RF Signal Source Mapping

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MetaGeek WiSpy 2.4 GHz Spectrum Analyser

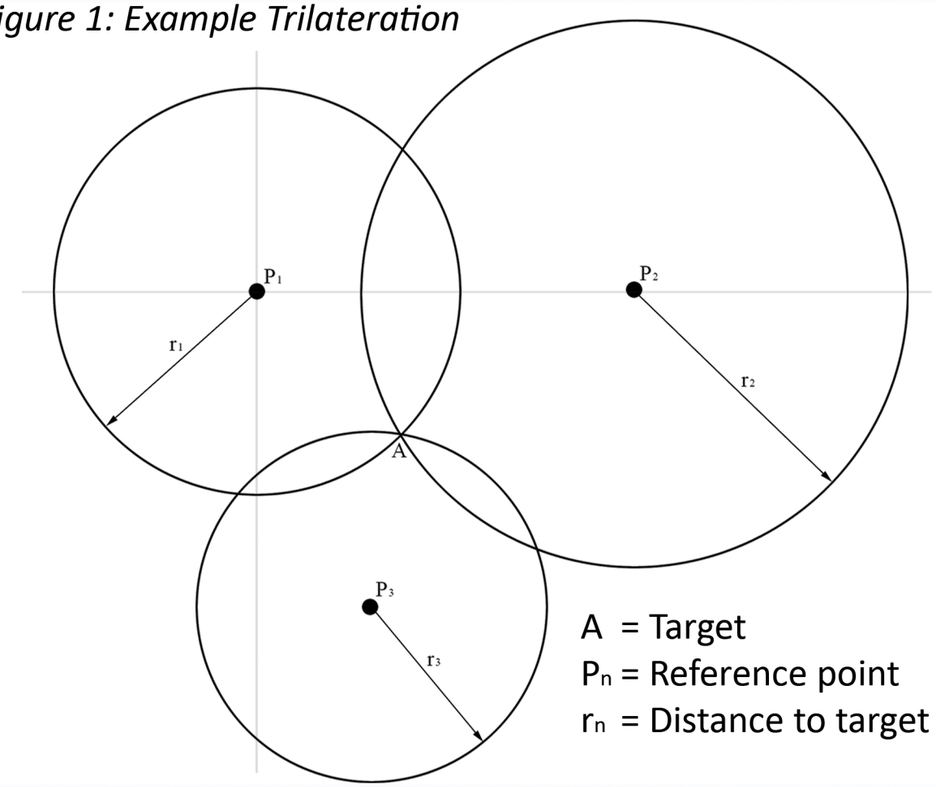
Project Outline

Using three MetaGeek Wi-Spy 2.4 GHz Spectrum Analysers and the method of trilateration, the location of Wi-Fi (802.11b/g/n) access points, devices and interferences can be approximated within the signal collection area.

Trilateration

Requires the location of two or more reference points and the distance between the reference point and the target.

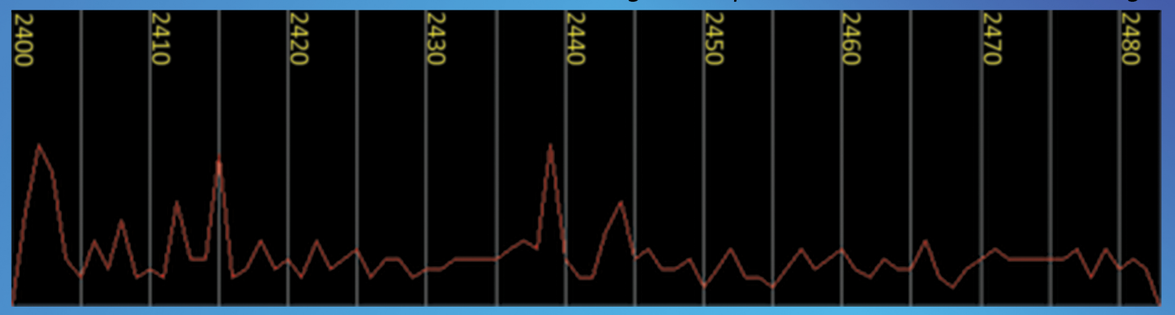
Figure 1: Example Trilateration



Two part solution

A listening client collects signal strength over the Wi-Fi signal range and sends batches of raw data to the mapping tool. Each frequency sweep is stored for statistical purposes and future playback. The client runs unobtrusively on multiple machines around the Wi-Fi network.

Figure 2: Spectrum data in the 2.4 GHz range



The RF Signal Source Mapping Tool interfaces with clients and processes the raw data to approximate distance and direction to Wi-Fi devices, over all Wi-Fi channels.

Benefits of this system

Rogue access points and interference sources can be discovered and elminated to improve security and performance.

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