Ford Motor Company: NVH Console deployment in Ford Motor Company for Full Vehicle NVH development

Challenge

- Replace an existing in-house tool used for the full vehicle NVH CAE assessments.
- Use names instead of IDs for the whole process.
- Accelerate NVH CAE assessment work.

Approach

Development of NVH Console embedded in ANSA, featuring:

- A simplified diagram view offering a concise overview of the full vehicle assembly and being fully synchronised with the 3D display.
- Loadcase Manager: an interface for the easy and fast creation/handling of components hierarchy, connectors and subcases.
- Options for customisation.
- Numerous checks.
- Seamless driving of any Nastran-based solver or META FRF Assembly. META FRF Assembly performance was optimised and its capabilities were extended.
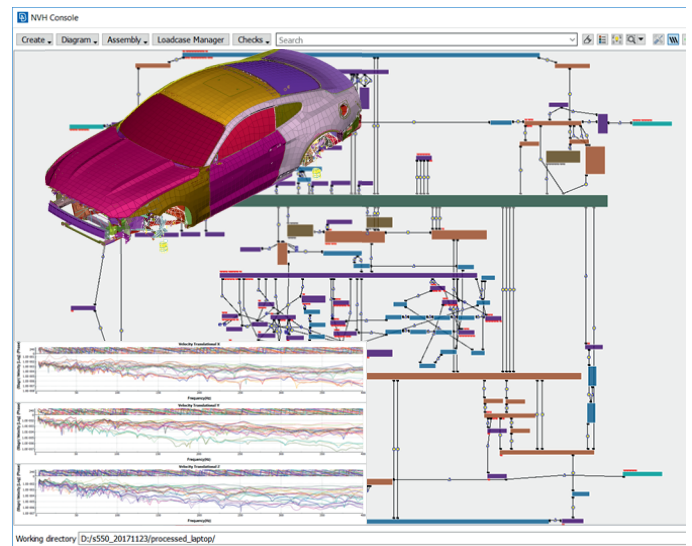
Results - Benefits

- Full vehicle models or sub-assemblies are built in a fast and robust way, completely independent from IDs, avoiding errors.
- Model build/update and users collaboration is further augmented by storing the assembly in modular XML files which can also be used as templates.
- NVH CAE assessments are calculated fast and accurate even on local workstations along with multiple root-cause analysis results extracted from a single run.
- Complicated standard loadcases can be created easily with minimum input.

"NVH Console enables us to efficiently build, update, and manage vehicle NVH models and custom dynamic loadcases for the timely support of our new vehicle NVH development. It has also provided a very efficient and accurate solver, the FRF Assembly of META, which allows us to conduct most of our full vehicle NVH CAE assessments on the engineers' local workstations."

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