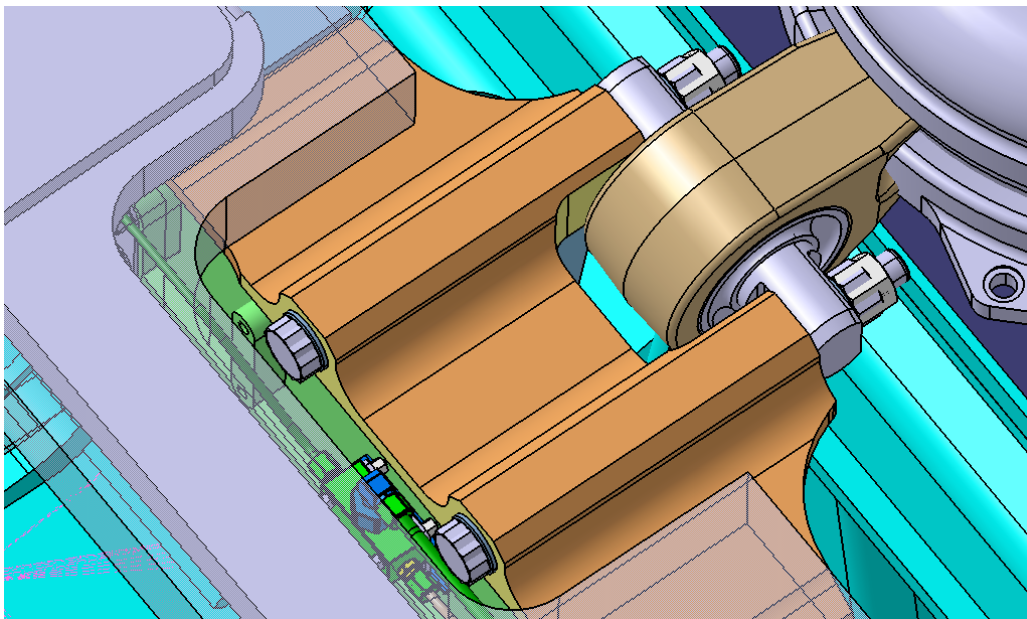


Alstom Cetim Cobra on track

Alstom relies on Cetim Cobra to dimension its joints according to its requirements and applicable standards. It uses the software to determine the tightening torques by incorporating the tolerance of the tools used during production.



©Cetim

OUR CLIENT

Corporate name
Alstom

2014-2015 turnover
6.2 billion Euros for 10 billion Euros in orders

Workforce
32,000 employees in over 60 countries

With its high-speed trains, Alstom is a French industrial flagship. Accordingly, the multiple assemblies of coach bodies, bogies, engines and other equipment are very carefully dimensioned on these trains. *“We have set standards so that our bolted joints meet the most stringent requirements. To help us in this process, we have decided to rely on a tool that complies with Standards VDI2230 and NF25-030 and which would enable us to obtain a detailed analysis of the behaviour of the joints”*, explained Jérôme Lebot who coordinates the numerical simulation working group at Alstom (French company specialising in rail transport).

The French industrial manufacturer has selected the latest version of Cetim Cobra, the software developed by Cetim to dimension prestressed bolted joints with controlled tightening. From the design phase, Alstom uses the software to determine the size and the type of joints based on the stresses sustained by the fasteners of the driver seat, a component underlying the body structure, the system connecting the bogies to the body, etc.

Time saving

Alstom has set standardised tightening torque ranges for each joint. *“In some cases, we have to calculate specific torques with Cetim Cobra*

Cetim's asset

Cetim Cobra is especially suited to the dimensioning of prestressed bolted joints with controlled tightening in the railway industry. It is designed to select the most adequate tightening mode and configuration by taking into account the environmental and industrial stresses of the product.



which provides the possibility of integrating the tolerances of the tools which are used on the production lines. Therefore, we take into consideration the measurement variations from the design phase”, stated Jérôme Lebot. Cetim Cobra also takes into account the dispersions stemming from painted or unpainted parts and the nature of the material (e.g., steel or aluminium). The calculation report provided by Cetim Cobra is included in the final design report. *“This allows us to save time and helps us to provide customers with the calculations that were performed”*, highlighted Jérôme Lebot.