

Michael K Brinker
Thesis Preparation Project
Rough Project Outline/Thoughts
January 30th, 2004

People:

Dream Team Members:

Roy Want: Very into RFID – Currently with Intel, formerly with Xerox/PARC
Richard W. DeVaul MIT Media Lab, part of the Wearable Research team, helped develop the Squirt IR tag.

Faculty:

John Choma: Chair of the Electrical Engineering department
Scott Fisher: Mobile communications/data transmission
Perry Hoberman: Microcontroller/Media Arts related experience
Peggy Weil:

Students:

Lance Banks: USC Electrical Engineer Graduate Student
Todd Furmanski: Virtual Surgery Interest/possible RFID interest?
Tripp Miliken:
Will Carter:
1st year students:

I would thoroughly enjoy working with Roy Want and Richard DeVaul because of their vast experience with RFID and Wearable computers respectively. These two individuals would have a lot of insight into my project, possibly even suggestions for improving the design of existing RFID components.

I believe Scott Fisher and Perry Hoberman would have good insight into my area of study as professionals with mobile media and microcontroller related interfaces/projects. Their expertise would also be extremely valuable.

Todd Furmanski, Tripp Miliken and Will Carter all have mobile media related projects that might segue nicely into my research using RFID to transmit information to and from individuals as well as embedding microprocessors into people/clothing.

Money:

One RFID Evaluation Kit would need to be purchased for evaluation purposes. A High Frequency Transponder and assortment of tags from Texas Instruments is available for

purchase through DigiKey. This would allow for a prototype to be constructed out of the modification of these products. \$631.75

Eventually, two modules will have to be constructed to suit my needs, one wearable reader device embedded into the sleeve of a paramedic and one read/write tag attached to the individual. The read/write tag would have to be engineered in such a way that would have a larger storage capacity. ~\$300

Development time would run probably about 3 months for the transponder, and about 4 for the tag. Given preliminary guesses, the time frame would run about a semester and a half, with the last quarter for field testing. ~\$300

Tools:

Programming is done in HexaDecimal. I have no experience with this so I would have to buy some programming books. ~\$150

Editor: Hex Workshop 4.2 \$49.95
<http://www.bpsoft.com/ordering/index.html>

I would need access to more than just electrical soldering equipment, specifically the hardware needed to tune antennas for both the tag and transponder. This equipment would probably not be found in our immersive lab, but maybe through the engineering department these tools might become available.

Total Production/Development Time	1 year (3/4 construction, 1/4 field testing)
Total Estimated Production Cost (no labor)	\$1431.70
Total Estimated Final Budget	\$2000.00