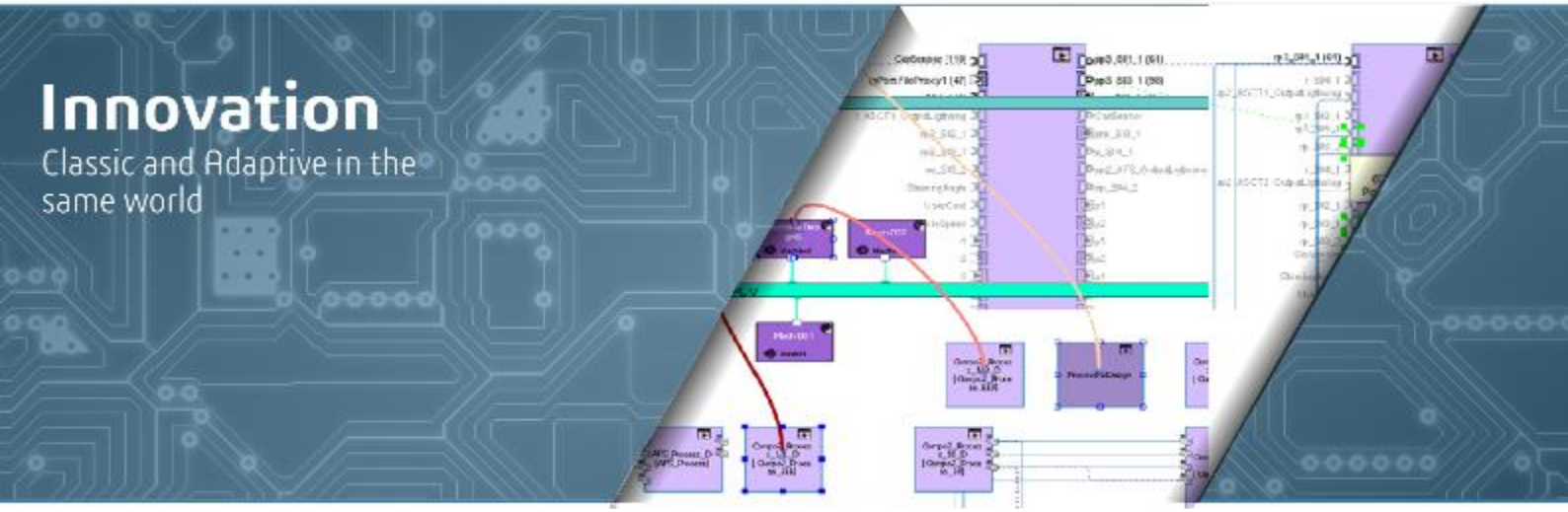
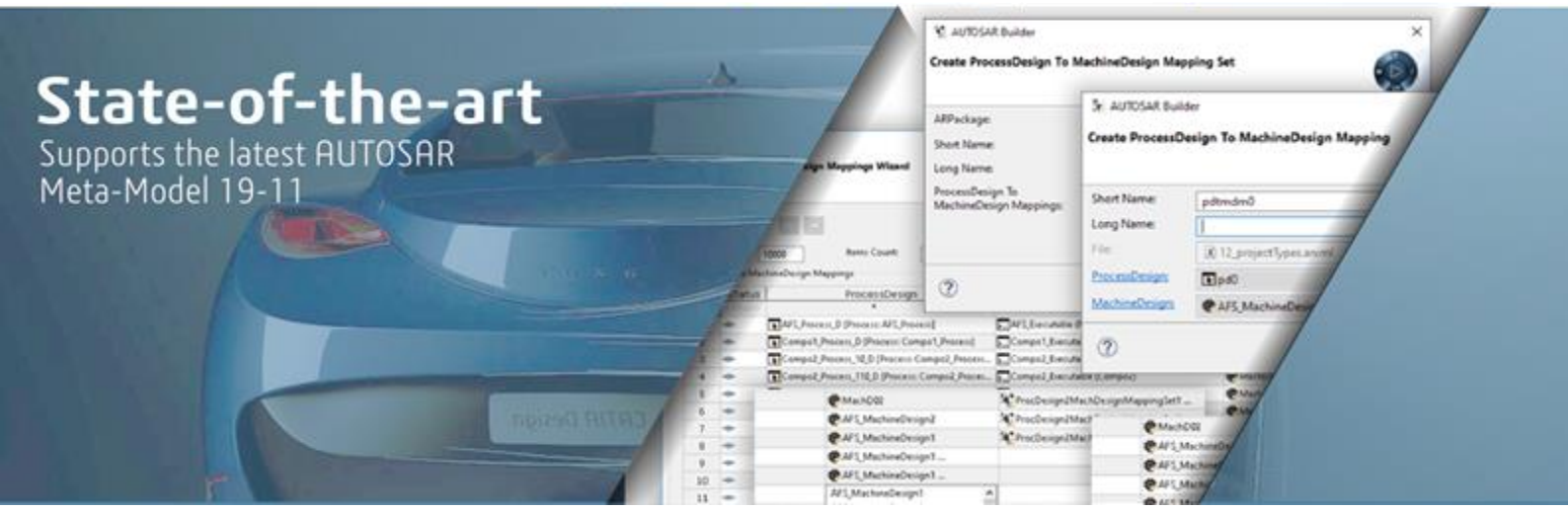
3DEXPERIENCE®

AUTOSAR Builder™

Welcome to AUTOSAR Builder 2021x





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General Presentation

AUTOSAR Builder is a complete ©AUTOSAR toolchain, starting from authoring to ECU configuration via ECU extract, RTE generation, simulation, and more features. It is a comprehensive tool for system and ECU design. It also enables you to import Model Based Design legacy descriptions and generate AUTOSAR compliant C code, ready to be embedded in target ECUs.

The AUTOSAR Builder tool suite includes:

- **Authoring Environment** – The AUTOSAR Authoring Tool for software modeling and network design
- **ECU Extractor**
- **ECU Environment** – The Generic ECU Configuration Editor for ECU configuration and BSW code generation
- **Rte Generator**
- **ASim** - AUTOSAR Simulation, covering the VFB level, and soon the ECU and Network levels
- **Adaptive Environment** – The AUTOSAR Adaptive environment for adaptive design

AUTOSAR Builder is based on Eclipse and uses ©Artop. Artop is an open AUTOSAR tool environment that is available for free. It enables you to build your own tools and integrate from other tool vendors.

For more details, see the AUTOSAR Builder Overview document.

1. System Requirements

AUTOSAR Builder is supported on Microsoft Windows 10, 8, 7, VISTA, XP (64 bit platforms).

The required minimum memory is:

- Approximately 600MByte hard-disk space
- 4 GB RAM*

(*)When working with large models in AUTOSAR Builder, it is recommended that at least 8GB of physical memory is allocated to enhance the performance.

2. Installation and Licensing

For more information related to the licensing of AUTOSAR Builder, see AB_Installation_Procedure.pdf.

New Features and Enhancements

1. Versions and AUTOSAR Builder

AUTOSAR Builder is based on:

- Eclipse Neon **4.6.3**
- ARTOP **4.6.1**
- CDT **9.2.1**

AUTOSAR Builder supports the AUTOSAR Classic **R19-11** and AUTOSAR Adaptive **R19-11**. Adaptive code generators are updated to support AUTOSAR Adaptive **R19-11**.

This release note summarizes updated features and new functionalities offered by AUTOSAR Builder 2021x.

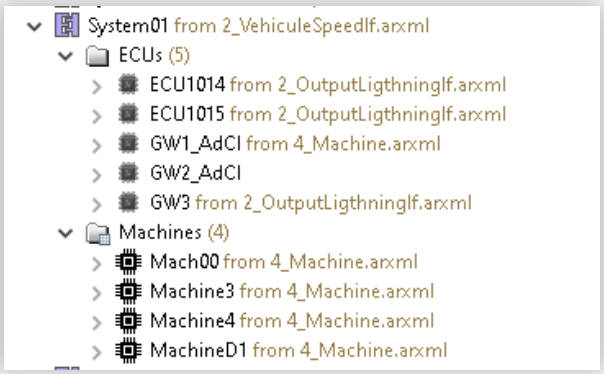
2. AUTOSAR Builder Fundamentals

2.1. Enhanced System View

2.1.1. Systems Node:

The Systems node in the System view is split into two nodes:

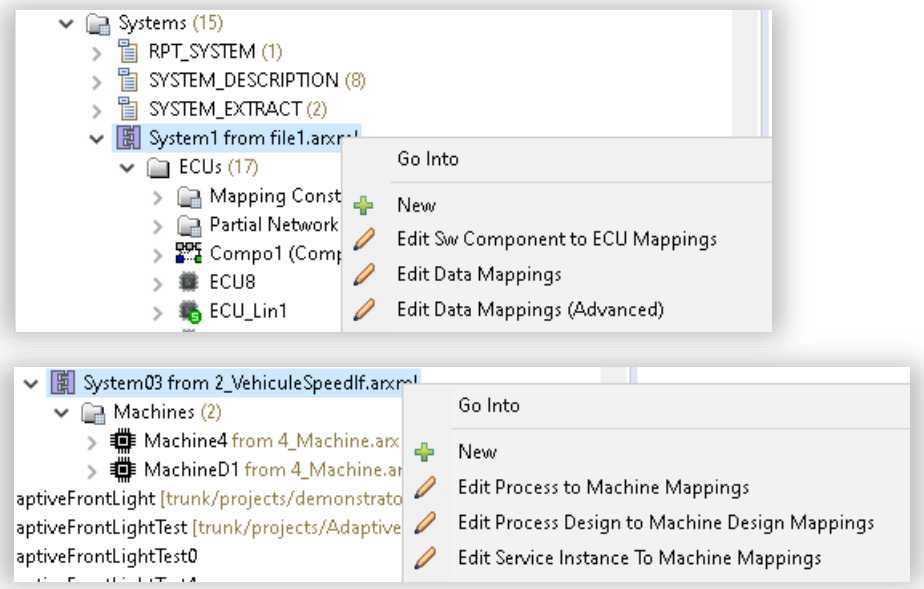
- ECUs: This node lists the ECUs (classical part) of the system and shows the involved software component to ECU mapping and its components.
- Machines: This node lists the machines (adaptive part) of the system and shows the involved machine designs, processes, and service instance to machine mappings.



2.1.2. Context Menu Commands

Context menu commands to edit the mappings between classical and adaptive system components are available on a system. You can now edit the following mappings on a system:

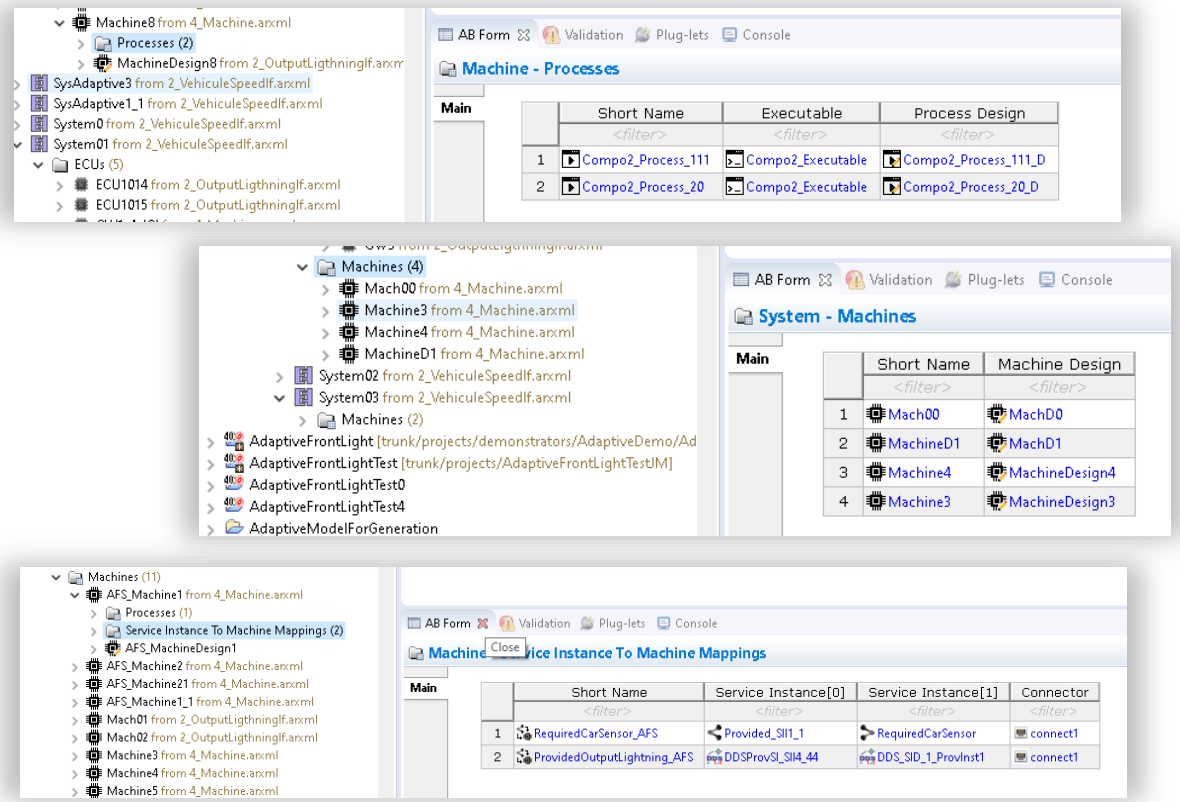
- Software component to ECU mappings
- Data mappings
- Process to machine mappings
- Process design to machine design mappings
- Service instance to machine mappings



2.1.3. AB Forms

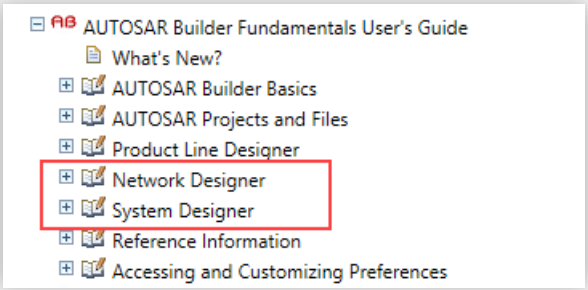
The AB Form now shows the elements involved in the adaptive component synthesis, when you click the following nodes:

- Machines: Shows the list of machines involved in the system and associated machine designs.
- Processes: Shows the list of processes, and associated executables and process designs.
- Service Instance to Machine Mappings: Shows the list of service instances and associated connectors.



2.2. User's Guide Reorganization

The themes describing the Network Designer and the System Designer are now presented in the AUTOSAR Builder Fundamentals User's Guide, as they are common to classic and adaptive environments.



3. AUTOSAR Builder for Classic

3.1. AB Validation for Classic Platform

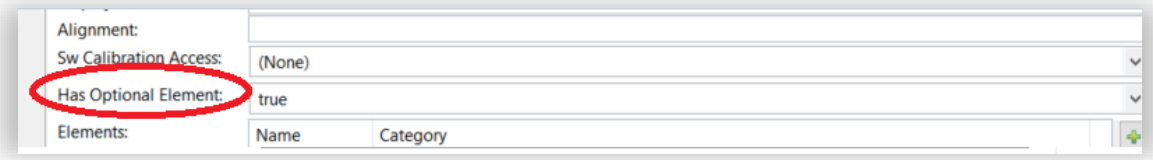
The following new rules are added for AUTOSAR Classic platform:

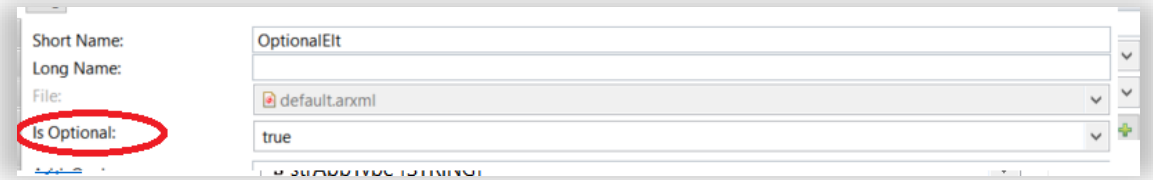
Category	Meta Model	Internal ID	Description
Authoring Environment / Software Designer	4.4.0	SOFT_41207	SubElementMapping: relevance of attribute isOptional
		SOFT_41208	Existence of ImplementationDataTypeElement.isOptional vs. ImplementationDataType.isStructWithOptionalElement
		SOFT_41209	First ImplementationDataTypeElement of ImplementationDataType that represents an Optional Element Structure
		SOFT_41210	ImplementationDataTypeElement with attribute isOptional set to True
		SOFT_41211	No use of Optional Element Structure for interaction with the diagnostic stack
Diagnostics	4.3.0	DIAG_49047	DiagnosticFimFunctionMapping shall only reference a SwcServiceDependency that aggregates FunctionInhibitionNeeds
		DIAG_49048	References from DiagnosticFunctionInhibitSource
Other/ EB Tresos Studio Compatibility	(None)	EBT_40028	EB Tresos Studio reject unused ClientServerOperation by any server RunnableEntities

3.2. Support for Optional Element Structure

3.2.1. Modeling Support

The modeling of optional elements is now supported on both application level and implementation level. You can define the “Is Optional” property for data type elements of records and structures.





3.2.2. RTE Generator and ASim Support

Structures with optional elements are now supported in RTE generator and can be tested using ASim.

3.3. Function Inhibition Manager (FIM)

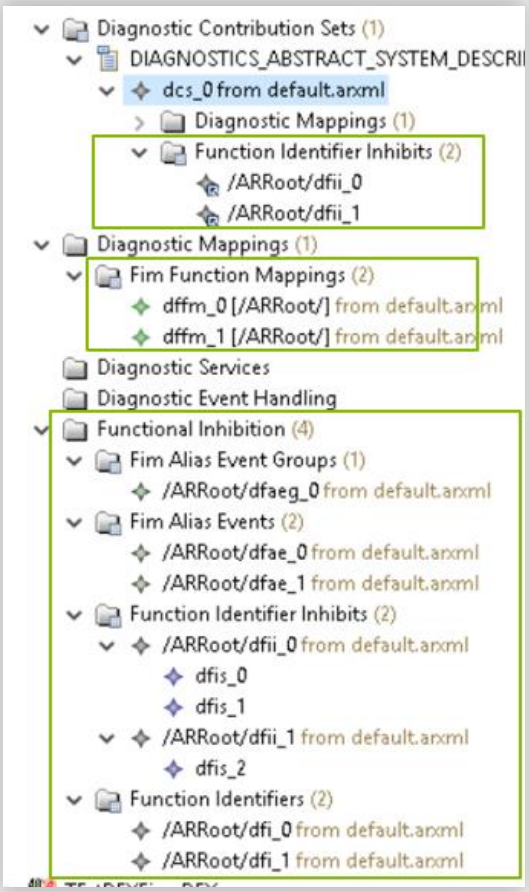
You can now create FIM elements and mappings in the diagnostic view. You can create the following FIM elements from the context menu of the Function Inhibition node:

- Fim Alias Events
- Fim Alias Event Groups
- Fim Event Groups
- Function Identifiers
- Function Identifier Inhibits

You can create the following mappings from the context menu of the Diagnostic Mappings node:

- Fim Alias Event Mappings
- Fim Alias Event Group Mappings
- Fim Function Mappings

You can also create references to the inhibits of the function identifiers from the context menu of a diagnostic contribution set.



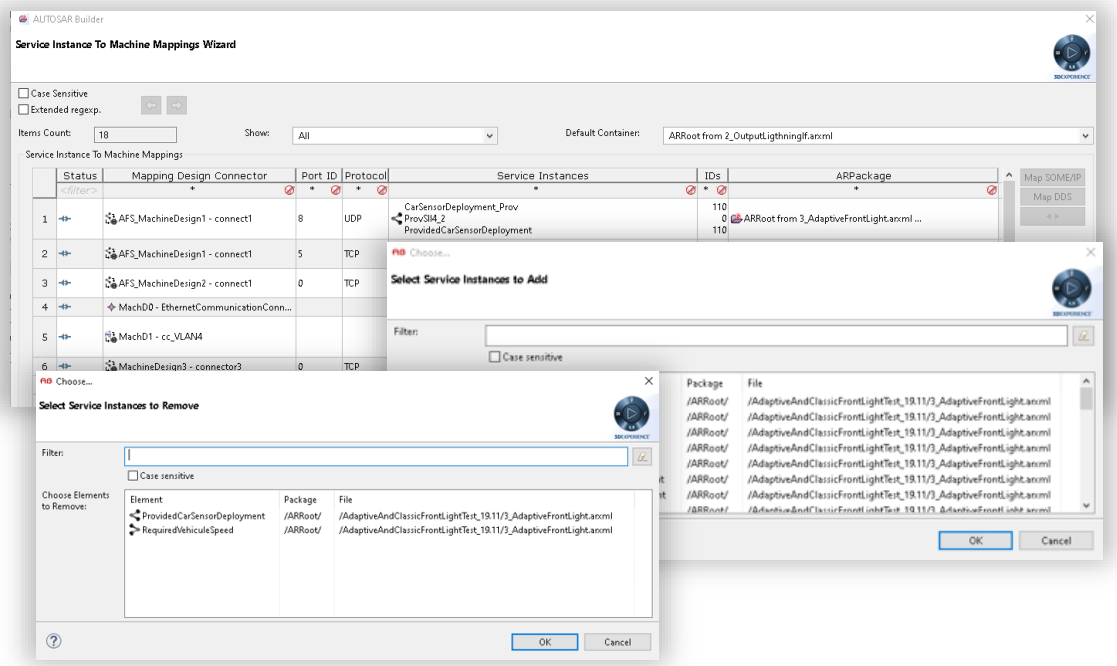
4. AUTOSAR Builder Adaptive

4.1. Adaptive 19-11 Update

AUTOSAR Builder 2021x integrates Adaptive 19-11 meta-model and already delivers the updated interfaces for new concepts implemented in this meta-model.

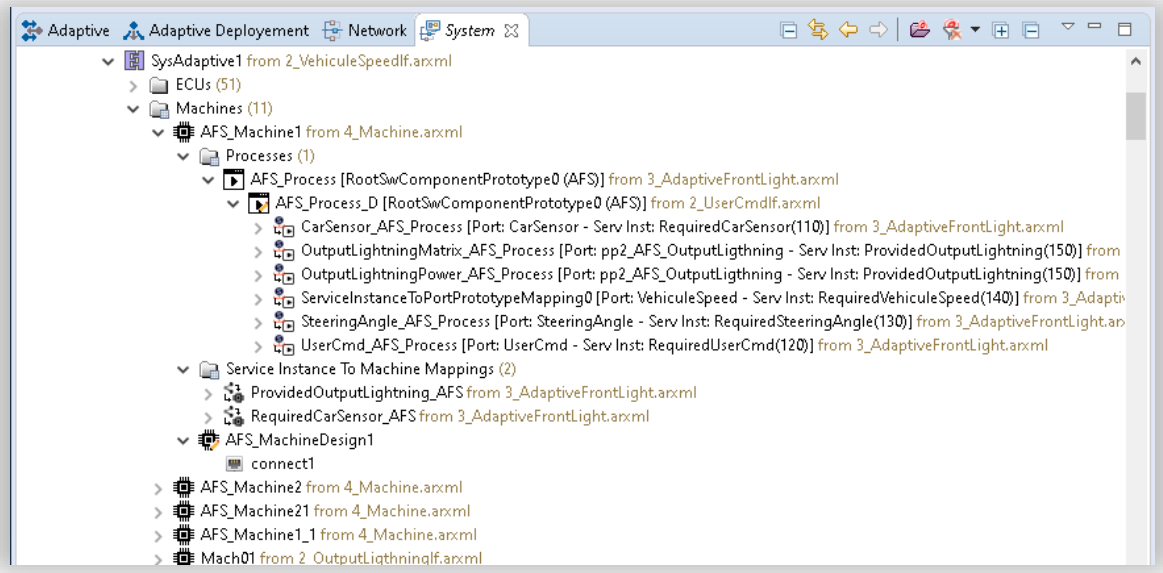
4.2. Service Instance to Machine Mapping Editor

You can now manage service instance to machine mappings using a dedicated editor.



4.3. System View

The System view is introduced in adaptive environment to know which adaptive elements are part of the system and to create or edit mappings between the involved elements.



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