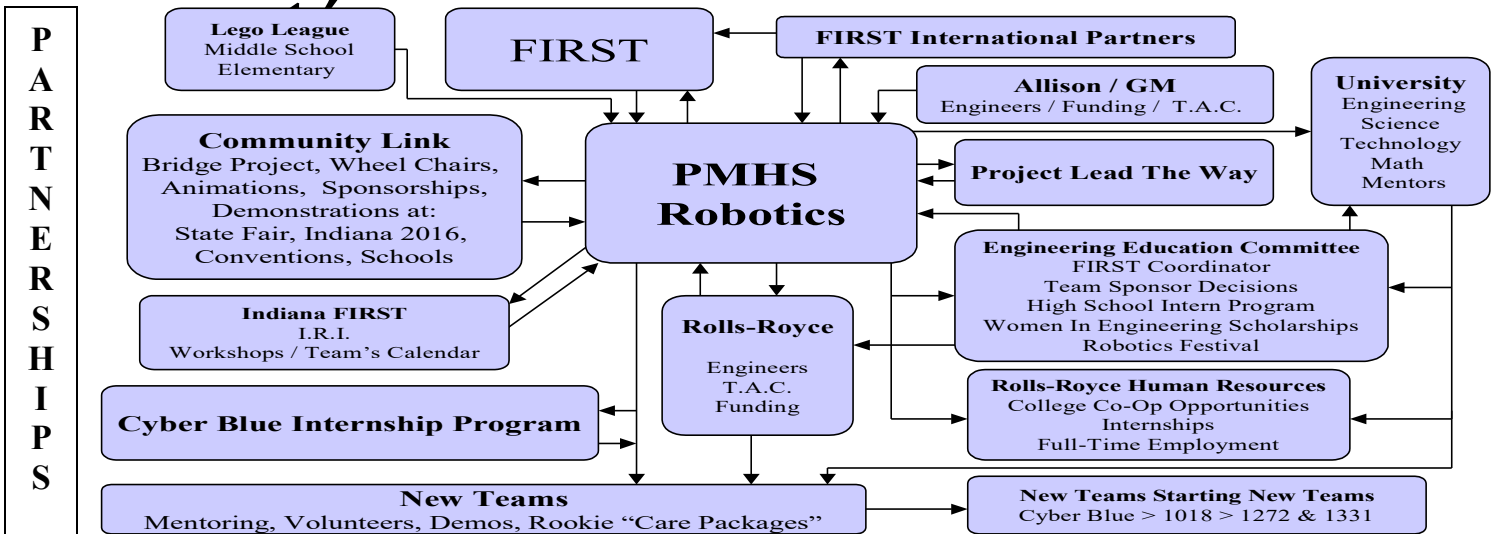


February 20, 2004

Cyber Blue News



Cyber Blue Implements Professional Program Management Processes for 2004 Season

For the 2004 season, Cyber Blue has taken significant steps to adapt a Professional Program Management model to its team operation. Cyber Blue has defined program requirements, set a schedule and key milestones, created a risk register, and implemented a staged audit process to improve its robot and overall program management.

The most significant change to team management has been the incorporation of a gated review process and Technical Advisory Committee (TAC).

In a gated review process, experienced auditors ask specific questions of the project team as the program moves from the concept phase through preliminary design, production, and entry into service. Specific criteria must be met in one phase before approval is given to move to the next phase.

The team expanded their traditional single review to four specific reviews – Concept, Preliminary Design, Critical Design and Production. A group of engineering managers formed the TAC, and committed to attend the multiple reviews. The group also attended the kick-off to improve their effectiveness with the team. This information helped prepare them for the upcoming reviews.

The Concept, Preliminary Design, and Critical Design reviews were held after weeks one, two, and three, respectively. The Production review was midway through week five. Each review was student led, had a stated goal, a list of expectations, and exit criteria for the gate. The program schedule was also reviewed at each event. Notes, suggestions, and comments were captured and reviewed by Cyber Blue team members following each review; suggestions were often incorporated immediately.

A strong Technical Requirements Document is key to a successful development program. This document has continued to be updated and refined as the build season has progressed and as more technical information could be included.

A master program schedule was created to incorporate key dates and milestones. As the season progressed, the schedule was regularly updated with new details. However, the major milestones were not changed.

Commented Co-Captain Jason Kixmiller, “The CDR (Critical Design Review) is a great way to obtain a fresh perspective on the challenge and

evaluate our team’s strategy and design.”

Ross Belloni, Engineering Director for the LHTEC Model T-800 engine and member of the TAC, had this to say of the team and the process: “Simply astounding! That’s how I would describe Cyber Blue’s adoption of a gated review product development process. They [the team members] have already seen some payoff and are convinced that it will deliver more. The knowledge and experience they are gaining about product development by involvement in the FIRST competition will pay big dividends throughout their careers, regardless of what profession they choose.”

The Cyber Blue Design Review Process was posted as a white paper on the “Chief Delphi” forums and has been downloaded well over one hundred times. Additionally, a regular review status was posted on the forum to provide ongoing feedback to the Chief Delphi readers of how each review progressed. Paul Copioli, an engineer from Team 217, highlighted the forum and stated “I am recommending this (thread) to be at the top of everyone’s ‘to read’ list.”

Today’s Major Headlines:

Pack to School, page 2
Rolls-Royce and FIRST, page 2

High School Interns, page 2
Wheelchair Repair, page 3
Cyber Blue Team Interns, page 3

IRI, page 3
FIPs, page 4
Bridge Project, page 4

Cyber Blue Co-Captain Among First High School Interns at Rolls-Royce

In the fall of 2003, Rolls-Royce started a special internship program for high school seniors. The students will work four hours a day every other day for one semester. Students will be assigned to an engineer for the duration of the internship period and may be assigned work in several different areas. The interns are not paid, but they do receive unique and valuable career experience in their chosen profession.

Cyber Blue Co-Captain Collin Fultz was selected for the program and began his work session with a full day orientation on January 5, 2004. After his orientation, Collin met with his



supervisor and learned of his assignment. Collin is working in the Special Processes section of Manufacturing Engineering and his specific responsibilities include working on a data base for part "masks", helping re-write part routing instructions, and assisting with a special investigation.

Collin said this of his internship opportunity, "There is only so much a student can learn in a classroom. This is why my internship is such a great opportunity for me. Because of FIRST, Cyber Blue 234, and now my internship at Rolls-Royce, I have gained knowledge that will be crucial for a successful career in engineering that was unavailable to me and thousands of students like me before this incredible partnership."

Rolls-Royce requires that students be

high school seniors, maintain a minimum 3.5 GPA on a 4.0 scale, plan for post-secondary instruction in an engineering field, and be eighteen years of age or older. Experience on a FIRST robotics team can give a candidate an additional edge for the competitive selection. Six students have intern positions for Spring '04.

Rolls-Royce has expanded into the high school internship program to help create a link with the students while they are still in high school. This internship program can serve as a natural transition into the college level Co-Op and Internship program.

At the completion of his internship session, Collin will be required to make a presentation on his experience to the Rolls-Royce Engineering Education Committee and to the Junior Class at Perry Meridian High School.

Rolls-Royce Expands FIRST Support in Indianapolis

The Rolls-Royce / Perry Meridian High School - Cyber Blue partnership began in 1999 and has proven to be a success for both organizations. Rolls-Royce has continued to see benefits from their support of FIRST robotics. Rolls-Royce is helping to insure its future by developing and encouraging the engineers of tomorrow.

Dr. David Quick is Manager of R & T Strategy at Rolls-Royce and had these comments "Because Rolls-Royce has established a special relationship with the Perry Meridian FIRST Robotics and PLTW (Project Lead The Way) programs, we have experienced a collaborative benefit of finding superbly motivated students who have joined the ranks of employment in various fields at Rolls-Royce. (These students) have exhibited the balance of depth and breadth to allow growth in responsibility. (These programs) have provided the students with the skills and attitudes needed to achieve significant technical accomplishment and career growth at Rolls-Royce".

Because of the positive Cyber Blue experience, Rolls-Royce is continuing to increase support of FIRST programs. Recently, the Engineering Education Committee added a new

Engineering Based Community Service

position of FIRST Robotics Coordinator. Chris Fultz, a three-year mentor of Cyber Blue, accepted this role. The intent of this position is to provide increased visibility of FIRST within Rolls-Royce and be a conduit of information about internships, co-op opportunities, and other special programs to local FIRST teams.

The committee also doubled the number of supported teams from three in 2003 to six in 2004, thereby providing financial support and engineering volunteers to every team in the Indianapolis area!

A new event planned for 2004 is a "Robotics Festival", to be hosted in the Rolls-Royce training center. Each Indianapolis team will be invited to bring its robot for display and demonstrations and make a presentation on its FIRST program

Rolls-Royce continues to support engineering education by providing scholarships to the Women in Engineering Summer Camp at the University of Dayton.

Rolls-Royce is also a long time supporter of the college Co-Op and Intern program and allows FIRST

participants to enter the program one year earlier than other applicants.

Pack to School

Cyber Blue participated in a program with Rolls-Royce to provide backpacks filled with school supplies for needy second-graders at Maplegrove elementary school. In **Indiana Robotics Invitational – 2003 Biggest and Best Ever!** 2003, Cyber Blue provided five backpacks for the program.

For 2004, part of the “entry fee” for the Indiana Robotics Invitational (sponsored by Cyber Blue and two other teams) will be a filled backpack. With an expected fifty teams participating in the IRI, this program will provide a significant positive impact to the students at Maplegrove.

Wheelchairs Help Less Fortunate

Cyber Blue has continued its wheelchair project into 2004. Broken chairs are obtained from local hospitals, repaired by the team, and then sent to the Timmy Foundation for transportation to an impoverished nation.

This is a great project for Cyber Blue as it lets the students use some of the mechanical skills they are learning through the Robotics program to assist those in need.

234

February 20, 2004

Page 3

In the spring of 2002, the Kokomo High School TechnoKats (45) approached Cyber Blue (234) with an idea to move the Indiana Robotics Invitational (IRI) from Kokomo to Indianapolis. In addition to the location change, the TechnoKats were looking for another team or teams to help organize and run the event. Cyber Blue and Full Metal Jackets (393), from nearby Morristown, responded to the challenge and began work for the third annual IRI to be in Indianapolis.

The 2002 IRI was held at Lawrence North High School. Lawrence North, through the Makenzie Career Center, was working to start a team and being the host location for the IRI was seen as an excellent way to introduce their students and administration to FIRST. Concession money from the event went to support the soon-to-be Makenzie team 1024.

Facilitating FIRST – Major Community Events

Cyber Blue is actively involved with several programs and projects that spread the FIRST message. Many of these programs are directed towards larger audiences and may help start new programs in areas unknown to Cyber Blue.

One such event is the team involvement with the Indiana 2016 program. Indiana 2016 is a state initiative to highlight community-based programs that have a positive impact on the state. FIRST Robotics is a featured part of the 2016 program as it is providing a solid technical base for students with engineering interests.

Cyber Blue has attended the Indiana State Fair as part of the 2016 program. Students presented the robot and the FIRST program to school officials, potential employers, other young students and the community through demonstrations and an ‘on stage’ discussion between one of the team members and then First Lady Judy O’Bannon.

In September 2003, Cyber Blue was also invited to the Electrical Manufacturing Expo. At this ‘working party’, the team did demonstrations as well as talk with manufacturers and visitors about FIRST Robotics and what the positive values of the

Team attendance at the IRI jumped from eighteen in 2001 to twenty-seven in 2002. The IRI received positive comments from those who attended and great publicity on the Chief Delphi (47) forums.

For 2003, the three host teams (234, 45 and 393) committed to an even bigger and better event. Lawrence North agreed to be the host site and event planning began in April, as soon as the regular FIRST season was complete. The registration fee was kept at \$300 and a special “scholarship” helped one rookie team attend at no charge.

And the results – FANTASTIC! Forty-eight teams competed at the fourth annual IRI, including all three 2003 National Champions and three Runner’s Up. The two-day event attracted over seven hundred FIRST Team Members and hundreds of spectators. Over sixty members of

program are. Cyber Blue has been invited back for 2004 and has been promised their own display booth. The event was extra special for Cyber Blue as FIRST founder Dean Kamen was presented with the Golden Omega award and visited with the team.

Cyber Blue Announces Robotics Internship Program

Cyber Blue has launched a new “Internship Program” to introduce FIRST to area schools.

Two students and a Faculty advisor from local schools will participate with the Cyber Blue team for a complete season. This season will include the fall education events, demos, and fundraising, as well as the FIRST build season and robotics competitions. The group will learn what it is like to be a part of a team; the adult will also learn basics of funding, travel and team organization.

Cyber Blue believes this Internship Program can be as effective as internships in the business world and greatly help new teams be successful in their rookie years at their home schools. Cyber Blue believes it can accommodate up to three schools in

Since 1999,
* 100% of Cyber Blue Senior

Cyber Blue (students, parents, families and friends) volunteered. Local media covered the event on the opening morning and explained the robot challenge and the FIRST program to the city of Indianapolis. With help from NASA TV, the entire two days of competition were webcast.

In addition to the robotics competition, the IRI included a complimentary team dinner, a human player competition hosted by team Wildstang (111), a ‘Chairman’s Award’ competition where teams put together a Power Point presentation about specific details of the IRI, and an animation competition hosted by Ivy Tech Kokomo.

The organizing teams have found a way to create a big event atmosphere while keeping the hometown feel to the IRI.

IRI 2004 will be even better!

DID YOU KNOW...?

- Graduates have attended college
- * 86% are obtaining Engineering, Science or Technology Degrees
- * 30% have worked at Rolls-Royce
- * 100% of the 2004 Seniors plan to study Engineering or Science

the 2004-2005 FIRST season. If more schools are interested, support from other local FIRST teams will be requested.

The Internship Program has been announced locally by a direct communication to area high school principals and Technology Department leaders. These schools were invited to the team “Open House” at the end of the build season and given information about the program. The school representatives were invited to nearby regionals and given information about the IRI.

Program information is also being shared through FIRST-related websites – Cyber Blue’s web page and Chief Delphi Forums, as well as at competition sites.

FIRST International Partners – Helping to Meet the Challenges of International FIRST

International FIRST teams face the same challenges as their US counterparts, but have the added complexity of finding and purchasing parts and game materials and getting them shipped to their schools.

To help overcome these obstacles and others, Cyber Blue has organized a “FIRST International Partners”, or FIPs. The goal of FIPs is to help the international teams work through some of their unique challenges by pairing them up with a U.S. team.

Sharing Materials, Knowledge and Good Will with FIRST Teams

New Teams

Cyber Blue continues to share information and resources through the FIRST community.

Cyber Blue met the Techno-Tics (1150) at the 2003 Arizona Regional. Team 1150 worked to build their robot with very limited resources. Cyber Blue provided assistance to the team at the event, and later sent a “care package” of nuts, bolts, gears, bearings and other components.

Cyber Blue has developed a strong relationship with team 1020 (Indiana Academy) at Ball State University. In 2003, Team 1020 worked in a teacher’s lounge and a basement. Scott Ritchie, Cyber Blue Leader, used his contacts at the university and helped arrange for the team to move into a Technology Lab at the school with access to the machines and equipment needed to build a robot. The school is also helping to organize college students to be team mentors.

Cyber Blue loaned several hand tools and arranged for one of its sponsors, Triangle Fasteners, to donate a large selection of nuts, bolts and fasteners.

Amanda Morrison is a team leader and had this to say about Scott Ritchie, “Scott embodies everything I believe FIRST is about – he is inspirational, respectful, positively exudes professionalism, and most of all, goes out of his way to help others.”

Care Packages

Cyber Blue sent care packages to the Rookie Indiana Teams. The packages included cookies, snacks, and a Good Luck note and arrived during week 3.

Weights Database

For many teams, the knowledge of an overweight robot often comes very late in the build process.

All FIRST international teams have been contacted and provided general information about the program. All have expressed a desire to participate.

Cyber Blue’s vision for this program is that the US and the International teams will work together to identify ways to move parts more easily as well as assist with logistics coordination for competition travel.

An additional benefit will be the international friendships that can develop between the teams.

To address this problem, Cyber Blue created a Weights Database, an interactive spreadsheet that tracks total robot weight as the user inputs quantities of materials used to build.

This database has been made available to all FIRST teams through Cyber Blue’s website.

Allison Transmission Added to Cyber Blue Team

Cyber Blue has added a new major sponsor for 2004 – Allison Transmission / G.M. Allison has provided financial support, engineers and one member of the Technical Advisory Committee for 2004. Cyber Blue is the first FIRST Indianapolis team for Allison Transmission to sponsor.

Cyber Blue + Indiana + Project Lead the Way = Inspired Engineers

Project Lead the Way (PLTW) is a pre-engineering program for high school students that acts as an excellent companion to a school’s FIRST program. Indiana has the second largest population of PLTW schools, due in part to FIRST and Cyber Blue.

The Indiana Department of Workforce Development (IDWD) was an early supporter of Cyber Blue through a “School to Work” program.

Cyber Blue has been active with a township wide initiative called the Bridge Project. The township takes surplus computers, cleans off old files, makes repairs and installs new

Cyber Blue has designated a portion of their web-site to the FIPs program to create a web-based area for teams to share information and learn more about the program.

The FIPs program is new and will develop to fit the needs and abilities of the participating teams. As more International teams join FIRST, they will be invited to join FIPs to help them acclimate to the FIRST program.

Bridge Project is a Community Success

The computers are then donated to needy families.

Mr. Michael Taylor is the township coordinator. “The PMHS Cyber Blue Robotics team is an integral part of the Bridge Project here in Perry Township. They demonstrate a commitment to their community. The spirit with which they communicate to the Bridge families is positive and sincere. Without (them), the Bridge Project would not be as successful.”

Science Fair Judges “Great”

Rolls-Royce has become almost the single source for judges for the Perry Science Fair. Susan Frantsi, Science Chair, said “The Rolls-Royce people are great. It is wonderful to have such knowledgeable people judging”.

Based on that visit, IDWD provided grants totaling over \$75,000 to several Indiana FIRST teams in the 2003 season.

The IDWD has now seen the value of PLTW and has been instrumental in bringing the program to Indiana high schools. Rolls-Royce is active with several PLTW schools in the Indianapolis area.