

## **AUTOMATION OF DOOR DYNAMIC SIMULATION SETUP USING ANSA TASK MANAGER**

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Dynamic Over Check, Abaqus, LSDYNA, ANSA Task Manager

ABSTRACT –

Simulation of door durability dynamic analysis using ANSA as a pre-processor is driven by a Standard Operating Procedure (SOP). It involves performing a set of tasks to convert a Static deck for an Abaqus run into a LS Dyna deck for dynamic simulation which needed to be performed manually. The tasks involve creation of linear and nonlinear springs, Mapping of linear materials from equivalent nonlinear materials in Abaqus, contacts for dynamic simulation, converting beam elements to connector elements and in turn create MPCs, set up initial and boundary conditions, definition of dynamic load case control cards and finally perform standard checks.

The automation of the above set of tasks in a sequential format was achieved using the ANSA Task manager. It provides an easy to use interface with seamless transition between the task manager and the main ANSA GUI. The automation was achieved using built in Task Manager Functionality as well as the python scripting interface in ANSA. The automation significantly reduces the time needed for set up from 6 hours to less than 0.5 hours. It eliminates manual errors and duplication of effort and aids in standardization of process.