Project Midterm Evaluation

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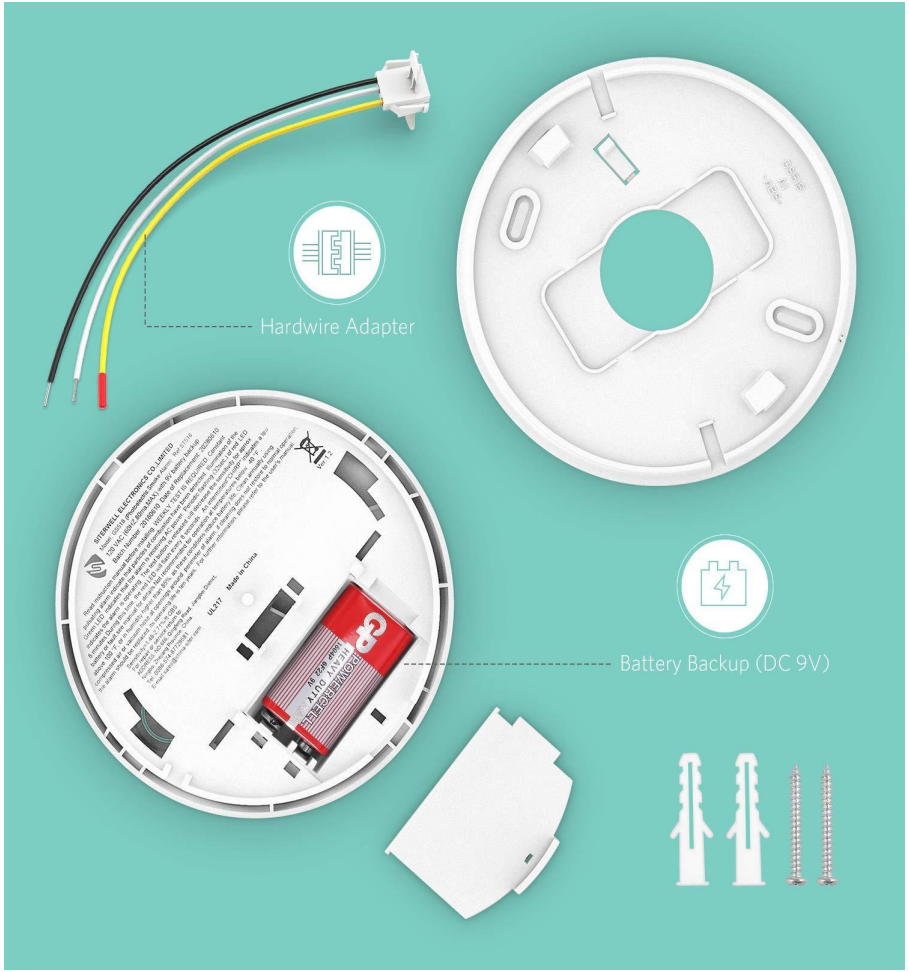
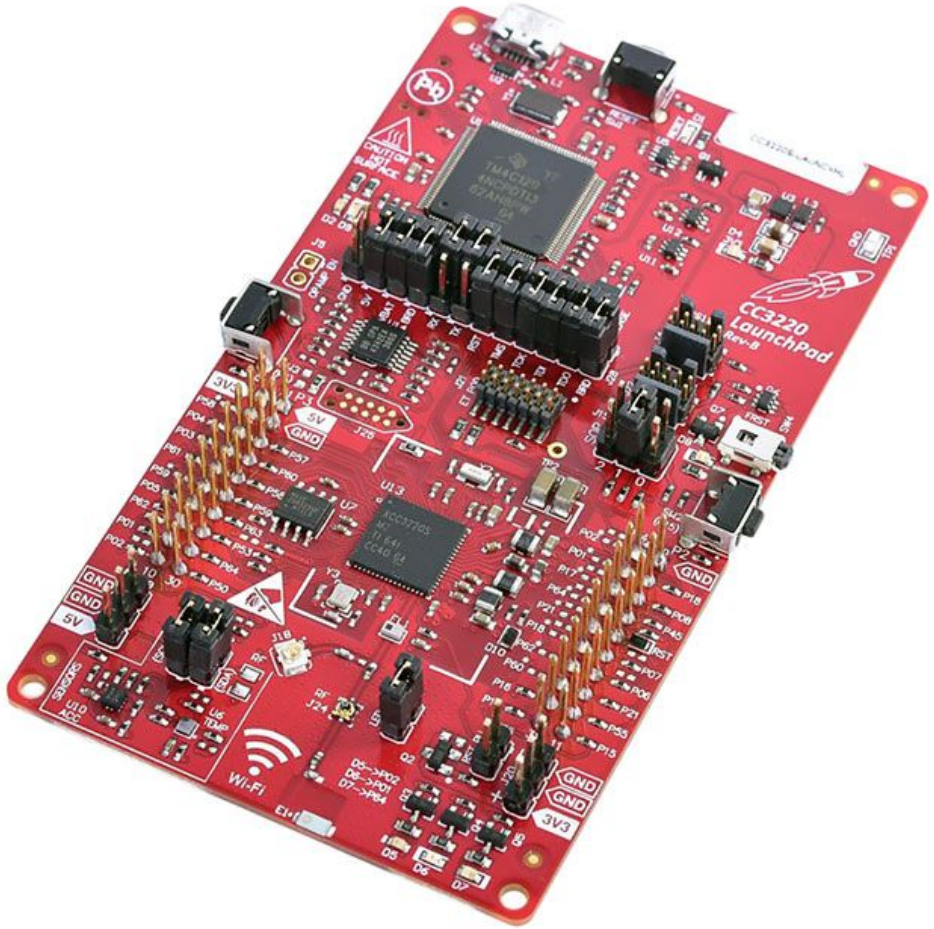
Smart Smoke Detector

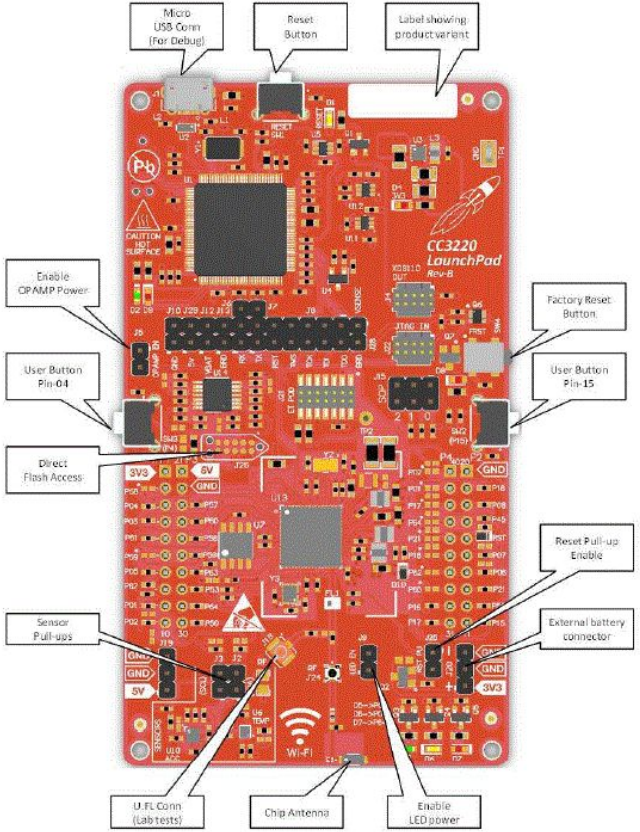
- Mobile alerts
  - Faster response time
- Wifi connected (Network processor)
  - Our build for IoT
- Utilizes 3 wires
  - AC power source
  - Uses a wire as a signal when it detects smoke
- Smart interconnect system to connect multiple smoke detectors together


Hardwire Adapter
Battery Backup (DC 9V)


CC3220
LaunchPad
Rev-B
Wi-Fi

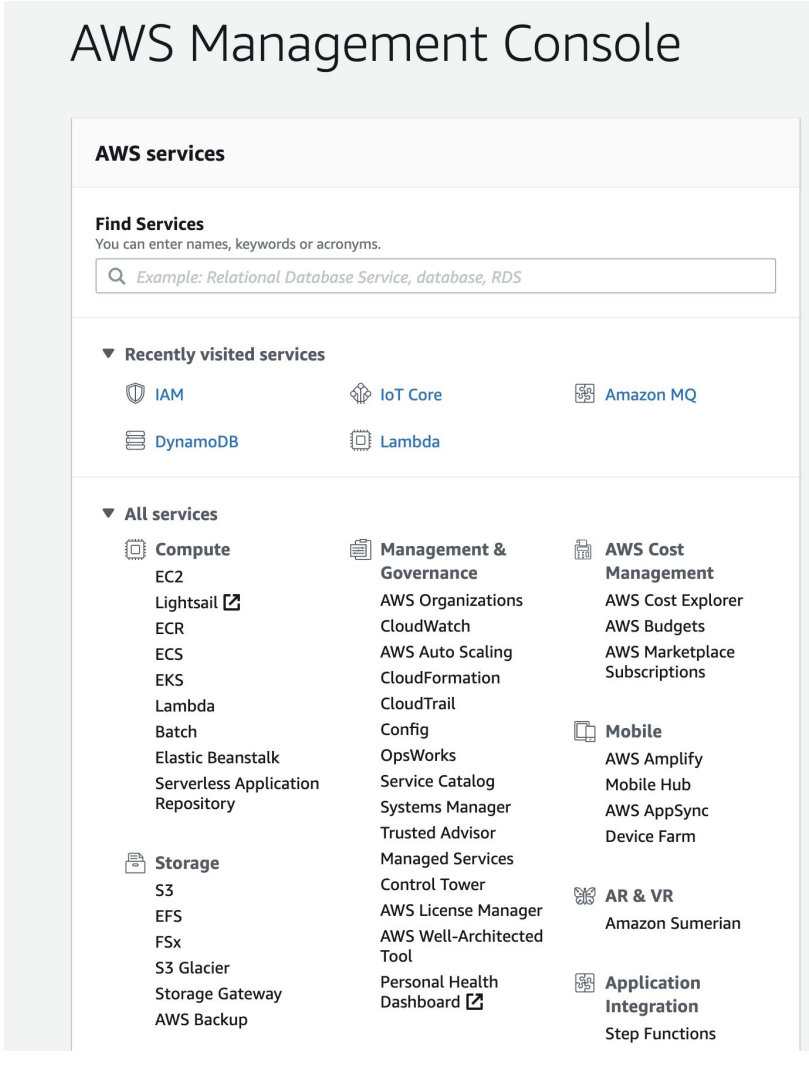
Existing Solutions

- Texas Instruments (CC3220SF-LAUNCHXL)
  - Smart thermostat guidelines to CC3220SF Board
  - Automatically door locked
  - SNS messages via MQTT broker to mobile devices
  - LED text showing on board
  - Motion camera detector
  - Commanding electronic devices turn on/off
  - Guidelines will help the implementation of the board



Required Components

- TI-CC3220SF LaunchPad
- AWS Account (student email requirement)
- Smoke Detector



Software

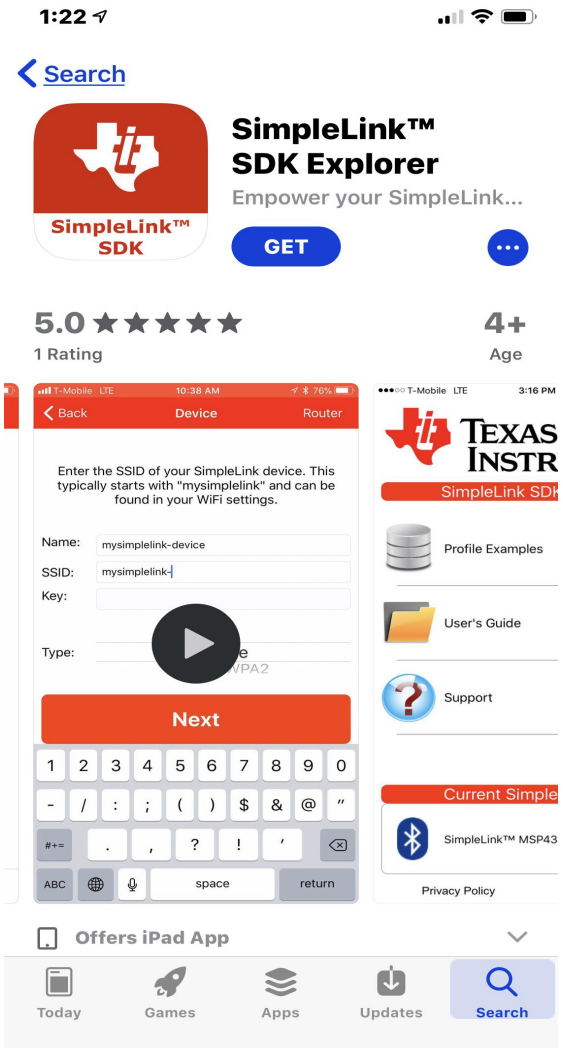
- To implement CC3220 with Amazon FreeRTOs
  - Follow professor Liu’s example
- Code Composer Studio IDE (CCS)
  - Implement wireless support
  - Wi-Fi(IEEE 802.11 b/g/n)
- SimpleLink CC3220 SDK v1.50.00.06
- Uniflash v4.2 or Later
- Network Terminal
- Terminal access (assuming Tera Term)

Hardware

- CC3320SF TI Board
- 1 micro USB cable (connected to CCS)
  - For programmer/debugger and terminal form
- 802.11 (2.4 GHz) wireless access point

Texas Instruments software

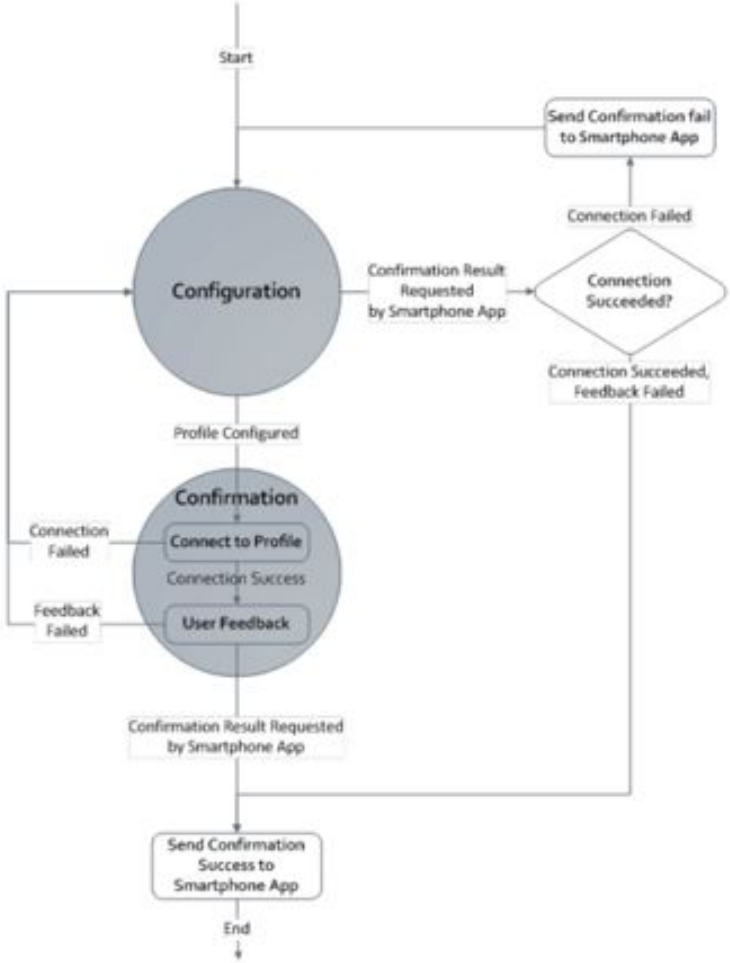
- Download the Texas Instrument connect app
- See how to connect http://www.ti.com/tool/wifistarterpro
- Allows connection
  - To the board
  - To mobile device



Current Status

- Group discussion on the first hand project
- We have Hardware portion
  - TI-CC3220SF LaunchPad
  - Smoke detector (on delivery) Kidde i12060 Hardwire with Front Load Battery Backup Smoke Alarm
- We have Software portion
  - Creating the pathway in Code Composer Studio
  - CC3220 SDK v1.50.00.06
  - Uniflash Applications
- AWS
  - Things/Rules
  - Certificates
  - Policies

Architecture



Our Plan

- Smoke detector (on route)
- Group meetings take place on Monday/Wednesday @ 1:15 pm
- Start implementing software for board week of 4/14
- Connect board to smoke detector week of 4/21
- Presentation week of 4/28

Resources

- http://www.ti.com/lit/ug/tidudo1/tidudo1.pdf
- https://training.ti.com/webcast-building-your-security-system
- http://www.ti.com/tool/CC3220SF-LAUNCHXL
- http://dev.ti.com/tirex/content/simplelink_academy_msp432sdk_1_15_00_00/modules/wifi_provisioning/wifi_provisioning.html
- https://www.mouser.com/new/Texas-Instruments/ti-cc3220sf-launchxl-development-kit/