

# JSC 'Tyazhmash'

Increases production by 80% with CATIA and ENOVIA SmarTeam



## Overview

### ■ Challenge

To maintain its leading position in the heavy machinery production market, Russia's Joint-Stock Company (JSC) 'Tyazhmash' had to shorten design, engineering and development cycle time

### ■ Solution

JSC 'Tyazhmash' chose CATIA and ENOVIA SmarTeam because they support the engineering tasks performed by JSC 'Tyazhmash' experts and are easy to implement

### ■ Benefits

With CATIA and ENOVIA SmarTeam JSC 'Tyazhmash' was able to speed production, improve quality, and process multiple orders

"The introduction of CATIA and ENOVIA SmarTeam enabled us to increase production volumes by 80% and to decrease our product rejects by 50%."

D.S. Trifonov, Development Director,  
JSC 'Tyazhmash'



### Products for industrial equipment, energy and transportation manufacturers

Established in 1941, Russia's Joint-Stock Company (JSC) 'Tyazhmash' is a leading manufacturer of products for the industrial equipment, energy and transportation sectors including metallurgy, construction, chemical and oil processing, space, and gold and diamond production.

JSC 'Tyazhmash' products are used throughout the world to equip thermal power plants operating with solid fuels as well as many hydro and nuclear power plants. They are also used by large integrated mining plants that process iron, copper, tungsten, molybdenum, gold and diamond, as well as in blast furnaces, open and shaft mines, cement and chemical plants, and at space launch sites.

With products recognized on both domestic and international markets, JSC 'Tyazhmash' is capable of processing complex orders and its solid reputation is mainly due to the high quality of its products as well as their durability and high serviceability.

### Managing large assemblies with CATIA and ENOVIA SmarTeam

In order to maintain its leading position in the heavy machinery production market, JSC 'Tyazhmash' had to shorten cycle times in its design, engineering and development activities. The company needed to perform automatic modelling of extremely large installations hence its choice was limited to CAD systems that support large assemblies and that manage the interaction between individual components. Having compared available options and CAD/CAM/CAE systems, the company chose a PLM solution developed from Dassault Systèmes (DS PLM). This choice was, in part, based on the solution's ability to efficiently handle engineering tasks performed by experts in various fields and its adaptability.

Since the PLM solution was needed to solve both current tactical tasks and future issues faced by the company, JSC 'Tyazhmash' felt it was important to choose a vendor that continuously and actively updates its software products and releases new functionalities. The company also wanted a solution that offered interoperability between different components for process automation and the capacity to support large volumes of information and large installations.

## **Better quality, reduced development time**

The management of JSC 'Tyazhmash' understood that building a fully-functional PLM system is not a task that could be accomplished immediately given the current state of the company's IT development. Therefore, it began to familiarize its designers with this type of software by having them use CATIA. The company also introduced ENOVIA SmarTeam. In order to achieve its objective, the company created a special department whose responsibility was to introduce advanced technology, ensure in-depth understanding of its functionalities and provide for a phased implementation of the mastered technology throughout the company.

The introduction of DS PLM in the design and engineering departments was an incentive for designers to switch from the drafting table to a PC within two years. As a result, the company now enjoys significant time savings when developing new structures and technological processes. Using its FARO measurement and inspection machine enabled the company to stop using substandard hardware, improve assembly quality, ensure precise layout and make verifications upon customer requests and on large installations. This significantly accelerated the production process and improved the quality of final products.

In order to improve processing quality, JSC 'Tyazhmash' purchased 5X high-speed

milling machines and digital equipment controlled by CATIA. All parts manufactured by this equipment require no additional finishing. Furthermore, current equipment is being upgraded, thereby significantly improving the quality of the final product. The company was able to undertake complicated projects under extremely tight deadlines and thus increase the number of contracts signed with customers. "The introduction of CATIA and ENOVIA SmarTeam enabled us to increase production volumes by 80% and to decrease our product rejects by 50%", says D.S. Trifonov, Development Director, JSC 'Tyazhmash'.

Flexible user set-up and system integration enabled most engineering tasks to be resolved efficiently while the process of adapting these solutions to the company's needs was also simplified.

In addition, the introduction of DS PLM at JSC 'Tyazhmash' has had a positive impact on the company's business image. For instance, demonstrating PLM solutions to potential local and international customers has enabled the company to sign over 40% of its contracts with prior booking. According to the company's management, PLM solutions significantly increase company value and credibility among customers.

"Dassault Systèmes constantly develops and expands the functionality of their PLM solutions. This was a contributing factor in our choice of DS PLM solutions."

D.S. Trifonov, Development Director,  
JSC 'Tyazhmash'



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