Smart Beehive

Concept Description

Our concept of a smart Beehive is to autonomously monitor the microclimate inside the beehive. Thus, we will monitor two main factors that affect the bees' health and movement activity which are the humidity and the temperature. Hence for this system, we will use two sensors to get information about the humidity and the temperature in order to make the task of the beekeeper easier as he can control and monitor the beehive's inner condition through the mobile phone. Besides that, there will be a status panel attached to the outer side of the beehive that will enlight a specific LED colour depending on the humidity/temperature level. Green led to a healthy microclimate, red in case of surpassing the maximum or falling under the minimum for the bees' activity we will use the Arduino WiFi IMU to sense the motion in the entrance side of the beehive.
It is important to mention that, for a healthy honey bee colony, the temperature should be within the range of 32 to 35 C and between 50-60% for humidity. As a result, our system will cool/heat the beehive in case the humidity and/or the temperature exceed or be less than the acceptable ranges.
The Beehives will also share the data with the cloud using WiFi which is going to be the main technology to establish communication in our system.
The system is divided into two parts (two Arduinos) the sensing part which is mainly inside the beehive and the side of the actuator on the outer side.

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