GAME - Team UPDATE - 2012-01-20
GAME

Code Bondé

Summary: If a competition's wireless environment has too many Access Points (AP's), the wireless bridge provided to teams will not be able to connect to the field's AP. Should FIRST determine that an event meets this criteria, we will employ an emergency procedure, called Operation Bondé, to insure that the event continues with minimal impact. This determination will most likely be made Wednesday or Thursday morning, and will be communicated to teams as early as possible. In the event of an Operation Bondé, teams will use a DLink DIR-825 , provided by *FIRST* in the queue, instead of the DAP-1522 that's required by the rules.

Background: The DAP-1522 wireless bridge required for competition will not link to *FIRST's* field access point if there are more than approximately 60 active access points in the venue. *FIRST* is working with all scheduled venues to reduce the number of access points active during the competition.

In the event that a venue cannot limit the number of active access points, *FIRST* will implement the emergency WiFi plan. *FIRST* has identified and tested an alternate bridge, the DIR-825, which is successful at reliably connecting with the *FIRST* access point in hostile WiFi environments like those described above.

Detail: *FIRST* will ship a small batch of these devices to each event to be used in the event of a hostile wireless environment. Teams will be asked to trade out their DAP-1522 wireless bridge for the *FIRST* provided DIR-825 while they're in queuing, use it in the match, and then return it to the field crew after leaving the field.

Teams will still go through inspection with their DAP-1522 (to meet size and weight parameters); the DIR-825 will not be subjected to inspection. Also, teams won't have to configure the DIR-825, they will be preconfigured.

Other quick facts:

- It's larger: 7.6" x 4.6" x 1.2" versus 4.4" x 5.7" x 1.3".
- It's heavier: 0.7 lbs versus 0.5 lbs.
- It has two external antennae.

- It requires 12V and the alternate bridge will be provided with a 4 ½ ft power cord with connector. Teams will plug it directly in to the dedicated 12V supply on the Power Distribution Board (it doesn't use the Current Logic converter).

We do not recommend teams purchase these devices as their use in the 2012 competition is improbable and if employed, the radios will be preconfigured so team-supplied DIR-825s will not be used.

The Arena
The Player Stations

Once plugged in to the Field Management System via the Ethernet cable provided, the ports that the teams will be able to access on the playing field are as follows:

– TCP 1180: This port is typically used for camera data from the cRIO to the DS when the camera is connected to port 2 on the cRIO. This port is bidirectional on the field.

– TCP 1735: SmartDashboard, bidirectional

– UDP 1130: Dashboard-to-Robot control data, directional

– UDP 1140: Robot-to-Dashboard status data, directional

– HTTP 80: Camera connected via switch on the robot, bidirectional

– HTTP 443: Camera connected via switch on the robot, bidirectional

All these ports are open on the playing field, so a team can use them as they wish if they do not employ them as outlined above (i.e. TCP 1180 can be used to pass data back and forth between the robot and the DS if the team chooses not to use the camera on port 2).

Robot-Robot Interaction
[G30-1]

Added Rule [G30-1]

A Robot may only be supported (fully or partially) by another Robot if one of the Robots is in contact with a Bridge.

Violation: Technical Foul for extended, strategic, or repeated loss of contact.

Robots supporting other Robots will invite scrutiny regarding the safety inherent in the design, per Rule [G07] . It behooves a team employing such a strategy to take precautionary action to mitigate any risk of Robots falling outside the Court.

General Robot Design
[R01-2]

The Robot must have a Frame Perimeter that is comprised of fixed, non-articulated structural elements of the Robot. The Frame Perimeter of a Robot is defined by the outer-most set of exterior vertices on the Robot that are within the Bumper Zone, which is between 2 and 10 in. from the floor. Minor protrusions no greater than ¼ in. such as bolt heads, fastener ends, and rivets are not considered part of the Frame Perimeter.

To determine the Frame Perimeter, wrap a piece of string around the Robot at the level described in [R02] . The string describes this polygon.

Note: to permit a simplified definition of the Frame Perimeter and encourage a tight, robust connection between the Bumpers and the Frame Perimeter, minor protrusions such as bolt heads, fastener ends, rivets, etc are excluded from the determination of the Frame Perimeter.

The carpet, the Bridge surfaces, and Keys are considered the flat floors – and thus are the reference planes for the Bumper Zone requirements. A Robot in a transitory state of crossing onto/off of a Bridge or Barrier is not considered to be on a flat floor.

GAME
The Robot

We have recently published conflicting responses in the Q&A regarding interpretation of the Bumper Zone, specifically [R01-2] and [R29]. We apologize for the confusion, and have revised the responses in question and added clarification in the Blue Box for [R01-2].