

## Outstanding tools in ANSA and $\mu$ ETA – Includes Configurator

### Introduction

The Includes Configurator is a tool for the generation of different model variants and loadcases. It has been based on the concept that a simulation model consists of several include files stored in a repository structured similarly to a file structuring.

The Includes Configurator can handle combinations of different include files of the model. Each of the combinations corresponds to a different variant or loadcase.

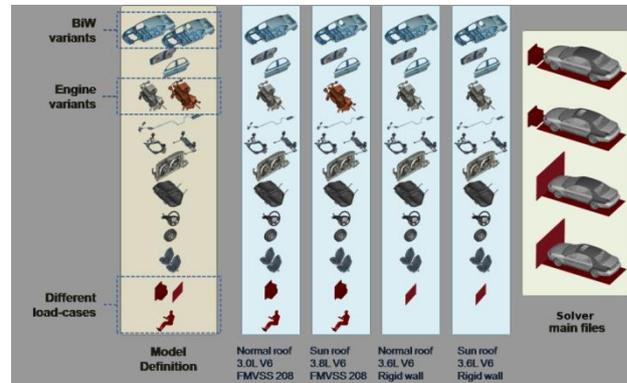


Figure 1: The concept

### The tool

The Include files that constitute the model must be made known to ANSA. However, the import of the model entities (FEM entities) in ANSA is optional.

The hierarchy is either read by ANSA or created and handled within the Includes Manager.

In the Includes Manager window the user can define the loadcases and then determine which includes will participate in which loadcases.

“Main” files reference the includes which are involved in each variant and can be output, without importing the FEM entities contained in the includes. Thus, it is possible for ANSA to output include references without loading the model.

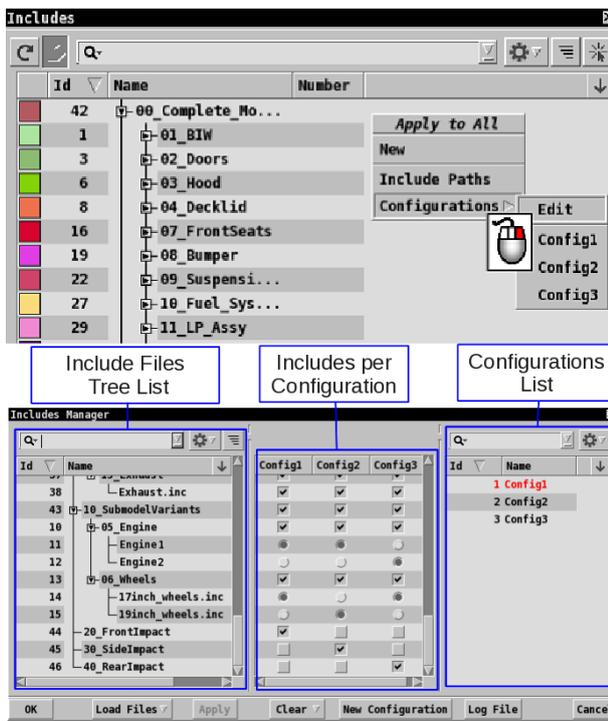


Figure 2: Include configurations creations and handling

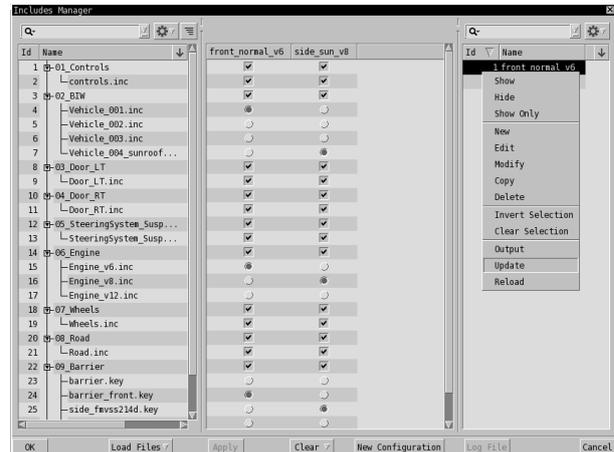


Figure 3: Output variants

Figure 3, displays an overview of the ANSA Includes Configurator interface for this output procedure.

The simultaneous output of multiple configurations can also be achieved by applying the Output function, provided that an Output File Name is specified.

### Communication with Data Management (DM)

The Includes Configurator provides useful functionality when handling includes with the aid of ANSA Data Management. Include files can be easily loaded in the configurator via DM Browser, as displayed in Figure 4.

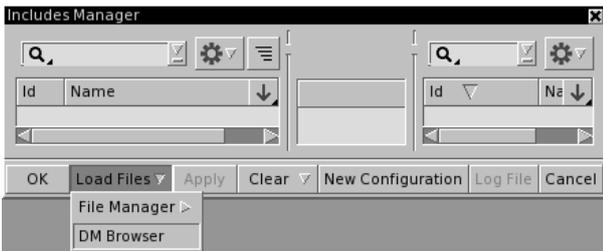


Figure 4: Loading through Includes Configurator

Moreover, the update of an includes' version or DM representation can be achieved by the Includes Configurator (Figure 5). The new version or representation is automatically imported in the database when a configuration that uses the include is updated or reloaded.

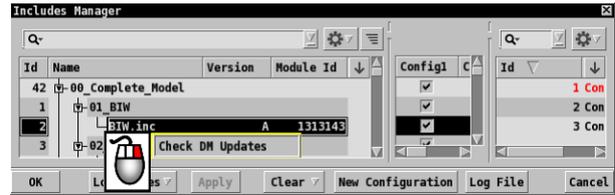


Figure 5: Update through Includes Configurator

### Automation

The above workflow can also be fully automated via the ANSA scripting language. Specifically, script functions are applicable for updating or reloading a configuration, as well as for outputting a configuration. Thus, Includes Configurator processes can become significantly faster.

### Conclusion

The key features and advantages of the Includes Configurator, such as the user-friendly interface, the direct interaction with other tools and functions, and the automation capabilities of ANSA offer powerful functionality for effective generation and management of model variants or loadcases.

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