Pooch Portal

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There are no existing wirelessly controlled dog doors on the market. Pooch Portal is a proof of concept that enables an existing product to be controlled over the Internet. We have inserted a microcontroller into the hardware of a pre-existing product to allow user interaction through a local server over the Internet.

The GUI allows users to control door functions remotely. Users can raise/lower the door and put it in automatic or manual mode. There are many other use cases that can be implemented with a simple manipulation of the software.

Our RF (Radio Frequency) communication utilizes GZLL protocol. This allows up to eight devices on just one host. The signal strength from each device is polled and the closest device will be identified and allowed access.

Internet Enabled

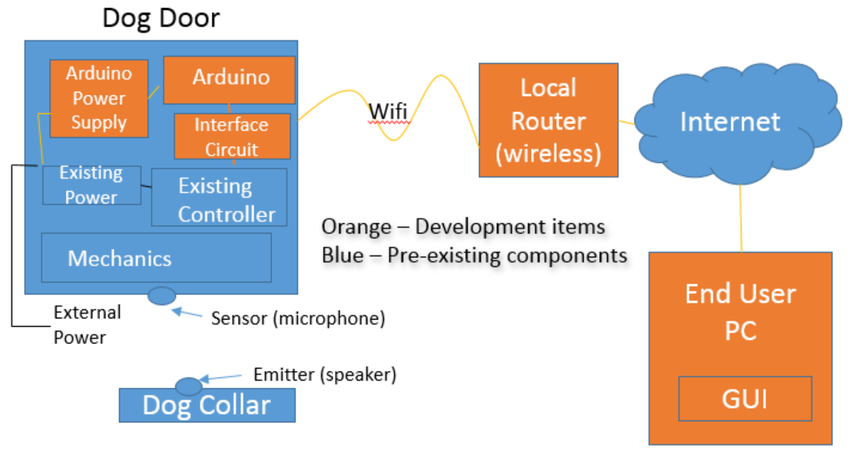
- **Manual Open**
- **AC Operations**
  - Automatic Mode
  - Manual Mode
  - Open
- **RFID Sensors**

Pooch Potal Control Center

Arduino with Ethernet Shield

MODE: **AUTOMATIC** turn on auto turn on manual

Door is currently **Closed** open door close door



Communication between the GUI and Arduino are accomplished over the Internet using a local wireless router. To gain access to the pre-existing dog door controller circuit board, wires are soldered onto the push buttons and LEDs. These wires are connected to the Arduino digital and analog I/O by the developed interface circuit. Digital relays replicate the manual push buttons, and voltage measurements taken at the LEDs using opto-isolators determine the operational state of the door.

Pooch Portal demonstrates that products can be improved by enabling control over the Internet. New and existing products can utilize this prototype to provide competitive advantages.