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| **To:** | Chuck Whittaker |
| **From:** | MRSD - Team Fieldroid |
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# Localization 02 – Test Plan

## The purpose of this experiment is to demonstrate the proof of concept and technological capabilities of Fieldroid.  The purpose of this document is to necessitate the use of the Leica TS15 Total Robot Station for 2 hours (max) on 10/23/2014.  This test plan consists of one test that demonstrates the real-time localization measurements of the Leica Robot Total Station.  This data will help us determine use requirements and feasibility for our project.

## Test 1: Leica Accuracy Tests

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| **Location:** | FRC Lab / Indoor |
| **Testing Time:** | 2 hours (max) |
| **Items Needed:** | * 1x Leica TS15 Robot Total Station (From Chuck Whittaker) * 1x Leica 360° Mini Surveying Prism * 1X Computer * 1X Male-to-Male USB Type-A |

### Procedure:

1. Set up the environment for testing the same way as Test 2 for Localization 01 – Test Plan. Look at Figure 1 below.
2. Set up the Leica Robot Total Station to record data points every 0.2 seconds using “Auto” record mode to record a stream of data points.
3. The exact positioning and set-up of the Leica Robot Total Station does not need to be accurate for these tests.
4. Hook a laptop to the Leica survey gun to view the real-time data records in the laptop.
5. Begin a series of auto-recording the stream of data as the survey prism travels around the square box. Trajectory of the prism should trace the contour of the square box.
6. View the real-time data records of the Leica in the computer. If this is too fast, set the Leica to record every 2 sec instead of every 0.2 sec.
7. Store all data recorded for plotting and analysis.
8. Perform several repeated passes around the box.

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| Figure 1. Set-Up and overview of environment. |