VECTOR

Release Notes

FCA SLP5

VECTOR

Content

1 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). **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: > We recommend a ECUC database update when updating to the new SIP. After the update rework may be	FEAT-3109

Type	Description	Change ID
	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. With the final R20 version the names are again in line with the rule set that was used with R19 and before.	FEAT-3109

Type	Description	Change ID
	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 > Dem_SetDTCSuppression > Dem_GetDTCSuppression > CallbackEventStatusChange	FEAT-2894

Type	Description	Change ID
	> 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

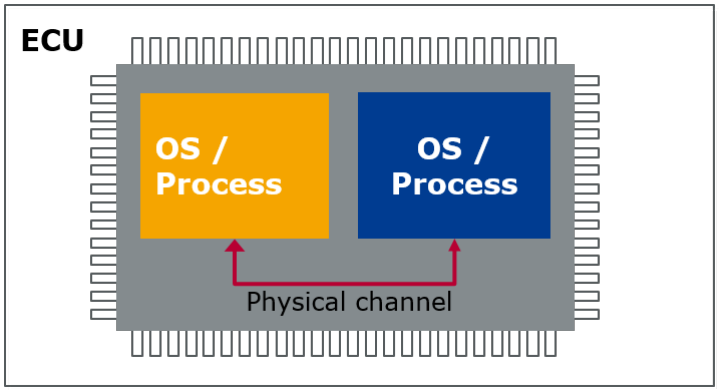
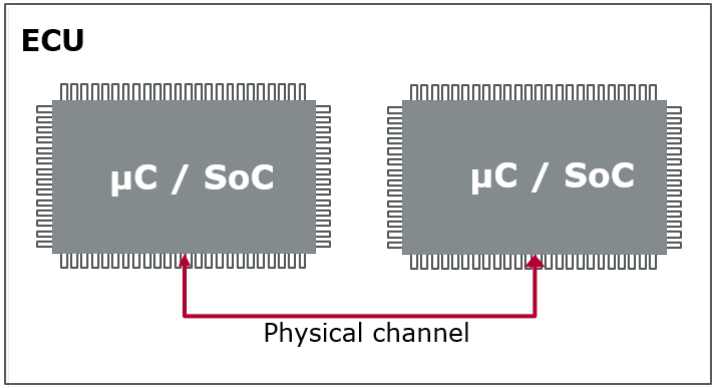
Type	Description	Change ID
Breaking Change	The support of DoIP draft standards have been discontinued: DIS/FDIS. From now on only the final standard (IS, 2012) is supported.	FEAT-3362
Extension	The SomeIpTp (Transport protocol for SOMEIP) has been realized and is available for development deliveries. 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

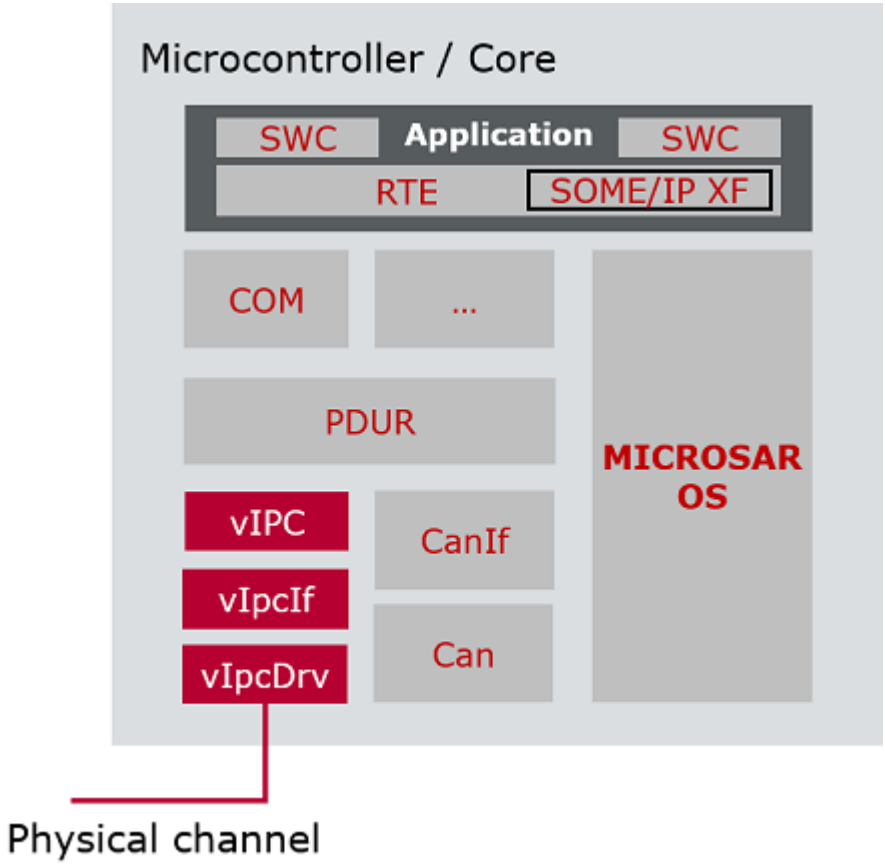
Type	Description	Change ID
Extension	It is now possible to use only one SoAd Socket Connection (Multicast local address, listen-only) for receiving multicast events from multiple servers. When receiving a SD SubAck message Service Discovery sets the socket remote address to the servers unicast address. 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

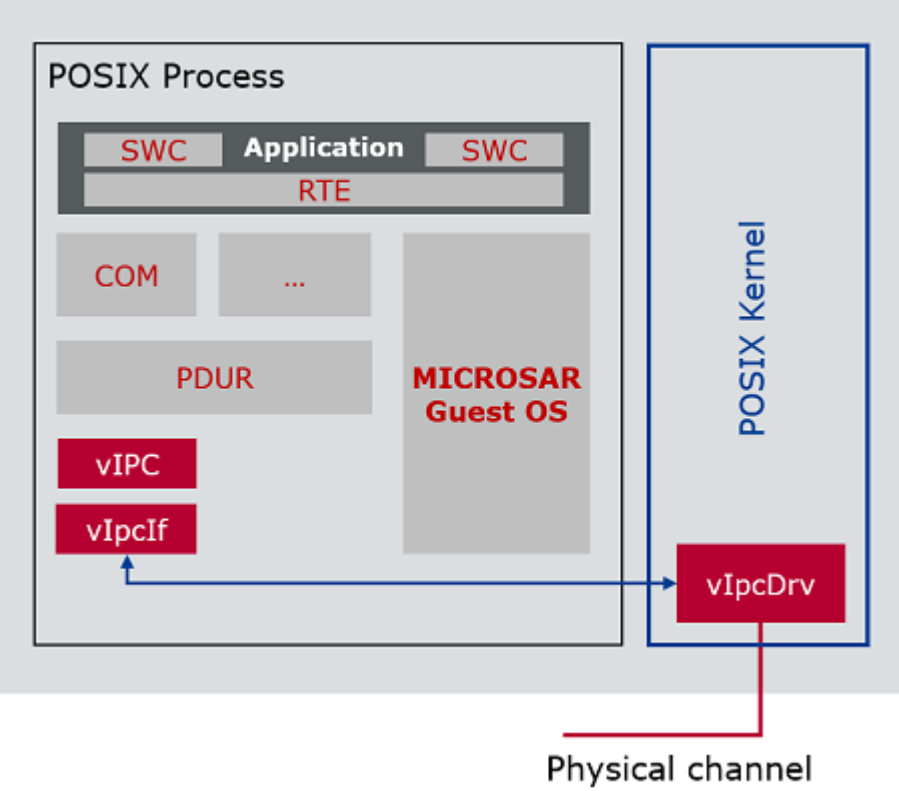
Gateway

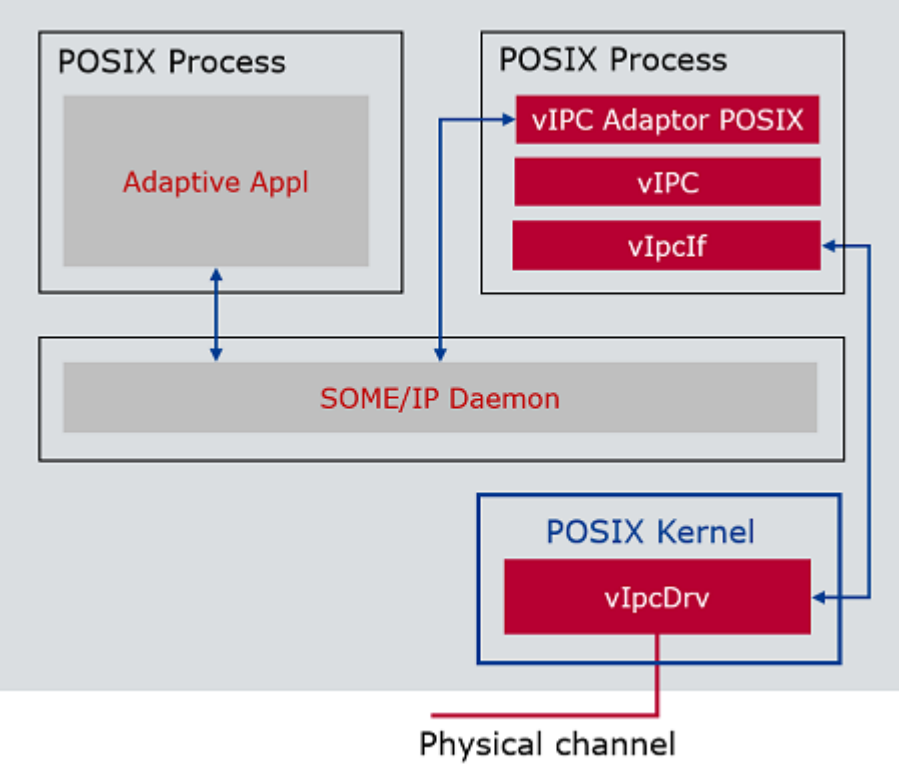
Type	Description	Change ID
Information	The RAM consumption of the PduR was reduced. The reduction becomes significant if there are many low-level interface routings configured.	FEAT-3285

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 Fiat NM ClassB and ClassC network management modules as well as the CddFiat module have been released for QM projects with the following use-cases: > ClassB Slave Clamp30 > ClassB Slave Clamp15 > ClassB Master	FEAT-2529

Type	Description	Change ID
	> ClassC Non-Wakeup > ClassC Wakeup Slave	
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) according to ISO/IEC 15118 ED2 CD2. Please note: This feature is provided by a dedicated vScc add-on.	FEAT-2765
Information	QM release of the GB/T 27930 charging component vCanCcGbt.	FEAT-2534

vVIRTUALtarget

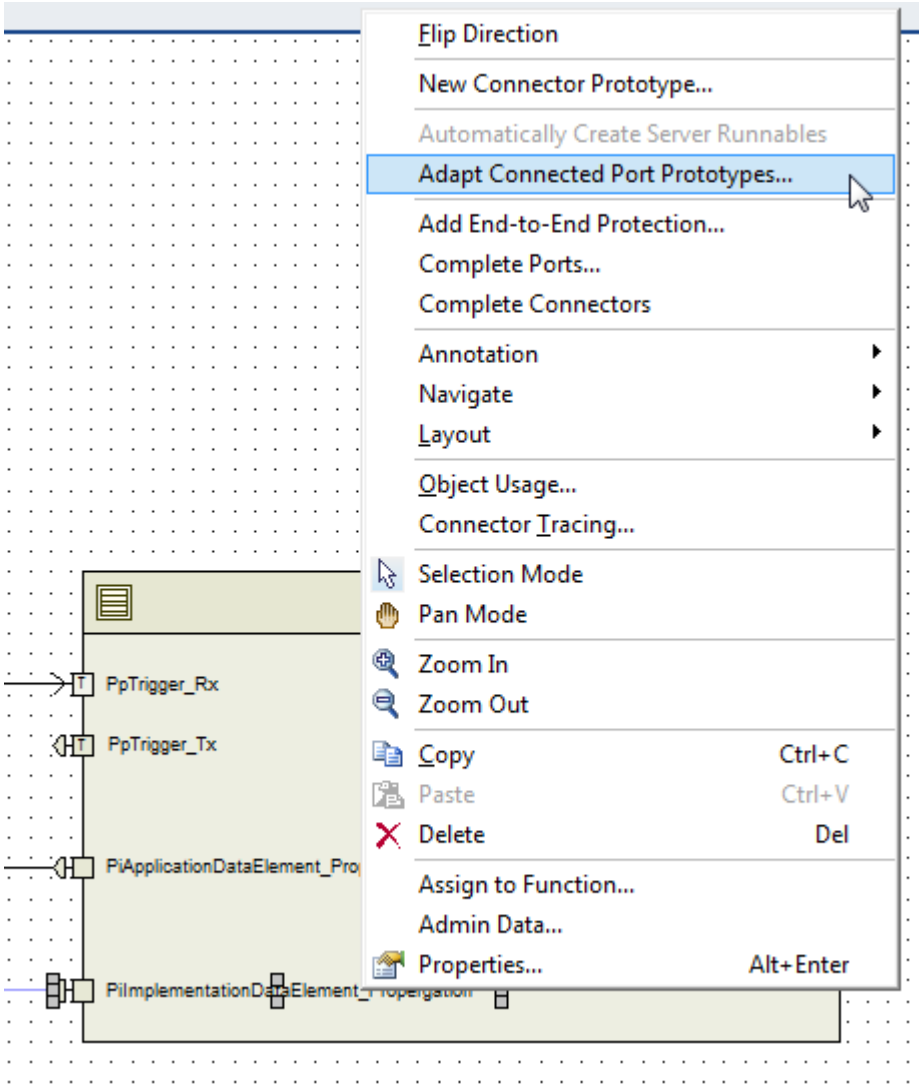
Type	Description	Change ID
Extension	AUTOSAR 4.3 based Crypto (Hw) modules are now simulated by a dedicated vVIRTUALtarget.Basic Crypto module. **Additional Information** The Crypto (Sw) module configuration is not considered as the algorithms are executed in software anyhow.	FEAT-2716 FEAT-3425
Extension	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

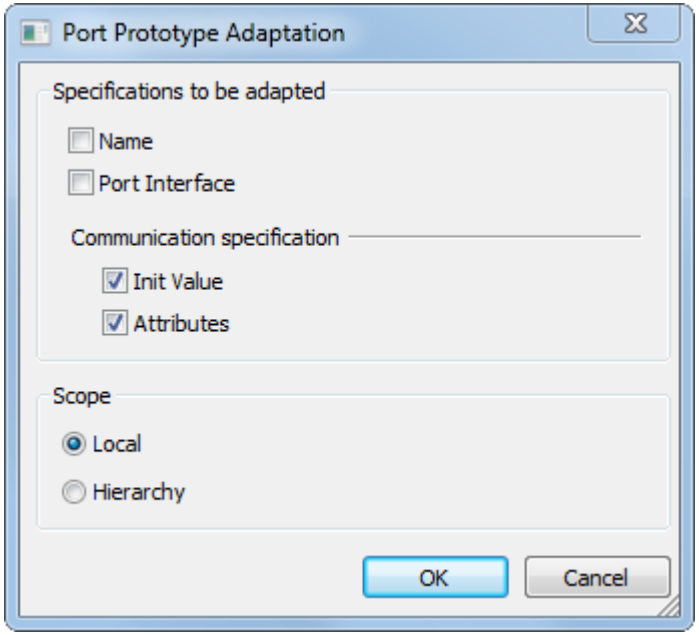
Watchdog

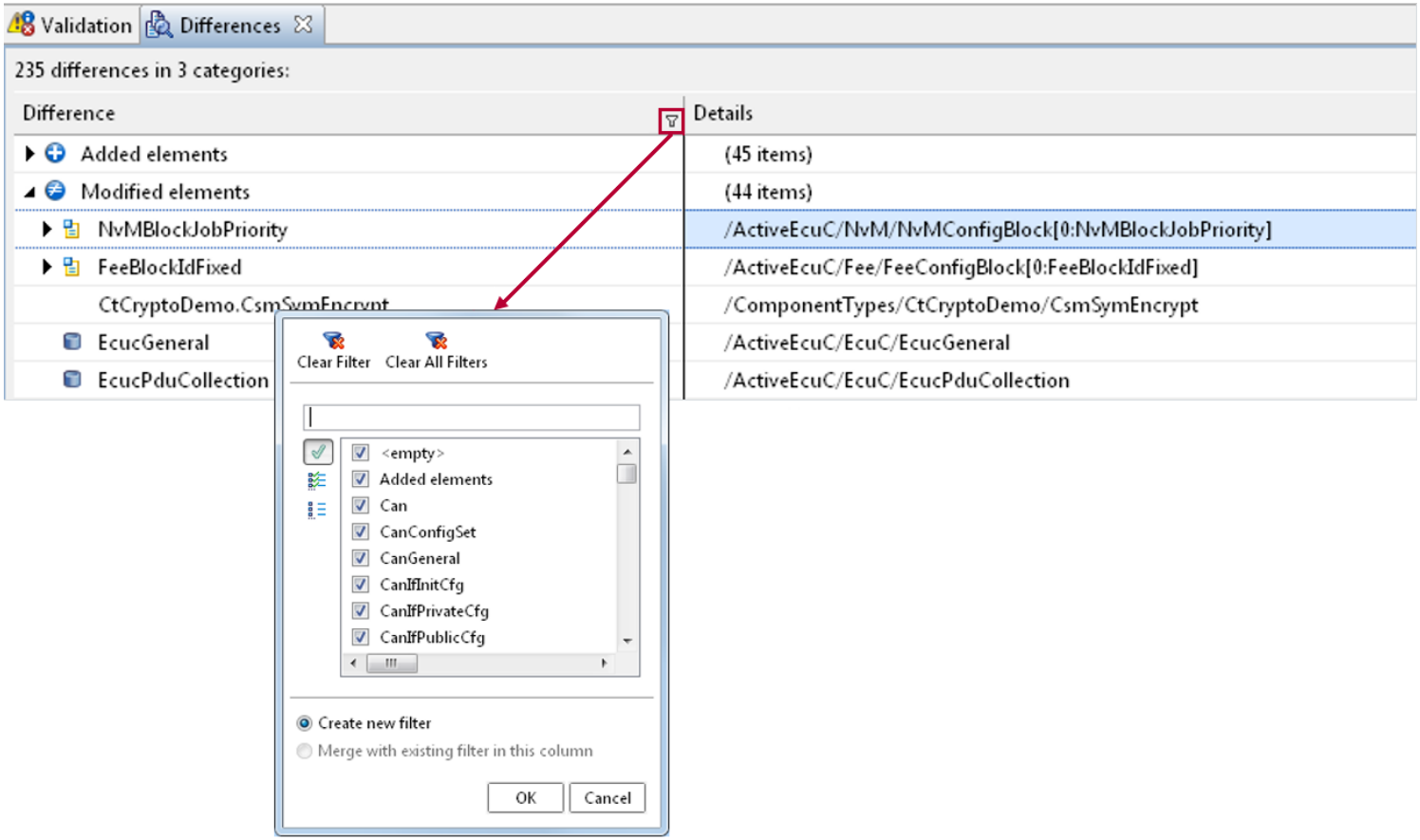
Type	Description	Change ID
Information	The TechnicalReference of WdgM has been updated with respect to the supported AR 4.2 functionality. Additionally, the module now also reports AR4.2.2 as supported AR version. No additional features have been realized.	FEAT-3029

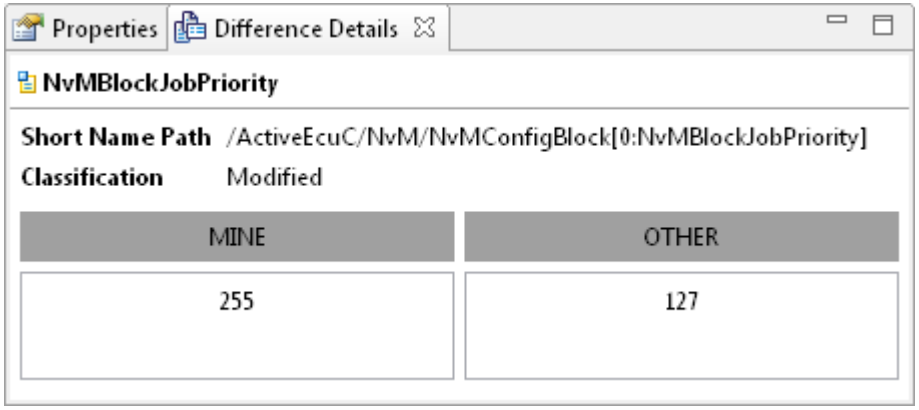
Tooling

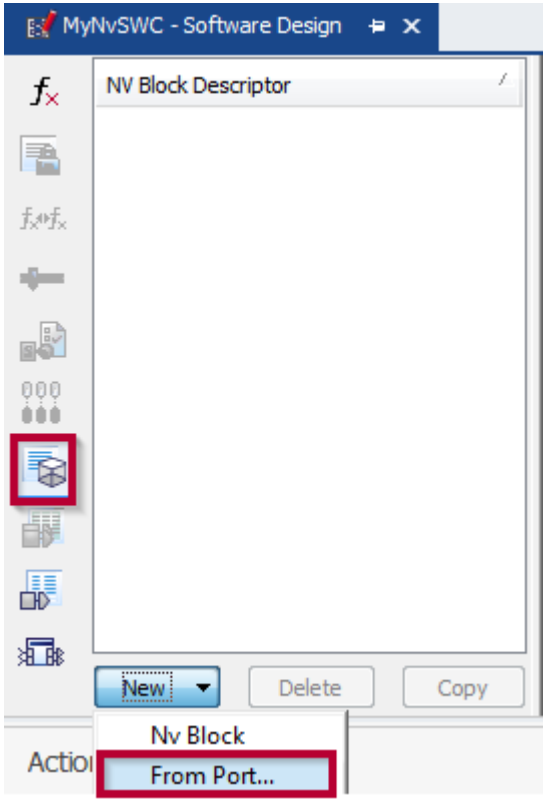
Type	Description	Change ID
Breaking Change	The compatibility evaluation of constants between application- and implementation data types is now more precise and allows more use-cases: > Several receivers of a port can now use application- or implementation data types with physical and internal init values, 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

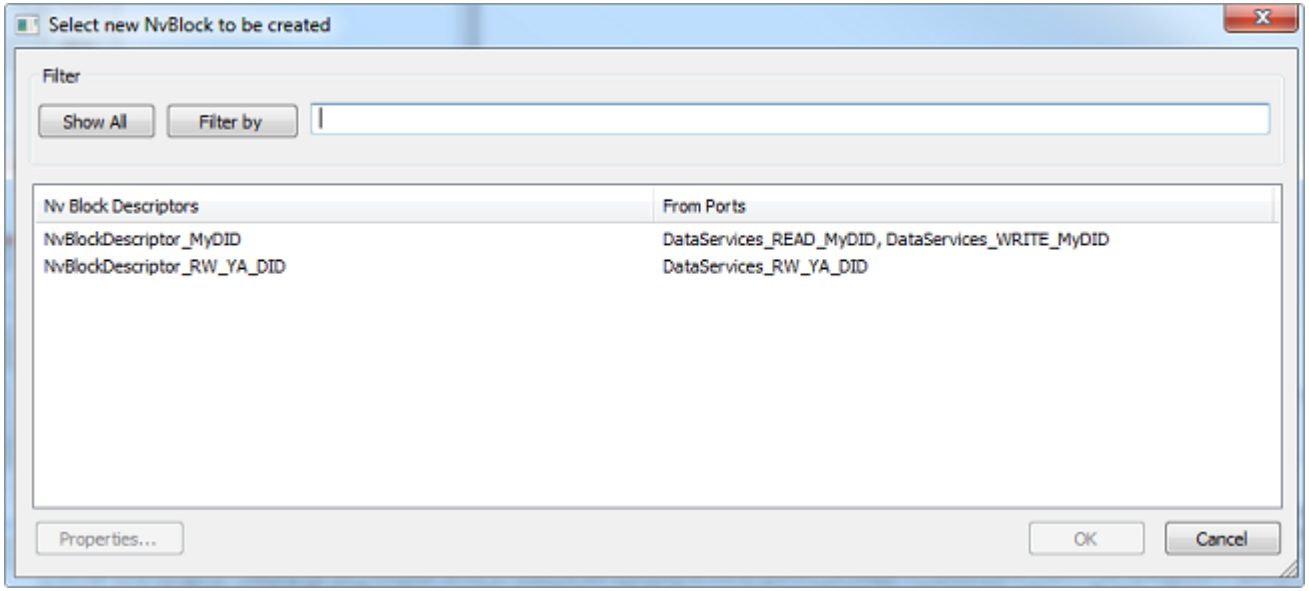
Type	Description	Change ID
	DaVinci Developer port prototype context menue: 	

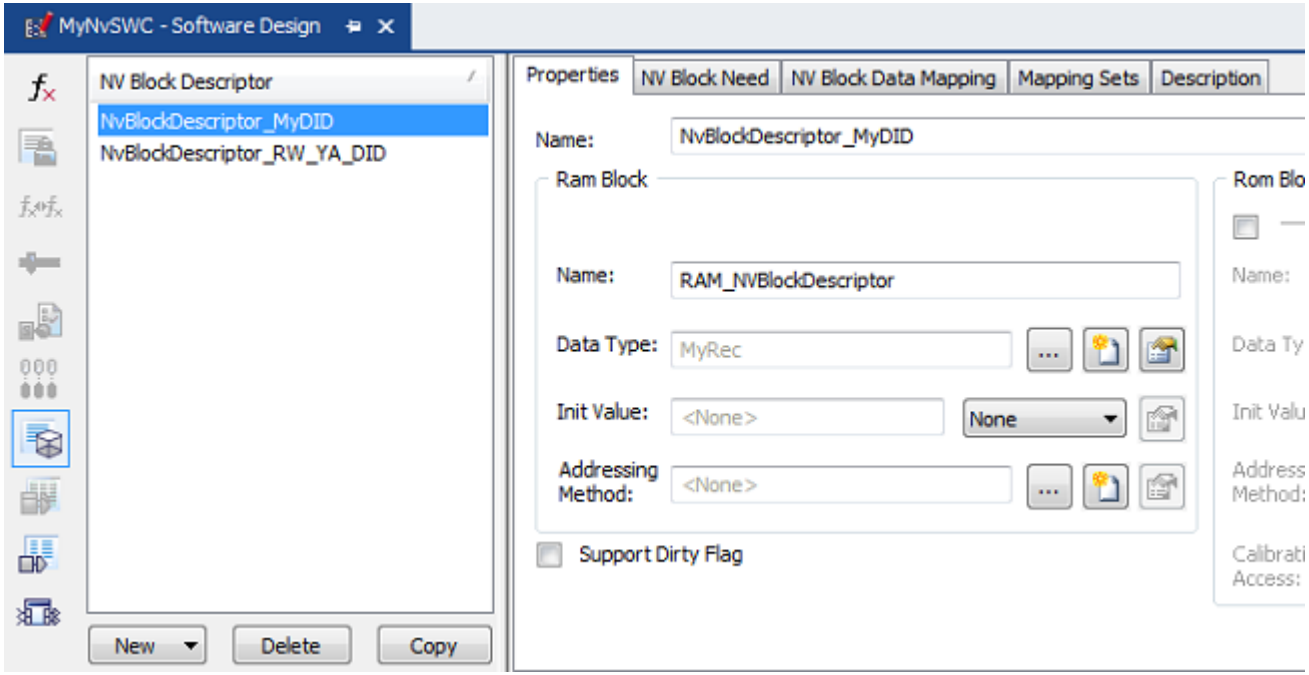
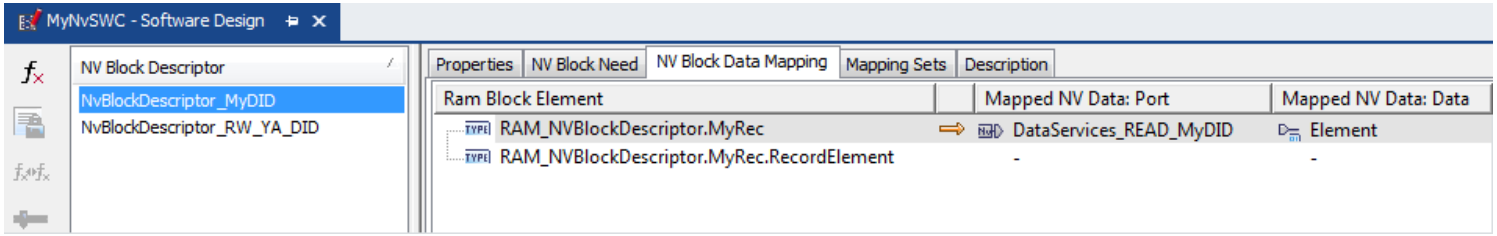
Type	Description	Change ID
	Select options:  **Migration notes for existing projects:** The Rte now throws RTE51035 in some projects that have been working with previous Rte versions. However the configuration used to be invalid in the past. This has not been relevant in the past as the Rte did not support 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. 	

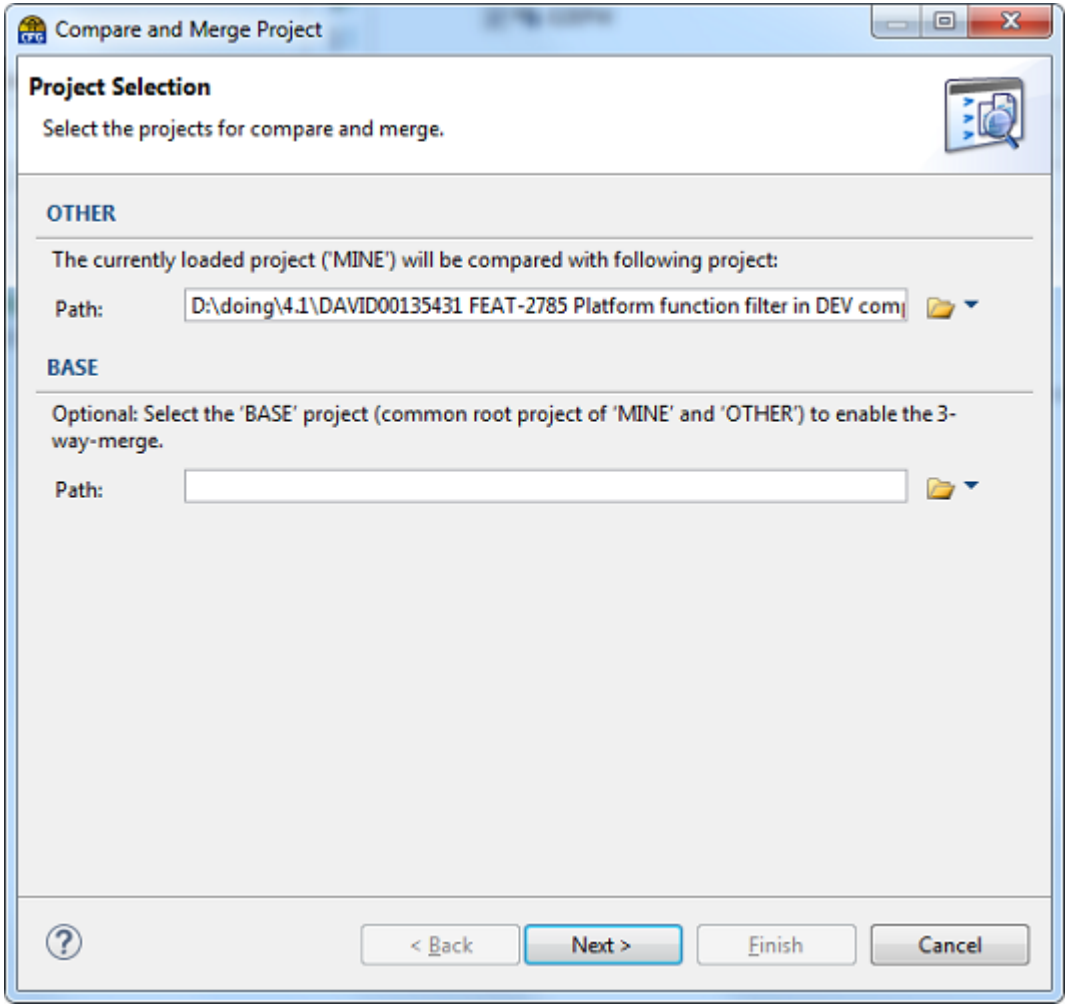
Type	Description	Change ID
	Improved layout of Difference Details View:  	
Extension	DaVinci Developer now provides a new convenience functionality that allows easy creation of a NvBlockSwc matching to given ports. NV Block Descriptors are automatically created and mapped to the ports.	FEAT-2485
Extension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

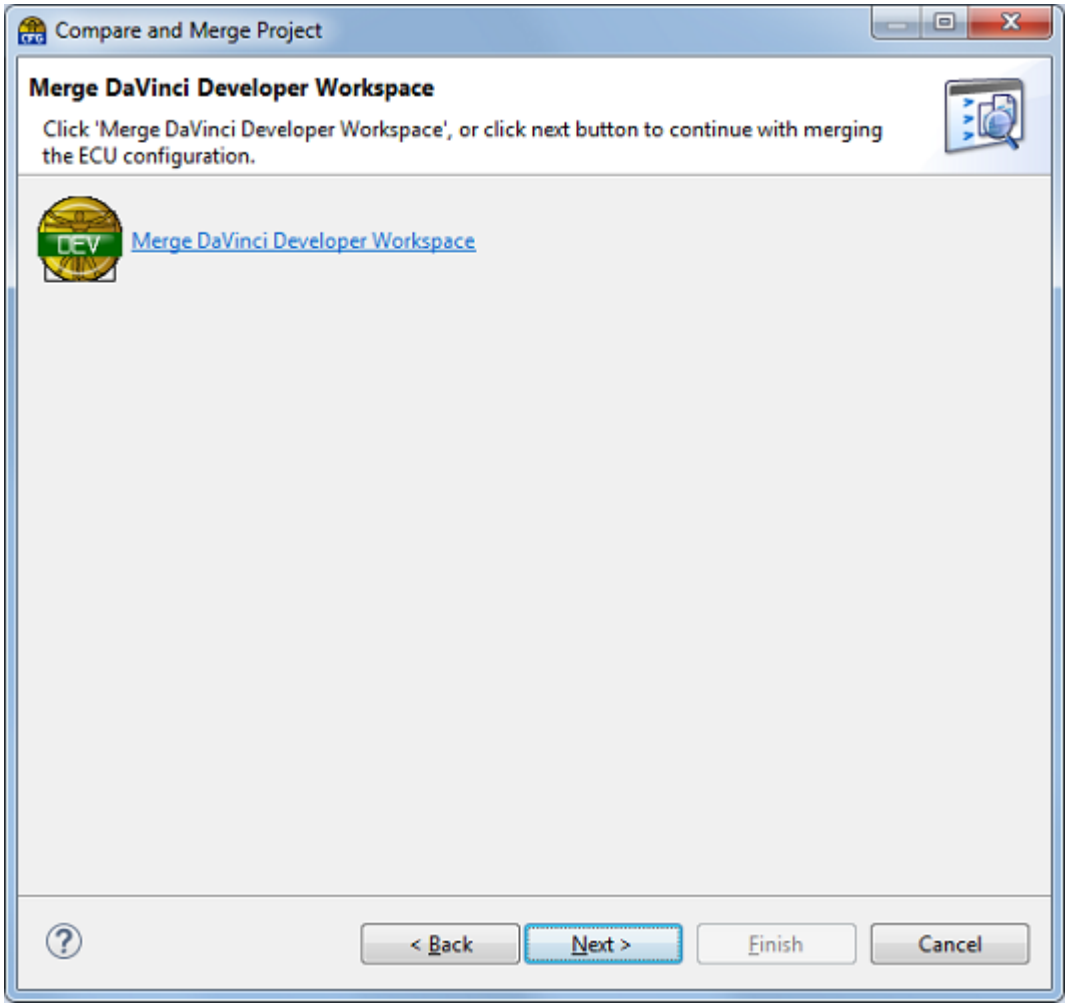
Type	Description	Change ID
	The assistant is launched from a NvSWC-T: New -> From Port... 	

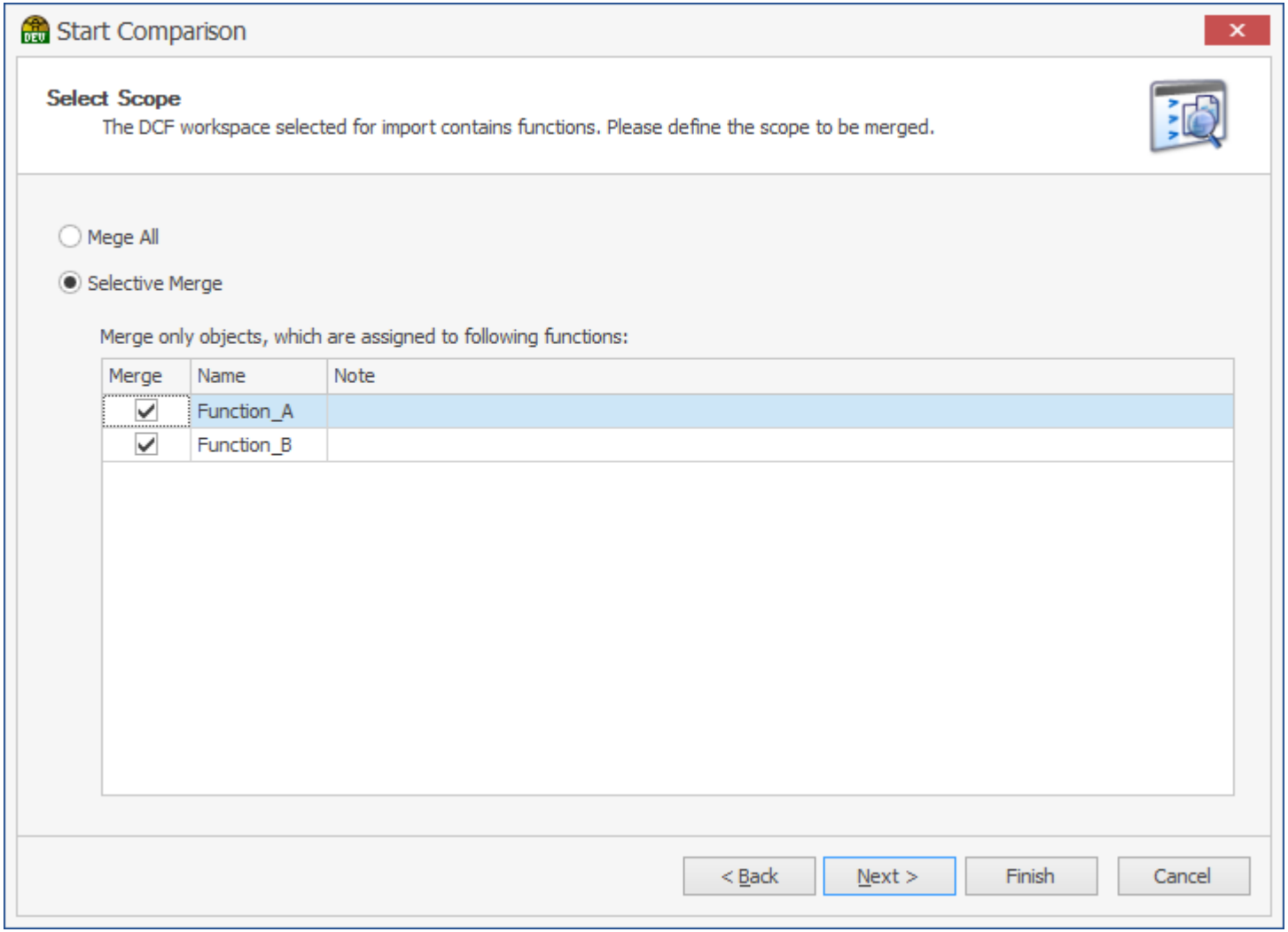
Type	Description	Change ID
	The wizard allows selecting the Nv blocks that shall be created. The assistant illustrates only NvPorts that do not yet have a mapping. 	

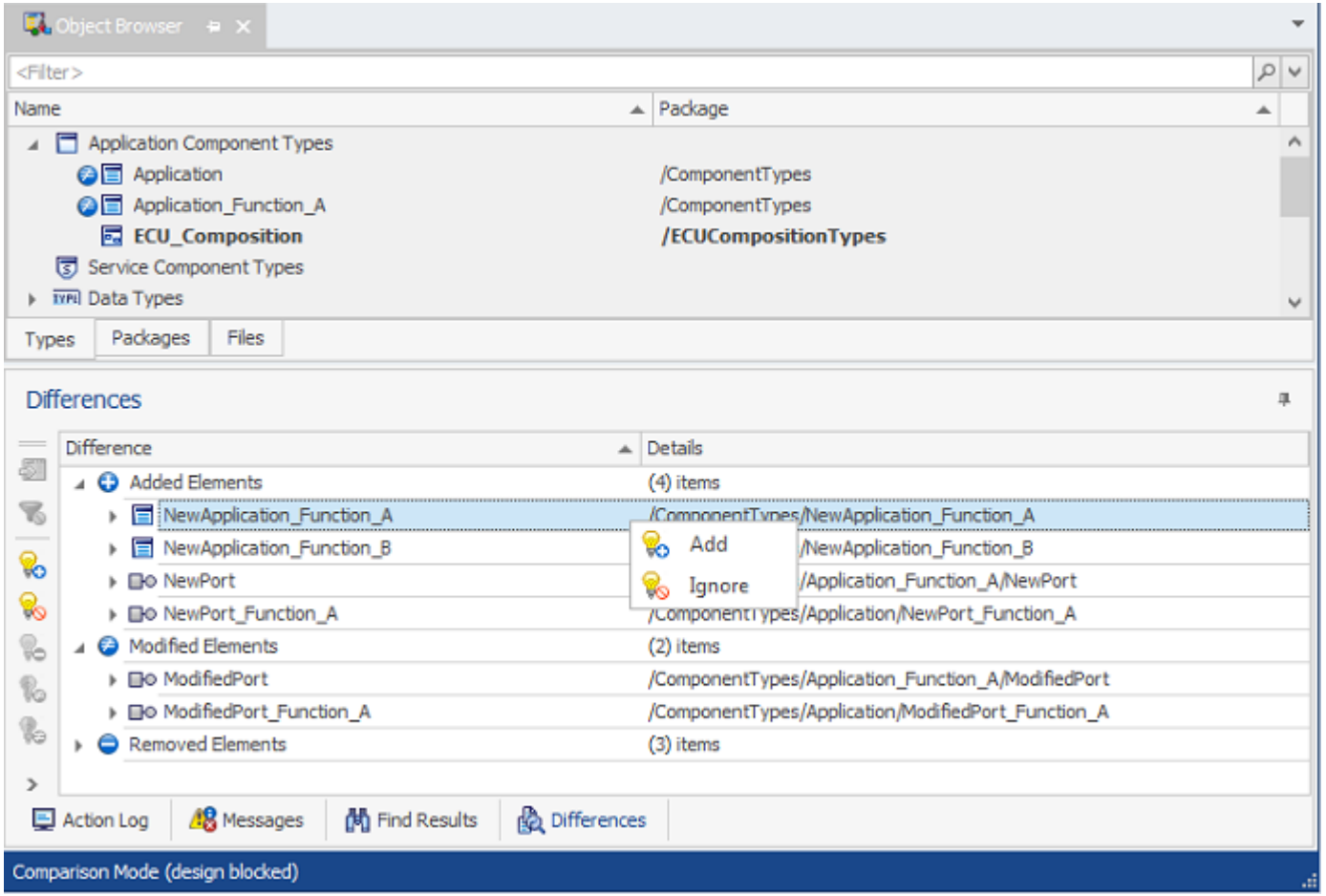
Type	Description	Change ID
	Once confirmed the assistant create the NvBlock for the selected NvPort:  Additionally the port mapping between the NvBlock and the NvPort is created:  	

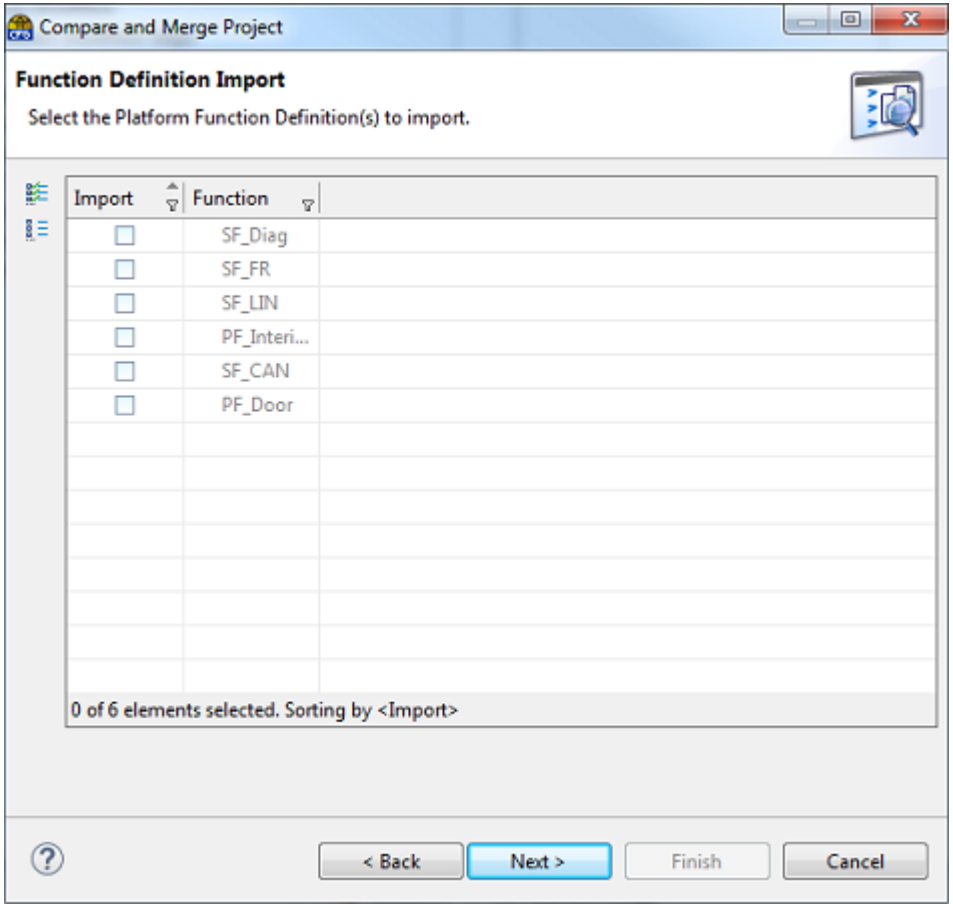
Type	Description	Change ID
	Additional Information read/write DIDs, which are provided by the transformed struct-interfaces	
Extension	The platform functions can now be used in DaVinci Developer and DaVinci Configurator for filtering of system template elements (such as SWCs and port mappings). Additionally, 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

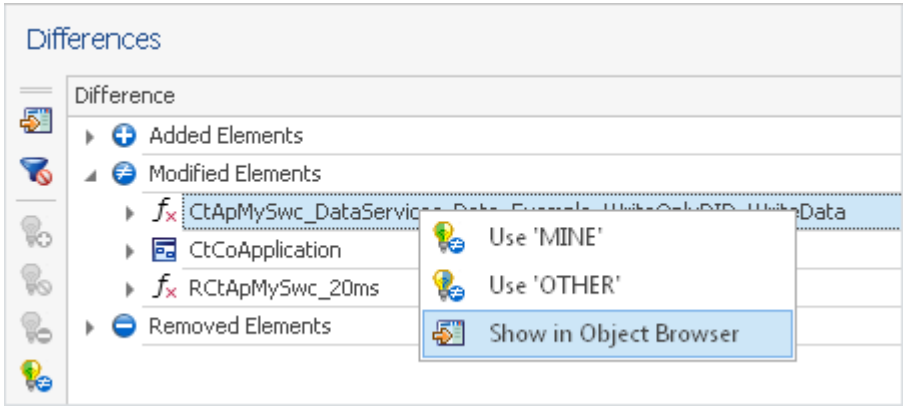
Type	Description	Change ID
	The DaVinci Developer platform function look and feel is now in-line with DaVinci Configurator Pro from where it is launched: 	

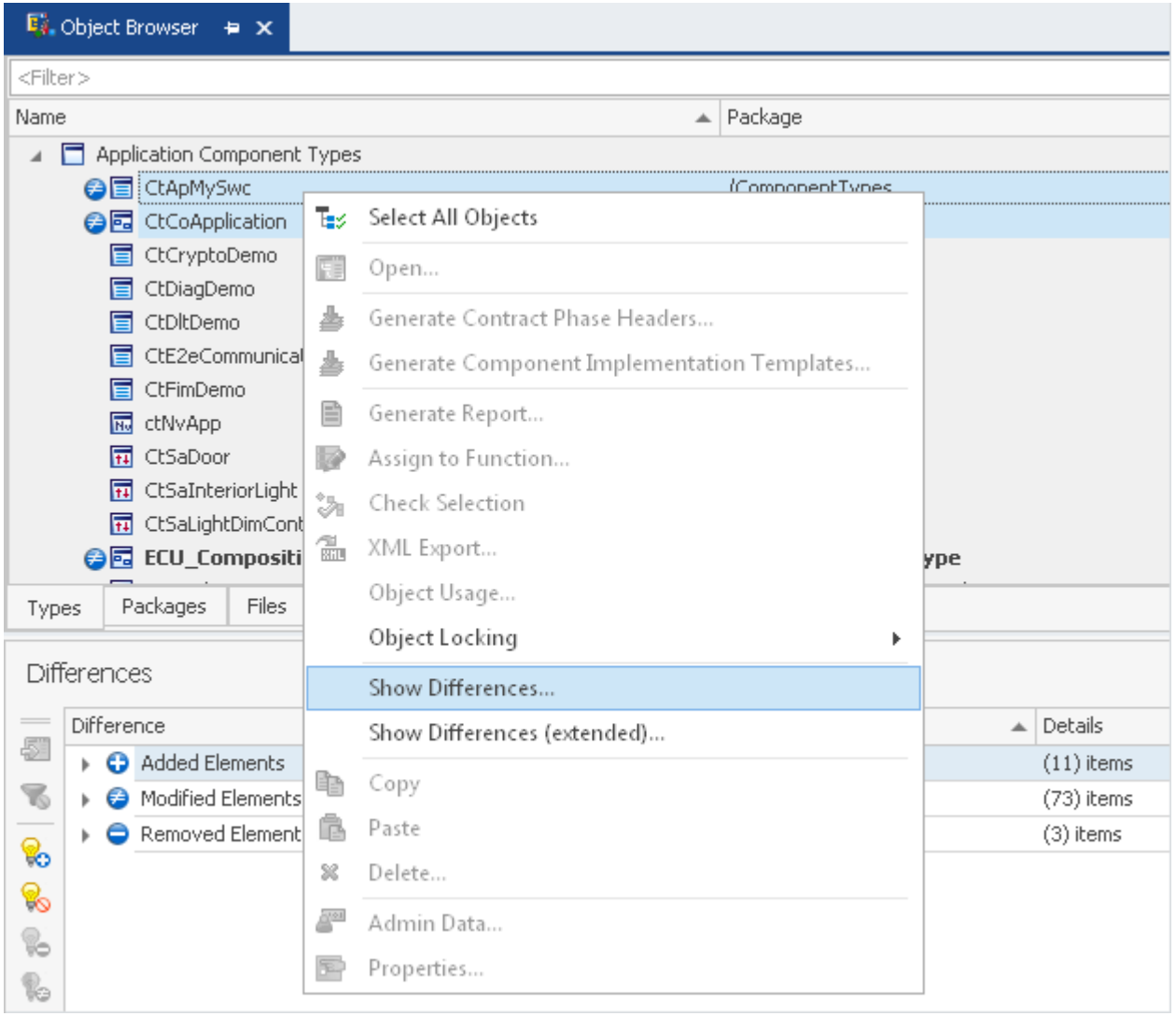
Type	Description	Change ID
		

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

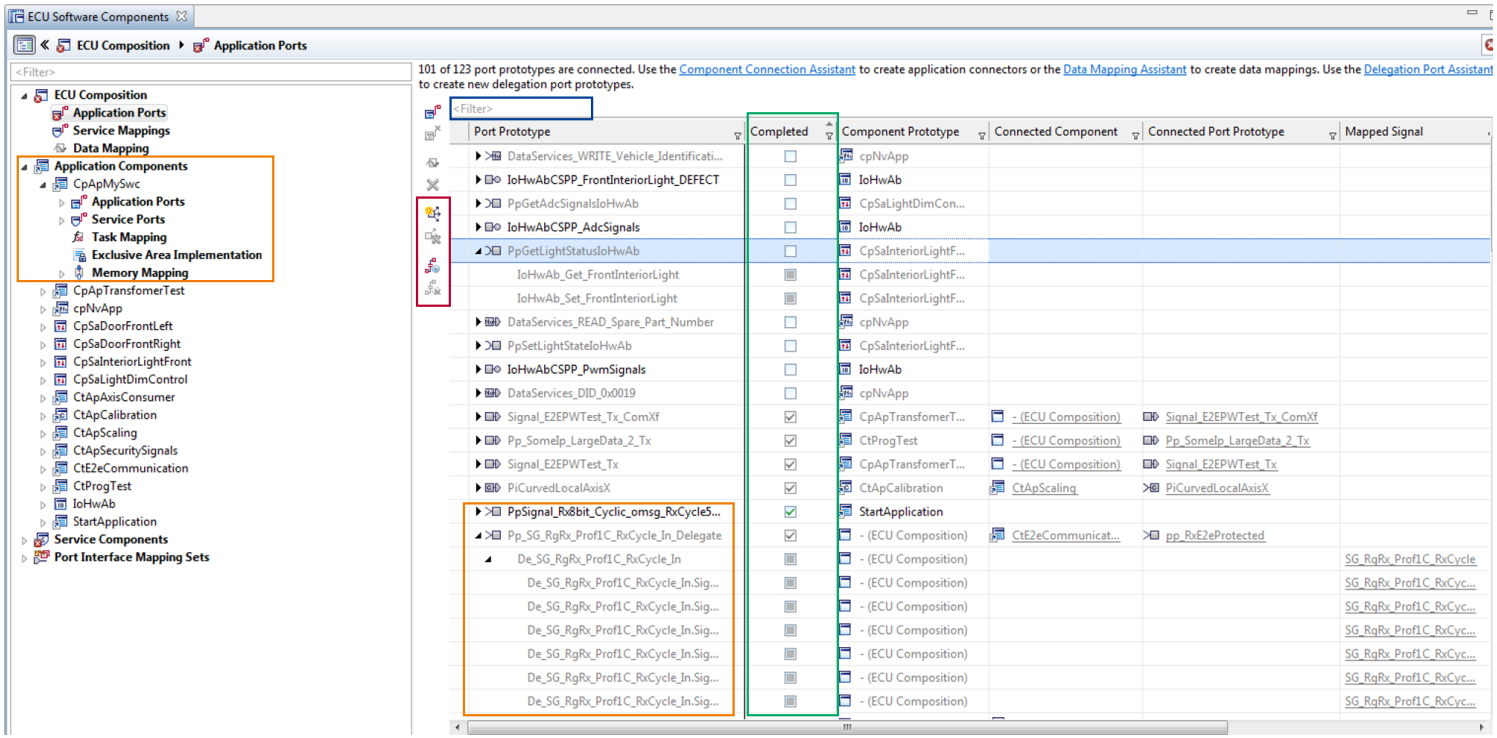
Type	Description	Change ID
	The DaVinci Developer difference illustration and merge control is now similar to DaVinci Configurator Pro (as introduced in R19): 	

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	

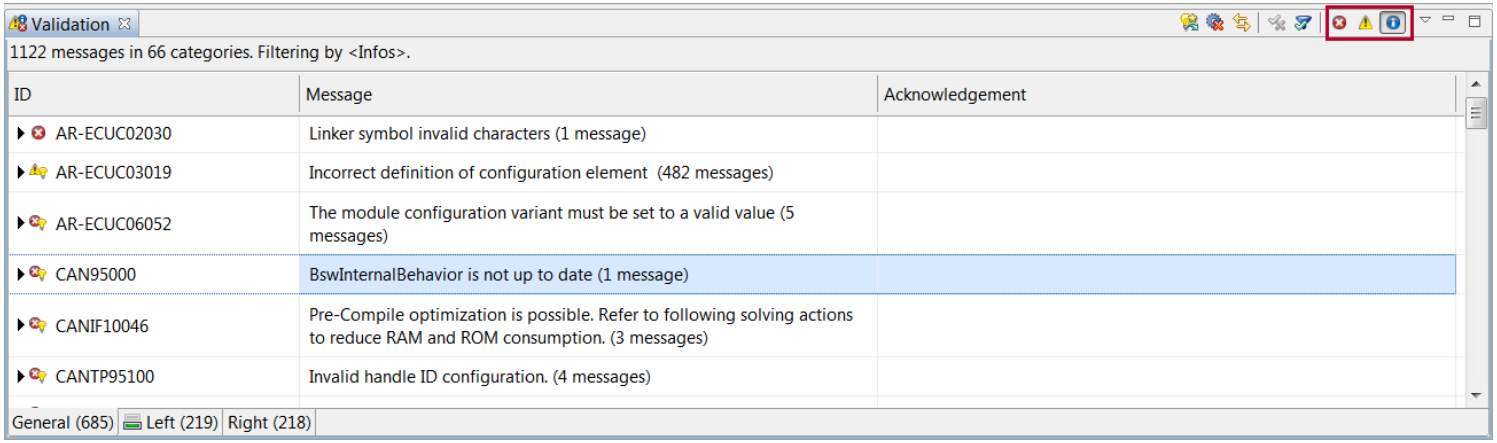
Type	Description	Change ID
Extension	Project diff/merge function of DaVinci Developer 4 has been improved: Navigation from Difference View to Object Browser is now possible 	FEAT-2494

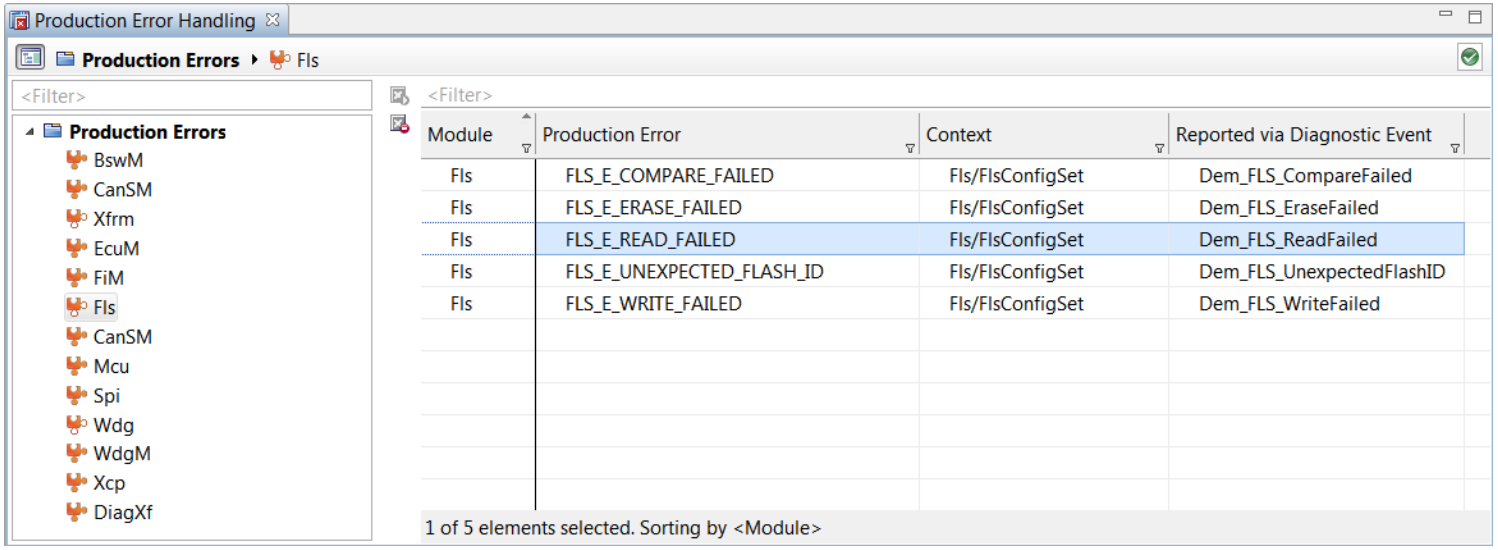
Type	Description	Change ID
	The Object Browser can now be used to compare two objects including sub-objects and references. 	
Extension	The user interface of DaVinci Configurator Pro has been improved with respect to the display of variant projects:	FEAT-2553

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
	 > Red: Set a Port Terminator to mark an intentionally unconnected port, create delegation ports from within DaVinci Configurator Pro. > Blue: General grid filter to search for arbitrary items > Green: Quick overview to show if the port is connected to other SWCs or to network signals > Orange: New tree structures to ease access to the configuration	
Extension	The DaVinci Configurator Pro automation interface was extended > by a new high-level convenience API that allows simple adding of 1:1 SWC port mappings and 1:1 data mappings > by the possibility to import module configurations	FEAT-2942 FEAT-3344

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.	FEAT-3231

Type	Description	Change ID
Extension	It is now possible to add a new DaVinci Developer workspace to an existing .dpa project from within DaVinci Configurator Pro. 	FEAT-3254
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

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General

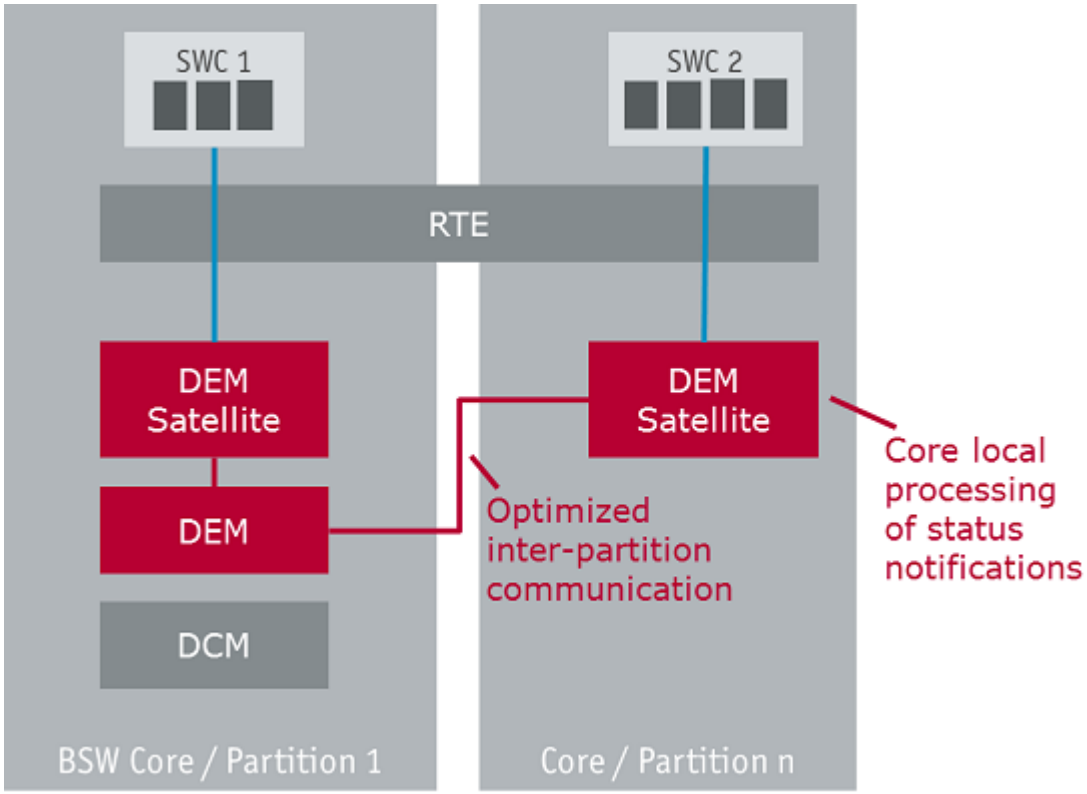
Type	Description	Change ID
Extension	The MemMap.h template now supports module specific MemMap files as defined by AR4.2	FEAT-2455

Communication

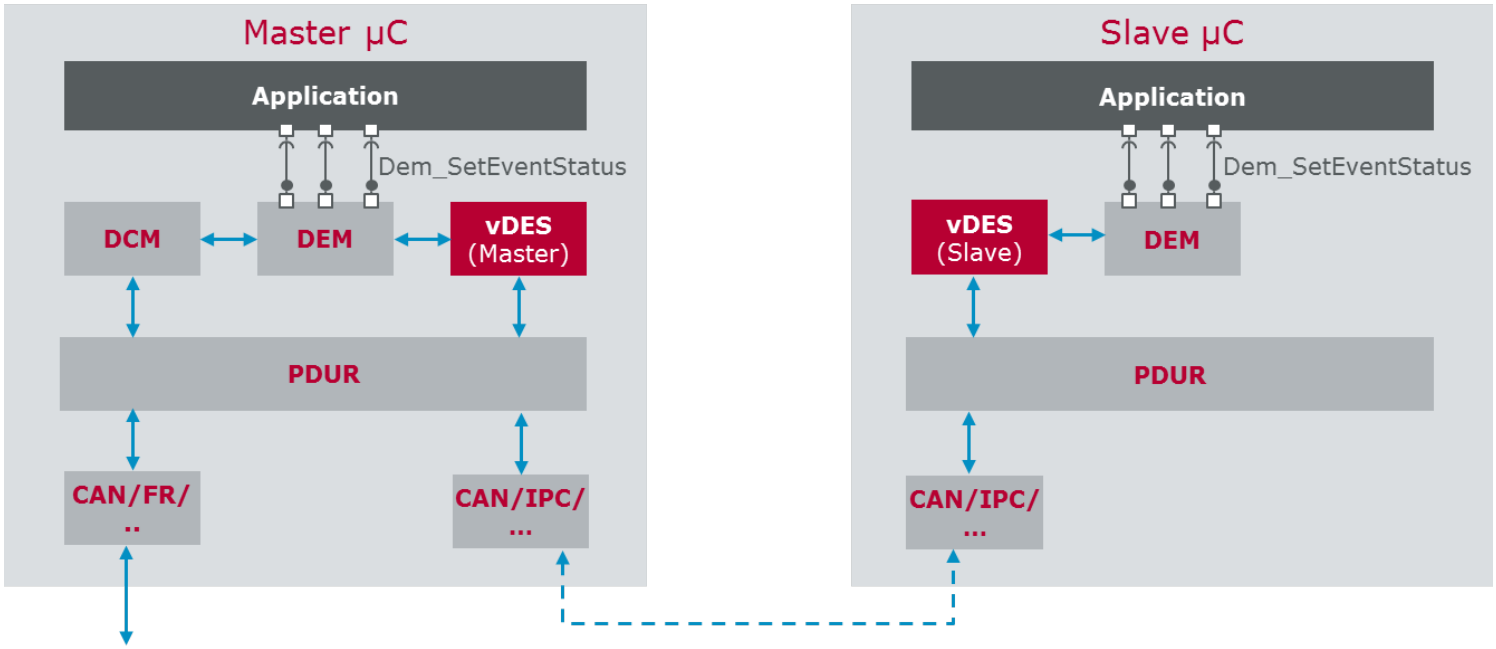
Type	Description	Change ID
Extension	The Com module now supports PDUs that are not mapped to a PDU group. In this case the PDU is now initially started and never stopped as defined by AUTOSAR.	FEAT-2726
Extension	The Com module now supports MASKED_NEW_EQUALS_X and MASKED_NEW_DIFFERS_X filters for Signal 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

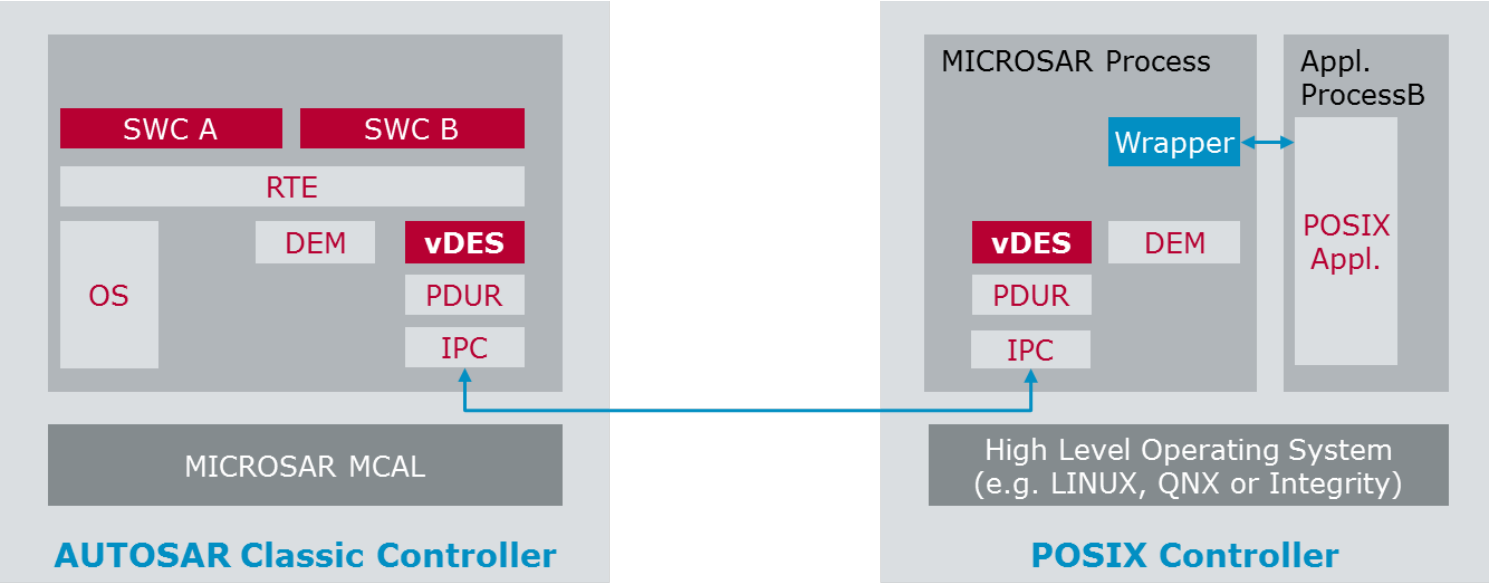
Diagnostics

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 and Dcm have been adapted to FCA specifications CS.00099 and CS.00100.	FEAT-2784
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:	

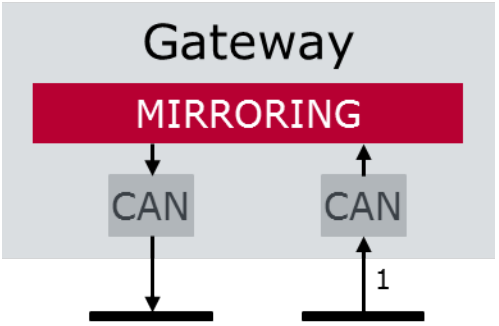
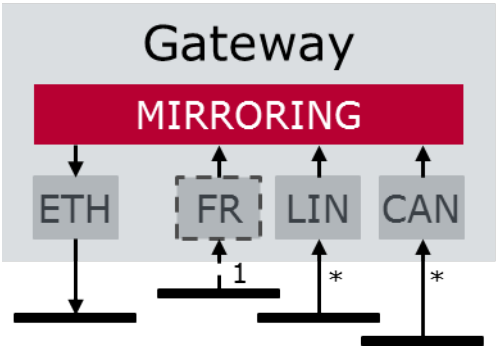
Type	Description	Change ID
		

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

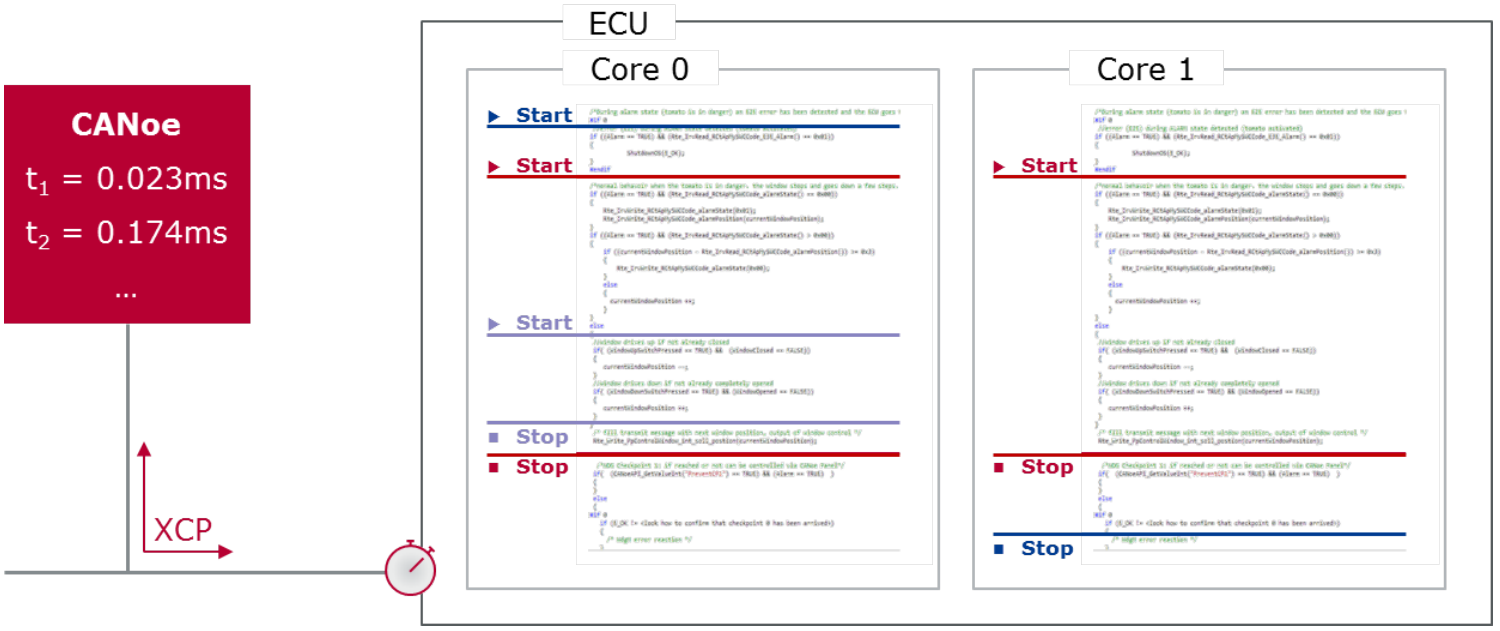
J1939

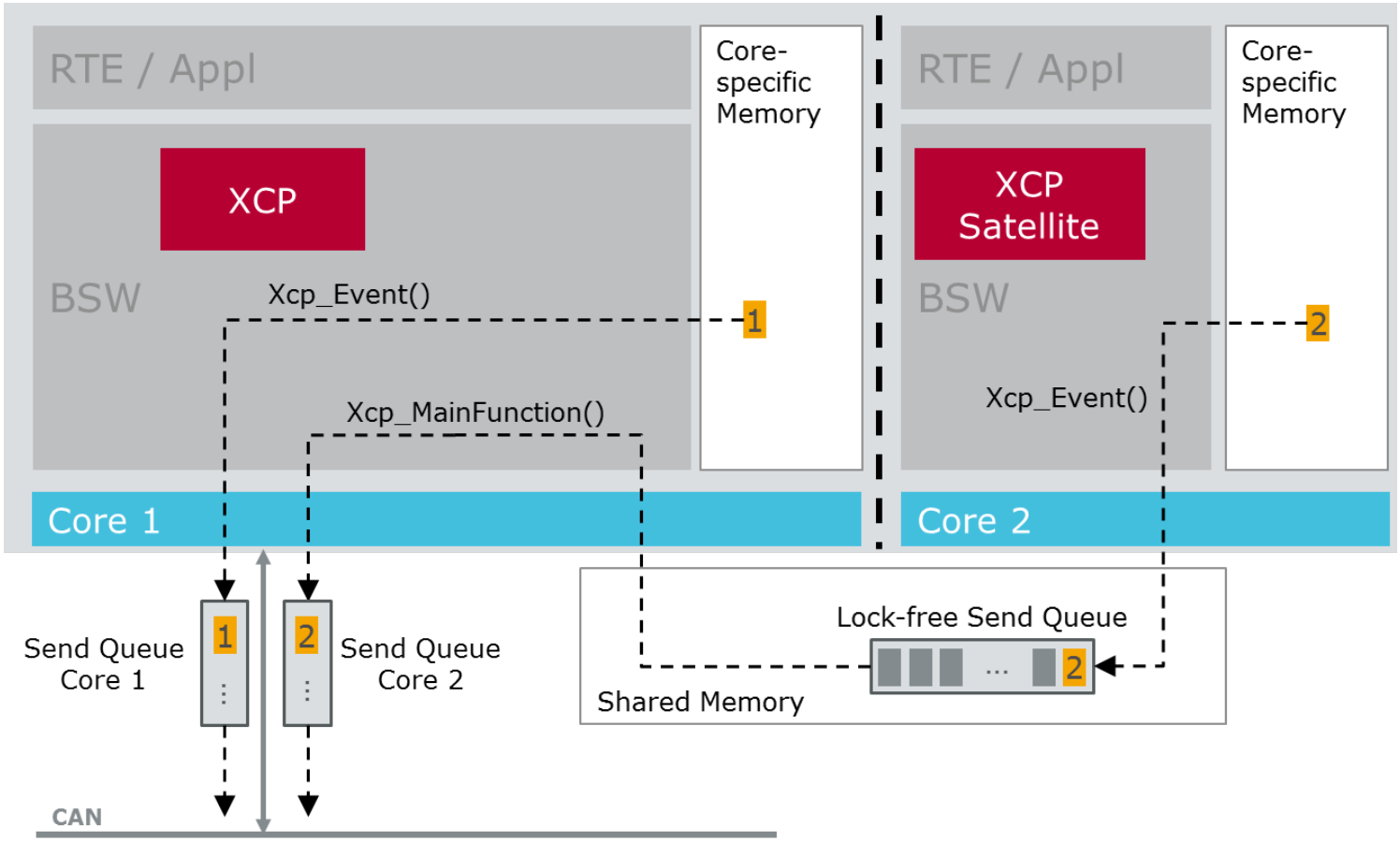
Type	Description	Change ID
Extension	The CAN stack now supports baudrate detection as it is defined by the J1939-16 standard.	FEAT-2738

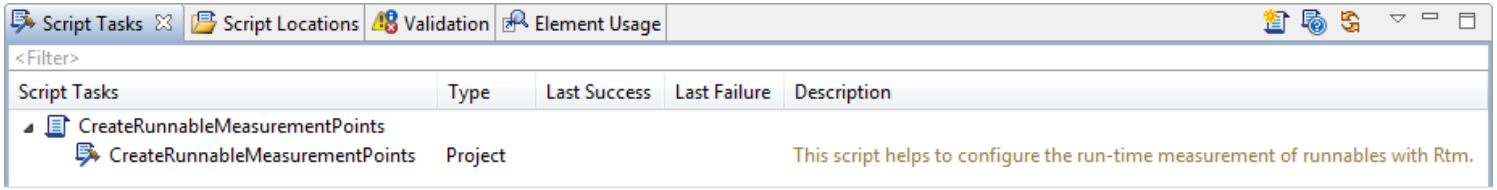
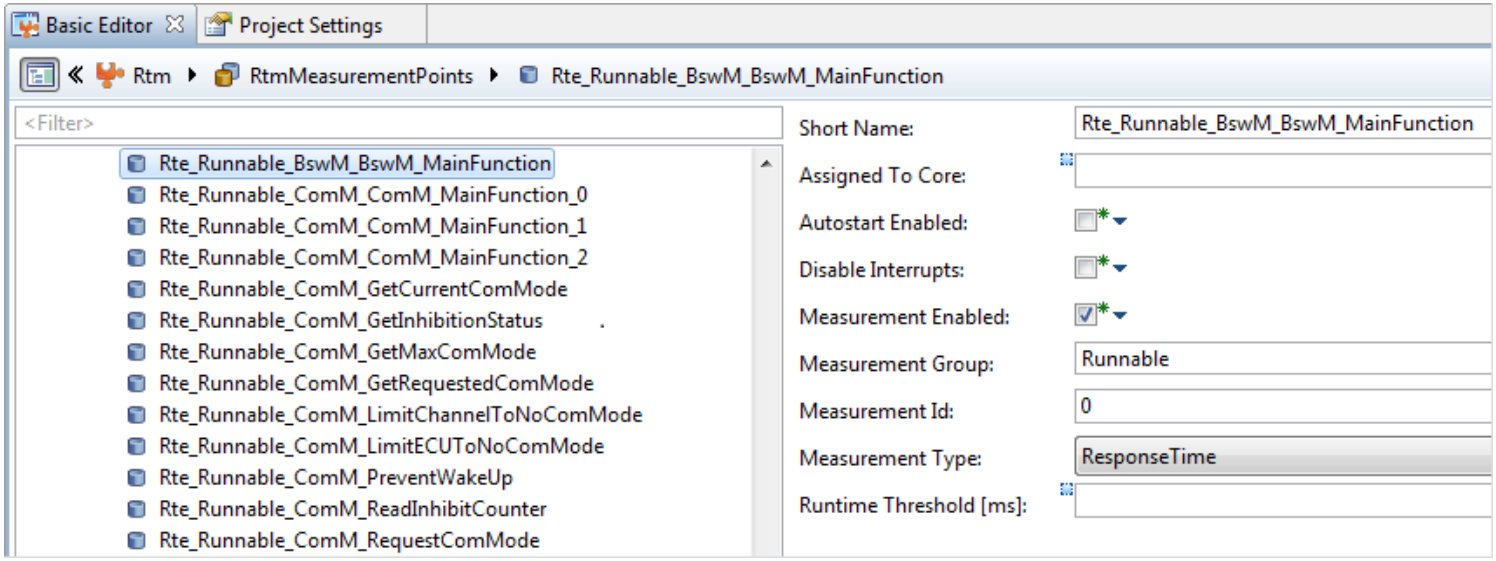
Type	Description	Change ID
	Note: This feature is available for selected CAN drivers only.	
Extension	J1939 Commanded NAME support is now provided.	FEAT-2862

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

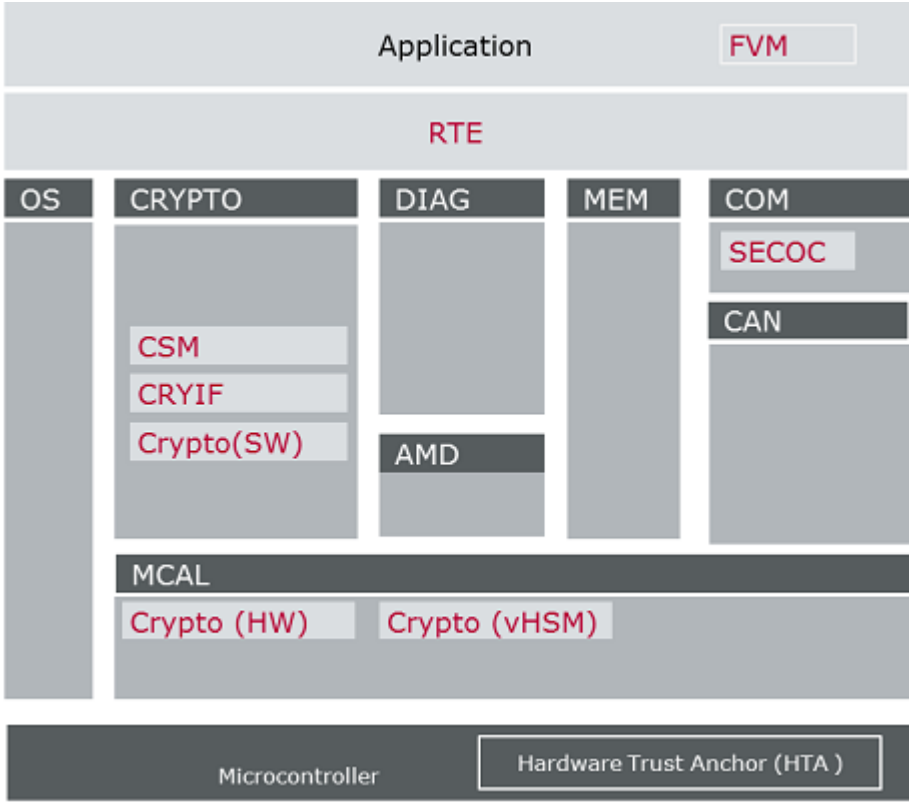
Type	Description	Change ID
	The breaking change affects projects only that shall be able to access flash data that has been written with the previous version of the Fee (Small Sector). The old Fee flash data are no longer compatible with the flash format of the new Fee. The new Fee reports existing data 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

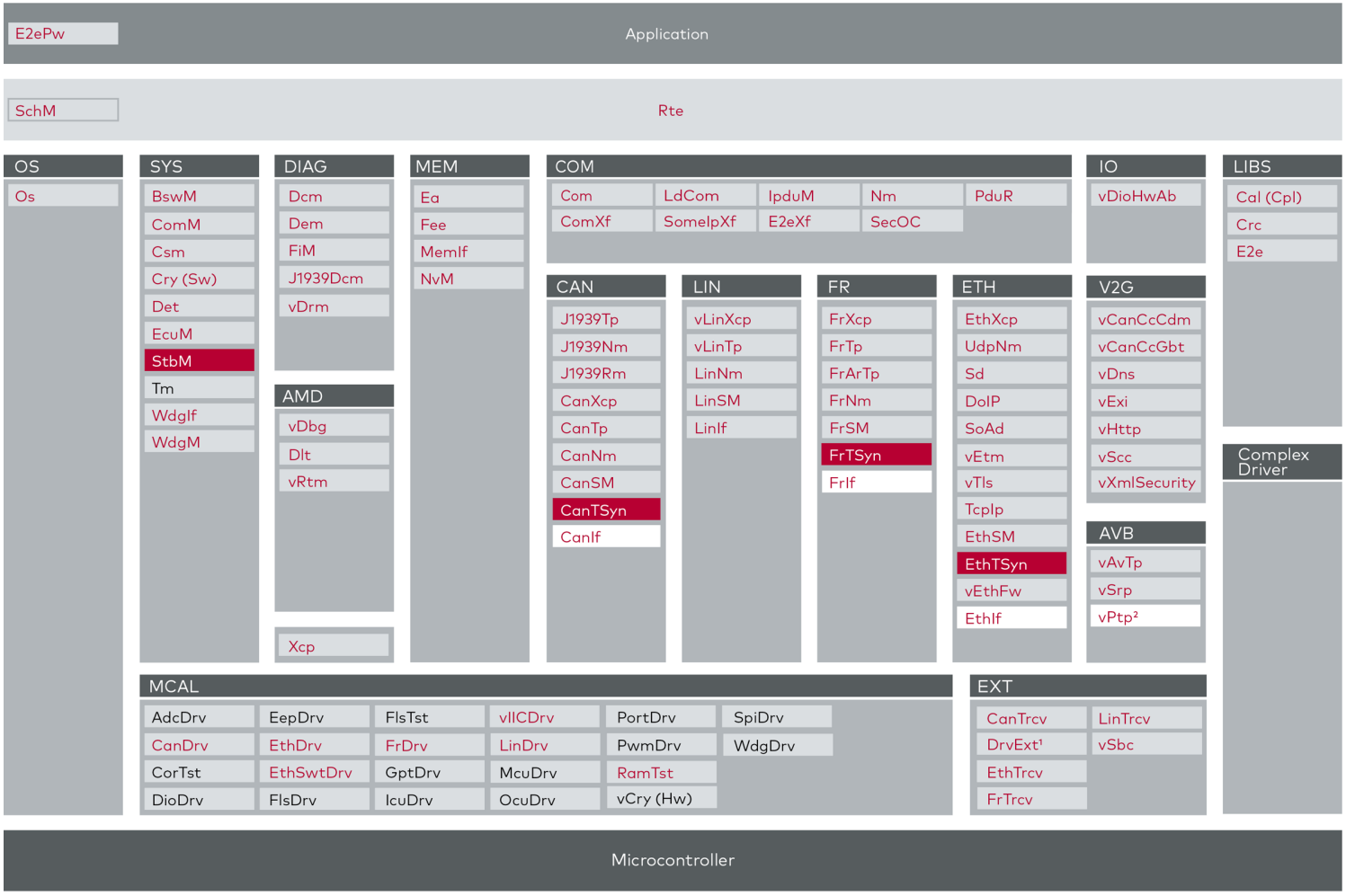
Type	Description	Change ID
Information	The AR4.3 based CRYPTO stack is now available as ASIL. The stack includes the Crypto (SW), CryIf, Csm and, SecOC. Hardware based CRYPTO drivers are available on request. Please note: Some algorithms realized by CRYPTO (SW) are not fully verified yet and will be 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

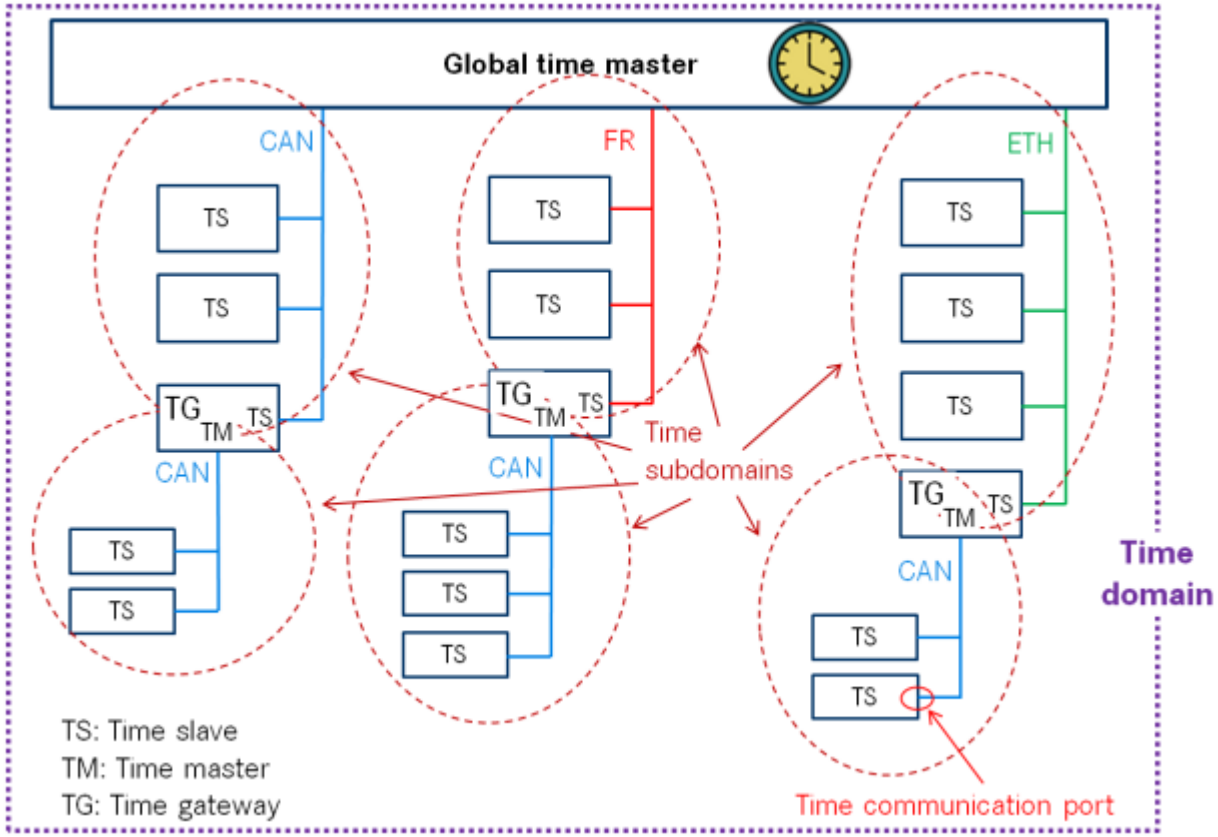
Time Synchronization

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

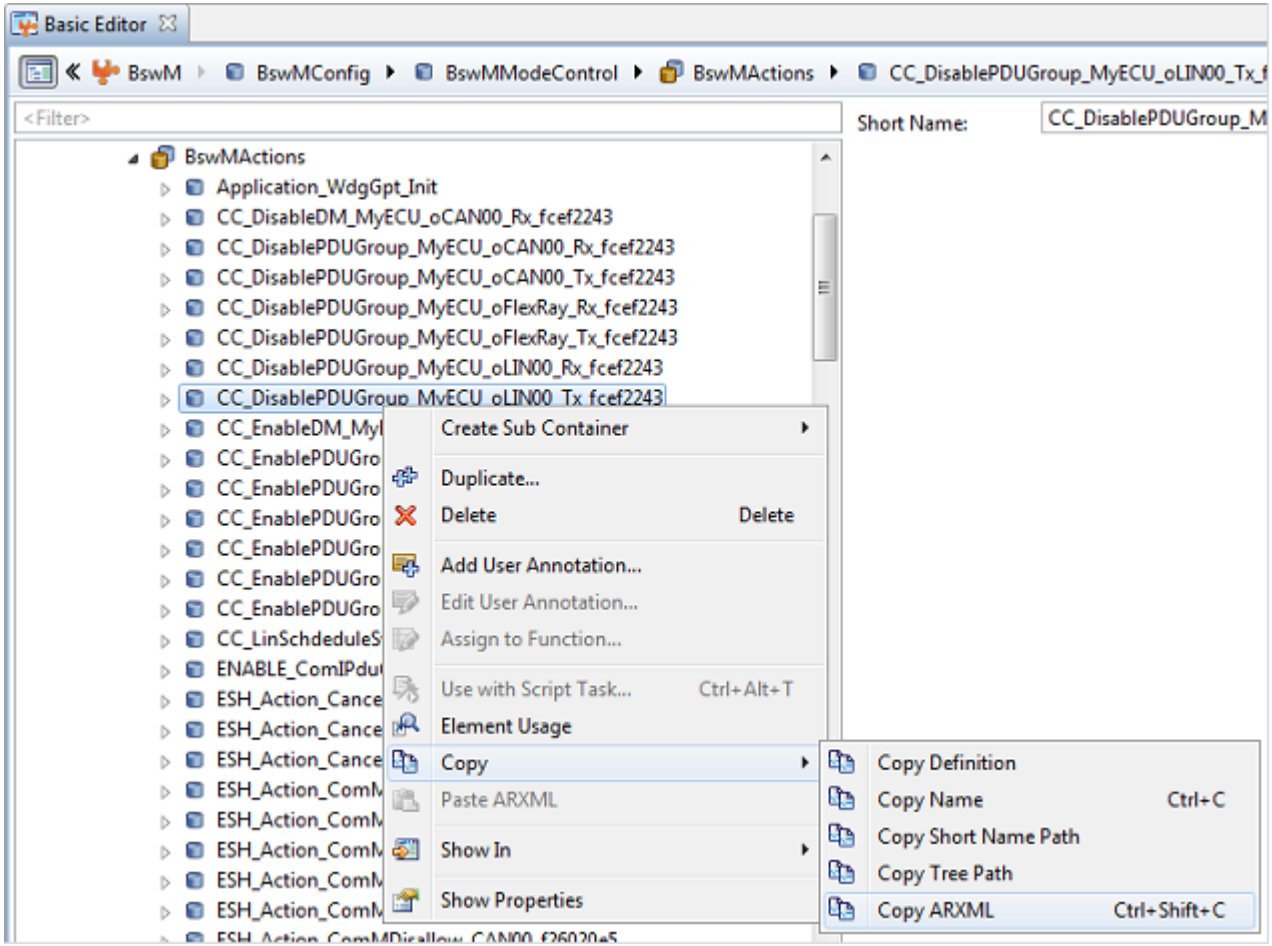
V2G

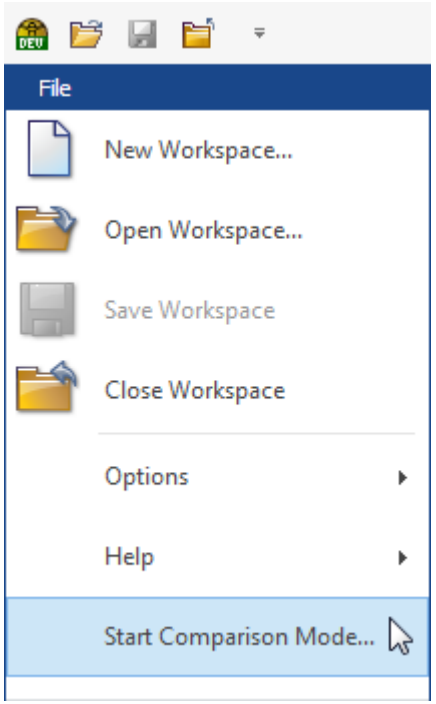
Type	Description	Change ID
Extension	The charging standard GB/T 27930 is now supported by a new MICROSAR component vCanCcGbt.	FEAT-2534
Extension	The charging standard CHAdeMO is now supported by a new MICROSAR component vCanCcCdm. Initially v1.1 of	FEAT-2752

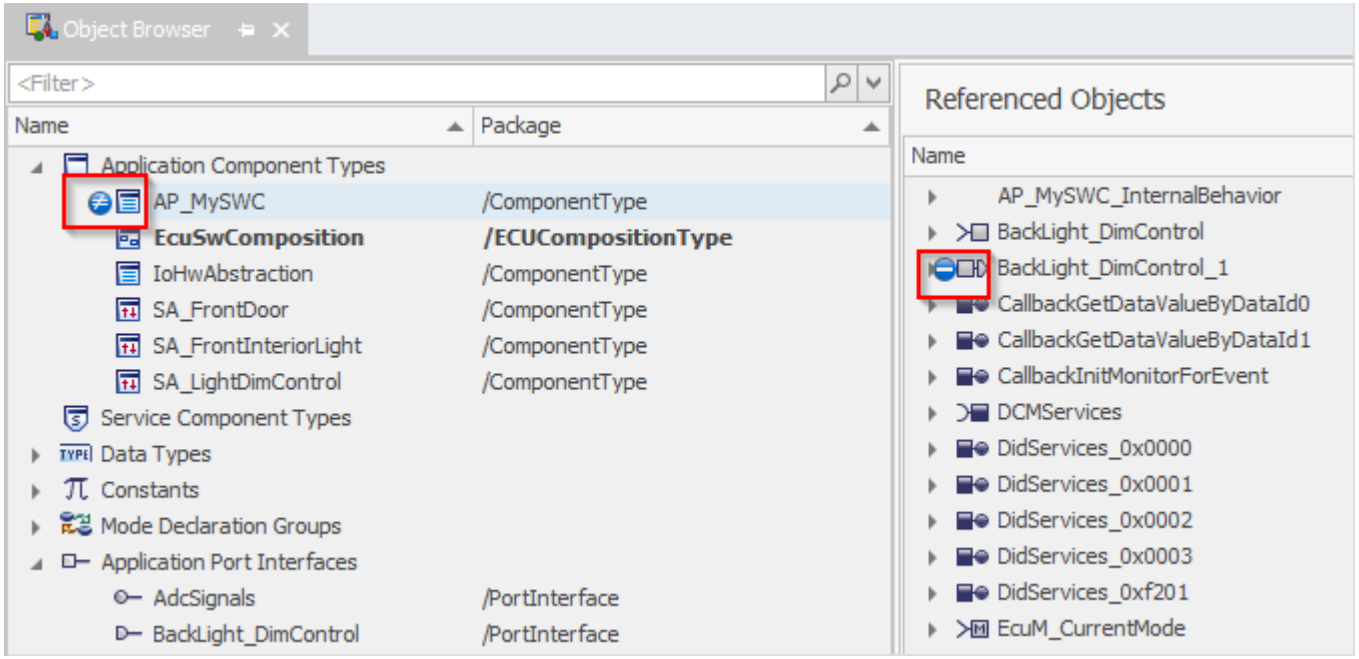
Type	Description	Change ID
	the standard has been realized.	

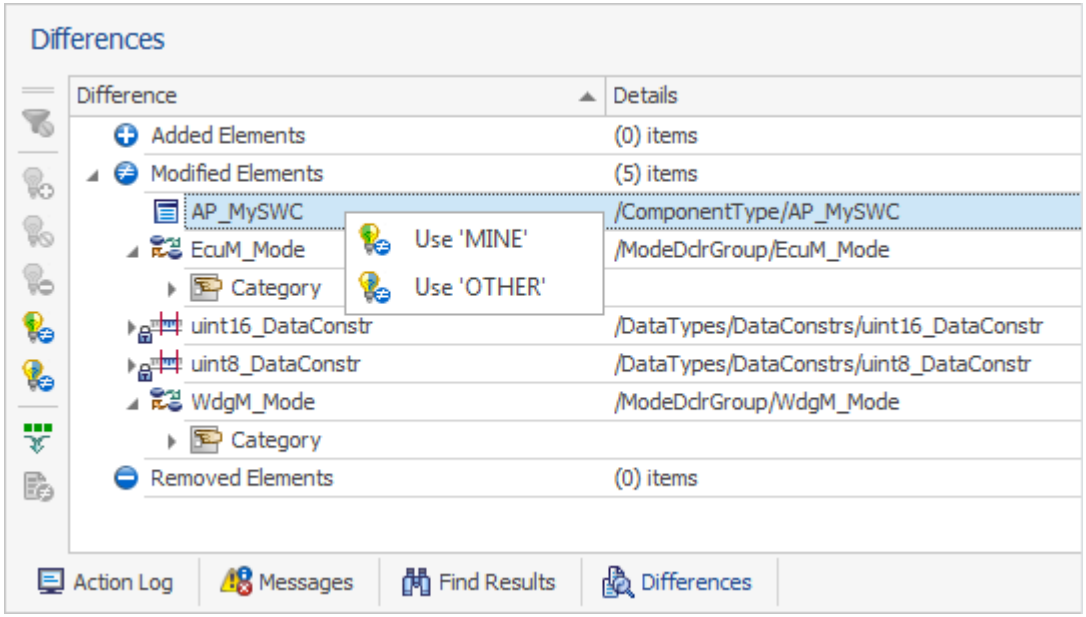
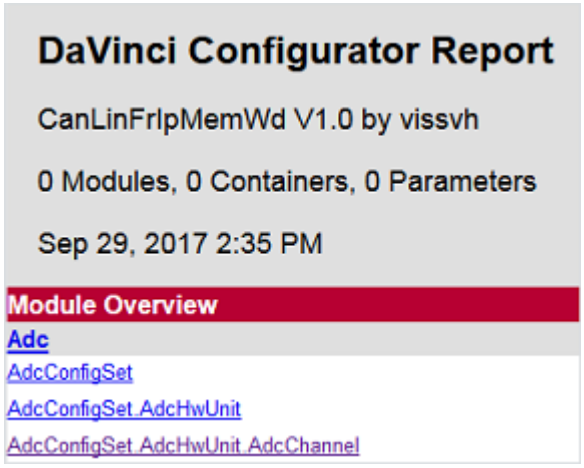
Tooling

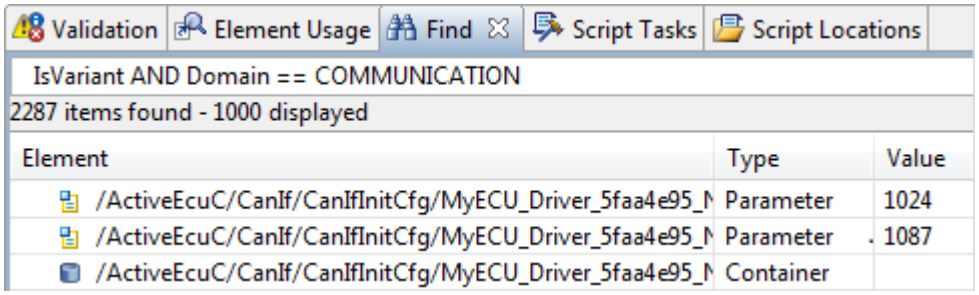
Type	Description	Change ID
Extension	DaVinci Configurator Pro supports copy and past operation of configuration data. This allows easy to use configuration data exchange e.g. between different projects or configuration trees.	FEAT-2481

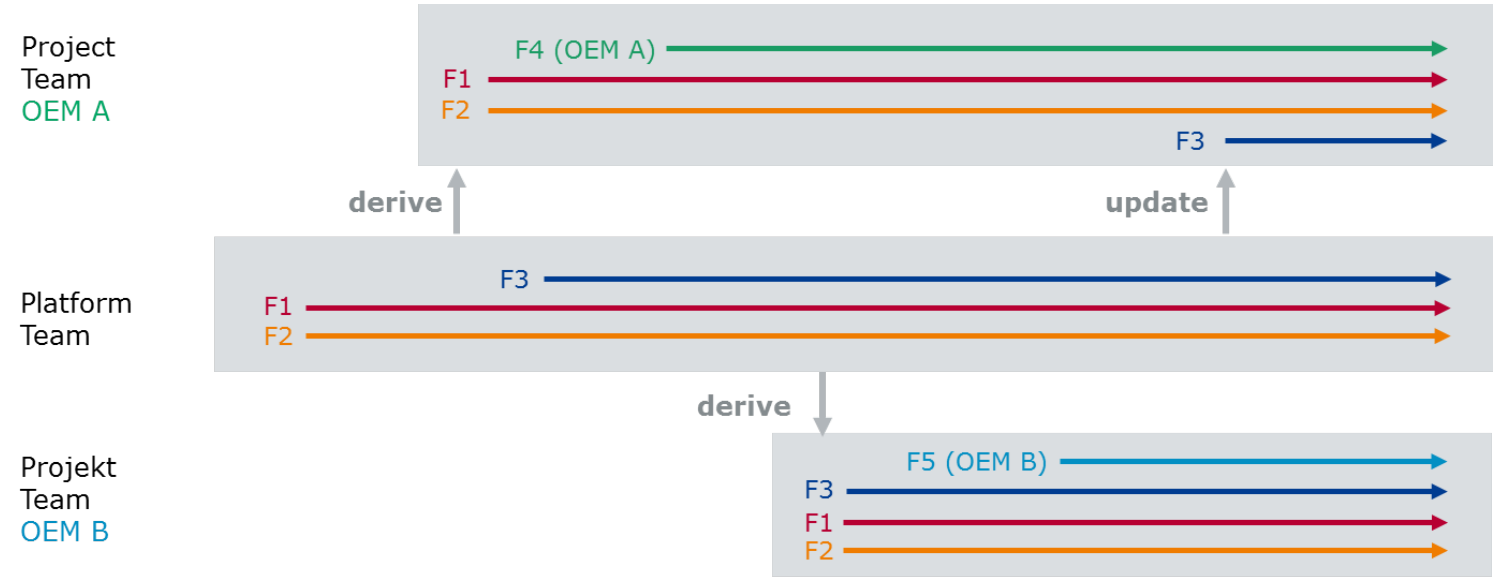
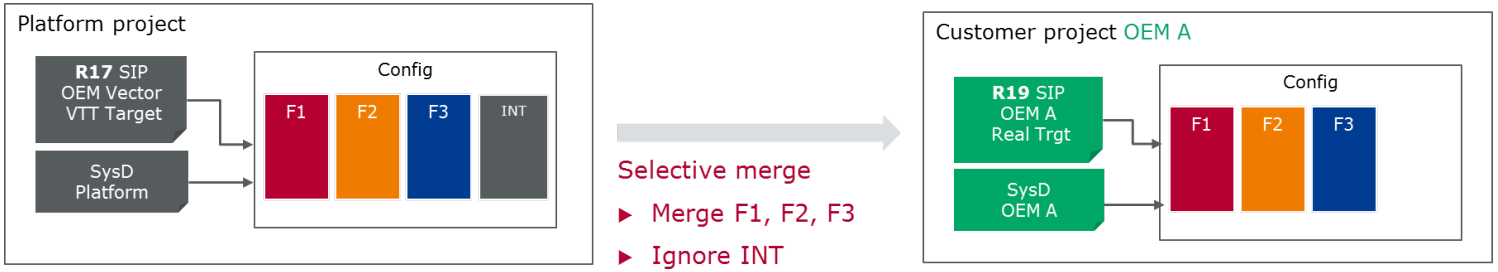
Type	Description	Change ID
	 **Additional Information** Copy and paste of configuration elements Copy grids to CSV format	

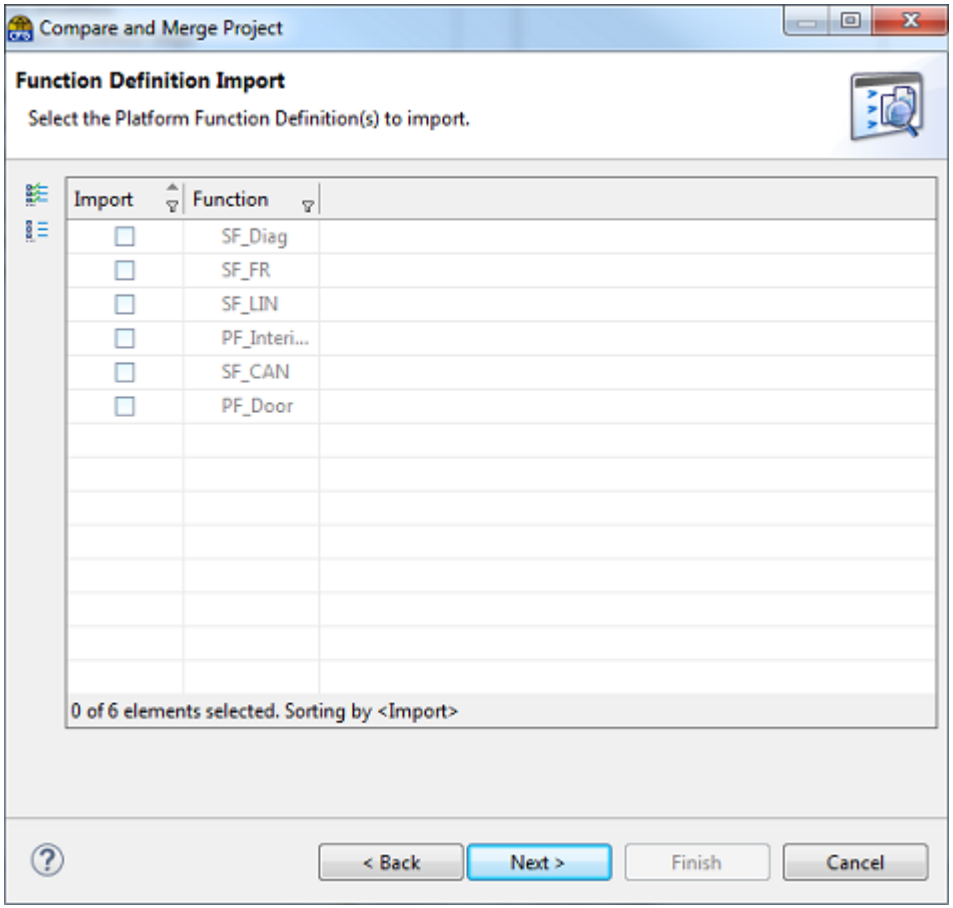
Type	Description	Change ID
Extension	DaVinci Developer has an improved diff- and merge functionality that allows selective merge decisions. The UI has been reworked to give a user experience similar to the diff- and merge functionality of DaVinci Configurator Pro. Launch the difference mode:  Highlevel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

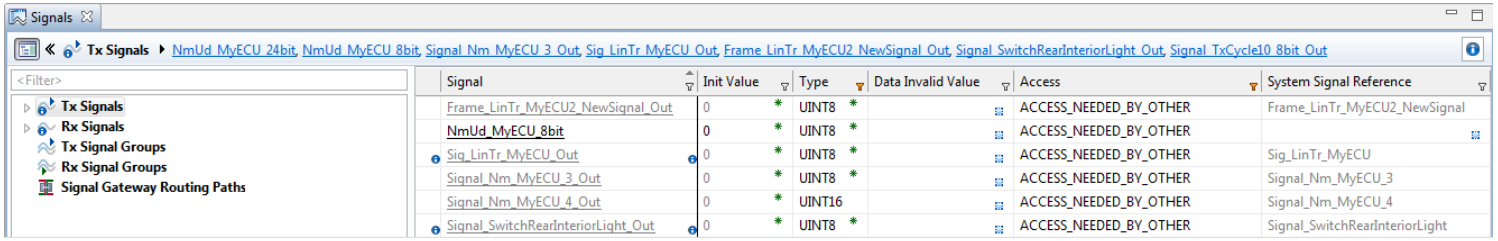
Type	Description	Change ID
	 The Differences View shows more details and allows resolving differences in the toolbar:	

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