

# Demo Details

<b>Title:</b>	Anyplace: Indoor Positioning and Navigation in the Big-Data Era
<b>Authors:</b>	L. Petrou <sup>†</sup> , G. Larkou <sup>†</sup> , C. Laoudias <sup>‡</sup> , D. Zeinalipour-Yazti <sup>†</sup> and C. G. Panayiotou <sup>†</sup> <sup>†</sup> Department of Computer Science, University of Cyprus, Cyprus <sup>‡</sup> KIOS Research Center, University of Cyprus, Cyprus
<b>Author to contact:</b>	Christos Laoudias, laoudias@ucy.ac.cy
<b>Associated paper (if any):</b> Specify submission # and title.	N/A
<b>Description:</b> (max 300 words)	<p><i>Anyplace</i> is an indoor positioning and navigation platform that operates on top of Google Maps with a big-data management Web 2.0 back-end service. <i>Anyplace</i> will allow entities (users, companies, organizations, etc.) to realize indoor information management systems, including product search and point of interest (POI) navigation, on top of existing wireless network infrastructure by leveraging rich multi-sensory data available on smartphones. Our platform consists of three components, namely the <i>Server</i>, the <i>Architect</i> website and the <i>Client</i> application on Android smartphones.</p> <p>The <i>Anyplace Server</i> follows a powerful big-data architecture and provides a Web2.0 API that connects to the back-end database in order to efficiently store metadata regarding indoor POIs and provide navigation instructions to the end-user.</p> <p>The <i>Anyplace Architect</i> website offers a user-friendly interface for placing the blueprint of a building on top of Google Maps with multi-floor support. The user can later add, annotate and geo-tag POIs inside the building and also connect them to indicate feasible paths among POIs.</p> <p>The <i>Anyplace Client</i> for Android smartphones has two modes and operates either as a <i>Logger</i> or as a <i>Navigator</i>. In <i>Logger</i> mode, the users may record signal strength information from nearby WiFi access points and contribute the collected data in a crowdsourcing fashion, by uploading them to the <i>Anyplace Server</i> through the API. These data are stored in the database and are later used for the provision of WiFi location information in GPS-deprived indoor</p>

environments. The *Navigator* is the main mode of operation that allows users to see their current location on top of the floorplan map and navigate between POIs inside the building. The onboard smartphone sensors (i.e., accelerometer, gyroscope and digital compass) are seamlessly integrated in our tracking module to smooth the WiFi locations and enhance the navigation experience.

We will demonstrate the real-time positioning capabilities of our platform by allowing attendees to carry an Android smartphone running the *Anyplace Client* software and viewing their travelled path on a floorplan map, while walking around the demo area, but also carry out product search and POI navigation. They will also have the opportunity to interact with the *Anyplace Architect* website in order to add and annotate indoor spaces in a straightforward way.