

Scribed notes from the hardware breakout session at RFID CUSP workshop:

Session led by Wayne Burleson.

Discussion of memory:

- How much functionality do tags want/need?
- What are the potential advantages/applications for putting more memory on tags?
 - Airplane parts are potentially a good case study, as they can use the memory for keeping a history.
- Non-volatile memory – higher power to write than read, thus read range can differ from write range.

Discussion of EZPass:

- Why is the EZPass not passive?

What functionality would be useful to add to tags?

- Energy storage – batteries are heavy, what about (super) capacitors?
 - Possible to keep a coarse timer alive?
 - Could allow for credit cards with expiration dates?
- Consensual reading - What sort of input could be used? Piezoelectric? Acoustic?
- Intrusion detection - Hardware tamper proofing: at what cost?
- Side channels - EM? Power?
- Sensors – temperature? bio-related? (noting that RFID is similar to sensor motes)
- FPGA prototyping platform using harvested power?

Reliability issues?

- Tags in isolated locations face unusual conditions (different from typical reliability scenarios).
 - Tags aren't powered for much time
 - but may sit idly in harsh environment (ie high temp)
 - Is material degradation a concern?
- Modes of failure:
 - Could dying tags leak secrets? Or do they die harmlessly?