January 20, 2009

TEAM UPDATE #5

GENERAL NOTICES

General Notes from *FIRST* Headquarters:

Don't Zap your Driver Station

Several teams have reported Driver Station lock up (requiring power cycling to recover) and we are currently investigating the issue, and have thus far tracked the problem back to Electrostatic Discharge (ESD). We are currently continuing to pursue the issue, but in the mean time, please practice prudence to mitigate the possibilities of this happening to your Driver Station.
The human body can carry an electrical charge (like when you shuffle your socks on the carpet so you can 'zap' a friend). Make sure you ground yourself before you touch the driver station or anything connected to the driver station. Touch metal before you touch your robot or Driver Station. It will save you a lot of time and energy.

The FRC Diagnostics Panel

The FRC Diagnostics Panel is a LabVIEW tool to assist with the diagnosis of robot problems. It allows for manual control of all the input and output connections on the Digital Side Car, Analog Breakout, and Solenoid Breakout boards. This tool is provided for use by teams and will be employed by the Robot Inspectors during FRC Regionals. An article about this software, and a link to download it, can be found on the FIRST Think Tank website.

http://thinktank.wpi.edu/article/138

Communication via the Field Management System

Every time the Driver Station and ROBOT communicate, a 1024-byte packet is sent between them. 40 bytes are reserved for use by the Field Management System. The remaining 984 bytes are available for teams to put in any of the user data that they want. The team can choose to send whatever they want in those 984 bytes.

Video is typically transmitted from the ROBOT by using the software ports specifically set up to support video throughput. This year, the Field Management System will not pass data sent through that port during a match (to ensure adequate system performance during competition events, until the new system is better characterized in actual competition settings). If a team really wants to transmit images from the camera back to the Driver Station during a competition, they can decompose the video frame and pass it as user data in the available 984 bytes per packet. However, the resulting throughput of the video will likely result in a frame rate so slow that it is not particularly useful.

Section 0 - Introduction

No changes.

Section 1 - Communication

No changes.

Section 2 – Team Organization

No changes.

Section 3 – At the Events

No changes.

Section 4 – Robot Transportation

No changes.

Section 5 – The Awards

No changes.

Section 6 – The Arena

Drawing **GE-09040**, Rev A has been updated to clarify the height of the Trailer Hitch.

Drawing **GE-09036**, Rev B has been updated to increase the size of the hole in the trailer tongue.

Practice field drawing **TE-09001** has been updated to correct the orientation of the barriers.

Section 7 – The Game

A brief description of one way to restore damaged wheels for competition is posted under *Section 7 – The Game* at http://www.usfirst.org/community/frc/content.aspx?id=452.

Section 8 – The Robot

Section 8 – The Robot, Rev E, includes the following edits:

<R51> Motors specifically permitted on 2009 FRC ROBOTS include:

A. All motors, actuators, and servos provided in the 2009 Kit Of Parts,

B. An unlimited number of COTS servos with a maximum output torque of 55 oz-in and maximum rotational speed of 100 rpm at 6 Vdc (e.g. HITEC model HS-322HD or HS-325HB servos, as provided in the Kit Of Parts),

C. An unlimited number of *FIRST* Tech Challenge (FTC) servos (HITEC HS-475HB servos),

D. One or two additional 2-1/2" CIM motors (part #FR801-001 and/or M4-R0062-12) in addition to those provided in the Kit Of Parts. This means that up to four, and no more, 2-1/2" CIM motors can be used on the ROBOT.

E. COTS motors used as one-to-one replacements (i.e. identical vendor and part number) for motors, actuators and servos provided in the 2009 Kit Of Parts that may have failed or become inoperable.

MI-00017, Rev A, The Axis Camera Pan and Tilt drawing, has been updated to remove the word "modified" in the description of the servo.

Section 9 – The Tournament

No changes.

Section 10 – The Kit of Parts

Information about acquiring additional batteries is now posted on the *FIRST* website at http://www.usfirst.org/community/frc/content.aspx?id=452. The link is located under *Section 10 – The Kit Of Parts*.

Helpful Links: