SensThys

EPIC

Always Right

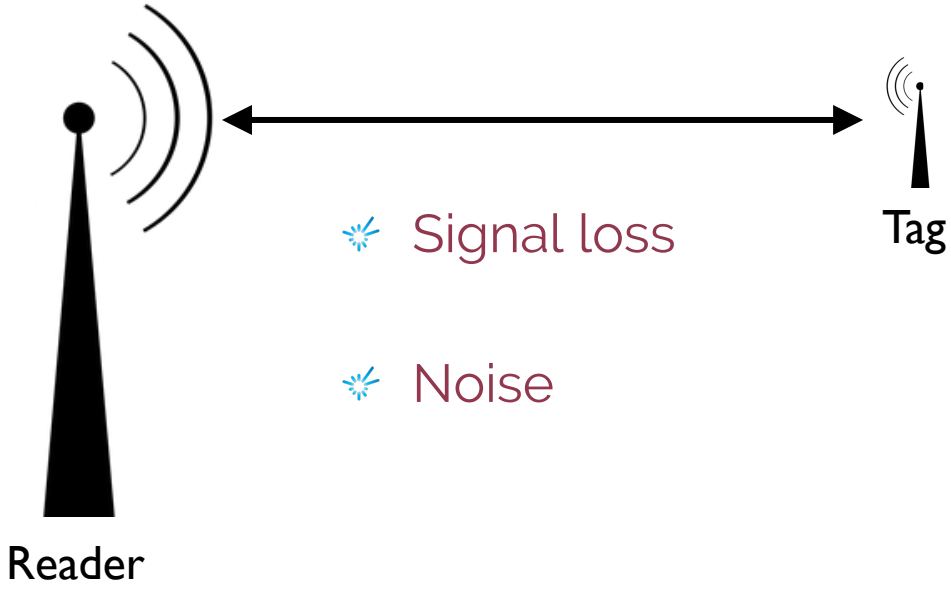
"From the errors of others, a wise man corrects his own."

Publilius Syrus (85 -43 BC)

AGENDA

- Introduction
- The problem of errors
- When errors matter
- EPIC
- Acknowledgements

RFID



- Signal loss
- Noise
- RFID Tag
  - Not self-powered
  - Poor error management
- No error correction
- No channel correction
- No data authentication

TRAITS OF RFID

- ***No*** tag corruption detection
  - **→Corruption straight to customer**
- ***No*** transmission error correction
  - **→Poor RFID system performance**
- ***No*** error correction
  - **→Single error = failure**

PRACTICAL RFID

- Tag corruption is known
  - "bit-flips" and "ghost tags" are slang
- Extensive direct testing minimizes issue
  - Tags are 100% tested several times prior to deployment
  - Typically have 3-6 months when errors are rare
- Key point – in many applications this works fine

LIMITS OF RFID

- Error rates < 1000 DPPM
- Multi-year tag lifetimes
- Large capacity tags
- When a mistake really matters
- No human backup

THE EVIDENCE ROOM

- Evidence is tagged
- A corrupted tag
  - *Looks like missing evidence….*
- Multiple corrupted tags…
  - A LOT of evidence missing?!?!
- **No good comes of this.**

FOOD LOGISTICS

- Produce tracked in RPC
  - (Reusable Plastic Containers)
- ~20M deployed tags
- ***~4% b-process failure***

PHARMA

- A corrupted tag
  - Weird input into software programs
  - Tag "disappears" from system
  - Gives the SKU of another product
- Pharmacist detects errors

OPPORTUNITIES

- Large format tags
  - Increases data corruption rate
  - Aircraft or automotive maintenance records
- Long life tags
  - The practical limitation to tag life is not function, it is corruption
- No access to the cloud
  - Significant data on tag without backup

EPIC

Always Right

SensThys

- Error management system
- Implementation
- Standards compliant
- Backwards compatible