



Test Plan for the BikeSmart System

A smart and safe bicycle system

PROJECT TEAM

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System Test Plan

Current test plans of the project consist of two main sections which are basically hardware testing and software testing. In this document, the hardware test plans are denoted by sign [H] and [S] for software test plans. At the end, the two sections will be examined for their interaction with the each other to make sure there is no conflict between hardware and software.

Test 1: LED visibility - [H]/[S]

User input:	User turns on the matrix of LEDs on the bicycle.
Conditions:	Display the bicycle in a 100-meter of distance while the LEDs are flashing.
Expected observations:	Under any kind of weather, the LEDs should be visible from other road user 100 meter behind the bicycle.

Test 2: Noise consideration - [H]/[S]

User input:	Power up the voice recognition system to detect the key words from cyclist.
Conditions:	Let the system to detect the key words while riding down hill with certain speed to allow wind to create some noise.
Expected observations:	The system should be able to detect the key words from user without any problem.



Test 3: Waterproof - [H]

User input:	Power up the voice recognition system to detect the key words from cyclist.
Conditions:	Rainy Day
Expected observations:	The system should be able to run properly under rainy condition with rain drops falling on sealed devices.

Test 4: Communication - [S]

User input:	User says keyword “left”, “right” and also pressing the brake handle.
Conditions:	Any.
Expected observations:	The system should be display the correct signal light corresponding to the input keyword and movement.

Test 5: Shock absorbing - [H]

User input:	Power up the voice recognition system to detect the key words from cyclist.
Conditions:	User riding the bicycle on the rough road in order to create some shocks.
Expected observations:	The wire connecting the device should be firmly attached and no signal should be lost.



Test 6: Casing - [H]

User input:	Cover up the devices on the bicycle with 3D printed protection cases.
Conditions:	User rides the bicycle under any condition.
Expected observations:	The casing should not interfere the user movements.