

“Development of an Ultra Fast Tool for Feasibility Study in Sheet Metal Applications”

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Abstract: The application of feasibility studies in sheet metal and automotive applications by means of forecast models is a new and promising technology for virtual and CAE driven product development.

General information based on finite element simulations can be categorized and can be condensed into so called forecast models, which are enormously fast in predicting target values i.e. thickness or strain distribution. The complete manufacturing feasibility test procedure of an inner deckled from an automotive application will take no longer than 60 seconds. No meshing and no process definition is required since the geometry itself is regarded as the significant process parameter.

The advantage in applying forecast models is that they can be used in the very early stage of product development without having profound expertise in sheet metal forming. Furthermore general manufacturing suggestions such as usually applied materials or common process parameters can be extracted easily.