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## **Automatic load case generation for crash and safety analysis.**

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### **ABSTRACT**

The continuously increasing complexity of FE-models and the surfeit of government regulations and consumer tests that demand always new load-cases and parameters to be taken into consideration have led to an urgent need for maximum possible automation in the stage of pre-processing. The main objectives are the saving of valuable time and the avoidance of errors that emerge from the tedious repetition of similar tasks. The afore-mentioned need for automation can now be effectively addressed with the new enhancements of ANSA.

The most important tool that has been newly redesigned to support this project is the ANSA scripting language. The new build-in functions give access to the properties of almost every entity within the ANSA database. They enable calculations based on these properties, their modification and even the creation of new entities. Together with the common functionality that every scripting language offer, it aims to be an integrated solution.

Of great importance it is also the full support of 'include' keywords. This keyword is of great use among CAE engineers because it is the only means provided by solvers which enables them to build their models in a flexible modular fashion.

With the employment of the afore-mentioned features, in this presentation we suggestively follow some steps in the preparation of a model for the cases of front and side impact tests. These steps are namely:

- The positioning of dummy, barrier and rigidwalls.
- The imposition of initial velocity and gravity forces.
- The appropriate modification of sets used by contacts, rigidwalls and initial conditions.
- The assembly of accelerometers and vehicle instrumentation.

*keywords: load-case, scripting language, include , crash, safety*