

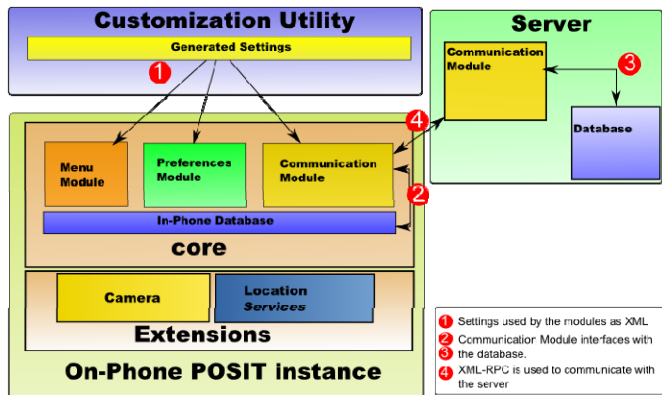
POSIT: Portable Search and Identification Tool

Using the Google Phone for Disaster Management

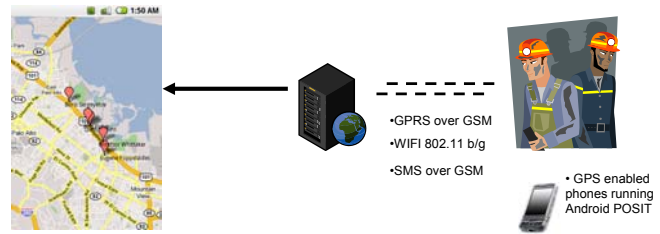
Prasanna Gautam, Trishan de Lanerolle, Ralph Morelli
Trinity College, Hartford CT

What is POSIT?

- User Customizable Android based data gathering tool.
- Proof-of-concept search and rescue tool for first responders.
- GPS, camera, keyboard and touch-screen for data input.
- WiFi and telephony data synchronization..
- Web-based customization utility.



POSIT Architecture



Mobile POSIT Instance (Use Case Scenario)

- Customized instance created for searchers to find and record information about persons of interest.
- Information captured: picture, age, sex, location, description.
- Assign a pre-printed barcode tag to the "person of interest".
- Generate a real time situation map of collected of finds.
- Other phone users and Remote control center administrators can access information on "person of interest" by scanning the bar code.

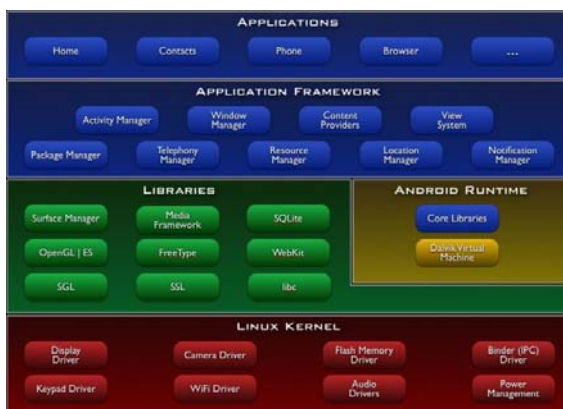


What is Android?

An Open Source software stack for mobile devices that includes an operating system, middleware and key applications.

Features:

- Application framework
- Dalvik virtual machine optimized for mobile devices
- SQLite for structured data storage
- Media support for common audio, video, and still image formats
- GSM Telephony (hardware dependent)
- Bluetooth, EDGE, 3G, and WiFi (hardware dependent)
- Camera, GPS, compass, and accelerometer (hardware dependent)
- Rich development environment



Android Architecture and Components

Observations and Discussion

Current Limitations:

- Works only with Android phones.
- Does not use SMS services.
- Lack of design input from domain experts.

Advantages:

- Easily modifiable and extensible.
- Accessible and Easy to Use
- Customizable for other types of field-based applications.

Free and Open Source Software (FOSS):

- Develop applications quickly, inexpensively, with close alignment to user requirements
- Can be customized without being dependent on third-party permission or cooperation.

References

- Google Android Developer, <http://developer.android.com/>, 2009
- Asplund, M. S. Nadjm-Tehrani, and J. Sigholm, Emerging Information Infrastructures: Cooperation in Disasters, in Proceedings of the 3rd International Workshop on Critical Information Infrastructures Security (CRITIS'08), Oct. 2008.
- Coyle, Diane and Childs, M. B. The role of mobiles in Disasters and Emergencies, GSM Association, www.dinkom.no/FILES/gsm_disaster_relief_report.pdf, 2005.
- POSIT Project. <http://dev.posit-project.org>, 2009



Acknowledgment and Disclaimer: This material is based upon work supported by the National Science Foundation under Grant Nos. CCF-0722137, CCF-0722134, and CCF-0722199. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

