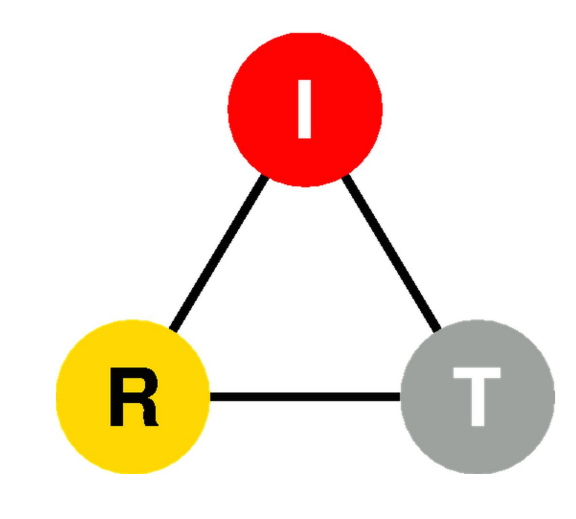




Smart Lock

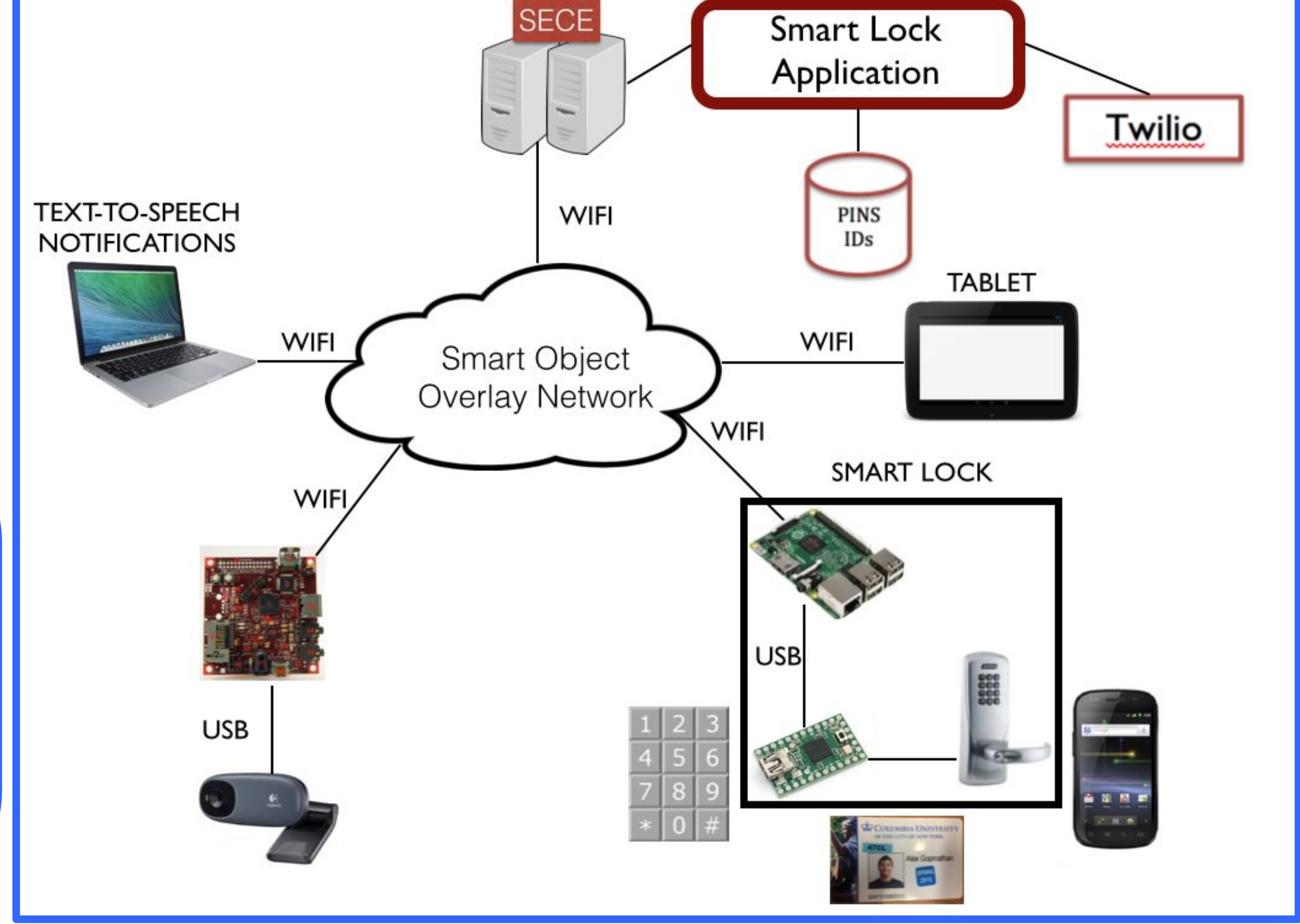


Olivier Jin, Brett Provance, Alex Gopinathan, Joseph Sweeney, Luc Davidson, David Gidony, Jan Janak, Henning Schulzrinne

The Motivation

- Columbia's CS department has approximately 20-30 door locks
- The Schlage door locks on campus are old, expensive, must be manually and individually programmed

Smart Lock Infrastructure



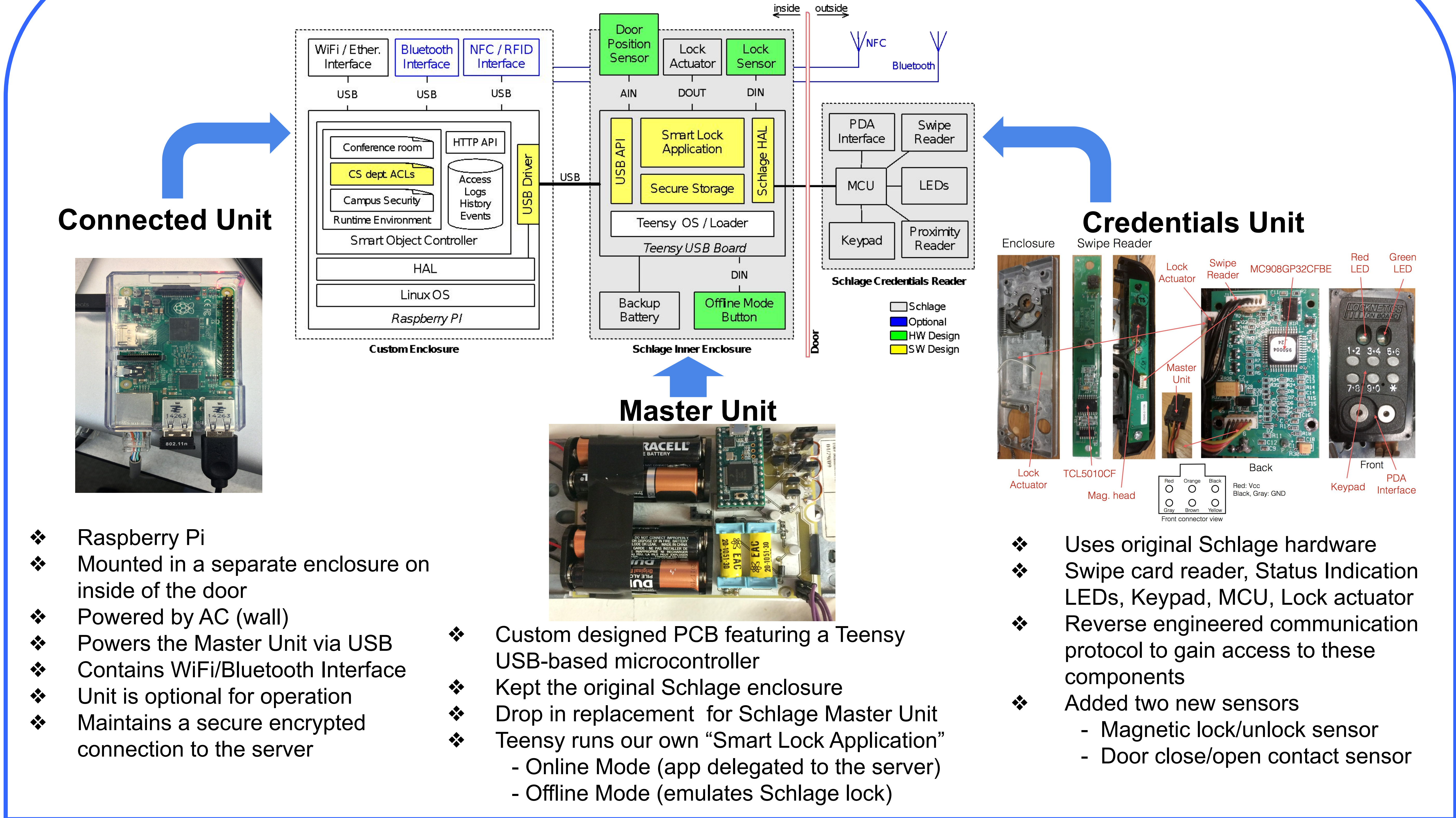
The Result

An integrated locking system that allows CS department administrators to remotely monitor, control, and configure the door locks in CEPSR

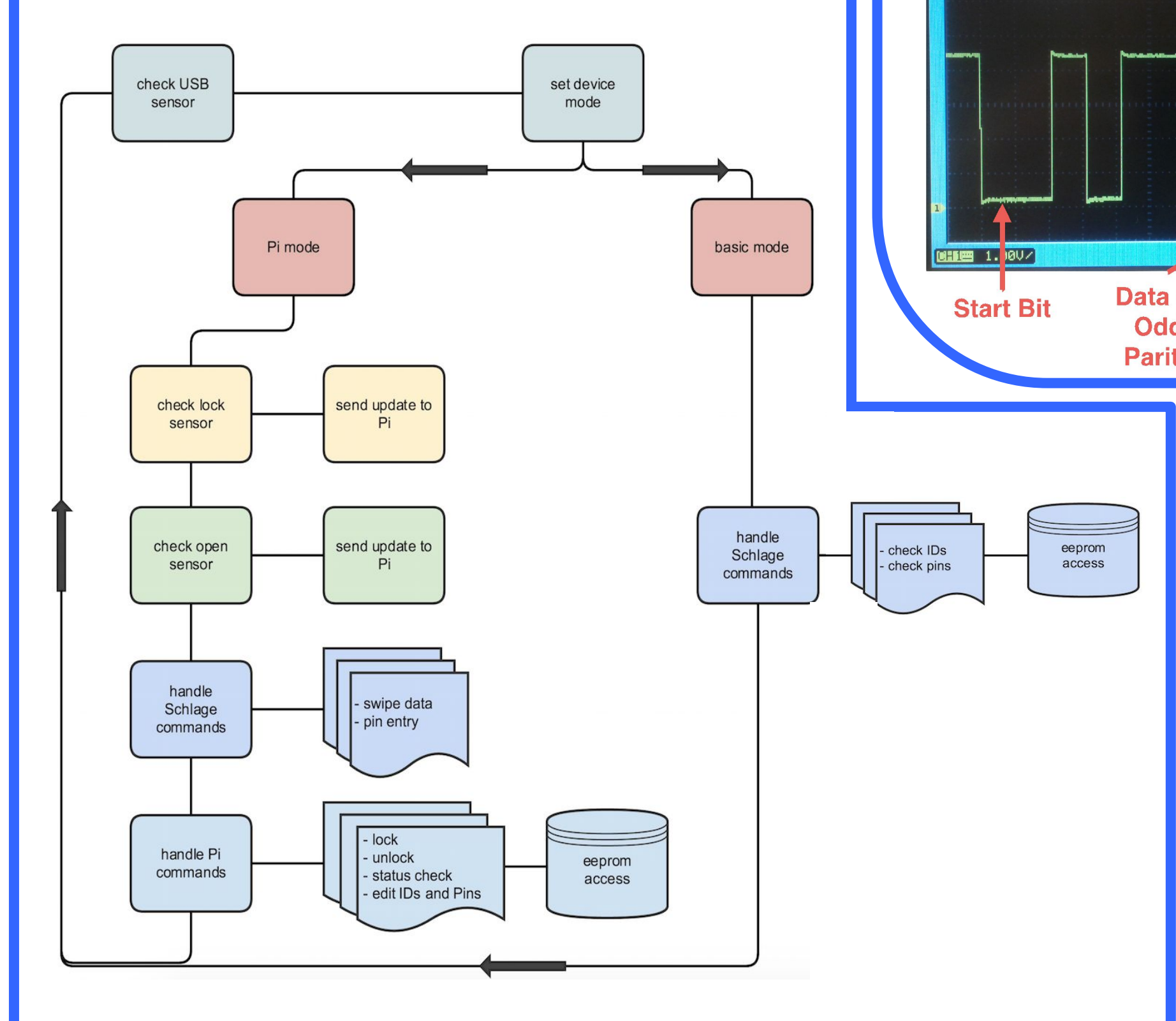
Added Features

- ❑ Real Time Monitoring
- ❑ Bluetooth and Wifi
- ❑ Online Programming
- ❑ Commonly Available Platforms
- ❑ Open Source Software/Hardware
- ❑ Custom Sensors
- ❑ Reuse Schlage Hardware

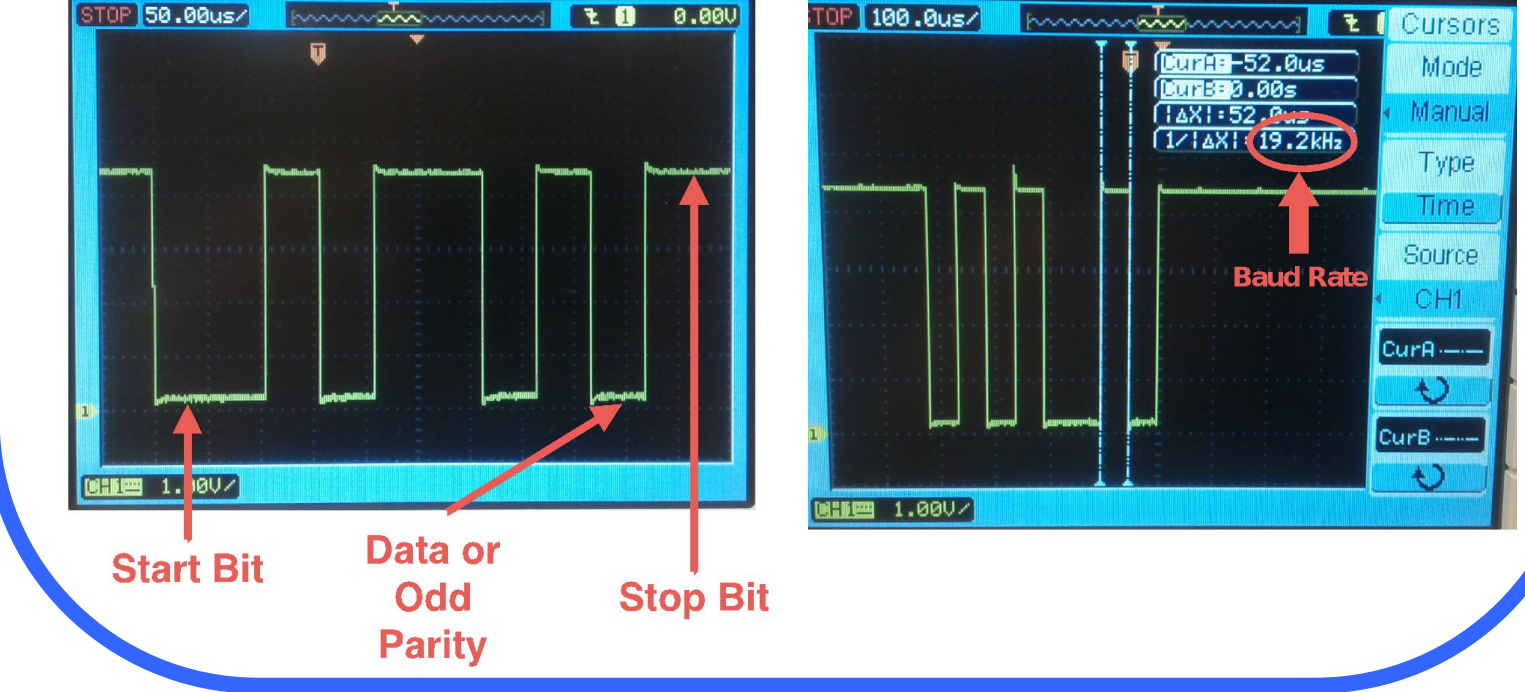
Smart Lock Architecture



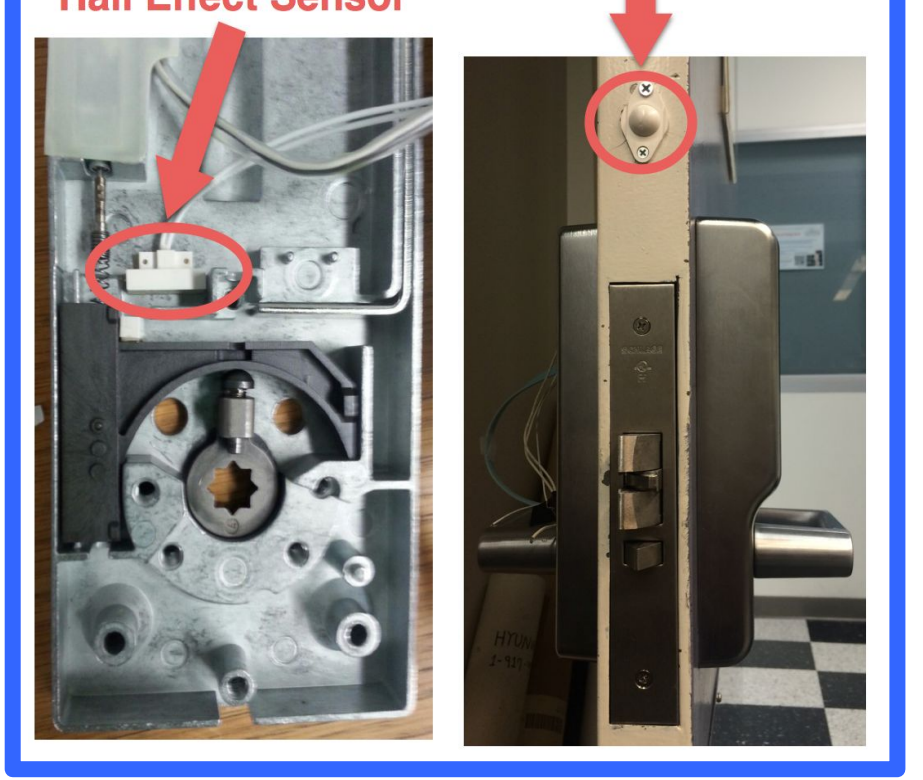
Software Design



Reverse Engineering Schlage Protocol



Custom Sensors



Lock Schematic

