Project WiMDAS Plan of Action

This document outlines the plan of action and projected timeline for the completion of the Wireless Modular Data Acquisition System (WiMDAS) for the capturing of sensory data for Jayhawk Motorsport (JMS) vehicles. The two primary objectives of this system are to: save all sensory data for post-race analysis, and to make the data remotely available real-time for networked user devices.

Fall 2012 Objectives
The Fall 2012 objectives focus on researching and developing a system for capturing all sensory data and saving the data locally within a vehicle.

1. Research sensors
    - Develop requirements spec for speeds and bandwidth needed for each
2. FSAE Rules Analysis
    - Understand limitations and requirements for the system
3. Spec microcontroller hardware for interfacing with the sensors
4. Research and develop solution for powering the system
5. Develop sensor-to-microcontroller protocol including code guidelines/standards
    - Documentation on how to interface and efficiently sample sensors
    - Develop testing utilities and sample code
6. Develop microcontroller-to-host protocol
    - Define standard for data transmission between microcontrollers and the vehicle host
    - Develop test utilities
7. Research and implement data storage standard for the vehicle host's attached SD Card-based storage
8. Develop utilities for exporting and/or viewing data for post-race analysis

Spring 2013 Objectives
The Spring 2013 objectives focus on adding wireless capabilities to the vehicle host (vhost) and to make this data accessible real-time for remote user devices via the intermediary remote host (rhost).

1. Spec wireless technologies for vhost-to-rhost data transmission
2. Develop vhost-to-rhost wireless protocol
    - Define standard for efficient and robust wireless data transmission between the vhost and the rhost
    - Develop test utilities
3. Setup Local Area Network (LAN) for networking user devices with the (local) remote host
4. Research software stack for driving the real-time user interface running on the the remote host
5. Develop interactive and user-configurable real-time user interface