

CONSISTENT MANAGEMENT OF THE MODEL BUILD PROCESS

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ABSTRACT

As the simulation process is more embedded in the overall product development process it becomes important to establish a consistent model build process. Only if a mature and consistent process is implemented and used to create the simulation models can there be confidence in the organization in using the simulation results throughout the development lifetime.

The objective of a consistent model build process is obvious, but there are challenges in accomplishing this, which will be highlighted in the presentation and solution approaches and experiences from existing projects presented. Examples are:

- There is a huge variety of simulation models required for the individual disciplines, domains and solvers used. The modelling approaches are quite different for example for a multi-body model, FEM-model or a CFD-model. From the PLM perspective it should be transparent as they are just interested to get consistent results for the different performance attributes, independent of what simulation methodology was used for that attribute.
- As the development progresses the detailing of the product changes, which requires to apply different modelling approaches as the maturity of the design increases. However the PLM does want to consistently track the evolution of product performance attributes throughout the lifecycle of the development.
- The turn-around time of simulation results needs to be reduced, which requires not only to make the modelling process more

consistent, but also introduce automation and intelligent governance of the modelling process.

The role of an SPDM system will be to provide the infrastructure for the simulation community to address the expectations from the PLM. This means the SPDM system needs to provide capabilities such as:

- Infrastructure to manage the modelling “best practices” for multiple disciplines and simulations domain.
- Allow CAE methods responsible to define which modelling approaches are applied.
- Ability to gradually and in a controlled manner increase the modelling automation
- Ensuring sufficient supervision and verification of the process by the simulation owner.
- Create formal verification gates, so that a high quality of the models created and be ensured.
- Ensure that all disciplines use the same design states for the modelling process.
- Establish maximal reuse of model data.
- Ensure maximal cross-use of data between the simulation domains.

In the presentation we will show industry examples and share experience on these topics.