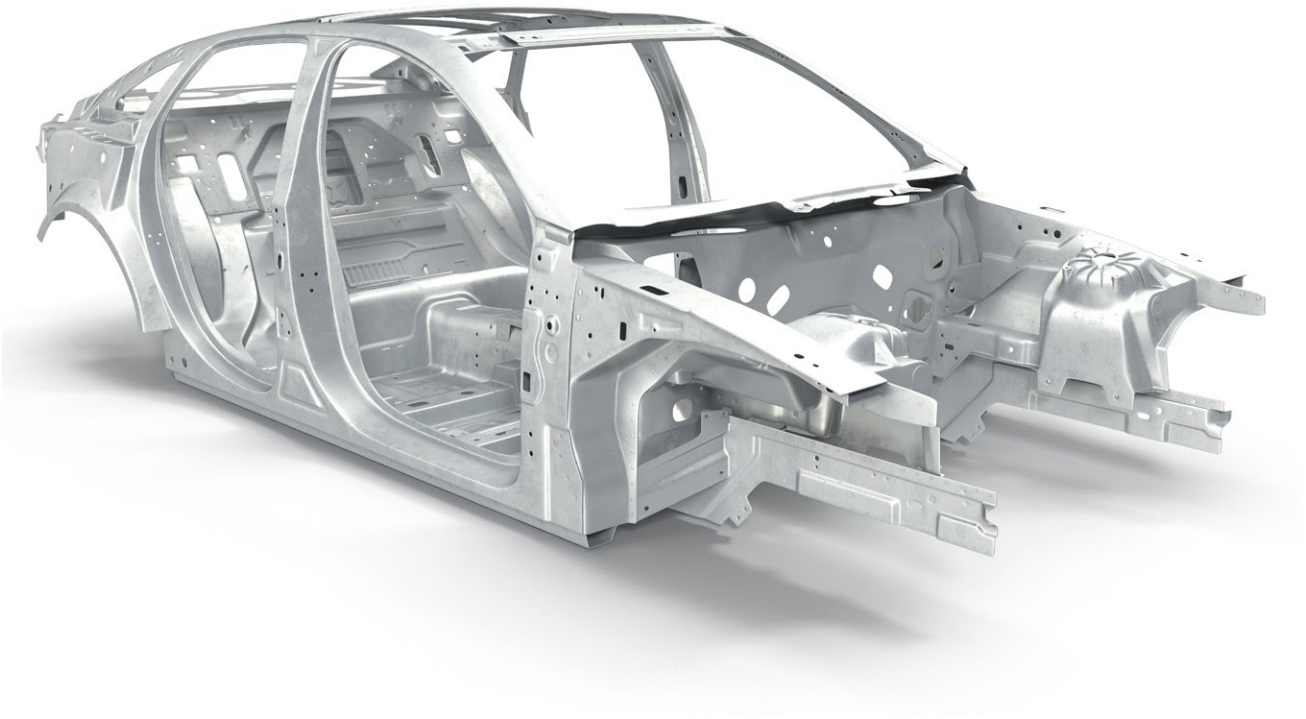
FormingSuite®

HEXAGON
MANUFACTURING INTELLIGENCE

FORMING TECHNOLOGIES

FASTFORM® ADVANCED

BODY IN WHITE FORMABILITY ASSESSMENT, SPRINGBACK ANALYSIS AND BLANK SHAPE DEVELOPMENT



FASTFORM® ADVANCED enables users to quickly and easily evaluate part and process feasibility as well as determine blank shape and springback. It identifies formability problems enabling users to implement design changes earlier in the product life cycle, saving time and money. Before releasing data to tooling, engineers should run FASTFORM® Advanced to assess formability risks. It considers component or tool geometry and accounts for material properties, friction, binder, addendum, blank holder force, pad pressure, draw-beads, and tailor-welded blanks.

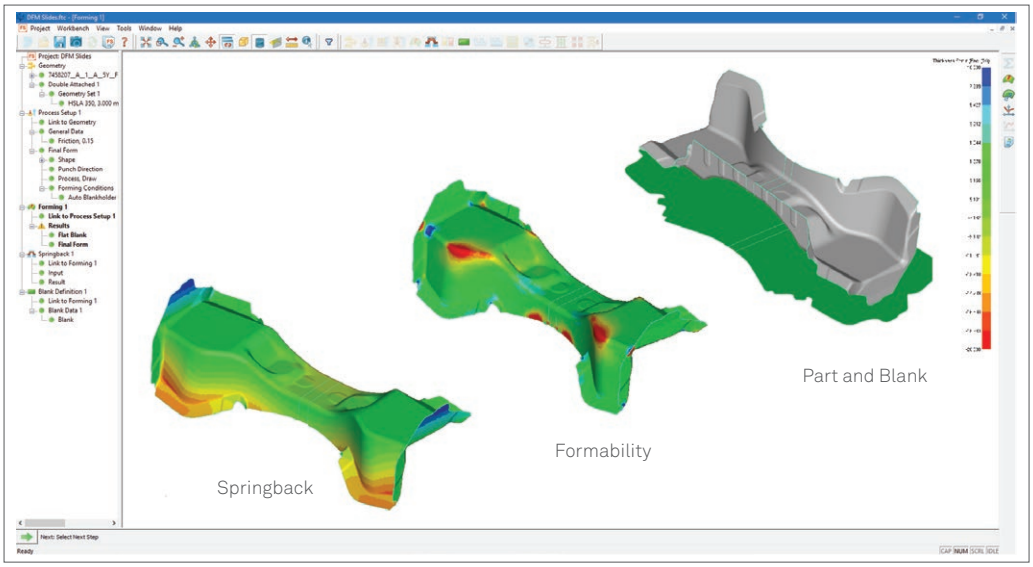
FASTFORM® ADVANCED

FASTFORM® ADVANCED uses FTI's proprietary Coupled Hybrid Inverse (CHI) solver for fast accurate results. It enables design engineers to apply Key Product Requirements (KPR) and Design for Manufacturability (DFM) principles. This technology introduces the concept of designing BIW components so that geometry can be evaluated for formability and manufacturing-based issues can be minimize. KPR/DFM strategies will expose design problems early in the New Product Introduction process so that fewer Engineering Change Orders (ECO) are issued from tooling.

KPR techniques are used to review Class A surfaces while the clay models are still in Styling. The KPR analysis addresses issues such as cosmetic quality, surface distortion for mating surfaces (hole tolerances, master locators), dent resistance, continuity of reflect lines, continuity of features, slip lines and thinning. KPRs significantly affect the product's safety, compliance with governmental regulations or is likely to significantly affect customer satisfaction (quality) with a product.

DFM techniques are used on Class B and C Body-In-White (BIW) components. Product designers can evaluate several forming scenarios. Engineers can predict formability issues and account for processing conditions such as binder, pressure pads, blank holder forces, and pilot holes/slots. Formability assessments are accurately described on the Forming Limit Diagram (FLD), Safety Zone, Thickness Strain, Major/ Minor Strain, and Springback plots.

Component strains and thinning information can be uploaded to CAE Departments to increase accuracy of component performance for structural, crash, NHV, fatigue and durability analysis. Studies have shown that using this thinning and work hardening information can increase CAE accuracy by 30%.



FASTFORM® ADVANCED determines material utilization and enables cost and weight optimization

FEATURES

- Identifies product design changes that improve quality, material utilization and reduce costs
- Scientific physics-based approach identifies formability issues at product design stage
- Predicts formability and calculates blank size accounting for binder, pressure pads, blank holder forces, and pilot holes/slots
- Accurately identifies material thinning and gathering conditions on Forming Limit Diagram (FLD), Safety Zone in addition to Thickness Strain, Major/ Minor Strain, etc.
- Calculates Springback to predict issues for tooling and generates compensation file for export to CAD
- Evaluates multiple manufacturing scenarios for optimal material usage
- Automatically generates a report to summarize product design issues and material utilization