12 Working with the Modular Library Automotive

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This chapter deals with the modular library ‘Automotive’ (in original VDA Automotive Bausteinkasten) of the software Plant Simulation with the focus on point-oriented elements from this library. First, a general introduction to specific modular libraries in Plant Simulation, their purpose, way of use and limits is presented. A brief description of the library ‘Automotive’, its historical as well as current development, structure and field of use follows. The core of this chapter presents two sample models which show the use of the library ‘Automotive’. The aim is to give the reader insight into the variety of the modules and objects of the library ‘Automotive’ which enable the user to efficiently simulate various processes we can encounter in the automotive industry.

12.1 Creating and Managing User-Defined Libraries in Plant Simulation

In Plant Simulation it is possible to create simulation models of material flow which can reflect number of logistic and production systems running on various principles. For this reason Class Library provides the user with a range of active and passive material flow objects (built-in objects). By default the Class Library contains the following hierarchically structured folders: MaterialFlow, Resources, InformationFlow, UserInterface, MUs, Tools and Models (see Fig. 12.1).
Fig. 12.1 Structure of the class library

However, when modeling specific real processes built-in objects contained in the folders shown in Fig. 12.1 might fail to meet the requirements for the desired functionality. For this reason, it is possible to create user-defined objects with custom functionality. User-defined objects should be organized in toolboxes for transparency reasons (each toolbox should than be dedicated for a set of objects representing the same field of application). Therefore, the very first step should be creating a new folder in the class library (by clicking the right mouse button at the basis or any folder and selecting New – Folder). In this folder, you can create the new toolbox. Basically, there are two ways how to accomplish this:

1. By selecting the basis in the class library, clicking the right mouse button and then selecting New – Toolbar (see Fig. 12.2, left part). A new toolbar will be created on the basis level in the class library. Additionally, in the toolbox window a new tab Toolbar will emerge (highlighted in Fig. 12.2, right part).

Fig. 12.2 Creation of a new user-defined toolbox in the basis

In the same way the toolbar can be created in any folder of the library (instead of the basis) when selecting the particular folder (optimally a newly created folder designed for user-defined objects). This procedure is depicted in Fig. 12.3. Again a new tab Toolbar in the toolbox will be created. It is possible to rename the toolbox so that its name matches the functionality of the intended objects the toolbox will contain.