Volkswagen: Process for preparing engine parts for acoustic calculations

Challenge

- Create a procedure to use standardized numbering for engine parts.
- Prepare a segmented engine-block-structure for an automated superelement-procedure.
- Prepare the engine parts for minimized storage and output by increased quality.

Approach

ANSA scripts were deployed that:
- renumber the engine parts by use of predefined rules according to part position in the assembly structure and connectivity to other parts / entities.
- create bushing-elements to connect different parts including the search for combining nodes.

Results

- The ANSA -script creates a custom set of windows that allows to change the position of parts, review / correct the masses and delete / replace any parts.
- All parts are output in the desired format, providing a ready to run file structure (includes, headers, etc.).
- Fully automated and optimized preparation-process that minimizes user errors.
- The time for the preparation of the calculation models has been drastically reduced.
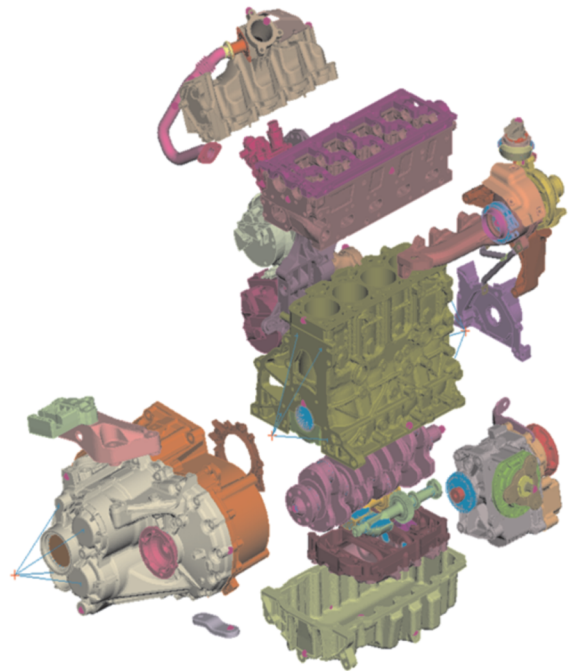
> *"The procedure in ANSA helps us - alongside a script to run the calculation and a special calculation program for acoustics - to reduce the time for acoustic calculation from weeks to hours. We are now able to run multiple versions of engines and engine-parts in order to design engines with low noise in a minimum of time."*
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> *Dr. P. Stamerjohanns,*
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> *Volkswagen AG*