The database of automobile body structures and materials has been developed by disassembly investigation. Material development and EVI activities are strongly supported by this database. Many proposals have been made to our customers such as weight and cost reduction, performance improvement and structural optimization including the forming process.

New forming technologies are developed for improving formability of steel sheets. JIM-Form® is one of our original forming technologies, which improve deep-drawability by press motion control with a servo press machine. Formability of JFE’s new sheet products are evaluated by press forming tests. Automotive prototype parts are produced using the products. We propose new forming technologies and effective application of new products to our customers.

The strength, rigidity and durability of automotive bodies and parts are evaluated by numerical analyses and experiments. Based on the data, we propose suitable materials, shapes and joining conditions for development of bodies and parts to customers.

High accuracy is required in numerical analysis of press forming especially in multi-stage forming: draw forming, trimming, and restriking. We support our customers in parts development by predicting the risk of defects such as wrinkles, surface distortions, fractures, stretch-flange cracks and springbacks. We are making continuous effort to improve the accuracy of CAE analysis by applying advanced models such as the YU model which can incorporate the Baushinger effect.