

PTC® Solutions Enrich Product Development Skills for High School Teams Participating in FIRST Robotics Competition

Windchill[R], Pro/ENGINEER[R] and Mathcad[R] help teams complete six-week build cycle to deliver competition ready robots

NEEDHAM, Mass. -- PTC (Nasdaq: PMTC), The Product Development Company[R], today announced that more than twenty percent of teams competing in the 2008 FIRST (For Inspiration and Recognition of Science and Technology) Robotics Competition (FRC) registered to use its Windchill collaboration solution to manage their FRC projects during the company's inaugural year of sponsorship. Founded in 1989 by inventor and entrepreneur Dean Kamen, FIRST reaches more than 125,000 students in grades K-12 annually. The organization offers accessible, innovative programs for children that build science and technology skills and interests, as well as self confidence, leadership, and life skills. PTC also announced the election of James Heppelmann, executive vice president and chief product officer, to the national FIRST executive advisory board.

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The FRC challenges teams of young people and their mentors to solve a common problem in a six-week timeframe using a standard "kit of parts" and a common set of rules. Teams build robots from the parts in order to compete in regional and international competitions. All participating FRC teams are offered the opportunity to use PTC Windchill, Pro/ENGINEER and Mathcad schools editions. Pro/ENGINEER is PTC's integrated CAD/CAM/CAE software that helps companies develop detailed, intuitive and realistic digital product representations as well as related deliverables. Mathcad is PTC's engineering calculation software that combines a powerful computational engine, accessed through conventional math notation, with a full-featured word processor and graphing tools. Windchill, PTC's content and process management software, is a web-based application that allows teams to store their FIRST competition information in a single location for all members to access. The Windchill web-based system, hosted on Sun[R] servers, provides teams the capability to securely control CAD data, calculations,

and documents. Members can also email each other within the system, and set up timelines and calendars to help manage their projects.

In addition to PTC's software and hosting contribution, PTC employees in Massachusetts, Minnesota, Michigan, Pennsylvania and Israel are supporting the FRC as mentors, judges and regional volunteers. Many long term PTC customers such as Battelle and Pelco have also committed time and resources to help encourage student interest in math, science and engineering.

"Through FRC, FIRST presents high school students with the opportunity to participate in a real-life product development experience. FIRST alum are more valuable as a result and are better able to leverage the skills they are developing using Windchill, Pro/ENGINEER, and Mathcad as they pursue careers in science, technology, engineering, and math," said Jim Heppelmann, executive vice president and chief product officer, PTC. "As a member of the FIRST executive advisory board I hope to help FIRST achieve its strategic growth goals by strengthening the relationship between industry partners and the FIRST organization. Recruiting, fostering, and retaining industry mentors are vital to the expansion of the FIRST program and key to inspiring more students to engage in professions that will advance technology globally. PTC is proud to invest in this important initiative."

FRC Team #839, "Rosie Robotics" from Agawam High School in Agawam, Massachusetts, has been participating in the FRC for the past seven years and eagerly took advantage of the opportunity to use the full complement of PTC solutions. Comprised of more than 30 students and mentors, the team used Pro/ENGINEER for some design work. All work was uploaded to Windchill to enable continuous and remote collaboration - no longer were work files unavailable. Mathcad was used to analyze a problem as simple as the weight of the air inside the 40 inch diameter ball used in the competition to the mechanical engineering analysis of the mechanism. "The PTC solutions added a new sense of excitement to the FRC experience," said Jay Cameron, mechanical engineering mentor, team #839. "Windchill has been a tremendous boon to the team's operations by eliminating obstacles to work stoppage from unavailability - students can access the project from virtually anywhere to complete their tasks, which ultimately increases team productivity." Team #839 received the Regional Chairman's Award at the Boston Regional competition. This prestigious award honors the team that best represents a model for other teams to emulate and best embodies the purpose and goals of FIRST.

Rookie team #2387 from the Columbus Alternative High School in Columbus, Ohio opted to design the frame for their robot using Pro/ENGINEER instead of using the frame supplied in the stock kit. The team also relied on Pro/ENGINEER to analyze the weight of its robot, identify the center of gravity to ensure the robot was balanced and to analyze the robotic arm mechanism to determine correct linkages and validate that everything would work. By using PTC Windchill, the team was able to easily share its Pro/ENGINEER models with disparately located team members and mentors and receive timely feedback through Windchill forums. "Windchill is an enabler for increasing the frequency of interactions between the FRC teams and their industry mentors," said Chris Brandon, B2e project director, Battelle. "Simply stated, if we can have more interaction between the students, teacher mentors and industry professional mentors, the students' experience with FRC is enhanced." Team #2387 received the Rookie All-Star Award at the Buckeye Regional competition.

Anne Shade became involved with FIRST in 1998 as a participant on her high school's FRC team. She began mentoring teams during college and credits FIRST with influencing her decision to become a mechanical engineer. She now mentors rookie team #2377, Chesapeake High School, Pasadena, Maryland, and immediately embraced Windchill to manage all of the teams' documents. "It was very exciting to be able to start the team off on the right foot using an industry leading collaboration solution and teaching them a disciplined approach to product development," says Anne Shade, mechanical engineer and FIRST mentor, team #2377.

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"Windchill provides a huge advantage for these students because they will go into industry already knowing the tools and processes used by product development professionals."

Team #2377 placed fifth overall out of 60 teams in the Chesapeake Regional and won the Highest Rookie Seed and Rookie All-Star Award at that competition which has earned them a spot at the Championship event in April.

By using Pro/ENGINEER, Team #2509, Hutchinson High School, Hutchinson, Minnesota, eliminated the need to create prototypes, saving valuable time in the condensed six week build process. The team used Pro/ENGINEER for 40% of their design and reverse engineered the remaining 60% using parts converted into Pro/ENGINEER from the stock kit that were pre-loaded into a Windchill library. One team member found the rendering capability particularly useful because he was able to view detailed measurements and immediately see how changes to the measurements were propagated throughout the design. Other team members felt that the Pro/ENGINEER mechanism capabilities provided the best check and balance to confirm that Tiger, the team's robot, would work. As a participant in the PTC Global Education Program, many of the students on the Hutchinson team had already completed a foundation class in Pro/ENGINEER. The team used Windchill for project management and document storage.

"The short build cycle can be especially challenging for rookie teams trying to coordinate all of the tasks involved in building the robot along with marketing, fundraising and team operations," said Daryl Lundin and Jeff Smith, co-coaches, Team 2509. "By using Windchill and Pro/ENGINEER, the team was able to increase their productivity and successfully complete the build process."

About FIRST

Accomplished inventor Dean Kamen founded FIRST (For Inspiration and Recognition of Science and Technology) in 1989 to inspire an appreciation of science and technology in young people. Based in Manchester, N.H., FIRST designs accessible, innovative programs to build self-confidence, knowledge, and life skills while motivating young people to pursue opportunities in science, technology, and engineering. With the support of many of the world's most well-known companies, the not-for-profit organization hosts the FIRST Robotics Competition and FIRST Tech Challenge for high-school students, the FIRST LEGO[R] League for children 9-14 years old, and the Junior FIRST LEGO League for 6 to 9 year-olds. To learn more about FIRST, go to www.usfirst.org.

About PTC's Global Education Program

PTC's education program provides teachers and professors with complete learning solutions to prepare a new generation for success in a technological world. From secondary school to the university level, PTC gives students the ultimate in product

development education by providing software, training and classroom materials to educators worldwide. Its education program is a part of a technological literacy movement that seeks to improve critical thinking and multidimensional problem-solving skills as well as preparing a growing number of students to become engineers.

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FIRST is pleased to announce that PTC, The Product Development Company, is expanding its sponsorship in this year's FIRST Robotics Competition (FRC).

PTC's Product Lifecycle Management (PLM) solutions, including Pro/ENGINEER, Windchill, and Mathcad, are the tools engineers use everyday to do their jobs. As a Crown Level Supplier to FIRST and the FRC program, PTC is offering these solutions to help students design their robots and, through which, FIRST students can learn the language of engineering. The following software products are available to each and every registered 2009 FRC team!!!

Pro/ENGINEER - FIRST teams will have access to Pro/ENGINEER, PTC's integrated 3D CAD/CAM/CAE software. Pro/ENGINEER is the standard in 3D product design, featuring industry-leading productivity tools that promote best practices in design while ensuring compliance with industry and company standards. Pro/ENGINEER enables students to detail the form, fit, and function of their robot.

With Pro/ENGINEER, high-fidelity digital models have full associativity, so that as your robot design changes during the build season, those changes will be reflected in your drawings and assembly automatically. Used by 15,000 high schools and 1,451 colleges and universities, Pro/ENGINEER offers an intuitive user interface making it easy to learn and use. For many years, FRC teams have used Pro/ENGINEER as part of their high school curriculum.

Windchill – Through its understanding of structured information such as CAD files, engineering calculations, and technical documentation, Windchill helps teams to work concurrently together or virtually from home. You can find the right files, and share product development data during the build season.

Windchill supports CAD authoring tools such as Pro/ENGINEER, Autodesk Inventor, AutoCAD, and Solidworks. Windchill also includes robust visualization capabilities, and provides a secure environment for project management and execution.

Windchill facilitates collaboration with web-based workspaces, alerts, discussion forums, and Microsoft Office integration. Hosted by PTC, web-based Windchill is easily accessible through a Web-browser.

Finally, Windchill can manage your entire project including fundraising, marketing, and finance information. Last year, over 300 teams signed up to use Windchill.

Start your FRC project now and get familiar with the capabilities that will allow you to plan, manage, share, and get the most out of FRC team information during the fast-paced build season.

Mathcad - Mathcad, PTC's engineering calculation software, is used to perform, document, and share calculation and design work. The unique Mathcad visual format and easy-to-use whiteboard interface integrates standard mathematical notation, text, and graphs into a single worksheet making Mathcad ideal for knowledge capture, calculation reuse, and engineering collaboration. Mathcad lets teams work with interactive designs to capture the critical methods and values behind each of their robot designs.

Mathcad simplifies and streamlines documentation by combining equations, text, and graphics in a single worksheet. Mathcad makes it easy to keep track of the most complex calculations. Last year, teams used Mathcad to help them with key calculations during the build season to predict the behavior of their robot.

Lastly, PTC has created a dedicated web-page containing various information to aid teams in getting started using the PTC solutions for their robot design. You will find recorded product demos to learn more about the use of our products and how they can help enhance your design and collaboration for your team in this year's FRC Competition! This page can be accessed from the project OR from www.ptc.com/go/firstgettingstarted.

How to register for the software:

Registration is easy. Your team's main contact will register at www.ptc.com/go/frcregistration Once registered, he/she will have the ability to create their team project or projects. In addition, the main contact will become the project manager and manage member access to the team project.

From the project, team members will download the Pro/ENGINEER Schools Edition, for Integrated CAD/CAM/CAE and Mathcad Student Edition for engineering calculations.

For Questions and Technical Support please email: firstsupport@ptc.com
Go Teams!