

SENSOR POD

Taiwan Forestry Research Institute
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July 13, 2012 (Week 3)

Proposed Research

- To set up an Android-based system that will monitor the aspects of a rainforest, such as humidity, temperature, and wind direction.
- Use Samsung Galaxy Nexus to capture audio, pictures, and videos.
- Use DataTurbine to send any captured media from the rainforest to different stations for more analysis.
- Use an IOIO board to maintain and be the basis of the sensors.



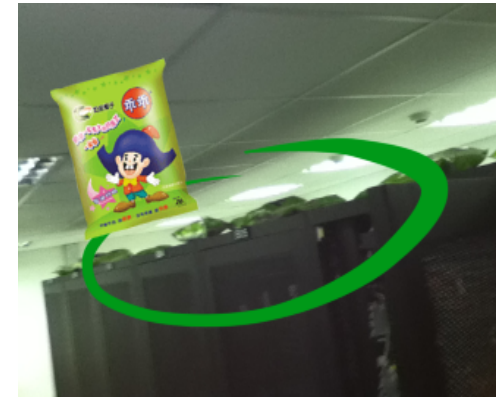
Progress (for Week 3)...



- **Connected the phone to the Sony recorder.**
 - Unfortunately, the phone does not seem to detect the recorder as a microphone. However, my laptop does detect this setup. The headset/external mic, n the other hand, do work, although the audio is slightly muffled compared to recorder apps (ex: Tape-a-Talk Voice Recorder, TapeMachine).
 - Currently, the code uses AudioRecord to grab uncompressed audio files, then convert them to wav. (MediaRecorder, another method of recording, uses a codec [AMR-NB] to grab compressed audio files, which end up having poor sound quality).
 - The muffled sound can possibly be solved by equalizing the audio before it is sent to RBNB or by utilizing another codec from a custom codec library.

...Progress (for Week 3)

- **Created a PowerPoint of how to setup Eclipse and the phone.**
 - It's missing one screenshot for the part where the phone is first turned on, though.
- **Connected the phone to the solar panel setup with Sara's help.**
- **Checked out the server room at TFRI.**
 - Kuai Kuai (means "my little darling" literally in Chinese) corn snacks are placed on top of the machines. The flavor must be Coconut (green wrapping) so the machines run properly (green light on a computer = no problems). As a joke, the Five Spices flavor (orange wrapping) may cause the machines to behave badly (orange light on a computer = error).
- **Installed AirDroid through an apk file and the abd command. This should help with controlling the phone remotely (starting and quitting apps, retrieving files).**
 - My other choice would be to use Remote Web Desktop, but the add-on that allows you to start and quit apps requires a rooted phone.



Plans (for Week 4)

- **Finalize the setup with Sara.**
 - Test the system with two batteries and the solar panels – this week we were only able to test with one battery. I need to check if the phone still has the problem from the first week, where it would eat up more charge than it was being charged with.
- **Show the others how to setup Eclipse and the phone in person.**
- **Figure out how to implement the Equalizer Android library into the code for better quality, try another codec for converting into wav, or try to configure the phone so that it will detect the recorder.**
 - But the amplifier on the recorder still poses a problem. In the rainforest, it's not practical to have the recorder on Manual mode. On Auto mode, however, the recorder takes time to adjust to new audio levels, so there's a bit of noise before every small or large sound.

Culture



Culture



Pictures are taken at Cihu Mausoleum, Shilin Night Market, Shimen Dam, Long Shan temple and at a porridge shop. Inside the garden at Cihu Mausoleum, there are tons of statues depicting the same person – Chiang Kai Shek. It's a little unnerving!