Platform Configurations

- This document provides a high level overview of different FTC Driver Station (DS) and Robot Controller (RC) configurations. Each configuration consists of a control path between the DS/RC pair and/or a development path.
- The control path consists of DS/RC communication, which includes gamepad commands, sensor data, RC heartbeats, etc.
- The development path includes ADB interface with debug monitor (including breakpoints, line stepping, logcat, etc.) and app installation.
- Configurations (D), (E) and (F) have not been implemented.
- Configurations (D) and (E) will be operational with a future feature update that allows the user to select between WiFi-Direct, WiFi, and Ethernet control paths.
- Configuration (F) requires an update that sets the WiFi-Direct connection password, so that the Workstation can connect to the ad-hoc network. Both devices can connect to the same workstation via WiFi-Direct only if there are two wireless network adapters to maintain both connections simultaneously.

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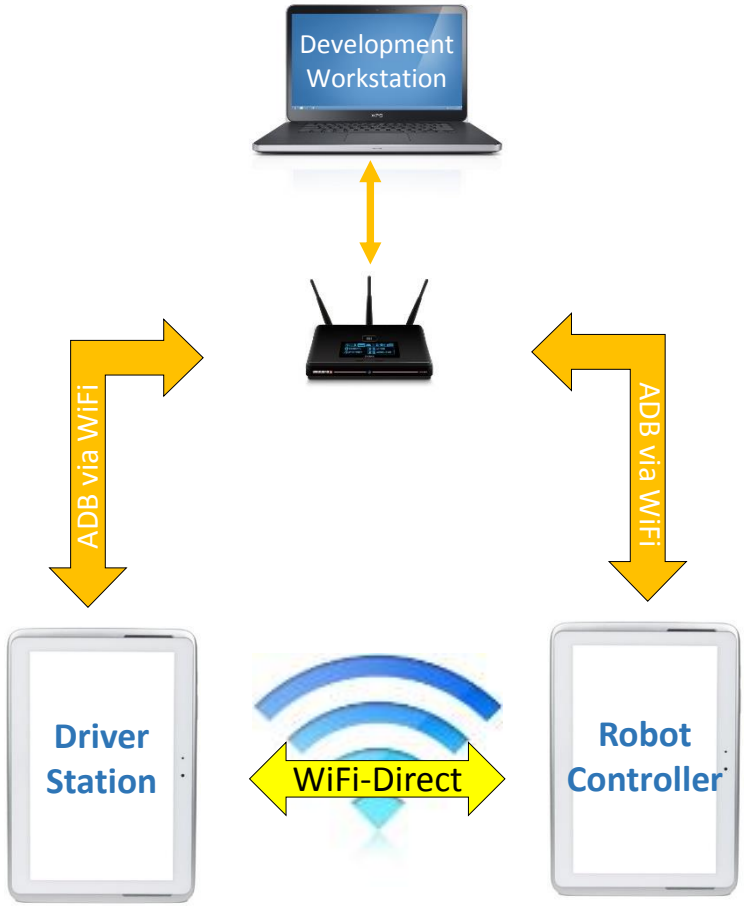
WiFi-Direct Competition Configuration (A)

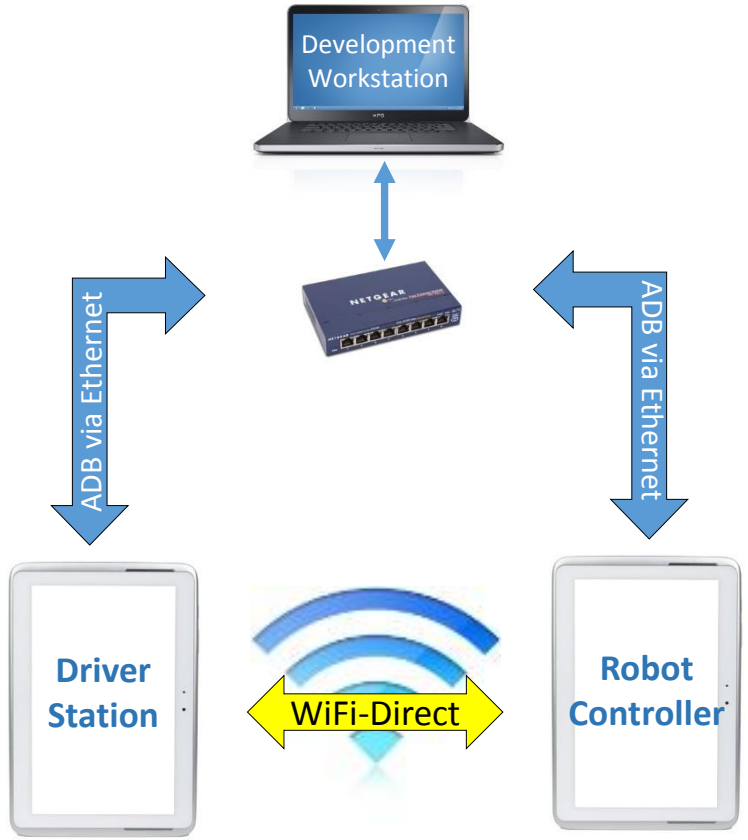
Driver Station (DS) and Robot Controller (RC) are connected via WiFi-Direct. ADB development connection is not available.

WiFi Development Configuration (B)



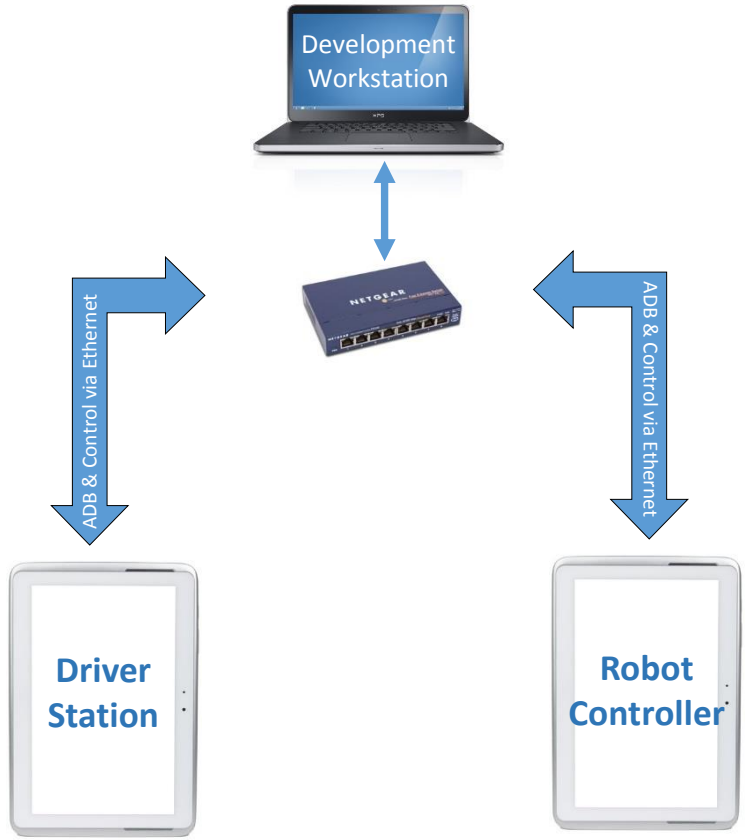
Driver Station and Robot Controller control path are connected via WiFi-Direct. DS and/or RC can be connected to ADB via WiFi for development.

Ethernet Development Configuration (C)



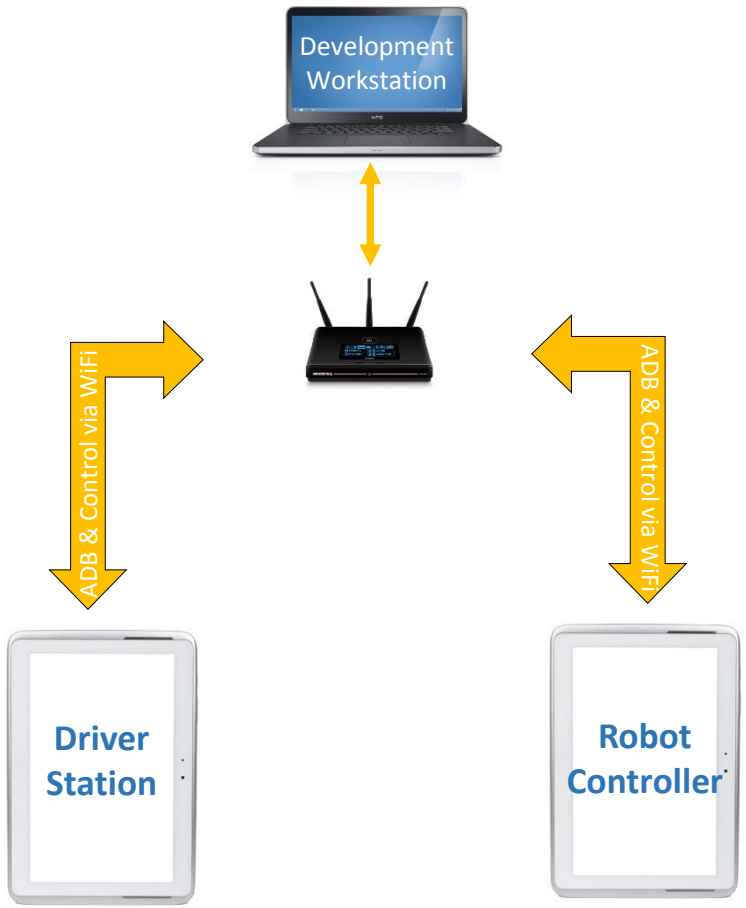
Driver Station and Robot Controller control path are connected via WiFi-Direct. DS and/or RC can be connected to ADB via Ethernet for development. The USB Ethernet adapters are connected to the USB hubs connected to the DS/RC host tablets via OTG USB cable. Ethernet adapters have only been verified with Android Lollipop (v5.0).

Full Tether Pit Configuration (D)



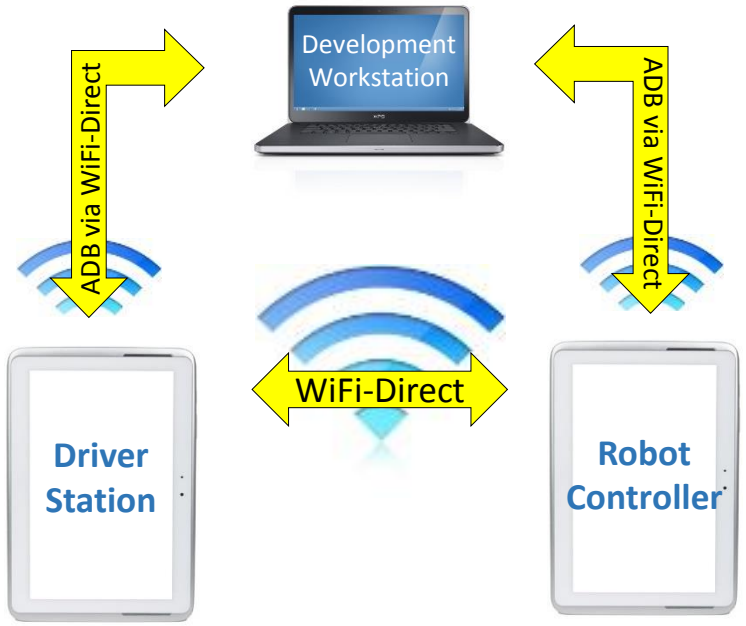
Driver Station and Robot Controller control path are connected via Ethernet. DS and/or RC can be connected to ADB via Ethernet for development. The USB Ethernet adapters are connected to the USB hubs connected to the DS/RC host tablets via OTG USB cable. Ethernet adapters have only been verified with Android Lollipop (v5.0). *Control Path is NOT currently implemented.*

Full WiFi Development Configuration (E)



Driver Station and Robot Controller control path are connected via WiFi. DS and/or RC can be connected to ADB via WiFi for development.
Control Path is NOT currently implemented.

WiFi-Direct Development Configuration (F)



Driver Station and Robot Controller control path are connected via WiFi-Direct. DS and/or RC can be connected to ADB via WiFi-Direct for development.
Development Path is NOT currently implemented.