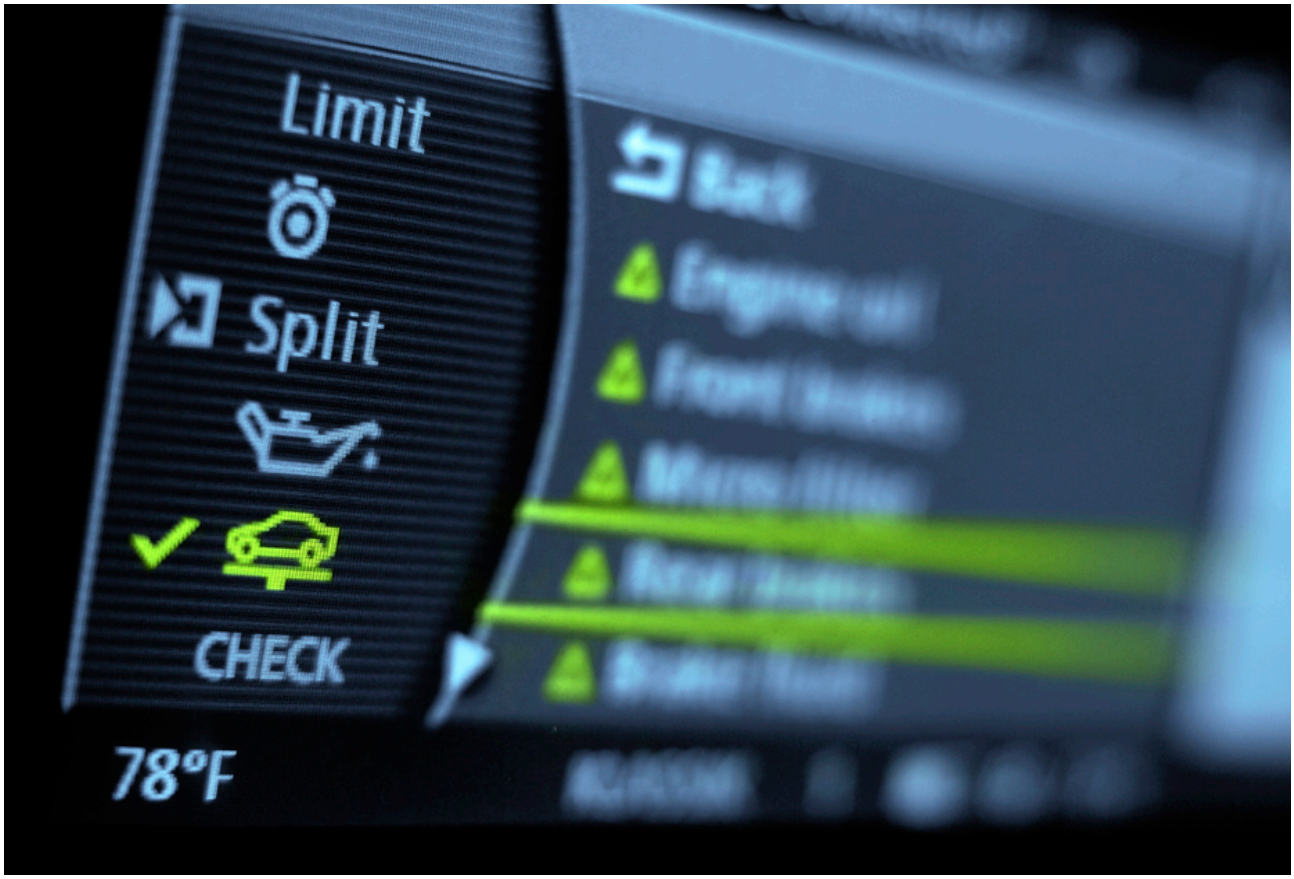
Elektrobit

EB tresos® AutoCore Generic 8 SystemCreatorContrib documentation

Module release 0.0.142



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Legal disclaimer

Confidential information.

Table of Contents

1. Overview

Welcome to the SystemCreatorContrib product release notes and documentation.

This document provides:

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

2. SystemCreatorContrib module release notes

- Module version: 0.0.142.B567464
- Supplier: Elektrobit Automotive GmbH

2.1. Change log

This chapter lists the changes between different versions.

Module version 0.0.114

2021-09-30

Module version 0.0.86

2020-08-21

Module version 0.0.66

2020-03-12

- Inclusion of documentation.

2.2. New features

- No new features have been added since the last release.

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. SystemCreatorContrib user's guide

3.1. Overview

Execution of `SystemCreatorContrib` tool, converts DBC file to corresponding ARXML file.

3.2. Supported Autosar Version's list

SystemCreatorContrib, tool supports below list of Autosar Versions for execution.

- 4.0.1
- 4.1.1
- 4.1.2
- 4.2.1
- 4.2.2
- 4.3.0
- 4.3.1
- 4.42
- 4.43
- 4.44
- 4.45
- 4.46
- 00046
- 4.4.0

3.3. Aruments List

Please refer section "1.3 Argument details" in SystemCreatorCore Userguide for global arguments, which can be used for execution of tool.

3.4. Conversion Details

3.4.1. ConverterDbc

Description : Common dbc conversion. Should support most dbc files. In some cases special configurations might be required to support none default attributes. Especially the detection of diagnostic channels based on name patterns might not work in all cases.

Additional Arguments:

- **DbcSignalGroupNamePattern** (String)
  Default : "SG_{message}_{signalgroup}"
- **ScaleInitValues** (Boolean)

  Defines if the compumethod should be applied to the init values. Depends if the the input files specifies physical or raw values as init values.
- **ReceiveFullPdu** (Boolean)

  If true, always all signals of a pdu will be flagged as ecu relevant, even if the input files only does not.
- **IgnoreInitValues** (Boolean)

  If true, all init values of the input file will be ignored.
- **DbcAttributes** (Record)

  Configuration on how to interpret the dbc attributes. The default values should work in most cases, but as they are not defined by any standard there can be cases where the names have to be adapted.
  Please note that giving an explicit value for a list, will replace the entire lists default.

  - **GlobalAttributes** (Record)

    global attributes.

    - **ChannelName** (String)

      Attribute to set the channel name. If specified -ChannelName argument takes precedence over the DBName attribute. If the attribute is not present in DBC file and the channel named is not specified by explicit argument, then by default the tool takes the input dbc file name as channel name.
      Default : "DBName"
    - **Baudrate** (String)

      Attribute to set the network baudrate.
      Default : "Baudrate"
    - **Nm** (Record)

Attribute related to Network Management

- **StartAddress** (ListPrimitives)

  Attribute to set the lower can ID of Nm messages.
  Default : "NmBaseAddress", "NmhBaseAddress", "NmAsrBaseAddress"
- **MsgCount** (ListPrimitives)

  Attribute to set the number of CanIds for Nm.
  Default : "NmMessageCount", "NmhMessageCount", "NmAsrMessageCount"
- **MsgCycleTime** (ListPrimitives)

  Attribute to set Nm message cycle time.
  Default : "NmCanMsgCycleTime", "NmhCanMsgCycleTime", "NmAsrCanMsgCycleTime"
- **WaitBusSleepTime** (ListPrimitives)

  Attribute to set Nm WaitBusSleep time.
  Default : "NmWaitBusSleepTimer", "NmhWaitBusSleepTimer", "NmAsrWaitBusSleepTime"
- **TimeoutTime** (ListPrimitives)

  Attribute to set Nm timeout time.
  Default : "NmTimeoutTimer", "NmhTimeoutTimer", "NmAsrTimeoutTime"
- **RepeatMessageTime** (ListPrimitives)

  Attribute to set Nm repeat message time.
  Default : "NmRepeatMessageTime", "NmhRepeatMessageTime", "NmAsrRepeatMessage-Time"
- **MsgTimeoutTime** (ListPrimitives)

  Attribute to set Nm Tx ack timout.
  Default : "NmMsgTimeoutTime", "NmhMsgTimeoutTime", "NmAsrMsgTimeoutTime"

- **SignalAttributes** (Record)

  Signal specific attributes.

  - **AttributeNameSendType** (String)

    name of the attribute to read the signal send type from. Used to determine the Autosar signal transfer property.
    Default : "GenSigSendType"
  - **AttributeNameIncativeValue** (String)

    name of the attribute get the signal filter value for the false mode (in case of message/signal type is IfActive*)
    Default : "GenSigInactiveValue"
  - **SendTypeNone** (ListPrimitives)

SendType attribute value to be considered "undefined".
Default : "NoSigSendType", "none"

- **SendTypePending** (ListPrimitives)

  SendType attribute value to be considered as "pending".
  Default : "cycle", "cyclic", "cyclicX"
- **SendTypeTriggered** (ListPrimitives)

  SendType attribute value to be considered as "triggered".
  Default : "spontanX", "spontanWithDelay", "spontanWithRepitition", "OnWrite", "OnWriteWithRepetition", "Event", "OnEvent", "Direct", "cyclicAndSpontanWithDelay", "cyclicAndSpontanX", "cyclicIfActiveAndSpontanWD", "cyclicWithRepeatOnDemand"
- **SendTypeTriggeredWithoutRepetition** (ListPrimitives)

  SendType attribute value to be considered as "triggered-without-repetition".
  Default : "spontanWithoutRepitition", "OnWriteWithoutRepetition"
- **SendTypeTriggeredOnChange** (ListPrimitives)

  SendType attribute value to be considered as "triggered-on-change".
  Default : "OnChange", "OnChangeWithRepetition"
- **SendTypeTriggeredOnChangeWithoutRepetition** (ListPrimitives)

  SendType attribute value to be considered as "triggered-on-change-without-repetition".
  Default : "OnChangeWithoutRepetition"
- **SendTypeIfActive** (ListPrimitives)

  SendType attribute value to be considered as true/false mode control signal.
  Please note that the implementation of this attribute might be incomplete as it highly depends on the usecase.
  Default : "IfActive", "IfActiveWithRepetition", "cyclicIfActiveX", "cyclicIfActiveFast"

- **MessageAttributes** (Record)

  Message specific attributes.

  - **AttributeNameSendType** (String)

    name of the attribute to read the message send type from. Used to determine the Autosar pdu ComTxModeMode property.
    Default : "GenMsgSendType"
  - **SendTypeNone** (ListPrimitives)
    Default : "noMsgSendType", "NoSendType", "none"
  - **SendTypeDirect** (ListPrimitives)

    SendType attribute value to be considered as "direct".

Default : "Direct", "OnChange", "OnChangeWithRepetition", "OnWrite", "OnWriteWithRepetition", "event", "spontaneous", "spontanX", "OnEvent"

- **SendTypePeriodic** (ListPrimitives)

  SendType attribute value to be considered as "periodic".
  Default : "Periodic", "cyclic", "Cycle", "FixedPeriodic", "cyclicX", "cyclicIfActiveX", "cyclicIfActive-Fast"
- **SendTypeMixed** (ListPrimitives)

  SendType attribute value to be considered as "mixed".
  Default : "Mixed", "EventPeriodic", "cyclicAndSpontanWithDelay", "cyclicAndSpontanX", "cyclicWithRepeatOnDemand", "OnEventAndCyclic"
- **DiagRequest** (String)

  If set to 'yes', the message will be considered a diagnostic request.
  Default : "DiagRequest"
- **DiagResponse** (String)

  If set to 'yes', the message will be considered a diagnostic response.
  Default : "DiagResponse"

- **Diag** (Record)

  - **RoeMessagePattern** (ListRegularExpressions)
    Default : "DIAGNOSTIC_ROE_-.*"
- **Nm** (Record)

  Nm related parameters. Use these to define values missing in the dbc file. '-1' means undefined

  - **IdBase** (Long)
    Default : 1024L
  - **IdCount** (Long)
    Default : 255L
  - **MsgCycleTime** (Double)
    Default : -1.0
  - **WaitBusSleepTime** (Double)
    Default : -1.0
  - **TimeoutTime** (Double)
    Default : -1.0
  - **RepeatMessageTime** (Double)
    Default : -1.0
  - **MsgTimeoutTime** (Double)
    Default : -1.0
  - **CbvPosition** (Integer)
    Default : -1
  - **CbvSignalDetection** (RegularExpression)

Default : "CBV_-.*"

- **SniPosition** (Integer)
  Default : -1
- **SniSignalDetection** (RegularExpression)
  Default : "SNI_-.*"

- **Diag** (Record)

  - **RoeMessagePattern** (ListRegularExpressions)
    Default : "DIAGNOSTIC_ROE_-.*"

- **E2E** (Record)

  - **Defaults** (Record)

    - **Profile** (String)
      Default : "PROFILE_01"
    - **MaxDeltaCounter** (Long)
      Default : 2L
    - **MaxErrorStateInit** (Long)
      Default : 1L
    - **MaxErrorStateInvalid** (Long)
      Default : 1L
    - **MaxErrorStateValid** (Long)
      Default : 0L
    - **MaxNoNewOrRepeatedData** (Long)
      Default : 0L
    - **MinOkStateInit** (Long)
      Default : 0L
    - **MinOkStateInvalid** (Long)
      Default : 0L
    - **MinOkStateValid** (Long)
      Default : 0L
    - **Offset** (Long)
      Default : 0L
    - **CrcOffset** (Long)
      Default : 0L
    - **CounterOffset** (Long)
      Default : 0L
    - **ProfileBehavior** (Enum)
      Default : "R-4--2"
    - **DataIdMode** (Enum)
      Default : "ALL16_BIT"
    - **SyncCounterInit** (Long)
      Default : 0L

- **UpperHeaderBitsToShift** (Long)
  Default : 0L
- **WindowSize** (Long)
  Default : 3L

- **Properties** (Map)
  Default : "Property[SignalGroup=Default]"
- **ChecksumSignalPattern** (RegularExpression)
  Default : "Check[Ss]um.*"
- **CounterSignalPattern** (RegularExpression)
  Default : "RollingCounter.*"

- **Security** (Record)

  - **MessageAutodetect** (Record)

    - **Active** (Boolean)
      Default : false
    - **FreshnessValueSignalPattern** (RegularExpression)
      Default : "FreshnessValue.*"
    - **MacSignalPattern** (RegularExpression)
      Default : "(MAC.*)|.*MAC[0-9]+"
    - **TripCounterSignalPattern** (RegularExpression)
      Default : "TripCounter.*"
    - **ResetCounterSignalPattern** (RegularExpression)
      Default : "ResetCounter.*"
  - **SecuredPduName** (String)
    Default : "SEC_%1$s"
  - **Defaults** (Record)

    - **AuthInfoTxLength** (Long)
      Default : 48L
    - **FreshnessValueLength** (Long)
      Default : 16L
    - **FreshnessValueTxLength** (Long)
      Default : 16L
  - **Properties** (Map)
    Default : "Property[MessageName=Default]"
- **XCP** (Record)

  - **MessageNamePattern** (RegularExpression)
    Default : ".*(XCP)|(Xcp).*"
- **DiagConnectionNamePatterns** (List)

  - **DiagConnectionNamePattern** (String)
- **TpMessages** (List)

List of Tp Messages. By default the type and channel will be auto detected on the message name. But if an auto detection is not possible, they can be listed here explicitly.

- **TpMessage** (Record)
  - **MessageID** (Long)
  - **Type** (Enum)
  - **ConnectionName** (String)

3.4.2. ConverterDEXT

Description : Basic xls to arxml converter. Might not yet support all types of services.

3.4.3. ConverterGenericXls

Description : A generic XLS to arxml currently in development. Please ask support if you need to use it.

Additional Arguments:

- **ChannelSheet** (String)

3.4.4. ConverterJ1939Dbc

Description : Dbc conversion for J1939 dbcs

Additional Arguments:

- **DbcSignalGroupNamePattern** (String)
  Default : "SG_{message}_{signalgroup}"
- **ScaleInitValues** (Boolean)

  Defines if the compumethod should be applied to the init values. Depends if the the input files specifies physical or raw values as init values.
- **ReceiveFullPdu** (Boolean)

  If true, always all signals of a pdu will be flagged as ecu relevant, even if the input files only does not.
- **IgnoreInitValues** (Boolean)

If true, all init values of the input file will be ignored.

- **DbcAttributes** (Record)

  Configuration on how to interpret the dbc attributes. The default values should work in most cases, but as they are not defined by any standard there can be cases where the names have to be adapted.
  Please note that giving an explicit value for a list, will replace the entire lists default.

  - **GlobalAttributes** (Record)

    global attributes.

    - **ChannelName** (String)

      Attribute to set the channel name. If specified -ChannelName argument takes precedence over the DBName attribute. If the attribute is not present in DBC file and the channel named is not specified by explicit argument, then by default the tool takes the input dbc file name as channel name.
      Default : "DBName"
    - **Baudrate** (String)

      Attribute to set the network baudrate.
      Default : "Baudrate"
    - **Nm** (Record)

      Attribute related to Network Management

      - **StartAddress** (ListPrimitives)

        Attribute to set the lower can ID of Nm messages.
        Default : "NmBaseAddress", "NmhBaseAddress", "NmAsrBaseAddress"
      - **MsgCount** (ListPrimitives)

        Attribute to set the number of CanIds for Nm.
        Default : "NmMessageCount", "NmhMessageCount", "NmAsrMessageCount"
      - **MsgCycleTime** (ListPrimitives)

        Attribute to set Nm message cycle time.
        Default : "NmCanMsgCycleTime", "NmhCanMsgCycleTime", "NmAsrCanMsgCycleTime"
      - **WaitBusSleepTime** (ListPrimitives)

        Attribute to set Nm WaitBusSleep time.
        Default : "NmWaitBusSleepTimer", "NmhWaitBusSleepTimer", "NmAsrWaitBusSleepTime"
      - **TimeoutTime** (ListPrimitives)

        Attribute to set Nm timeout time.
        Default : "NmTimeoutTimer", "NmhTimeoutTimer", "NmAsrTimeoutTime"

- **RepeatMessageTime** (ListPrimitives)

  Attribute to set Nm repeat message time.
  Default : "NmRepeatMessageTime", "NmhRepeatMessageTime", "NmAsrRepeatMessage-Time"
- **MsgTimeoutTime** (ListPrimitives)

  Attribute to set Nm Tx ack timout.
  Default : "NmMsgTimeoutTime", "NmhMsgTimeoutTime", "NmAsrMsgTimeoutTime"

- **SignalAttributes** (Record)

  Signal specific attributes.

  - **AttributeNameSendType** (String)

    name of the attribute to read the signal send type from. Used to determine the Autosar signal transfer property.
    Default : "GenSigSendType"
  - **AttributeNameIncativeValue** (String)

    name of the attribute get the signal filter value for the false mode (in case of message/signal type is IfActive*)
    Default : "GenSigInactiveValue"
  - **SendTypeNone** (ListPrimitives)

    SendType attribute value to be considered "undefined".
    Default : "NoSigSendType", "none"
  - **SendTypePending** (ListPrimitives)

    SendType attribute value to be considered as "pending".
    Default : "cycle", "cyclic", "cyclicX"
  - **SendTypeTriggered** (ListPrimitives)

    SendType attribute value to be considered as "triggered".
    Default : "spontanX", "spontanWithDelay", "spontanWithRepitition", "OnWrite", "OnWriteWith-Repetition", "Event", "OnEvent", "Direct", "cyclicAndSpontanWithDelay", "cyclicAndSpontanX", "cyclicIfActiveAndSpontanWD", "cyclicWithRepeatOnDemand"
  - **SendTypeTriggeredWithoutRepetition** (ListPrimitives)

    SendType attribute value to be considered as "triggered-without-repetition".
    Default : "spontanWithoutRepitition", "OnWriteWithoutRepetition"
  - **SendTypeTriggeredOnChange** (ListPrimitives)

    SendType attribute value to be considered as "triggered-on-change".
    Default : "OnChange", "OnChangeWithRepetition"
  - **SendTypeTriggeredOnChangeWithoutRepetition** (ListPrimitives)

SendType attribute value to be considered as "triggered-on-change-without-repetition".
Default : "OnChangeWithoutRepetition"

- **SendTypeIfActive** (ListPrimitives)

  SendType attribute value to be considered as true/false mode control signal.
  Please note that the implementation of this attribute might be incomplete as it highly depends on the usecase.
  Default : "IfActive", "IfActiveWithRepetition", "cyclicIfActiveX", "cyclicIfActiveFast"

- **MessageAttributes** (Record)

  Message specific attributes.

  - **AttributeNameSendType** (String)

    name of the attribute to read the message send type from. Used to determine the Autosar pdu ComTxModeMode property.
    Default : "GenMsgSendType"
  - **SendTypeNone** (ListPrimitives)
    Default : "noMsgSendType", "NoSendType", "none"
  - **SendTypeDirect** (ListPrimitives)

    SendType attribute value to be considered as "direct".
    Default : "Direct", "OnChange", "OnChangeWithRepetition", "OnWrite", "OnWriteWithRepetition", "event", "spontaneous", "spontanX", "OnEvent"
  - **SendTypePeriodic** (ListPrimitives)

    SendType attribute value to be considered as "periodic".
    Default : "Periodic", "cyclic", "Cycle", "FixedPeriodic", "cyclicX", "cyclicIfActiveX", "cyclicIfActive-Fast"
  - **SendTypeMixed** (ListPrimitives)

    SendType attribute value to be considered as "mixed".
    Default : "Mixed", "EventPeriodic", "cyclicAndSpontanWithDelay", "cyclicAndSpontanX", "cyclicWithRepeatOnDemand", "OnEventAndCyclic"
  - **DiagRequest** (String)

    If set to 'yes', the message will be considered a diagnostic request.
    Default : "DiagRequest"
  - **DiagResponse** (String)

    If set to 'yes', the message will be considered a diagnostic response.
    Default : "DiagResponse"

- **Diag** (Record)

  - **RoeMessagePattern** (ListRegularExpressions)

Default : "DIAGNOSTIC_ROE_-.*"

- **AddMissingTpConnections** (Boolean)

  Argument to specify the generation of missing J-1939-TP-CONNECTION for all the multicast messages (DLC >8) if the TP.DT message with PGN=60160 and TP.CM message with PGN=60416 are not defined in DBC file.
  Default : true
- **UseRm** (Boolean)

  Argument to specify processing of Request Management messages with PGN=59904 and/or PGN=59392 defined in the DBC file.
  Default : true

3.4.5. ConverterXls

Description : generic XLS to arxml currently in development. Please ask support if you need to use it.

Additional Arguments:

- **SheetConfig** (Record)

  Configuration on how the sheet names to use

  - **EcuSheet** (Record)

    Sheet holding the information about the Ecus. Mainly used for excel internal validation

    - **SheetName** (String)
      Default : "ECUs"
  - **ChannelSheet** (Record)

    Sheet holding the information about the channels

    - **SheetName** (String)
      Default : "Networks"
  - **GatewaySheet** (Record)

    Sheet holding the information about the channels

    - **SheetName** (String)
      Default : "Gateway"
  - **SocketSheet** (Record)

    Sheet holding the information about the ethernet sockets

    - **SheetName** (String)

Default : "Sockets"

- **MessageSheet** (Record)

  Sheet(s) holding the information about the messages/signals

  - **SheetName** (ListPrimitives)
    Default : "Messages"

4. SystemCreatorContrib module references

SystemCreatorContrib configuration parameter reference is not available.

SystemCreatorContrib API reference is not available.

4.1. Integration notes

4.1.1.1. SystemCreatorContrib dependencies

The usage of the module depends on the following other modules

- ArtopLib
- ArtopCmd
- SystemCreatorCore