**Description**

TrailScribe is a concept for how to make a tablet computer work like an electronic field notebook.

- Synchronize maps and common data for offline use in expedition
- View areas of interest for the samples to be collected
- View current location and establish orientation
- View position history to check if all target areas have been visited
- View different map overlays to gain familiarity of the terrain

**Rationale**

More than 40 years ago, the last humans to walk on the Moon used cuff checklists and map books to stay on track. What will the next generation of lunar explorers use?

- Need for offline mapping tools customizable for scientist field testing
- Usability in remote field conditions
- Situational awareness improvement to increase productivity and safety in the field
- More real-time collaboration and sharing of expedition plans and results

**Solution**

TrailScribe is an Android application designed to be used as an electronic field notebook by scientists and astronauts. Therefore, all its features are expected to run fully offline, since internet connectivity is seldom present during field work.

1. The scientist syncs her data before starting her day.
2. New maps and data are downloaded to the device.
3. The scientist determines her targets on her traverse.
4. She can compare her objectives to her actual traverse.

**System Design**

TrailScribe operates on a Nexus 7 device with an Android operating system. It uses a RESTful API to interact with a server that provides OpenLayers map display, SQLite database, and the trailScribe application. The server also uses Python/Django for web framework, MySQL database, and Ubuntu operating system.