

Hyundai Motor India Engineering NVH Inspection Tool

A complete automation process
for sub-system Inspection

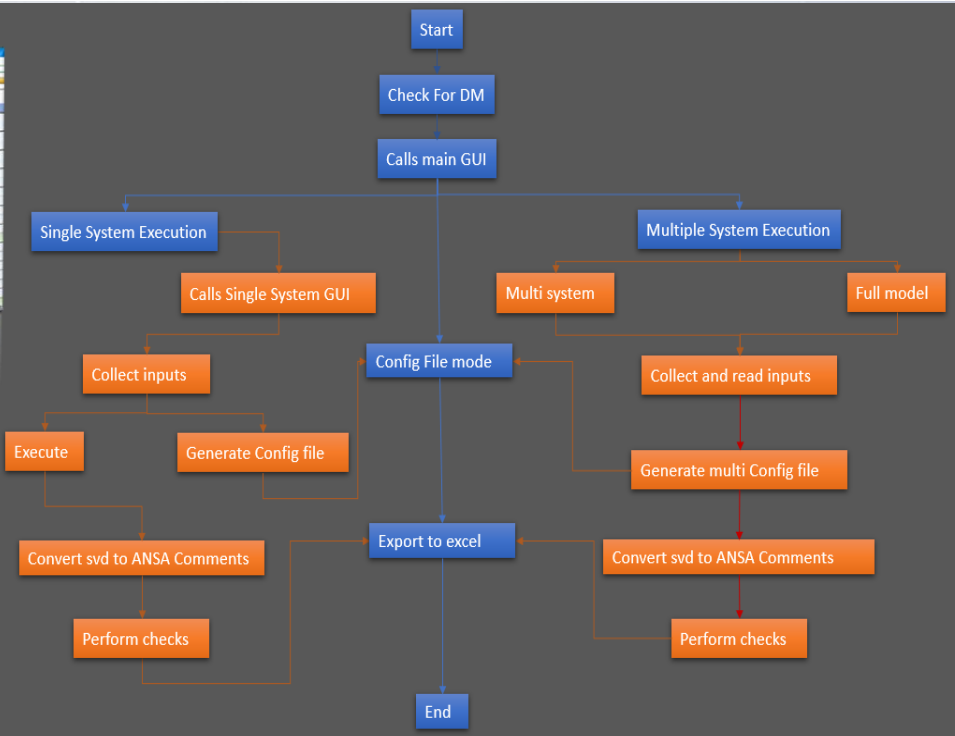
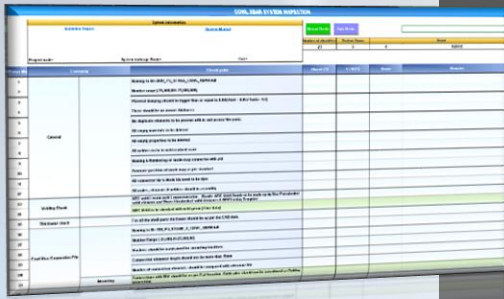
In NVH analyses, the full-vehicle model is built by assembling multiple subsystems from Trim body, Chassis & Engine room modules. This assembly process consumes considerable amounts of time making up for a big part of the overall analysis process.

Meanwhile, during model build, it is important to ensure that each sub-system, and ultimately the full vehicle model, is built without errors. This requires additional time resources spent on model inspection.

Addressing this, BETA CAE Systems brings forth the NVH Inspection tool, which helps engineers check the quality of the model and identify errors. Employed in close collaboration with Hyundai Motors India Engineering, the tool not only saved considerable time during model inspection but made sure that the quality of the models meets the demanding requirements of the experienced Hyundai Motors India Engineering team.

“The NVH Inspection Tool is well developed and executed by BETA CAE Systems with which our tedious model Inspection process has become convenient and fast. We are glad to work with BETA for the tool development and we are looking forward to continue this collaboration for the further enhancement of the tool.”

Jithendra Swamy
Aditya Sriram
Hyundai Motor India Engineering



Challenge

The aim was to reach the maximum possible automation level, for inspecting predefined checks.

In this effort, the main challenges the following:

- Develop and code a comprehensive checks database, by identifying and standardizing checks for each sub-system.
- Simplify the input file by converting it to that of ANSA's readable comment format.

Approach

The tool offers a versatile approach for inspecting all sub-systems in full vehicle. It assesses all sub-systems automatically in batch mode.

Then, a .json file is created containing all necessary information for executing checks on the specified sub-systems.

Consequently, the required input is interpreted from the configuration data and the checks are performed automatically across the multiple sub-systems, sequentially.

At the end of the execution, the tool updates the results into a check-specific standard template, provided by the user.

Finally, a comprehensive report is created to with the automatic-inspection's results. Then user can then quickly and easily analyse and decide whether to make any corrections based on the assessment results.

Benefits

- Compared to manual inspections, automation offers significant accuracy, repeatability and time reduction.
- Capability to inspect results from an easy to read and comprehend standard reporting spreadsheet format.
- Available in both GUI and no-GUI execution modes.

Results

Inspection and reporting of FE Models can be performed automatically for all the standard sub-systems with a single click, unleashing time to correct issues and improve model quality.

Hyundai Motor India Engineering has achieved a significant overall time reduction using the NVH Inspection Tool developed by BETA CAE Systems.

For more information visit BETA CAE Systems visit www.beta-cae.com