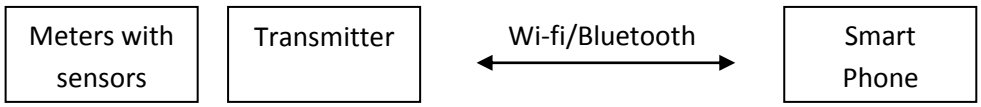
Wireless Field Connectivity - 2

This approach needs the following approach:



As shown above, there are two ways to achieve near field connectivity. Either over Bluetooth, or Wi-fi. Both the ways are shown below:

1. Bluetooth:

China's Bluetooth Serial modules for Arduino are very cheap: 5-10$ per module. You can find them on eBay: Bluetooth RS232, Bluetooth Serial, HC-03, HC-04, HC-05, HC-06.

The whole process can be divided into the following steps:

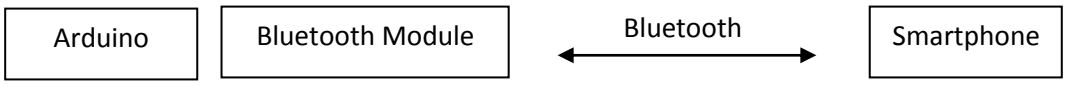
1. Transfer data fom Arduino via Bluetooth appropriate Serial port library.

2. The mobile phone already has Bluetooth.

3. Read the appropriate serial port on the mobile.

4. Data get’s transferred to the mobile.

For automatic connection, the transmission file on Arduino and should be continuously running. Also, the reading file should also run continuously on the mobile phone.



Bluetooth has major disadvantage of range. It exist only from 5 to 30 meters at max.

2. Wi-fi based:

Wi-Fi access points can function in either “ad-hoc” or “infrastructure” mode, and many WI-Fi-enabled devices can only connect to infrastructure-mode networks, not ad-hoc ones.

Wi-Fi networks in infrastructure mode are generally created by Wi-Fi routers, while ad-hoc networks are usually short-lived networks created by a laptop or other device. But it isn’t always so simple.

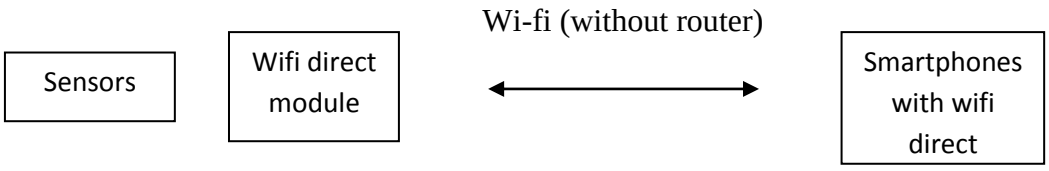
A **wireless ad hoc network (WANET)** is a decentralized type of wireless network. The network is ad hoc because it does not rely on a pre existing infrastructure, such as routers in wired networks or access points in managed (infrastructure) wireless networks. Instead, each node participates in routing by forwarding data for other nodes, so the determination of which nodes forward data is made dynamically on the basis of network connectivity. In addition to the classic routing, ad hoc networks can use flooding for forwarding data.

Wireless mobile ad hoc networks are self-configuring, dynamic networks in which nodes are free to move. Ad-hoc mode can be easier to set up if you just want to connect two devices to each other without requiring a centralized access point.

There is a technology called **Wi-fi direct.** Nowadays, a lot of mobile phones are coming with the Wifi direct facility to exchange data. The new Wi-Fi Direct standard also builds on ad-hoc mode, allowing devices to communicate directly over Wi-Fi signals.

Wifi direct is a kind of boon for IOT (**Internet Of Things**) type applications.

The following can be the working methodology for our system:



Module for Wifi direct:

http://www.amazon.in/ESP8266-Serial-Wireless-Transceiver-Module/dp/B00O34AGSU/ref=sr_1_3?ie=UTF8&qid=1434566667&sr=8-3&keywords=direct+wifi#productDetails