Assistive Access for Android

Overview
There are many disabilities that leave people unable to use smart devices. Most of us rely on phones and tablets as a source of communication, information, entertainment, and much more. Unfortunately, some disabled folks are being left behind in the technologically dependent world around us.

We developed a working solution facilitating switch access control, scanning, of the Android operating system. The end-user can successfully navigate the Android OS by switching applications, browsing the web, and playing games using only a single switch as input.

Objectives
- Take a primarily touch-based Android OS and make it fully support scanning by building an accessibility service to run on top of it
- Implement and design scanning engines (XY and Windshield Wiper)
- Integrate the scanning approach into the accessibility service framework provided
- Build a gesture bar that allows the user to select different actions

Approach
- Meet with Tobii Dynavox to determine the goals of our project
- Tobii Dynavox will provide us with their accessibility framework -- add our implementations of XY and Windshield Access Engines, as well as a gesture bar
- Develop the XY Access Engine; verify the XY Access Engine
- Develop the Windshield Engine; verify the Windshield Engine
- Develop the Gesture Bar; integrate into the Access Engines
- Hold weekly online conference calls with Tobii Dynavox sponsor

Outcomes
- Tobii Dynavox has been saved a few months of development time from several employees
- Tobii Dynavox has saved money by not having to pay employees
- Tobii Dynavox has a new project to build off of and use to generate revenue
- Tobii Dynavox has been presented a new idea to use as an input switch -- a blow switch
- Tobii Dynavox has been given a working XY access engine
- Tobii Dynavox has been given a working Windshield Wiper access engine
- Tobii Dynavox has been given a gesture bar implementation with highlighting elements