# Collaborative engineering process for multidisciplinary optimization of a gas turbine component

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## 1. Abstract

Today manufacturing companies are more and more often characterized by a growing product and processes complexity. Projects needs the participation of a pool of companies that have to collaborate in a multidisciplinary and integrated way following a defined PLM strategy.

These challenges are meant to introduce a new way of working, based on innovation and global collaboration, both internally among different disciplines and externally between operations, administration, and maintenance and its suppliers. The development engineering department works with a know-how based on models algorithms and data coming from different key-disciplines as aerodynamics, heat transfer, mechanical integrity, combustion, materials, etc. For this reason the use of these topics in a multi-disciplinary process is often difficult due to the incompatibility of notation, informatics languages and IT platforms.

Here-hence the need of defining and managing the simulation processes and associated data so that they can always be tracked, traced, referred to the product requirements and available by all the users operating in network on different disciplines involved in the product design.

The target for the introduction of a collaborative engineering process is to manage, improve and accelerate the multidisciplinary simulation analysis, in order to obtain the best product in terms of technological innovation, performance and quality since the early design conception. The introduction of collaborative engineering process is the key to meet the targets of a competitive market like the energy field.