Elektrobit

EB tresos® AutoCore Generic 8 EcuExtractUpdate.Patch documentation

Module release 0.0.151

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Legal disclaimer

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1. Overview

Welcome to the EcuExtractUpdate.Patch product release notes and documentation.

This document provides:

- Chapter 2, “EcuExtractUpdate.Patch module release notes“: details of changes and new features in the current release
- Chapter 3, “EcuExtractUpdate.Patch user's guide“: concept information and configuration instructions
- Chapter 4, “EcuExtractUpdate.Patch module references“: configuration parameters and the application programming interface

2. EcuExtractUpdate.Patch module release notes

- Module version: 0.0.151.B567464
- Supplier: Elektrobit Automotive GmbH

2.1. Change log

This chapter lists the changes between different versions.

Module version 0.0.68

2020-08-21

Module version 0.0.67

2020-06-01

Module version 0.0.52

2020-04-01

Module version 0.0.48

2020-03-12

- Inclusion of documentation.

2.2. New features

2.3. Elektrobit-specific enhancements

This module is not part of the AUTOSAR specification.

2.4. Deviations

This module is not part of the AUTOSAR specification.

2.5. Limitations

This chapter lists the limitations of the module. Refer to the module references chapter *Integration notes*, subsection *Integration requirements* for requirements on integrating this module.

- For this module no limitations are known.

2.6. Open-source software

Open-source software information is not available for this module.

3. EcuExtractUpdate.Patch user's guide

3.1. Overview

The `EcuExtractUpdate.Patch` module allows the user to apply the patches to the given ARXML file.

3.2. Aruments List

Please refer section "3.3. EcuExtractUpdater Argument details" in EcuExtractUpdateCore Userguide for arguments, which can be used for execution of tool.

3.3. Patch Details

3.3.1. PatchAddAvailabilityBitfield

Long Name : Adds availabilityBitfield to ApplicationRecordDataType
Description : Adds availabilityBitfield to ApplicationRecordDataType as the first element if the mapped ImplementationDataType has it.

3.3.2. PatchAddChecksumFromAttribute

Long Name : Creates Checksum value in the admin data of the root node
Description : Create the checksum value in the admin data of the root node as same as AUTOSAR root node.

3.3.3. PatchAddCompatibleValueSpecification

Long Name : Add Compatible ValueSpecification
Description : Converts VALUE-SPECIFICATION of the INIT-VALUE defined for the ComSpec to a compatible one if it is of the wrong type is of type. IMPLEMEMATION-DATA-Type will point to a NumericalValueSpecification APPLICATION-DATA-TYPE will point to an APPLICATION-VALUE-SPECIFICATION

3.3.4. PatchAddDiagnosticAccessPermission

Long Name : Setting access permission to RDI
Description : Some RDIs(ReadDataByIdentifier) have the AccessPermission defined only in the Routine sub-functions. In such instances DIAGNOSTIC-ACCESS-PERMISSION from RDI START subfunction is set to RDI

3.3.5. PatchAddGetStoreStateCSO

Long Name : Create missing 'GetStoreState' ClientServerOperation
Description : Patch to create a missing 'GetStoreState' CLIENT-SERVER-OPERATION in configured CLIENT-SERVER-INTERFACE.

Additional Arguments:

- **ClientServerInterfaceName** (String)

  Implementation Client Server interface name.
  Default : "ICS_VIN_Ctrl_ST3"
- **RefImplementationDatatype** (String)

  Reference to the Implementation Datatype.
  Default : "/SecurityArchitecture/DataTypes/Ssa_VinStoreStateType"

3.3.6. PatchAddInitValueForAllRPorts

Long Name : Add Init value for all RPorts
Description : Add INIT-VALUE for all the R-PORTs which are not initialized.

3.3.7. PatchAddMissingDataTypeMappingSet

Long Name : PatchAddMissingDataTypeMappingSet
Description : Adds a certain datatype mapping set reference to all Swcs and compositions

Additional Arguments:

- **DataTypeMappingSetReferencePath** (String)

  Path of the DataTypeMappingSet which needs to be referenced in the AtomicSwComponentType and CompositionSwComponentType
  Default : "/NewDataType/DataTypeMappingSet"

3.3.8. PatchAddMissingDiagnosticConnectionRefs

Long Name : Add missing diagnostic connectionRefs
Description : A diagnostic connection reference is added for every Diagnostic connection defined in the ECU Extract which are terminated locally and not part of a Gateway routing.

3.3.9. PatchAddMissingFibexElementRefs

Long Name : Adds missing FibexElementRefs
Description : Adds a FibexElementRef to the System for elements that are not yet referenced.

3.3.10. PatchAddMissingShortLabels

Long Name : Adds missing ShortLabels in Value Specification
Description : Adds missing SHORT-LABELs in ARRAY-VALUE-SPECIFICATION, RECORD-VALUE-SPECIFICATION and APPLICATION-VALUE-SPECIFICATION.

3.3.11. PatchAddMissingTpConnectionIndent

Long Name : Adding missing TP-CONNECTION-IDENT
Description : Adding missing TP-CONNECTION-IDENTs in DIAGNOSTIC-CONNECTIONs. Supported elements are FUNCTIONAL-REQUEST-REFS, FUNCTIONAL-REQUEST-REFS and RESPONSE-REF.

3.3.12. PatchAddMissingUnitRef

Long Name : Add Missing UnitRef
Description : Adds missing UNIT-REF node to SW-VALUE-CONT of APPLICATION-VALUE-SPECIFICATIONs. This is applicable only for AUTOSAR Data Types APPLICATION-PRIMITIVE-DATA-TYPE and ImplementationDataType.

3.3.13. PatchAddSafetySystemDiagnosticSession

Long Name : Adds safety system diagnostic session
Description : Adds a new diagnostic Session called SafetySystem and references it at appropriate locations.

3.3.14. PatchAddSwcImplementation

Long Name : Creates SWC Implementation
Description : Creates SWC-IMPLEMENTATION based on SWC-INTERNAL-BEHAVIOR for all SWCs that do not have one.

3.3.15. PatchAddSwcInternalBehaviour

Long Name : Creates SwcInternalBehavior.
Description : Creates SWC-INTERNAL-BEHAVIOR if not available.

3.3.16. PatchAdjustUpperLimitOfCompuScale

Long Name : Adjusts upper limit Of CompuScale to lower limit
Description : Adjusts UPPER-LIMIT of COMPU-METHOD of type TEXTTABLE same as the LOWER-LIMIT.

3.3.17. PatchBaseTypes

Long Name : Fix non-standard BaseTypes
Description : Search all non standard base types and replace them with the corresponding AUTOSAR standard type.

Additional Arguments:

- **SkipBaseTypesInArraySignals** (Boolean)

  Skips the ArrayBaseType Signal while replacing the non standard base types.
  Default : false
- **MoveCompuMethodToImplDataType** (Boolean)

  Copy compu methods to the Implementation Data Type.
  Default : true

3.3.18. PatchCanFd

Long Name : Fixes CanFD message type

Description : Creates CAN-FRAME-RX-BEHAVIOR and CAN-FRAME-TX-BEHAVIOR tag if missing and sets it to FD if DLC is greater than 8 bytes.

3.3.19. PatchCanIds

Long Name : Changes CAN-ADDRESSING-MODE-TYPE to EXTENDED
Description : Changes CAN-ADDRESSING-MODE-TYPE to EXTENDED if CAN-FRAME-TRIGGERING's IDENTIFIER is greater than 2047.

3.3.20. PatchCanTpSTmin

Long Name : Fixes CantTp STmin
Description : Converts CanTpNode.stMin from ms to s if greater than 0.127.

3.3.21. PatchCddPduTypes

Long Name : Replaces Cdd PDU Type
Description : Replaces a CDD PDU type with a configured one. e.g.- PatchCddPduTypes:ABC=UserDefinedIPdu to covert a UserDefinedPdu category ABC to UserDefinedIPdu. - PatchCddPduTypes:ABC=Delete to delete the element ABC completely.

Additional Arguments:

- **CddPduTypes** (List)
  - **CddPduType** (Record)
    - **Category** (String)

      CATEGORY string of Pdus to replace
    - **Replacement** (String)

      Replacement to be done. Supports 'UserDefinedIPdu' and 'Delete'.

3.3.22. PatchChangeEcuInstance

Long Name : Changes ECU Instance
Description : Changes the ECU-INSTANCE of Diagnostic Extract to the compatible ECU-INSTANCE of ECU Extract.

3.3.23. PatchChangePduGroups

Long Name : Change PduGroups
Description : Change PduGroup assignments of Pdus based on the configuration.

Additional Arguments:

- **Pdus** (List)

  Default values for all SdServerConfig to be used.

  - **Pdu** (Record)

    - **Name** (String)
    - **Path** (String)
    - **Mode** (Enum)
      Default : "Overwrite"
    - **PduGroups** (ListPrimitives)

      - **PduGroup** (String)
- **PduGroupPackage** (String)
  Default : "/PduGroups"

3.3.24. PatchCheckDuplicateReception

Long Name : Checking for multiple receptions
Description : Checks and reports if a signal is received on multiple channels. By additional arguments the patch can delete the duplicates from given channels.

Additional Arguments:

- **DeleteFromChannels** (List)

  list of channels where the duplicate messages should be deleted from.

  - **DeleteFromChannel** (String)

    Name of the channel to delete from.

3.3.25. PatchCheckInvalidReferences

Long Name : Checks for invalid references
Description : Searches the system for invalid references. Depending on the element and the settings the patch will try to repair the issue. Sometimes the missing item can be recreated, but most of the time the only "fix"

is to delete the referencing element. If a reference was no fixed, this is reported as none fatal Error. Impact of such error depends on the project.

Additional Arguments:

- **CreateMissingNetworkEndpoints** (Boolean)

  Creates missing NETWORK-ENDPOINTS by recalculating the IP address from the SHORT-NAME if possible.
  Default : false
- **CreateMissingSystemSignalGroups** (Boolean)

  Creates missing SYSTEM-SIGNAL-GROUP based on the I-SIGNAL-GROUP referencing it.
  Default : false
- **CreateMissingBaseTypes** (Boolean)

  Creates missing BASE-TYPE.
  Default : false
- **DeleteMissingISignals** (Boolean)

  Deletes all objects referencing a missing I-SIGNAL.
  Default : false
- **DeleteMissingPortInterfaces** (Boolean)

  Deletes all objects referencing a missing PORT-INTERFACE.
  Default : false
- **DeleteMissingPortPrototypes** (Boolean)

  Deletes all objects referencing a missing PORT-PROTOTYPE.
  Default : false
- **DeleteMissingClientServerOperations** (Boolean)

  Deletes all objects referencing a missing CLIENT-SERVER-OPERATION.
  Default : false
- **DeleteMissingVariableDataPrototypes** (Boolean)

  Deletes all objects referencing a missing VARIABLE-DATA-PROTOTYPE.
  Default : false
- **DeleteMissingConstantSpecifications** (Boolean)

  Deletes all objects referencing a missing CONSTANT-SPECIFICATION.
  Default : false
- **DeleteMissingSwComponentTypes** (Boolean)

  Deletes all objects referencing a missing SW-COMPONENT-TYPE.
  Default : false

3.3.26. PatchCleanCanIf

Long Name : Cleans up CanIf
Description : Cleans CanInterface by deleting all N-PDUS of CAN-FRAMEs that are not used in any CAN-TP-CONNECTION.

3.3.27. PatchComXfBuffers

Long Name : Updates ComXfBuffer sizes
Description : Updates TRANSFORMATION-TECHNOLOGY per message size.

3.3.28. PatchConvertsApplicationToCompositionType

Long Name : PatchConvertsApplicationToCompositionType
Description : Converts APPLICATION-SW-COMPONENT-TYPE to COMPOSITION-SW-COMPONENT-TYPE if runnables are missing.

3.3.29. PatchCreateAdaptiveRootComposition

Long Name : Create Adaptive Root Composition
Description : Creates a RootCompostion for all Executables that directly reference an ADAPTIVE-APPLICATION-SW-COMPONENT-TYPE

3.3.30. PatchCreateMissingSignalPorts

Long Name : Creates missing signal ports
Description : Creates SignalPorts for all the ISignals which do not have ISignal Port configured but are part of a SignalGroup that has a port.

Additional Arguments:

- **Mode** (Enum)

  Defines if 'All' signals or only 'GroupSignals' should be processed.
  Default : "GroupSignals"
- **ExcludedPdus** (List)

  List of Pdus that should be excluded.

- **ExcludedPdu** (Record)
  - **Name** (String)
  - **Path** (String)
- **IncludedPdus** (List)

  List of Pdus that should be included. If any entry on the list,
  - **IncludedPdu** (Record)
    - **Name** (String)
    - **Path** (String)

3.3.31. PatchCreateUniqueSystemSignal

Long Name : Creates Unique SystemSignal
Description : Creates a unique SystemSignal/SystemSignalGroup for each ISignal/ISignalGroup to allow individual handling by the ATOMIC-SW-COMPONENT-TYPE.

3.3.32. PatchDefaults

Long Name : Configure default values
Description : Patch to configure default values of DATA-CONSTR-RULES, NONQUEUED-SENDER-COM-SPEC, NONQUEUED-RECEIVER-COM-SPEC, SOMEIP-TRANSFORMATION-I-SIGNAL-PROPS-CONDITIONAL, APPLICATION-VALUE-SPECIFICATION, APPLICATION-ENDPOINT. For DATA-CONSTR-RULE containing PHYSCONSTRS, CONSTR-LEVEL node is added. For NONQUEUED-RECEIVER-COM-SPEC default features HANDLE-OUT-OF-RANGE, HANDLE-NEVER-RECEIVED and HANDLE-TIMEOUT-TYPE are set. For NONQUEUED-RECEIVER-COM-SPEC feature HANDLE-OUT-OF-RANGE is set. For SOMEIP-TRANSFORMATION-I-SIGNAL-PROPS MESSAGE-TYPE Enum value is set to REQUEST_NO_RETURN. For APPLICATION-VALUE-SPECIFICATION CATEGORY is set to VALUE.

Additional Arguments:

- **SdServerConfig** (Record)

  Default values for all SdServerConfig to be used.
  - **InitialDelayMaxValue** (Double)
    Default : 0.1
  - **InitialDelayMinValue** (Double)
    Default : 0.01

- **InitialRepetitionsBaseDelay** (Double)
  Default : 0.3
- **InitialRepetitionsMax** (Integer)
  Default : 3
- **OfferCyclicDelay** (Double)
  Default : 2.0
- **RequestResponseDelayMax** (Double)
  Default : 1.0
- **RequestResponseDelayMin** (Double)
  Default : 0.0
- **ServerServiceMajorVersion** (Long)
  Default : 1L
- **ServerServiceMinorVersion** (Long)
  Default : 0L
- **Ttl** (Long)
  Default : 6L

3.3.33. PatchDeleteAdminData

Long Name : Deletes Admin-Data
Description : Deletes all ADMIN-DATA.

3.3.34. PatchDeleteAllPncMappings

Long Name : PatchDeleteAllPncMappings
Description : Deletes all the PNC-MAPPINGS and unset PNC-VECTOR-LENGTH, PNC-VECTOR-OFFSET, PNC-FILTER-DATA-MASK.

3.3.35. PatchDeleteAllUuids

Long Name : Deletes UUIDs
Description : Deletes all UUIDs of IDENTIFIABLE elements.

3.3.36. PatchDeleteChannels

Long Name : Deletes Channels
Description : Deletes PHYSICAL-CHANNEL based on given arguments.

Additional Arguments:

- **DeleteEmpty** (Boolean)

  Delete all empty channels if set to true.
  Default : false
- **Channels** (List)

  List of channels to delete. Can use either name or path

  - **Channel** (Record)

    - **Name** (String)
    - **Path** (String)

3.3.37. PatchDeleteDataMappings

Long Name : Deletes Data Mappings
Description : Deletes all DATA-MAPPING.

3.3.38. PatchDeleteDescription

Long Name : Deletes Descriptions
Description : Deletes all the descriptions.

3.3.39. PatchDeleteDuplicateDelegationSwConnectors

Long Name : Deletes duplicate delegation SwConnectors
Description : Deletes the duplicate DELEGATION-SW-CONNECTOR.

3.3.40. PatchDeleteElements

Long Name : Delete selected elements
Description : delete all elements that match type and path pattern.

Additional Arguments:

- **Elements** (List)

List of elements that should be deleted. Only elements that match type and path will be deleted.

- **Element** (Record)

  Describes an element to be deleted.

  - **Type** (String)

    Defines the element type to be deleted. Both java class and arxml tag names can be used.
    Default : "ANY"
  - **Path** (String)

    Path of the elements to be used. Supports regular expressions.
- **Verbose** (Boolean)

  If set to true, all recursively deleted items will be messaged as well.
  Default : false

3.3.41. PatchDeleteEmptyMappings

Long Name : Deletes Empty Mappings
Description : Deletes all SWC-TO-ECU-MAPPING that do not contain any mappings.

3.3.42. PatchDeleteInvalidComponentPrototypes

Long Name : Deletes invalid ComponnentPrototype
Description : Deletes all SW-COMPONENT-PROTOTYPE from the COMPOSITION-SW-COMPONENT-TYPE, that have an invalid type reference.

3.3.43. PatchDeleteInvalidConnectors

Long Name : Deletes invalid Connectors
Description : Deletes all connectors of type DELEGATION-SW-CONNECTOR and ASSEMBLY-SW-CONNECTOR that have missing references.

3.3.44. PatchDeleteInvalidElements

Long Name : Delete Invalid Elements

Description : Delete all invalid elements that are missing critical mandatory parameters and can not be repaired by any other logic. If deletion is disabled for a certain element, it will give an Error message instead indicating that the element has to be handled by the user.

Additional Arguments:

- **Default** (Boolean)

  Enable State for all Elements that are not explicitly enabled/disabled.
  Default : true
- **EmptyDataMappings** (Boolean)

  Deletes all kinds of DataMappings such as SENDER-RECEIVER-TO-SIGNAL-MAPPING, CLIENT-SERVER-TO-SIGNAL-MAPPING, SENDER-RECEIVER-TO-SIGNAL-GROUP-MAPPING, ...

3.3.45. PatchDeleteInvalidSignals

Long Name : Deletes invalid Signals
Description : Deletes all signals that are not mapped correctly. e.g. byte array starting in middle of a byte". If I-SIGNAL-TYPE-ENUM is PRIMITIVE then signals whose length is greater than 64 are deleted and for signals whose length is greater than 32 and whose mapping start position is in middle of a byte are also deleted.If I-SIGNAL-TYPE-ENUM is ARRAY then signals which are not of byte length are deleted and signals whose mapping start position is in middle of a byte are also deleted.

3.3.46. PatchDeleteLongNames

Long Name : Deletes LongNames
Description : Deletes all LONG-NAME elements.

3.3.47. PatchDeleteNonDiagnostic

Long Name : Deletes non-diagnostic elements
Description : Deletes all communication elements that are not diagnostic related.

3.3.48. PatchDeleteOuterE2ESenderVariablePrototypes

Long Name : Deletes outer E2E senderVariablePrototypes
Description : Deletes all but the most inner SENDER-IREF of the E2E Variable Prototypes.

3.3.49. PatchDeletePayloadPduSocketMappings

Long Name : PatchDeletePayloadPduSocketMappings
Description : Removes the SocketConnectionIpduIdentifier of all container payload pdu triggerings.
Rational : Mapping of both, container and payload, would lead to a duplicate header id error in SoAd configuration.

3.3.50. PatchDeletePdus

Long Name : Deletes PDUs
Description : Deletes PDUs based on below arguments.

Additional Arguments:

- **Pdus** (List)
  - **Pdu** (Record)
    - **Name** (String)

      Name of a Pdu. Example:PatchDeletePdus:Name=PDU_Functional
    - **Path** (String)

      Path of a Pdu.Example:PatchDeletePdus:Path=/PDU/PDU_Functional

3.3.51. PatchDeletesInvalidSocketAddress

Long Name : PatchDeletesInvalidSocketAddress
Description : Deletes all the SOCKET-CONNECTION-BUNDLE having invalid SERVER-PORT-REF

3.3.52. PatchDeleteUnusedElements

Long Name : Delete unused elements
Description : Deletes unused/unreferenced elements based on the given arguments

Additional Arguments:

- **Types** (List)

  object types to delete. Takes Java class names. If non is given it defaults to PortInterface and AutosarDataType

- **Type** (String)

3.3.53. PatchDeleteUnusedNPdus

Long Name : Deletes Unused N-PDUs
Description : Delete Unused N-PDUs

3.3.54. PatchDeleteUnusedSignals

Long Name : Deletes unused Signals
Description : Deletes all signals that do not have a signal port and therefore will not be imported anyway.

3.3.55. PatchDeleteZeroTimouts

Long Name : Deletes zero timeouts
Description : Deletes all timeouts of the value 0

3.3.56. PatchDiagnosticArrayElements

Long Name : Changes uint8_ascii BASE-TYPE-REF
Description : Changes BASE-TYPE-REF uint8_ascii to uint8_opaq for a DIAGNOSTIC-ROUTINE whose ARRAY-SIZE-SEMANTICS is VARIABLE-SIZE.

3.3.57. PatchDoIp

Long Name : Pacth DoIp
Description : Checks DoIp Connections. Create individual Sockets for Tcp connections. Create explicit Multicast connection.

Additional Arguments:

- **SplitClientSocketForBundles** (Boolean)
  Default : false
- **AddExplicitMulticast** (Boolean)

Default : true

3.3.58. PatchDuplicatePdus

Long Name : Deletes duplicate Ethernet PDUs
Description : Deletes the 2nd instance of EthernetPdus that are assigned twice (in a connection as well as in connection bundle)

3.3.59. PatchDuplicateShortNames

Long Name : Deletes duplicate ShortNames
Description : Searches duplicate short names and fixes it by renaming the short name and references. Automatic fixing only works for special use cases!

3.3.60. PatchDynamicArraySizeProfiles

Long Name : Adds missing DynamicArraySizeProfiles
Description : Adds missing DYNAMIC-ARRAY-SIZE-PROFILE with a default.

Additional Arguments:

- **DynamiArraySizeProfile** (String)

  Name of DynamicArraySizeProfiles to be used
  Default : "VSA_LINEAR"

3.3.61. PatchDynamicServicePorts

Long Name : Set Remote Tcp service ports to dynamic assignment
Description : Set all remote Tcp service ports to dynamic assignment.

3.3.62. PatchDynamicTcpClientPort

Long Name : Patch Dynamic Tcp Client Port
Description : Checks Tcp Client Connections. Create individual Sockets for Tcp connections.

Additional Arguments:

- **SplitClientSocketForBundles** (Boolean)
  Default : true

3.3.63. PatchE2EPduGaps

Long Name : Adds E2E PDU Gap
Description : Adds dummy signals into E2E PDUs to avoid problems with unused bits

3.3.64. PatchE2EPeriodic

Long Name : E2E PDU Periodic
Description : Changes all E2E PDUs to DIRECT as PERIODIC is not allowed for these

3.3.65. PatchE2EPWtoTransformer

Long Name : Convert E2EPW to Transformer
Description : Changes all protection wrapper PDUs to use transformers instead. Also makes all SignalGroups use ComXf.

Additional Arguments:

- **ConversionMode** (Enum)
  Default : "legacy"
- **TruncateDataLength** (Boolean)

  if set to true, the DataLength will be truncated to the PduLength if it is longer.
  Default : true
- **OverwriteValuesPathIn** (Path)

  Input file path.
- **OverwriteValuesPathOut** (Path)

  Output file path.
- **UnprotectedToComXf** (Boolean)

  Defines if also SignalGroups without E2E should use ComXf
  Default : false
- **DefaultProtectionName** (String)

Default : "E2ETransformation_P02"
- **MaxDeltaCounter** (Long)
  Default : 2L
- **MaxErrorStateInit** (Long)
  Default : 0L
- **MaxErrorStateInvalid** (Long)
  Default : 0L
- **MaxErrorStateValid** (Long)
  Default : 0L
- **ProfileName** (String)
  Default : "PROFILE_02"
- **PreR4_2** (Boolean)
  Default : true
- **MaxNoNewOrRepeatedData** (Long)
  Default : 14L
- **MinOkStateInit** (Long)
  Default : 1L
- **MinOkStateInvalid** (Long)
  Default : 1L
- **MinOkStateValid** (Long)
  Default : 1L
- **Offset** (Long)
  Default : 0L
- **SyncCounterInit** (Long)
  Default : 0L
- **UpperHeaderBitsToShift** (Long)
  Default : 0L
- **WindowSize** (Long)
  Default : 1L
- **Protections** (List)
  - **Protection** (Record)
    - **ProtectionName** (String)
    - **MaxDeltaCounter** (Long)
      Default : 2L
    - **MaxErrorStateInit** (Long)
      Default : 0L
    - **MaxErrorStateInvalid** (Long)
      Default : 0L
    - **MaxErrorStateValid** (Long)
      Default : 0L
    - **WindowSize** (Long)

Default : 1L

- **SyncCounterInit** (Long)
  Default : 0L

3.3.66. PatchE2ESignalGroups

Long Name : E2ESignalGroups patch
Description : Ensures that all Signals of an E2E protection are received, as SignalGroup degredation is not allowed for E2E.

3.3.67. PatchE2ETransformerSignalGroups

Long Name : Correct Signal-Group size
Description : Adds a dummy signal at the beginning and end of an E2E protected PDU to ensure that the SignalGroup size is correct.

Additional Arguments:

- **AddStartDummy** (Boolean)

  Set "True" to add dummy signal. Example:PatchE2ETransformerSignalGroups:AddStartDummy
  Default : false

3.3.68. PatchForImplementationDataTypes

Long Name : Deletes invalid Implementation DataTypes
Description : Deletes IMPLEMENTATION-DATA-TYPE without SW-DATA-DEF-PROPS

Additional Arguments:

- **ARPackageName** (String)
  Default : "NewDataType"
- **DataTypeMappingSetName** (String)
  Default : "DataTypeMappingSet"

3.3.69. PatchGenerateTestSwc

Long Name : Generates Test SWC

Description : Generates a APPLICATION-SW-COMPONENT-TYPE to receive and send all SYSTEM-SIGNAL processed by the ECU. Also exports interfaces for all Signals.

Additional Arguments:

- **TestSwcName** (String)

  SWC Name (By default TestSwcName is TestSwc).
  Example:PatchGenerateTestSwc:TestSwcName=Fcu
  Default : "TestSwc"
- **IgnoredSignals** (ListPrimitives)
- **Ecus** (List)
  - **Ecu** (Record)
    - **Path** (String)

      autosar path to the Ecu instance to generate a TestSwc for.

3.3.70. PatchIgnoreRxTransferProperties

Long Name : Ignores RxTransfer properties
Description : Deletes transfer properties from all Pdus that are only received

3.3.71. PatchImplementationDataTypes

Long Name : Deletes invalid Implementation Data-types
Description : Deletes IMPLEMENTATION-DATA-TYPE if it dose not contain SW-DATA-DEF-PROPS.

3.3.72. PatchIncrementEventFailureCycleCounterThreshold

Long Name : Increments EventFailureCycleCounterThreshold
Description : Increments EVENT-FAILURE-CYCLE-COUNTER-THRESHOLD by 1 if its value is less than 254.

3.3.73. PatchIpAddressAssignment

Long Name : Missing IP Address Assignment

Description : Adds references to all IP addresses to the ETHERNET-COMMUNICATION-CONNECTOR, by adding the missing NETWORK-ENDPOINTS

3.3.74. PatchLinTpTimings

Long Name : Change LinTp timings
Description : Changes LinTp timings to configured values

Additional Arguments:

- **Channels** (List)
  - **Channel** (Record)
    - **Path** (RegularExpression)

      Path of the channel the changes should be applied to. Can be a regular expression to match multiple channels.
      Default : ".*"
    - **P2Max** (Double)
    - **P2Timing** (Double)

3.3.75. PatchMakeCompuLiteralsUnique

Long Name : Changes the CompuLiteral value for uniqueness
Description : Renames the COMPU-CONST-TEXT-CONTENT value to make it unique.

3.3.76. PatchNmConfig

Long Name : Fixes NM configuration
Description : Fixes various NM properties. Changes NM-CBV-POSITION and NM-NID-POSITION.

Additional Arguments:

- **CbvPosition** (Integer)

  Control bit vector position. -1 means disabled.
- **NodeIdPosition** (Integer)

  Node id position. -1 means disabled.

3.3.77. PatchNmPdus

Long Name : Recaculates NmPdus
Description : Adds a NM-PDU Rx/Tx Pdu based on the information of Tx/Rx if it is missing

3.3.78. PatchNmPncIds

Long Name : Fixes NM PncIds
Description : Corrects the PNC-IDENTIFIER positions from AUTOSAR4.0 to AUTOSAR4.2 by adding the position offset

3.3.79. PatchNmUserdata

Long Name : Invalid NM user-data signals
Description : Searches NM user-data signals that are not allowed as user data. E.g. in NM-CBV-POSITION or NM-NID-POSITION. Then remove the SignalPort to prevent import to ECUC.

3.3.80. PatchObfuscateNames

Long Name : Obfuscate Names
Description : Obfuscate Names in an arxml and also deletes all Descriptions and LongNames.

Additional Arguments:

- **Excludes** (List)

  Defines elements that shall be excluded from the obfuscating. Types can be Arxml tag names, but also base types. e.g. 'PortPrototype' will match 'P-PORT-PROTOTYPE' and 'R-PORT-PROTOTYPE'

  - **Exclude** (Record)

    - **Name** (String)
      Default : ".*"
    - **Type** (String)
      Default : "ANY"
- **Includes** (List)

  - **Include** (Record)

    - **Name** (String)

Default : ".*"

- **Type** (String)
  Default : "ANY"

3.3.81. PatchPncUsage

Long Name : PNC usage
Description : Try to fix the NM-PNC-PARTICIPATION usage if PNC-VECTOR-LENGTH is zero.

3.3.82. PatchPortAutoConnect

Long Name : PatchPortAutoConnect
Description : PatchPortAutoConnect.

Additional Arguments:

- **Mappings** (List)
  - **Mapping** (Record)
    - **RPortPattern** (RegularExpression)
    - **RReplace** (String)
    - **PPortPattern** (RegularExpression)
    - **PReplace** (String)

3.3.83. PatchRenameElement

Long Name : Rename Elements
Description : Renames element using regular expressions.

Additional Arguments:

- **RenamePatterns** (List)
  - **RenamePattern** (Record)
    - **Type** (String)

      Type of element the replacement should be done for. Can be the arxml tag name or JavaClass name and is case insensitive. e.g. 'AR-PACKAGE', 'ARPACKAGE', 'ARPackage' or 'arpackage' will all work the same.

Default : "ANY"

- **RegEx** (RegularExpression)

  Regular expression to match on.

- **Replace** (String)

  String to replace with. Regular expression group replacement can be used. $1 will be replaced with match group 1 and so on.

- **Mode** (Enum)

  Defines to what the regular expression is applied. If set to "Path", 'Packageable' elements can also be moved to other packages.
  Default : "Name"

3.3.84. PatchSeperateElements

Long Name : Seperate selected elements
Description : copy or move selected elements to one or more new arxmls. Only supports Packageable elements.

Additional Arguments:

- **Arxmls** (List)

  List of arxmls to copy/move elements into

  - **Arxml** (Record)

    - **Path** (Path)
    - **Mode** (Enum)
      Default : "copy"
    - **Elements** (List)

      - **Element** (Record)

        - **Type** (String)
          Default : "ARObject"
        - **Path** (String)

  - **Arxml** (Record)

    - **Path** (Path)
    - **Mode** (Enum)
      Default : "copy"
    - **Elements** (List)

      - **Element** (Record)

- **Type** (String)
  Default : "ARObject"
- **Path** (String)

3.3.85. PatchServiceFanout

Long Name : Support Tx Fanout of Service Event PDUs on SoAd Layer
Description : Support Tx Fanout of Service Event PDUs on SoAd Layer (instead of doing that in RTE).

3.3.86. PatchSetTransformationTechnologyVersion

Long Name : Sets TransformationTechnology Version
Description : Sets the TRANSFORMATION-TECHNOLOGYs version.

Additional Arguments:

- **Techs** (List)

  List of versions by tech

  - **Tech** (Record)

    tech to patch

    - **Protocol** (String)
    - **Version** (String)

3.3.87. PatchShortName

Long Name : Fixes ShortName
Description : Reduce the length of SHORT-NAMEs to configured length as well as replacing all illegal characters with _-. If no custom length is given for an element type it will be 127.

Additional Arguments:

- **Limits** (List)

  - **Limit** (Record)

    - **Value** (Integer)

Custom length to reduce to.

- **Type** (String)

  Class name of elements the limit is valid for.

3.3.88. PatchSignalAutoMapping

Long Name : SignalAutoMapping
Description : Automatically map signals and signal groups to SWCs ports.

3.3.89. PatchSignalFilter

Long Name : Wrong Signal filter
Description : Updates signal filter size to match the actual signal size by masking out bits outside of signal size.

3.3.90. PatchSignalGroupTimeouts

Long Name : Sets Signal-Group Timeouts
Description : Sets the I-SIGNAL-PORT Timeout to the group signal timeout if missing.

3.3.91. PatchSignalGroupTransferProperties

Long Name : Fix Signal-Group transfer properties
Description : Sets all Transfer properties to the same value.

3.3.92. PatchSignalInterfaces

Long Name : Deletes invalid Signal interfaces
Description : Deletes all SENDER-RECEIVER-INTERFACE elements that are missing their data type

3.3.93. PatchSignalsToGroups

Long Name : Changing signals to signal-groups

Description : Convert all primitive Signals to SignalGroups. SignalGroup name is based on PDU Name.

Additional Arguments:

- **SkipPdus** (List)
  - **Pdu** (String)
- **NameReplacements** (List)
  - **NameReplacement** (Record)

    Details of a name replacement
    - **Pattern** (String)
    - **Replacement** (String)
      Default : ""

3.3.94. PatchSomeIPXfTlvBuffers

Long Name : SomeIP Tlv Buffer sizes
Description : Creates SomeIP TRANSFORMATION-TECHNOLOGY Buffer per message size.

Additional Arguments:

- **PatchAll** (Boolean)
  Default : false

3.3.95. PatchSortGroupSignals

Long Name : PatchSortGroupSignals
Description : Sorts all GroupSignals of all SYSTEM-SIGNAL-GROUP and I-SIGNAL-GROUP in alphabetic order.

3.3.96. PatchSwBaseTypeEncoding

Long Name : Fixes SwBaseType Encoding
Description : Replaces unsupported SW-BASE-TYPE encoding using patch arguments.

Additional Arguments:

- **Encodings** (List)

- **Encoding** (Record)

  if an endocing "Encoding" is found, it is replaced by "To".

  - **From** (String)
  - **To** (String)

3.3.97. PatchTopLevelComposition

Long Name : Create/Update RootTopLevelComposition
Description : Create/Update the RootToplevelComposition.

Additional Arguments:

- **CompositionPath** (String)

  Composition path to reference in the RootComposition prototype.
  Default : "/ComponentTypes/ToplevelComposition"
- **RootCompositionName** (String)

  Root composition name.
  Default : "RootSwCompositionPrototype"

3.3.98. PatchTp

Long Name : Fixes TP configuration
Description : Sets CAN-TP-CHANNEL-MODE-TYPE to HALF-DUPLEX-MODE. For FLEXRAY-AR-TP-CHANNEL CANCELLATION and TRANSMIT-CANCELLATION is set to TRUE.

3.3.99. PatchUseClusterAsChannelName

Long Name : rename channels to the cluster name
Description : Rename channels to the cluster name to ensure Can and Lin channel names are unique.

Additional Arguments:

- **CAN** (Boolean)

  Flag enabling patching of CAN
  Default : true

- **LIN** (Boolean)

  Flag enabling patching of LIN
  Default : true

3.3.100. PatchUseImplementationDataTypeSymbol

Long Name : Sets short name to ImplementationDataType
Description : Makes IMPLEMENTATION-DATA-TYPE SHORT-NAME unique by using the SYMBOL.

Additional Arguments:

- **DuplicatesOnly** (Boolean)
  Default : false

3.3.101. PatchWdbiToRdbiDiagnosticAccessPermission

Long Name : PatchWdbiToRdbiDiagnosticAccessPermission
Description : Renames DIAGNOSTIC-ACCESS-PERMISSION of DIAGNOSTIC-WRITE-DATA-BY-IDENTIFIER (WBDI) if identical to DIAGNOSTIC-READ-DATA-BY-IDENTIFIER (RDBI).

3.3.102. PatchXcpPduTypes

Long Name : Replace XCP PDU Type
Description : Converts XCP PDUs to the right Type. Will only work if support for the ARXML provider was implemented.

4. EcuExtractUpdate.Patch module references

EcuExtractUpdate.Patch configuration parameter reference is not available.

EcuExtractUpdate.Patch API reference is not available.

4.1. Integration notes

4.1.1.1. EcuExtractUpdate.Patch dependencies

The usage of the module depends on the following other modules

- ArtopLib
- ArtopCmd
- EcuExtractUpdateCore