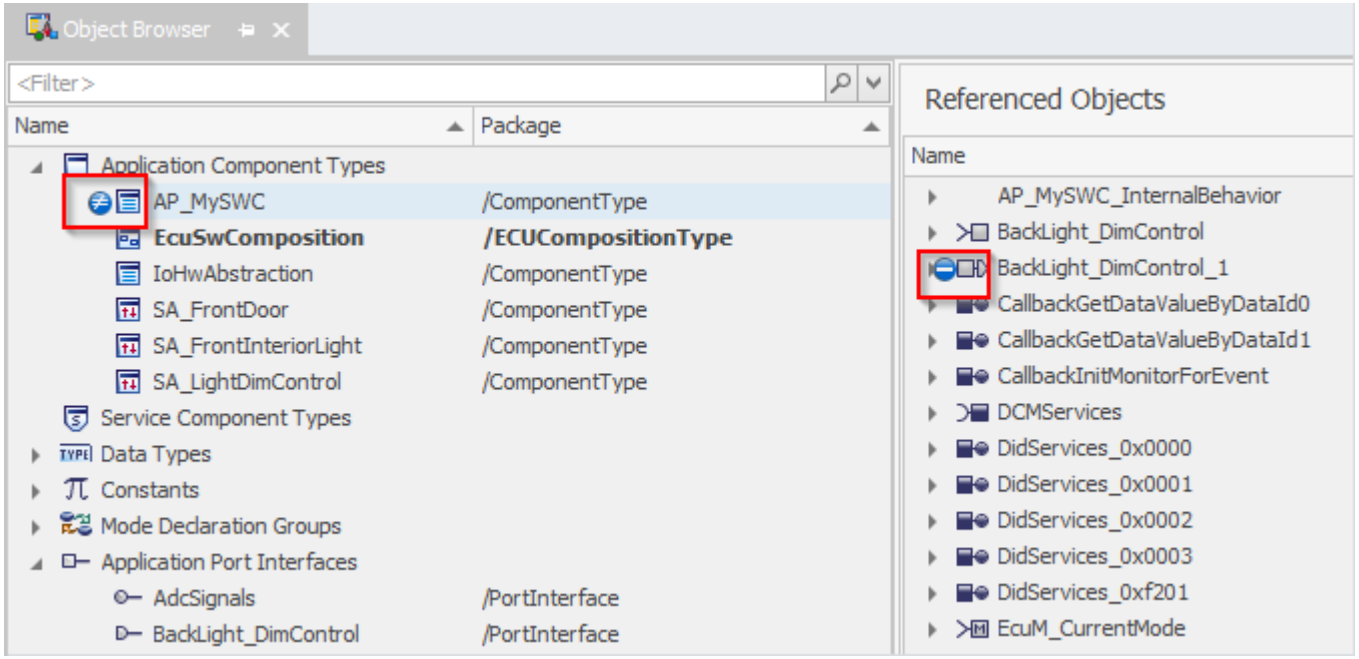
Type	Description	Change ID
	the standard has been realized.	

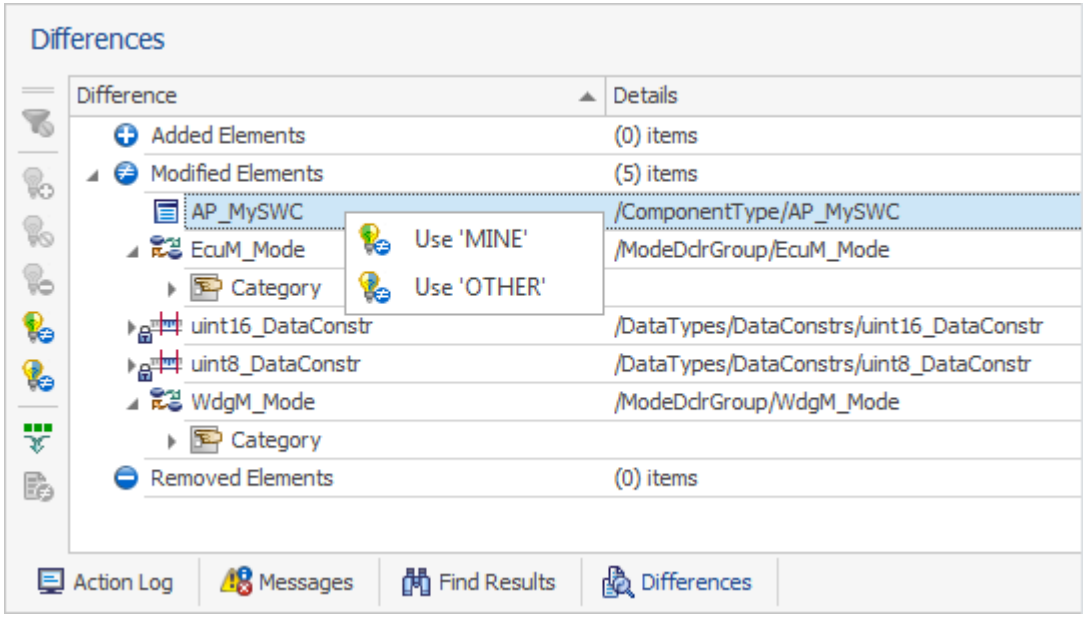
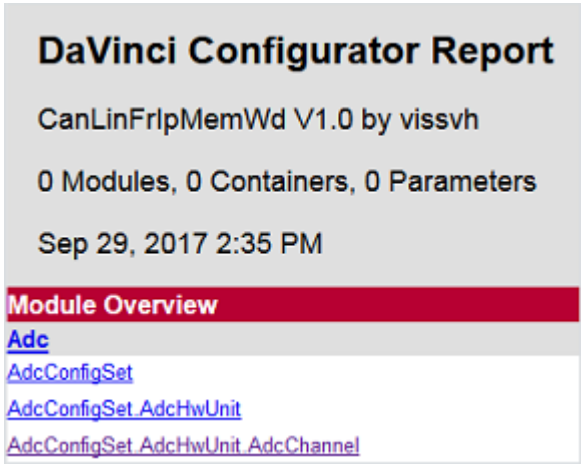
Tooling

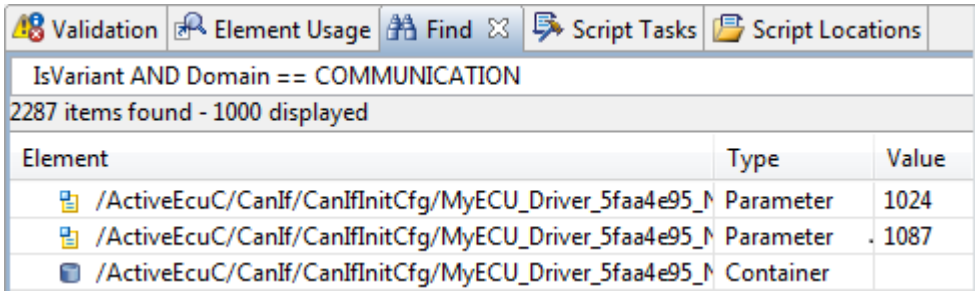
Type	Description	Change ID
Extension	DaVinci Configurator Pro supports copy and past operation of configuration data. This allows easy to use configuration data exchange e.g. between different projects or configuration trees.	FEAT-2481

Type	Description	Change ID
	 **Additional Information** Copy and paste of configuration elements Copy grids to CSV format	

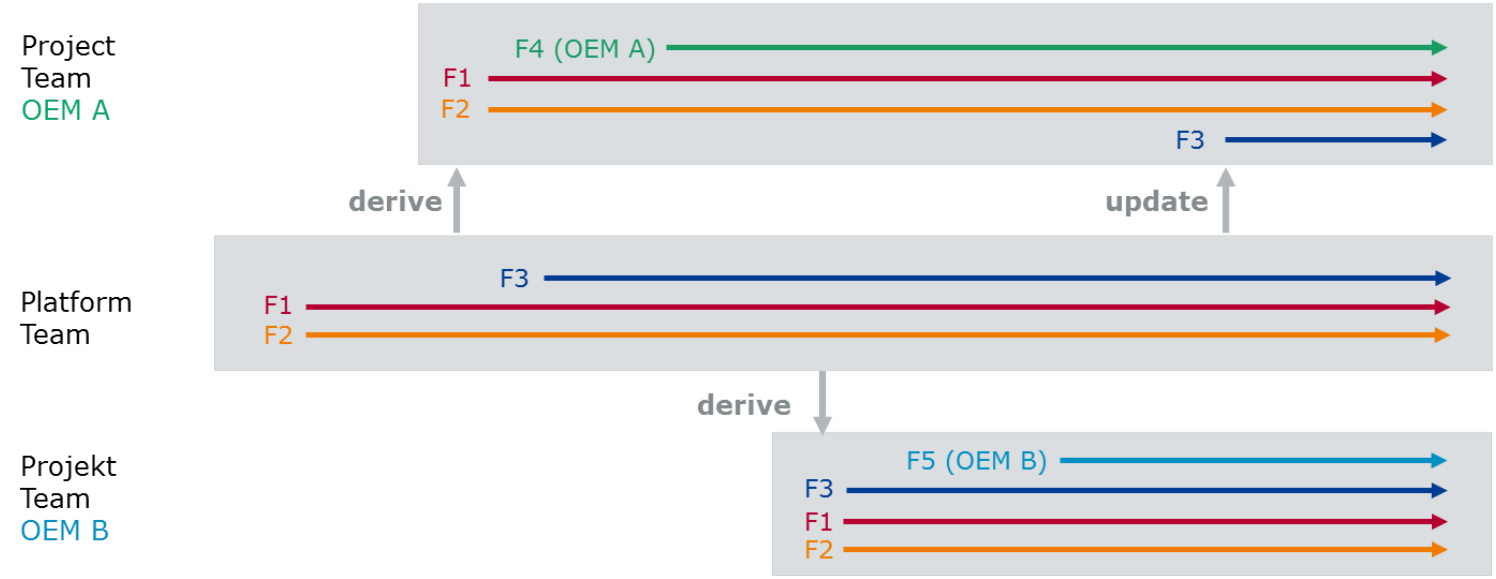
Type	Description	Change ID
Extension	DaVinci Developer has an improved diff- and merge functionality that allows selective merge decisions. The UI has been reworked to give a user experience similar to the diff- and merge functionality of DaVinci Configurator Pro. Launch the difference mode:  Highlevel difference illustration in Object Browser using icons:	FEAT-2494

Type	Description	Change ID
	 The Differences View shows more details and allows resolving differences in the toolbar:	

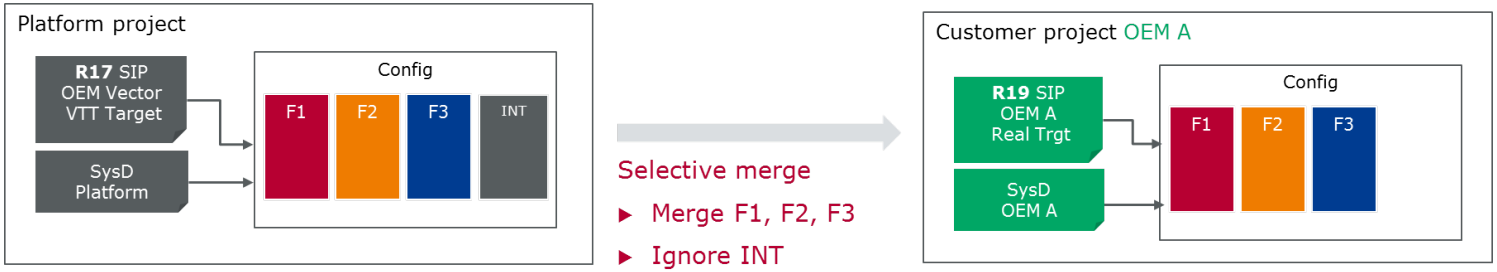
Type	Description	Change ID
		
Extension	The configuration report provided by DaVinci Configurator Pro can now be created via command line. 	FEAT-2553

Type	Description	Change ID
Extension	Central display option in DaVinci Configurator Pro to reference parameters either with full path or only as short name	FEAT-2553
Extension	The Find View of DaVinci Configurator Pro now provides a search criterion "IsVariant" that allows searching for elements that are actually different in the configured variants.  Use the Help dialogue to find out more about the different query possibilities. Alternatively you can hit "CTRL + SPACE" in the query editor to get a context sensitive list of possible options.	FEAT-2553
Extension	Product line approach supported by DaVinci Configurator Pro and DaVinci Developer: SWCs and ECUC containers can be assigned to platform functions. Selective diff/merge enables simple take-over of complete platform functions from a baseline project to individual customer projects.	FEAT-2785

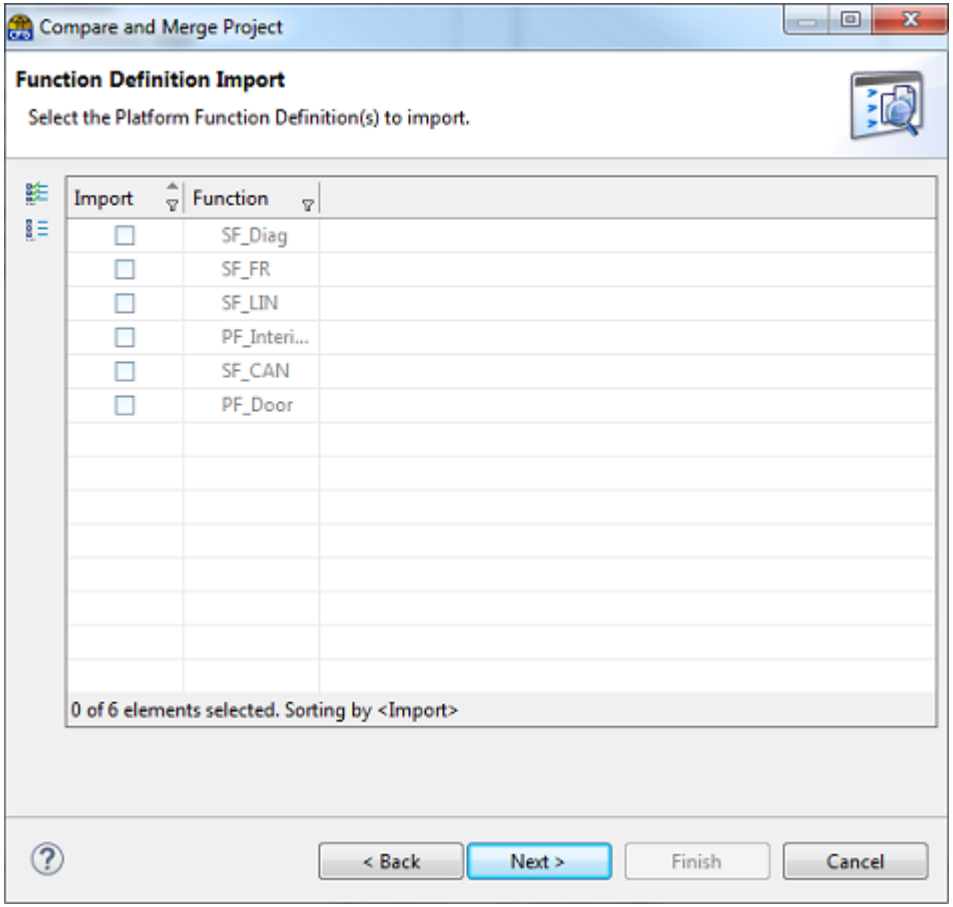
Type	Description	Change ID

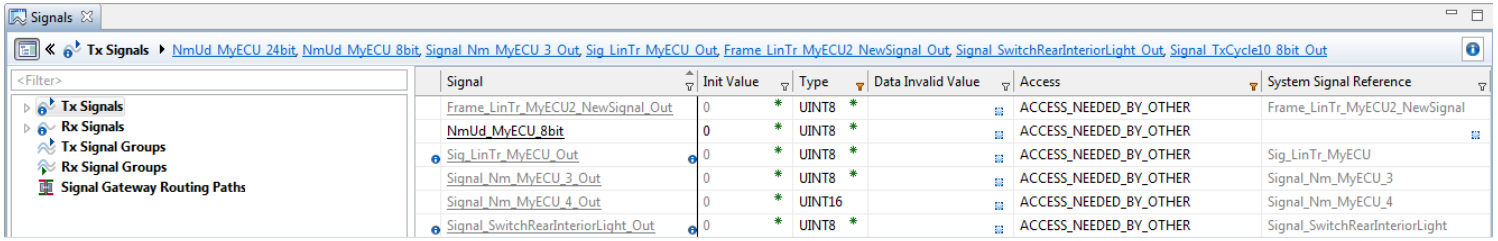


The tool allows to merge function related configuration items in one block:



Selection of functions that shall be merged within the Diff&Merge Assistant auf DaVinci Configurator Pro:

Type	Description	Change ID
		
Extension	The UI of DaVinci Configurator has been improved: > Basic editor: the expansion and selection state of the tree is restored after switching the displayed variant > Grids now supports multiple filtered columns	FEAT-2791

Type	Description	Change ID
	 > If a new element is created in the tree this new element is selected automatically	
Extension	The CAN baudrate configuration has been improved for devices that result in many possible register settings.	FEAT-2879
Extension	DaVinci Configurator Pro.WF now provides more powerful automation interface APIs to access and modify the task- and data mapping as well as the creation of component prototypes. This feature allows automation scripts to be created with less effort as the APIs abstract from the complex AR data structure.	FEAT-2942
Extension	When migrating a project from one SIP to another the derivative selection is now migrated.	FEAT-3011
Extension	DaVinci Configurator Pro now provides the possibility to split a SystemTemplate with prebuild variance into non variant configuration files that can be used in the process to setup a new project. The variant split is available as command line option of DaVinci Configurator Pro (DVCfgCmd.exe): using --exportPreBuildVariants <VARIANTS> Find out the full command and more details in the Help dialogue.	FEAT-3095
Extension	DaVinci Configurator Pro now blocks the possibility to configure PublishedInformation (defined in the BSWMD) as it is defined by AUTOSAR. This feature is currently limited to non MICROSAR modules.	STORY-1021
Information	DaVinci Developer has been realized as a 64-bit application to support large projects with more available memory.	FEAT-2944