I Sense a SNAG

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Introduction

Over the course of the summer I assisted in helping do networking research so the game lab could create Social Networking And Games (SNAG). This would be a package of games that help users connect at conferences in an enjoyable way. It also allows the users to link up and keep talking after the conference.

Background

Each year thousands of people come together at conferences, meet up, have great conversations and exchange information, however a common problem that arises after the conference is over the decision of whose contacts to keep and whose you should follow up with. Also, many times this information resides on a large stack of business cards which must be filtered through. We wanted to resolve that problem. One already existing solution we looked at was the CONNECT barcode scanners (used at Grace Hopper Celebration). However, it did not include any real time transitions and we felt that we needed to find something that would be able to be used for our prototype sooner. So we started exploring RFID technologies.

Research

• RFID

- Current tags can hold up to 256KB to 1MB, most hold less.
- Applications in Manufacturing, Medical, and Military
- DOD and Wal-Mart Leaders in RFID
- Common day RFID: Passport, Drives License, and Credit Cards include data chips with card information stored on it for quick reading.

There are three main types of RFID tags which can be seen below:

Tag Type	Tag Freq	Distance
Low Freq (LF)	125-134Khz	4-5 in.
High Freq (HF)	8.2-3.56MHz	10 ft
Ultra High Freq (UHF)	868-956MHz	40 ft

(Source: IBM Business Consulting Services, Jan 2006 via UCLA)

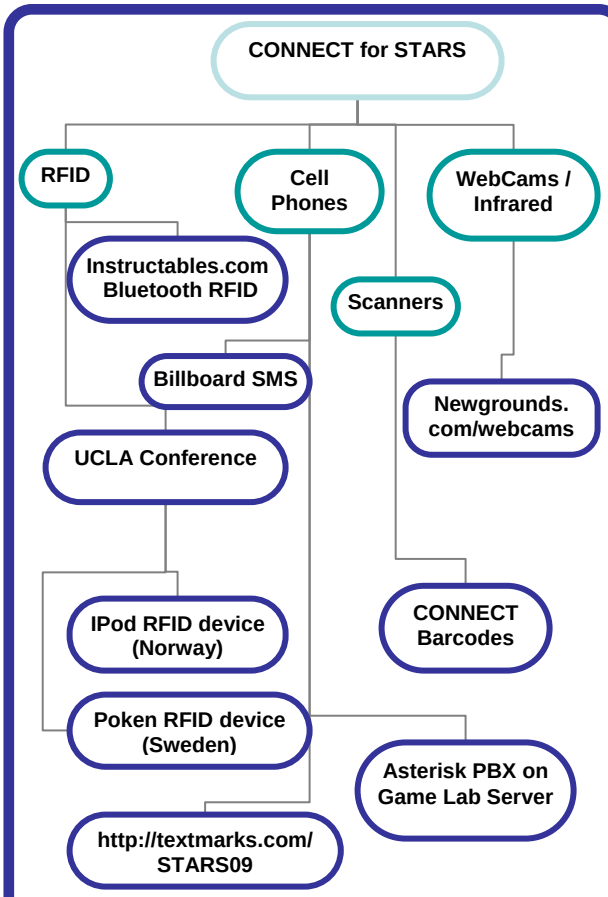
As part of my research, I took a trip to UCLA, California to study what they were doing in RFID. They have over 25 graduate projects actively working on RFID as well an extensive lab that shows how to use it in different capacities. One challenging goal is to find early adopters of the technology and ideas to hire students and allow for the continuing of project upon the research student's graduation.

• Poken

We found a poken system that was easy to put together. As Thomas Amberg from Sweden describes, one can "plug it into your computer's USB port to upload foreign IDs to their Website where IDs can be associated e.g. with Facebook accounts. It's only 20$ and should be widely available (it's made by a Swiss company BTW)."

Figure 1. Pokens

He suggested Pokens, which include reader and tag in one,



- **Phones Input:**

Textmarks.com – free ad supported customizable texting service with API

(Figure 2. Textmarks simulator)

Asterisk server – allows for calling and importing dialings to MYSQL.

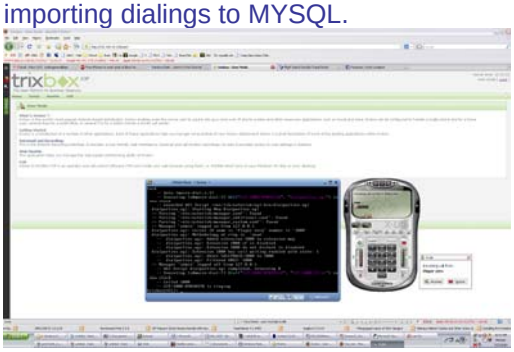


Figure 3. Asterisk Server screenshot

I gave my research to Game Lab which turned the inputs into a game called SNAGEM. It uses ids to link users together and display them in a point system as well as allowing users to vote on posters.

Impact and Conclusions

My research has helped me learn or increase my knowledge of the following:

- **RFID** – defined, current and future uses of, limitations and security, ways for our college to get on board.

- **MYSQL & Linux** – The Asterisk Phone Server used Cento OS and MYSQL to run and hold data. I learned basic MYSQL workings and honed my Linux command and security hardening.

- **Technology Diversity** – I contacted people from Sweden, Norway and other countries for input as well as many professors and grad students both at our university and universities across the United States. Their knowledge and ideas were quite helpful in my search.

- **Successes** – Developed a texting system for student connections. Each user texts their id to system. Upon synchronized input the user obtains a point. This laid groundwork to integrate phone call in for same system.

Future Work

On August 8th 2009, I will be assisting the game lab with setting up and presenting the SNAGEM games at the Student and Technology in Academia, Research and Service.

I also hope to continue researching RFID in the future; I plan on assessing security problems with RFID in the 49th S3curity Divisi0n security club as well as continuing similar research here at UNC Charlotte.