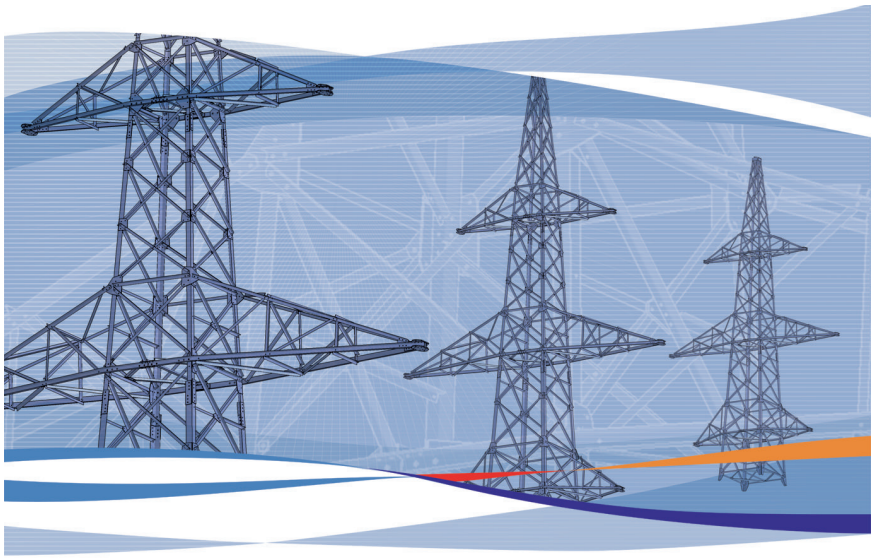
Dalekovod regains competitive spark with CATIA V5



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> – *Anton Ernest Hudic, Project Manager, Suspension and Tension Equipment, Dalekovod d.d.*

Overview

- ***The Challenge***
  Time-consuming and expensive manual processes were eliminating Dalekovod's twin competitive advantages of European-based manufacturing and low labour costs in Croatia
- ***The Solution***
  CATIA V5 reduced design cycle times by as much as 70 percent by eliminating late-cycle errors, hand-built models and imprecise analysis techniques
- ***The Benefit***
  Design cycles have been cut from four months to three weeks. Prototypes that took 16-20 weeks to prepare are now created in a week.

Time-tested methods no longer competitive

Dalekovod d.d., based in Zagreb, Croatia, has specialised in the design and manufacture of electrical transmission lines, substations, and electrical components for major highway projects since 1949. The majority of its products are sold internationally.

Unlike many of its competitors which have outsourced manufacturing to factories in Asia Pacific, Dalekovod continues to manufacture locally. The company was well positioned to win fast-track European projects thanks to Croatia's relatively low labour costs and central location, but Dalekovod's outdated design processes often cancelled these advantages.

Dalekovod's design methods were labour intensive and time consuming, so the company often had difficulty competing with the prices and delivery times of even far-distant suppliers. Testing could only be performed on hand-built models that often took 20 weeks to build – and if errors were discovered, redesigns took weeks or months.

IBM PLM Solutions energise design cycles

To reclaim its natural competitive advantages, Dalekovod turned to CATIA V5, an IBM Product Lifecycle Management (PLM) solution from Dassault Systèmes, choosing mechanical and structural design packages, as well as modules for sheet metal, finite element model (FEM) analysis, weld design, and machining.

"We had some programmes before, but it was very fragmented," said Marfat Ivo, Sales and Export Manager. "We couldn't simulate loads and stresses. So after each design we had to hand-build models from wood and then use copy-milling techniques to create the tools we needed for production. And if a surprise was discovered during the test, the entire process had to start again."

DALEKOVOD

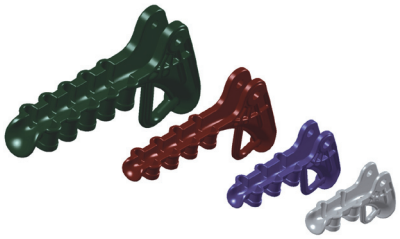
For its first project in CATIA V5, the company designed a suspension clamp to hold a high-voltage power line suspended across a river between two towers. The project, which typically would have required four months from design to production, was completed in just three weeks.

Rather than designing in 2D and then turning those designs into hand-built 3D models, Dalekovod's engineers created virtual 3D models in CATIA V5. With one click, designers could move from the structure design module to the analysis module for structural tests, then back to the design to correct any errors identified in the analysis. When the design was perfect, one click accessed the machining module, allowing manufacturing engineers to generate optimised tool paths and output CNC code for Dalekovod's lathes and milling machines.

"It is very helpful to see the completed design in a virtual environment and have it act as it were in physical form, with all of the properties of the assembly," said Anton Ernest Hudic, Project Manager for Suspension and Tension Equipment. "With CATIA V5, we have reduced the time from idea to reality by a factor of five, mostly because complex prototypes that once took 16-20 weeks can be created in a week."

Back on track with more to come

Dalekovod wants to continue streamlining its PLM processes, taking greater advantage of Knowledgeware and Generative Mechanical Design best practices. These tools will allow Dalekovod to fully utilise its expertise in future projects by automating and standardising common aspects of its designs using industry-specific, customisable knowledge-driven templates.



Dalekovod also plans to add SMARTEAM to manage the production of Bills of Material, a process currently handled by a custom software package created for Dalekovod by IBM Business partner CADCAM Design Centre. "With PLM, you can easily, quickly and simply make every one of your design ideas a reality," Hudic said. "We strongly recommend that our local colleges, especially the University of Zagreb, begin to train students in CATIA V5."

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