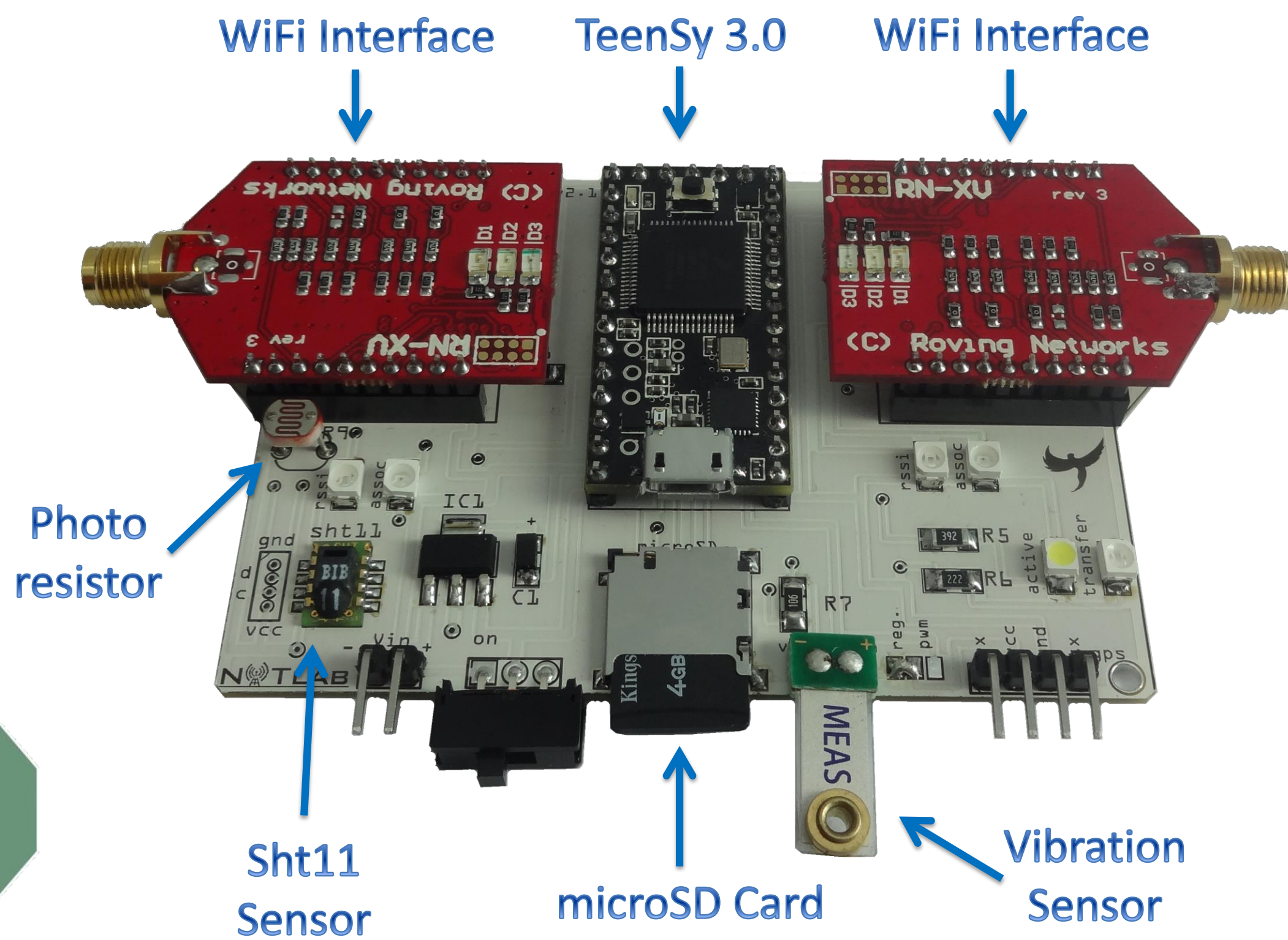


# Enabling Mobile Sensing through a Delay Tolerant Network

NITlab developed a mobile device capable of:

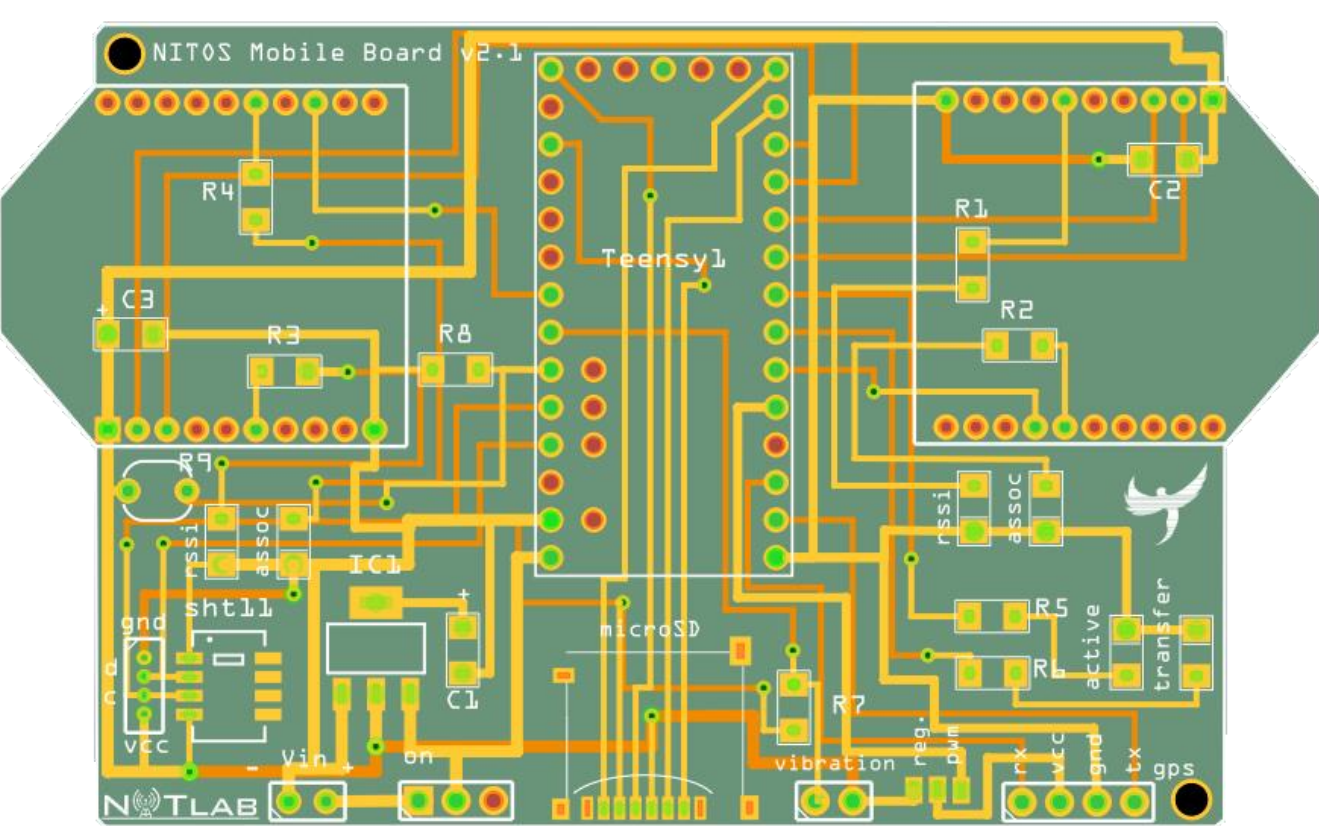
- ✓ Sensing environmental conditions.
- ✓ Capturing available WiFi networks.
- ✓ Logging the captured data.
- ✓ Transmitting the logged data when connection is available.

## Mobile Sensing Device



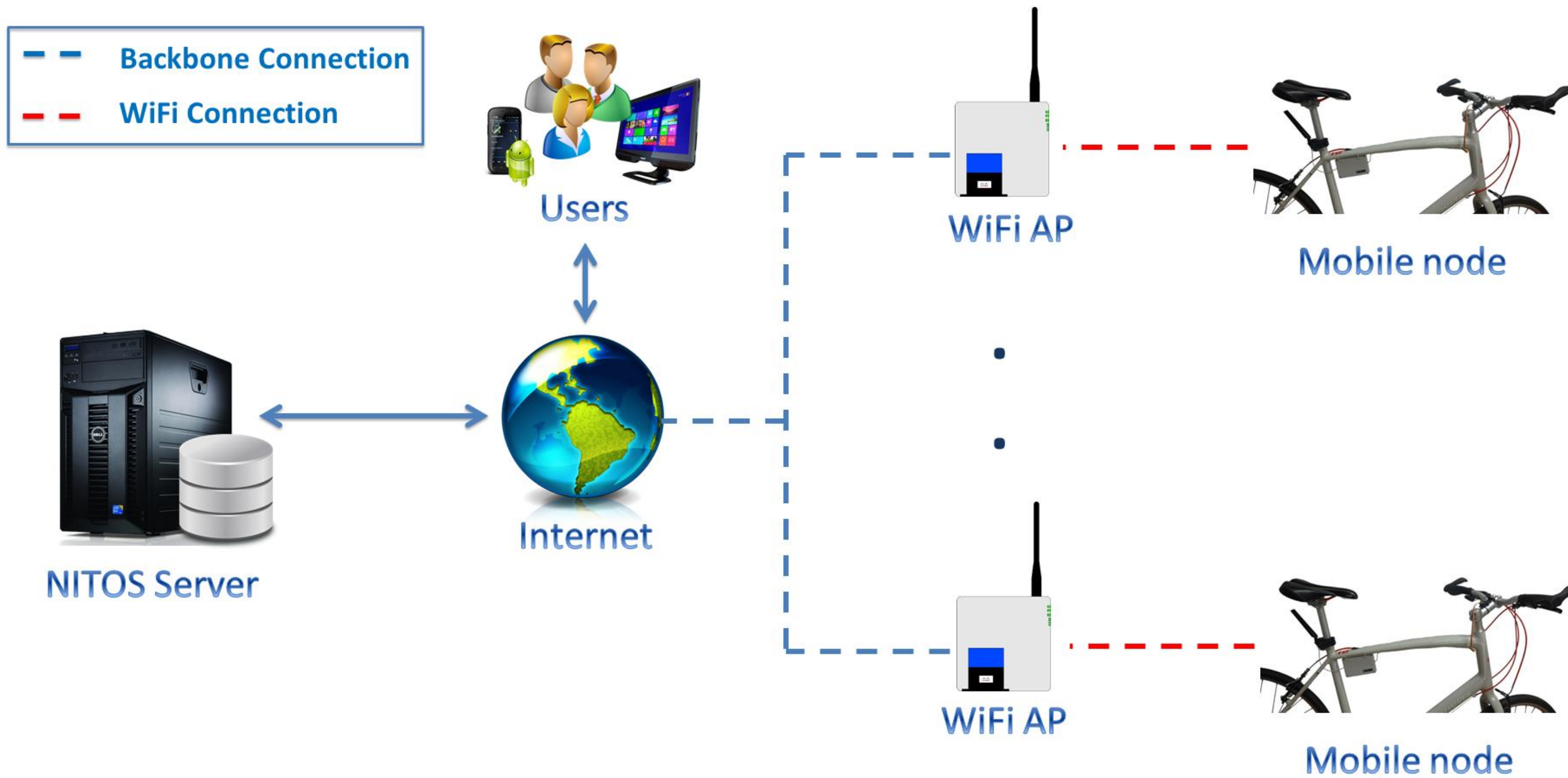
## Features

- ✓ Features **Teensy 3.0** microcontroller board.
- ✓ **48 MHz** CPU (32-bit ARM Cortex-M4).
- ✓ **128K** Flash Memory.
- ✓ Programmable through **Arduino IDE**.
- ✓ Localization through **GPS** module.
- ✓ **Vibration** sensor to wake the device and enable sensing.
- ✓ **WiFi** modules for wireless connectivity.
- ✓ microSD card for logging measurements.
- ✓ **Sht11** temperature & humidity sensor.
- ✓ Light intensity **photo-resistor** sensor.



Designed PCB

## Network Architecture

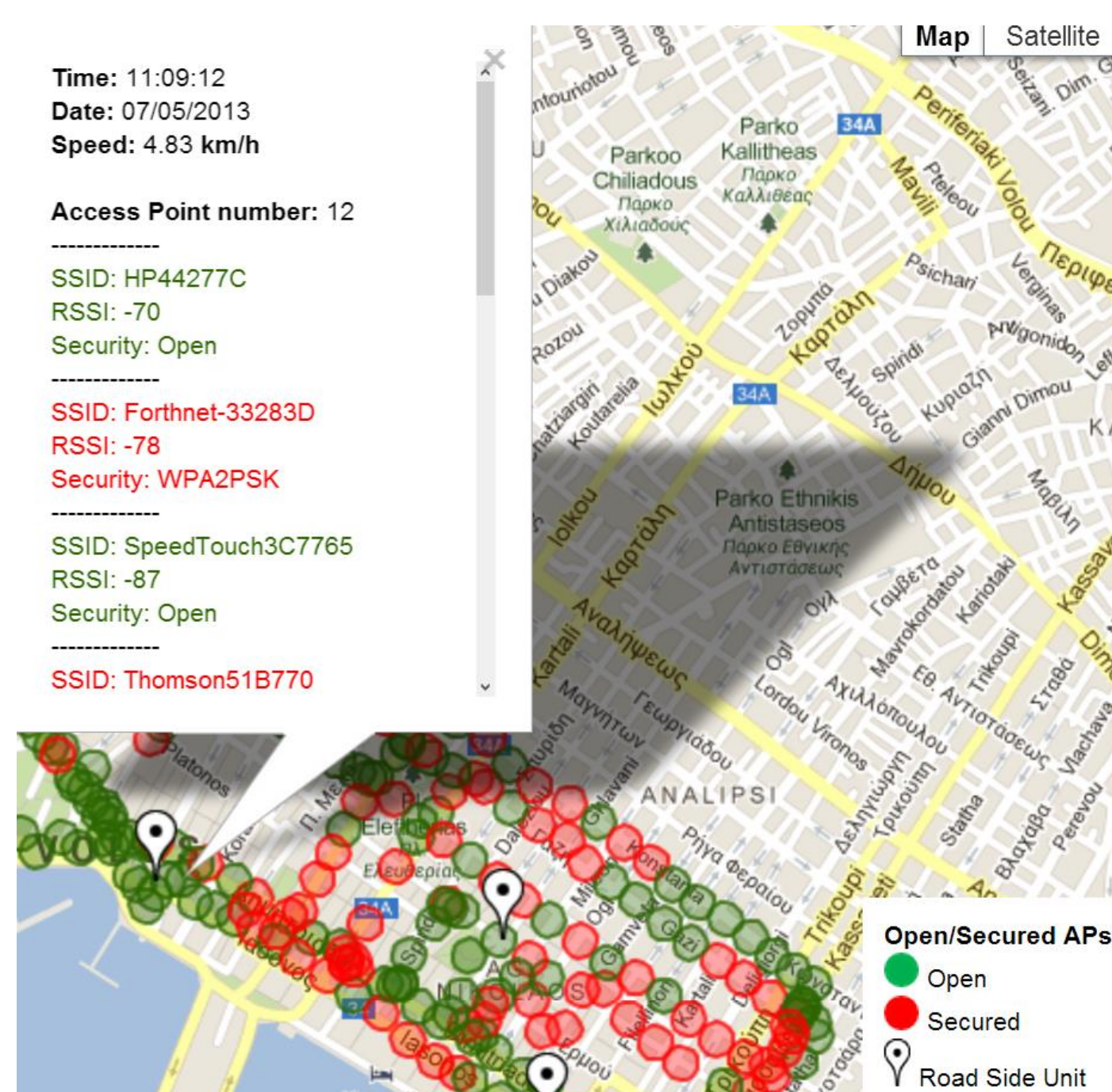


- ✓ As the mobile nodes move around, the sensing device collects measurements (environmental, WiFi networks, location).
- ✓ The measurements are locally logged until an available WiFi AP is found.
- ✓ When it comes into the range of an available WiFi AP, it transmits the measurements to the NITOS Server.
- ✓ Users can visualize the measurements through web-based tools.

## Web Representation Tools



Available WiFi Networks



Open/Secured WiFi Networks

## Mobile Node



Mobile sensing device, mounted on bike