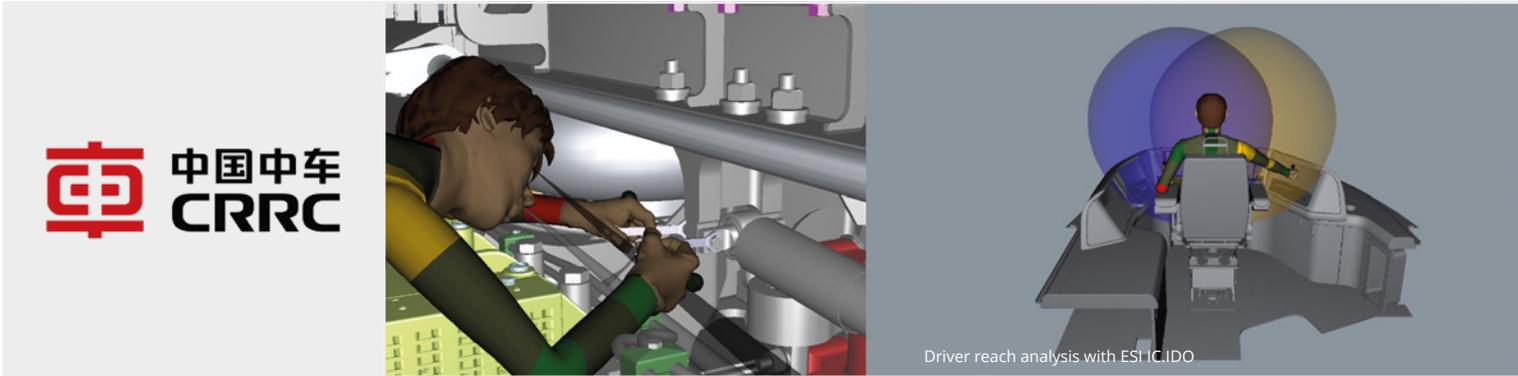


CRRC Zhuzhou Locomotive Optimizes Designs with Their Customer in Real Time Thanks to ESI IC.IDO



Challenge

CRRC ZELC received an order to develop a high quality, low-floor electric locomotive, along with the rolling stock, in the shortest timeframe possible. The validation and optimization of the product required an ergonomic product design and assembly process. To do this, CRRC ZELC needed a solution to conduct human factors analyses and ensure the quality and progress of the product development.

Benefits

With ESI IC.IDO, CRRC ZELC improved the efficiency of the product development and subsequent assembly. The engineering team could conduct accurately the ergonomic analysis for each region's users all across the country. Moreover, their client was able to review the design with a 1:1 3D virtual prototype and communicate modifications in real time. Deploying ESI's solution, the company saw a huge saving in development time and costs.

Story

The rapid transformation of information technology and product intelligence poses a major challenge for all industries. The railway industry finds that it too must focus on being as efficient and environmentally friendly as possible. To that end, they make use of the latest technologies to manage the lifecycle of their products and meet the personalized needs of their customers.

CRRC Zhuzhou Locomotive CO., LTD. (CRRC ZELC) is the key subsidiary

of CRRC Corporation, China's largest research and manufacturing company of electric locomotives. They are the leading enterprise in Hunan's rail transport industry, which is valued at roughly 129 billion Euro and coined 'Home of China's Electric Locomotives'. CRRC ZELC needed a new solution to improve their product development and help them meet strict deadlines given by their clients.

Overall, the client required an improvement of the product's criteria, an efficient assembly process and an interior and exterior color matching evaluation. As is typical for low-floor electric locomotives, the customer expected a significantly customized product and set unique customer-specific requirements.

Before implementing ESI's Virtual Reality solution, IC.IDO, CRRC ZELC used physical prototypes for validation of the ergonomics of their locomotives' design and manufacturing process. They relied on visual observation, manual analysis, and time-consuming modifications. This led to numerous redesigns and updating of physical prototypes, which greatly increased costs and impacted quality. Looking for an alternative to physical prototyping, CRRC ZELC evaluated different products. After several rounds of comparisons and concluded that IC.IDO's immersive experience, coupled with its friendly user interface and powerful functions, perfectly matched their requirement from product design integration to assembly process planning.

CRRC ZELC acquired three Virtual Reality Powerwall systems and their design team used the IC.IDO desktop version to load the Computer-Aided Design (CAD) model for ergonomic, assembly, and visual analysis. Leveraging the real-time collaboration feature, they used the Powerwall system for remote project reviews and product presentations. This way, customer suggestions could be generated and recorded in real time. Most importantly, with the immersive 1:1 3D experience, the costly physical prototype wasn't necessary for product review. This new virtual technique significantly improved the quality and efficiency of product design and CRRC ZELC delivered a high quality product, on time, and enhanced their already positive reputation.

"ESI IC.IDO is a comprehensive approach to help us solve the time and quality issues during product development. With its powerful and user-friendly functions, our design team could complete the project with much higher efficiency. Most importantly, this immersive engineering tool brought us a very creative and innovative way of designing a product and we have gradually integrated it into our daily work."

Nan GAO

Senior Product Manager
CRRC ZELC



for more information
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