**AnyPlace**

Indoor Positioning and Navigation in the Big-Data Era


University of Cyprus

**Overview**

- Operates on top of Google Maps with a big-data management Web 2.0 back-end service
- Leverages rich multi-sensory data available on smartphones
- Allows entities (users, companies, organizations) to realize indoor information management systems
- Indicative applications include product search and point of interest (POI) navigation

**AnyPlace Server**

- Follows a big-data architecture and provides a Web2.0 API using JSON objects for Mapping, Navigation and Positioning
- Responsible for storing buildings, floor plans, and POIs information
- Creates and delivers indoor navigation directions to the end-user upon request
- Uses Couchbase as its backend database for scalability and fast metadata retrieval

**AnyPlace Architect / Viewer website**

**AnyPlace Architect** website offers:
- User-friendly interface for placing floorplans on top of Google Maps
- Multi-floor support
- Convenient addition, annotation and geo-tagging of POIs inside the building
- Easy connection of POIs to indicate feasible paths among them

**AnyPlace Viewer** website offers:
- Read-only access to building, floorplan and POI information

**AnyPlace Client for Android smartphones**

**Navigator mode**

- Shows the building where the user resides automatically
- Users can load the floorplan and associated POIs
- Displays user location on top of the floorplan map using a powerful WiFi positioning algorithm developed in-house
- Users can search for POIs and get navigation directions from their current location to the desired POI

**Logger mode**

- Users can select the building and the floor for recording data
- Users may record Received Signal Strength (RSS) information from nearby WiFi APs
- Developed around the Android RSS API for scanning RSS data
- Users can upload the collected samples to the Anyplace Server through the API for crowdsourcing the RSS radiomap

**Architecture**

The platform consists of the AnyPlace Server, the Architect and Viewer website and the Android Client application running in Navigator or Logger mode

**AnyPlace Servers + Web 2.0 API**

**AnyPlace Architect**

- Mapping Information
- WiFi RSS Logs

**AnyPlace Logger**

- Information Vault
- Big Data Backend

**AnyPlace Navigator**

- Navigation Directions
- POIs Information and Radiomap

Web: [http://anyplace.cs.ucy.ac.cy/](http://anyplace.cs.ucy.ac.cy/)

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