location.io
empower your location services

a location services
enabling platform by **rx networks** ™

Wi-Fi & cell-ID positioning
(offline mode)

A client-based solution that provides lightning fast indoor location, even when disconnected from a network.

Overview

The **location.io** platform provides a client-based location solution that provides Wi-Fi and Cell-ID positioning without requiring a currently active network connection.

Traditional Wi-Fi and cellular based positioning services require a network connection to perform real-time remote database lookups in order to determine a device's position.

In contrast, **location.io** offline wi-fi & cell-ID positioning opportunistically downloads optimized datasets called "Regions" when a data connection is available. This allows position requests to be served when disconnected from the network. This approach ensures that the most accurate information is available without impacting battery life or incurring the power and latency overhead of multiple network requests. Wi-fi and cell-ID regions are fueled by the extensive **location.io** database and are tailored to best suit a user's general location, such as a city or metropolitan area.

Features and Benefits

Wi-Fi and Cell-ID Location Database: Rx Networks has an extensive global database of over 60M cell-IDs and 600M Wi-Fi access points. The database is self-learning and self-adapting to network changes as it is continuously kept up-to-date by devices using the **location.io** service. This cost effective approach ensures devices have the most up to date data.

Continuously Available: location.io offline wi-fi & cell-ID positioning ensures devices have a continuous positioning service even when not connected. And, when connected to a network, the on-board list of Regions is refreshed via any HTTP connection to enable flexible, low-cost updates.

Accuracy and Flexibility: location.io offline wi-fi & cell-ID positioning is optimized to provide both general purpose outdoor positioning and high-accuracy indoor positioning. By storing information inside a venue more densely, the product is able to adaptively calculate an accurate position where you need it most.

The highly configurable client is capable of supporting both high accuracy Wi-Fi positioning and neighborhood level cellular positioning. Due to this flexibility, **location.io** offline wi-fi & cell-ID positioning is ideal for both indoor positioning and M2M use cases such as device tracking.

Reliability: As an extension of the entire **location.io** service, the offline capability of wi-fi & cell-ID positioning adds further reliability since it operates autonomously when no network connection is available. When connected to a network, the proven 99.999% SLA database syncing and location fallback of the **location.io** service ultimately ensures a most reliable and predictable user location experience with minimal device battery impact.

Specifications	
Time For Position Lookup	100ms – 250ms
Typical Region Size Example (3.5 km by 4 km)	
Region Dataset Size (Transmitted Payload)	~500kB (Wi-Fi) ~25kB (Cell ID)
Region Dataset Size (Memory Storage)	1.6MB (Wi-Fi) 125kB (Cell ID)
Typical Horizontal Accuracy	
Wi-Fi	10m – 100m
Cell ID	150m – 2km