In attendance: Gene Frantz, Ray Simar, Eric Welsh, members of Team CharIoT

Goal: What we could potentially do that could be cool/interesting

Diagram of P#2

Not pinless

Particulate sensor externally (not SMD)

Processor board- not have MF put on components

Next iteration Ideas:

* LEGO-style: snap different functionality on and off
  + Maybe literally use a LEGO 1xN to support top layer
* Magnets (some interference issues with sensors)
* Ray: interactive with LEDs (ie blinking faster), responding to the environment or people at showcase
  + Bluetooth
* Erik: figuring out the showcase demo: exciting for people
  + Long term research, Solar cell on the top with voltage reading
  + Optical telephone: communicate with light onto solar cell… longer response time, have communication protocol with intensity
  + Working toward pinless… communicate with light for initial setup
  + Solar cell communication (paper?)
* Comm chip is SiP, not going to be able to collapse it more
* Pick a smaller processor- (longterm) which die is the smallest package?
* “Send the LED,” turn on the light on one board, tell the other one to turn its light on
* How do we want people to interact with our demo? Phone, laptop?
* Changing color of an LED on the second board by using heat gun on the first
* Interaction with a person will be 1-5 mins… if multiple demos, be able to move on between them quickly
* Can we do parallel demos? Recognize the judges, know when to disengage with people who take too long
* We don’t have a housing for it? Could 3-D print something designed
* Giveaway chiclet gum?

Paper?

* What have we done *in the context of the vision*?
* Read dust paper from Berkeley
* 20 yrs ago, but now progressed to point where we can do it
* How SiP starts enabling end vision? Now practical to be put into the field
* “Progress Report” on the goal: smart sensors that you can put around and they manage themselves
* Airdrop a ton of these over a battlefield, situational awareness, autoformed network

Networking

* 3 of each board
* Get 2 talking to the phone and phone back to them
* If ambitious, stretch goal: get them talking together
* ZigBee is better for this… our comms board supports multiple

Showcase: what excites people to look?

3-D printout of some mockups what we could do with it?

How tight could we make it if we worked at it?

3 antenna options right now (ceramic, bypass with SMA)

SiPs- put processor, battery and memory together

* Gene: Find area of all ICs together, then add 10%
* Erik: lots of debug components on this board, we wouldn’t need these

**Team Meeting**

* Boards should come in by Feb 19, rendering issue on their website will not be an issue
* Power board got ordered
* UART sensor working in isolation, neet to integrate into codebase

Sponsor Meeting

* Write a paper? Gene wants one
  + Where IoT is going… need to be doing something that is beyond
* Focus on a killer demo
  + LEGO style- swap out boards, snap together, 1-2 demos
  + Board reacts to something, communicates with another board or laptop/phone
  + Fume hood freshman team

GW: have demo plan **before 2 weeks**

Comms code status: not behaving, chip begins connection but fails somewhere in encryption stage

* This is one of the problems with Bluetooth… what other resources can we throw at it?
* Go talk to people in Knightly’s or Ashu’s group? Analyze packets with RF