

IMPLEMENTATION AND USE OF SPDRM TO STREAMLINE A CAE PROCESS

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ABSTRACT –

Seen in the context of traditional PLM, the growing complexity of simulation and analyses for new products brings CAE engineers in front of a great challenge: to improve CAE productivity and make CAE fast, flexible and efficient in order to identify deficiencies in time and suggest possible ways of improvement. However, information required for downstream CAE processes is often unavailable, untraceable, outdated or susceptible to error-prone manual methods. CAE's value is constrained by bottlenecks at data mining and dissemination. At the same time, CAE suffers from the lack of knowledge capturing and information reusability as the intellectual property gained by the collective experience of best practices is lost.

An approach to address the above is to place the CAE activities within a Simulation Data Management environment. The CAE cycle, however, is by definition a collaborative *process* and covers a wider field than just *data*. It involves individual engineers, departments, suppliers and other hardware/software resources. It is therefore essential that a Simulation Data Management environment is capable of associating the CAE data and the CAE activities with the available resources (human or non-), and place these in the context of a well-defined workflow.

By considering an example of a typical CAE workflow for the evaluation of vehicle performance in various disciplines, this work highlights the importance of orchestrating all CAE workflow actors in a common Simulation Process, Data and Resources Management (SPDRM) environment. Furthermore, this work will utilize the example to showcase the advantages presented when the applications involved in the workflow and the SPDRM environment share the same data repository.