



Who delivers top technology to develop and design a world-class Formula One car?

Siemens – Innovation Partner of Red Bull Racing

Answers.

SIEMENS

Siemens PLM and Red Bull Racing

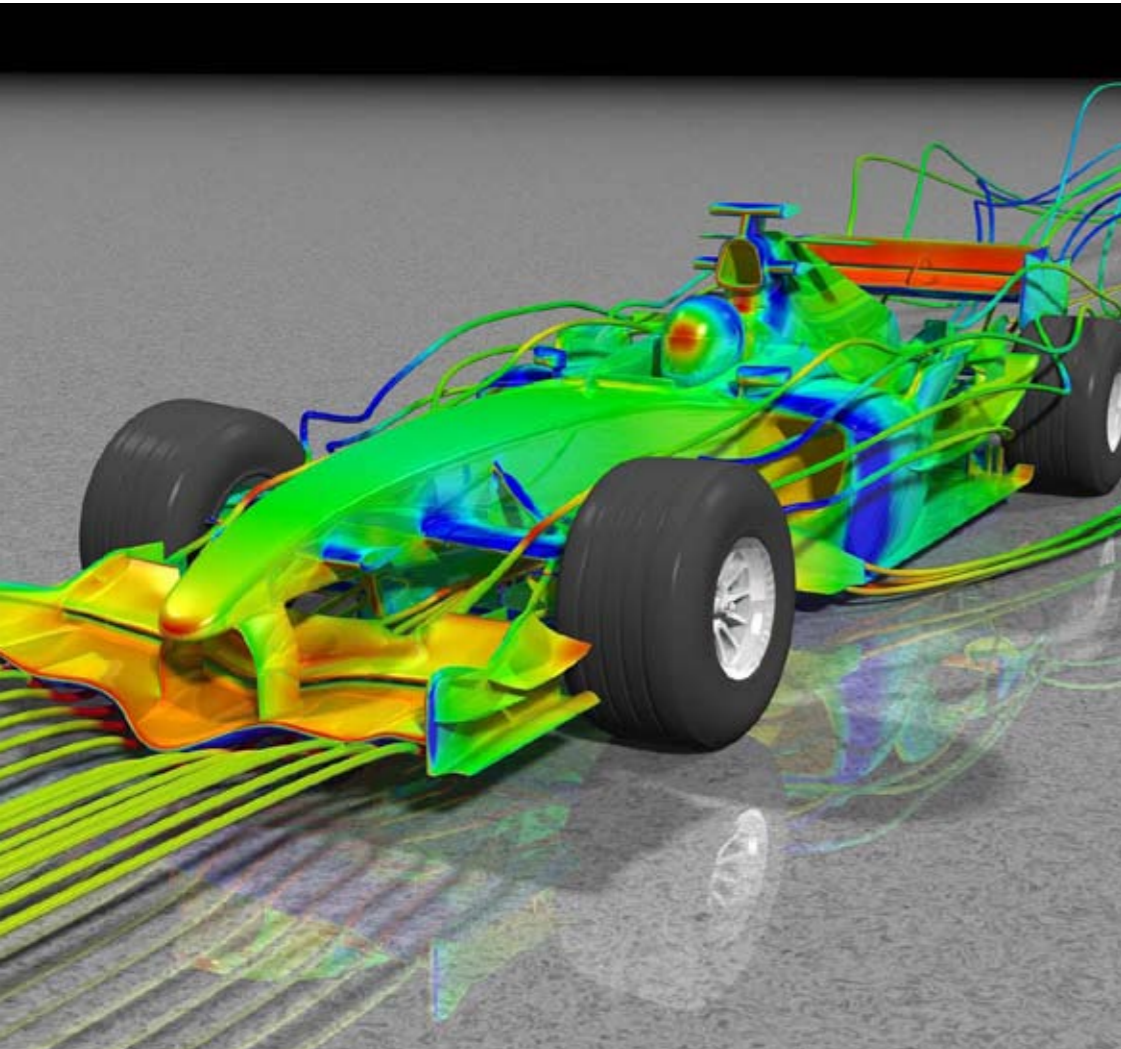


Technology is the key to success in modern day motorsports and cutting-edge innovations are fundamental to prevail in the world of Formula One. In fact, Grand Prix racing has become one of the most “time-critical” businesses in the world with on-track success dependent upon a complex and reliable development process subject to daily if not hourly deadlines.

After each Formula One race, Red Bull Racing Team Management must decide which vehicle alterations represent the optimal response to the lessons learned in the previous race and the track for the next race. The time span to implement these changes can be as short as one week.

Siemens PLM Software has long been a market leader in developing software for digital product development and manufacturing featuring embedded intelligence and collaboration tools which accelerate the process of designing and developing race cars.

Since the founding of Red Bull Racing, formerly Steward Grand Prix (1996-1999) and Jaguar Racing (2000-2004), the alignment of the team’s needs and Siemens PLM’s industry-leading capabilities, has defined a mutually beneficial partnership. In 2004 when the team was re-named Red Bull Racing, Siemens PLM Software was introduced as an Innovation Partner, a relationship which has only blossomed since, putting both parties on the inside track to success in their respective fields.



„Siemens PLM has a clear and realistic roadmap,
which it always manages to deliver upon.“

Christian Horner, Red Bull Racing



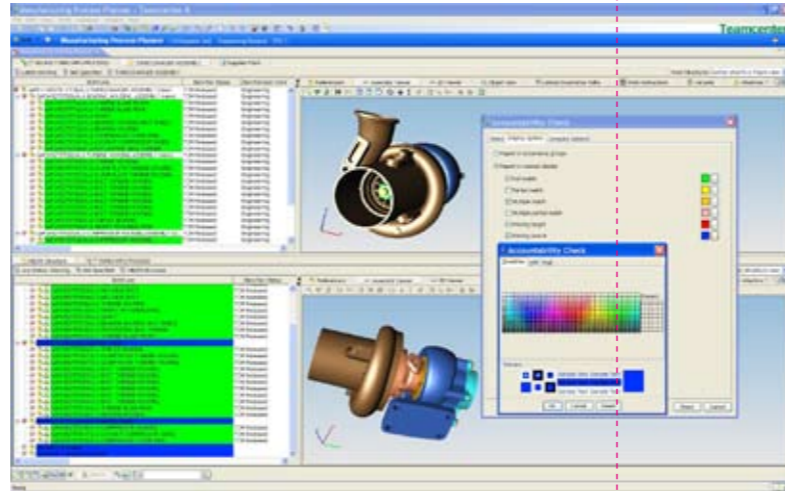
The digital backbone

With the help of Siemens PLM Software solutions, Red Bull Racing has continued its climb up the rankings, finishing second in the constructors as well the drivers' championship during the 2009 season. Siemens PLM Software provides Red Bull Racing with its unrivaled NX digital product design and manufacturing tools. The Teamcenter® software forms the digital backbone allowing the team of 180 engineers to design, develop and manufacture simultaneously in the virtual world. Excellent technical and business support is provided by the Siemens PLM professional services team, becoming an integral part of the Red Bull Racing Team.

Red Bull Racing also represents an ideal partner for Siemens PLM Software. Continuously pushing the software's limits in an effort to improve on-track

performance, the team consistently drives Siemens PLM products to the highest level of innovation. The cooperation, in turn, serves as a unique showcase of Siemens PLM Software to customers and supplies invaluable data and metrics for the development of future products and solutions for other industries.

In light of current sustainability trends, Siemens PLM Software also understands its engagement in Formula One as a source of innovation throughout its business with invaluable synergies to other business activities. Siemens PLM Software is proud that as a result of its work, Red Bull Racing has significantly reduced physical prototyping and limited material waste. Meanwhile, designers regained up to 75% of their time with the tedious and repetitive portions of the design process being eliminated.



„Siemens proactively comes to us with solutions to problems that, sometimes, we didn't even know we had!“

Steve Nevey, Red Bull Racing

Transforming business with Siemens PLM

Siemens PLM Software solutions unite the Red Bull Racing organization around product and process innovation and unleash the hidden power in the product lifecycle – from concept design to product development, manufacturing, launch and retirement. When working with Siemens PLM, organizations can move forward strategically, heading to the long-term while achieving near-term results. En route, they will recognize signs that they are on the road to more innovation and measurable growth – and well on their way to meeting five key business requirements:

Innovate more –

Rapid innovation is facilitated by providing a virtual environment that results in the delivery of more competitive products.

Move faster –

Project management tools help manage performance against goals and compress time-to-market.

Be compliant –

Non-compliant components and conditions are avoided by addressing business and market requirements.


Get optimized –

Re-use of intellectual capital translates into faster response times to markets, as well as improved quality.

Go global –

By using PLM to establish a highly secure, real-time digital environment, organizations can unite individuals in a widely distributed organization and maximize the advantages of globalization.

To establish an effective Global Innovation Network, the information technology strategy must be built on a coherent data structure that enables real-time, virtual collaboration and data sharing. Siemens PLM software unites the work of functionally or geographically separated teams in a single shared environment to ensure efficient communication and reliable exchange of product and process information. Siemens PLM software uses an “open-by-design” strategy that supports XML-based interoperability with best-of-breed design and manufacturing tools.



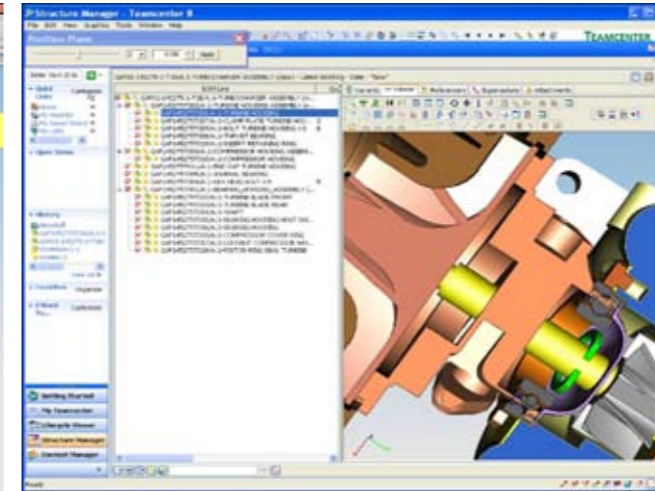
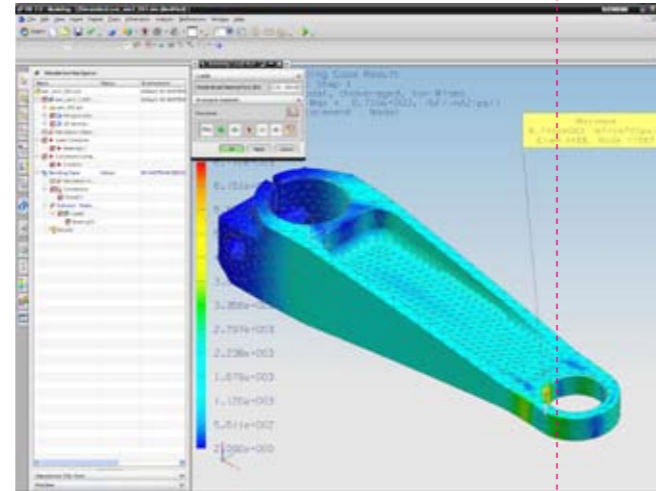
We never let a customer fail

To compete successfully in the fast-paced Formula One environment, Red Bull Racing must be able to modify its vehicle design rapidly, make or acquire the new parts quickly and still have time to test and refine developments prior to the race.

From the early stages during the off-season, the team's Formula One car is developed entirely in Siemens software, based on functional requirements and Formula One regulations. The model

proceeds to outline structure where the Red Bull Racing design team has approximately 150 workstations running the fully integrated CAD/CAM/CAE suite, NX® to develop geometric part models for the entire vehicle. This is all managed within the digital lifecycle management and visualization capabilities of Teamcenter®.

The fully integrated Siemens PLM solutions provide an integrated design-through-manufacturing environment to set the stage for a highly competitive Red Bull Racing team.



From concept ideation to manufacturing – NX®

NX® is used to design the car and create the machine tool cutter paths for manufacturing parts on the milling and turning machines. It transforms the entire product development process by enabling Red Bull Racing to reduce physical prototyping, improve quality, shorten cycle time and deliver more innovative products. Design engineers reference each other's areas of responsibility as they create the digital car, using the PLM system to control access and manage geometric and non-geometric data.

During the racing season, as modifications to the car are ordered, designers revise the digital model and review a 3D image of the changes with the team's senior technical management. Digital data drives in-house manufacturing machines to produce new and redesigned parts. Outside part suppliers also work from digital data. The parametric modeling capabilities of NX ensure that defined geometric relationships, such as those required by regulations, are maintained as design modifications are considered.

NX® is the industry's only unified solution that addresses every aspect of product development from concept ideation to manufacturing.

Holding it all together – Teamcenter®

Teamcenter® enables Red Bull Racing to engage all parts of their business in the introduction of successful new race cars. Integrated idea capture and management, real-time engineering collaboration and project management tools are combined with industry-leading product design and development solutions in a single shared source of product and process knowledge. Teamcenter not only manages the complete product definition and revisions as the car is developed, but also manages the process of introduction of the changes.

Teamcenter® maximizes the power of product and process knowledge to drive productivity and innovation. All this work behind the scenes has one purpose: faster lap times. After all, a design change that drops the lap time by a fraction of a second can determine the race.

**For more information about our partnership with Red Bull Racing
or our products and services portfolio, please contact:**

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