Introduction

This demonstration presents a location-based information providing system with following advantages that distinguishes it from existing systems.

- **Light-weight**: no pre-loading of information is required
- **Generic**: one app can be used in any place
- **Privacy-preserving**: user does not transmit any data; no Internet connection requirement; no user location shared with anyone
- **Easily updated**: information displayed can be easily updated by changing the broadcast, which is in full control of the building administrator
- **Scalable**: our broadcast system can support infinite number of users

Core Idea

Functions of components:
- Broadcast System: broadcasts location-labelled information
- Mobile Phone: filters information to be displayed based on user location
- Indoor Localization System: enables the mobile phones to passively localize indoors

System Design

Our implementation consist of three components:
- UWB-based passive TDoA localization
- WiFi Access Point broadcast
- User applications

Demo Showcase

**Tourists**: Feel free to get one of our Android phones and walk around to see descriptions of artifacts in the room. Enjoy your tour!

**Museum Managers**: Please add/ delete/ change information of artifacts using our excel form, and your changes will be broadcasted to all tourists in real time!