

# ZUWEETECHNOLOGIES

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*Dotslash Home*

# MISSION

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- ▶ Create a framework called ‘Dotslash’ that can securely and reliably control a set of nodes wirelessly, over local network or internet, with help of a central hub.
- ▶ Use this framework to design, produce and market a range of integrated modern smart home solution.

# OUR TIMELINE

# STATUS BEFORE MAKERVILLAGE (NOVEMBER 2ND WEEK, 2017)

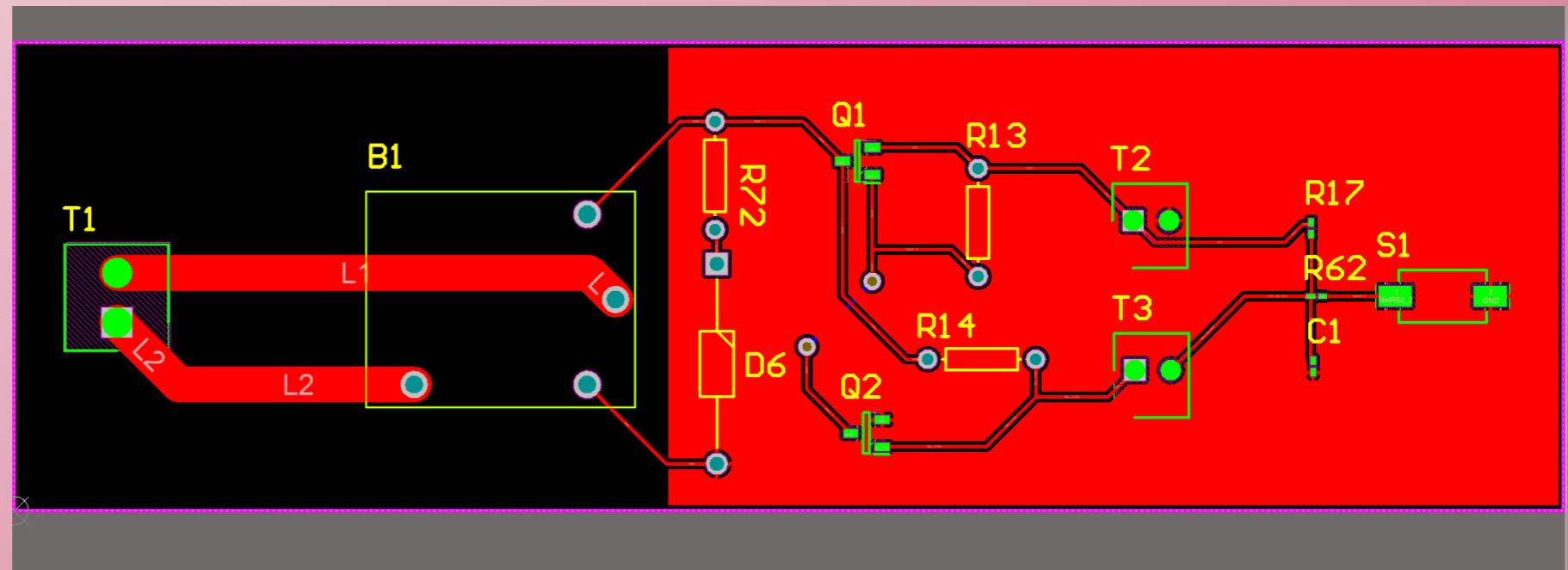
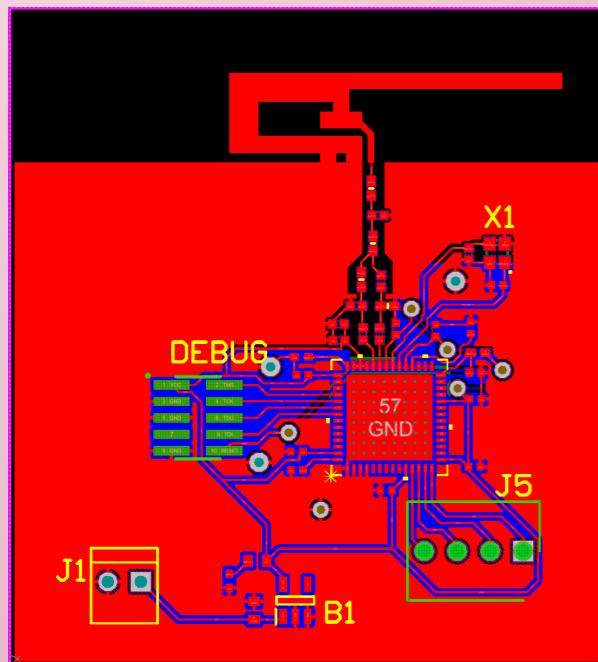
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- ▶ BASIC SOFTWARE FRAMEWORK INCLUDING FIRMWARE FOR ZIGBEE CHIPS, CLOUD SERVER AND CLIENT BINARIES FOR HUB
- ▶ SOFTWARE DEVELOPMENT WAS TAKING PLACE ON CC2538 DEVELOPMENT KIT FROM TI, RASPBERRY PI AND HEROKU AS CLOUD PLATFORM
- ▶ HARDWARE DEVELOPMENT IN SIMULATION PHASE

# STATUS ON FIRST REVIEW (FEBRUARY 6TH, 2018)

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- ▶ DESIGNED CC2538 BRINGUP BOARD, SMPS AND LATCH-RELAY CIRCUIT
- ▶ FABRICATED CC2538 BRINGUP BOARD, PROCURED COMPONENTS
- ▶ ON THE SOFTWARE SIDE, DEVELOPED A CONFIGURATION SERVER TO CONNECT HUB TO WI-FI , AS WELL AS BARE MINIMAL ANDROID AND IOS APPS.



# CURRENT STATUS (AS OF APRIL 11 , 2018)

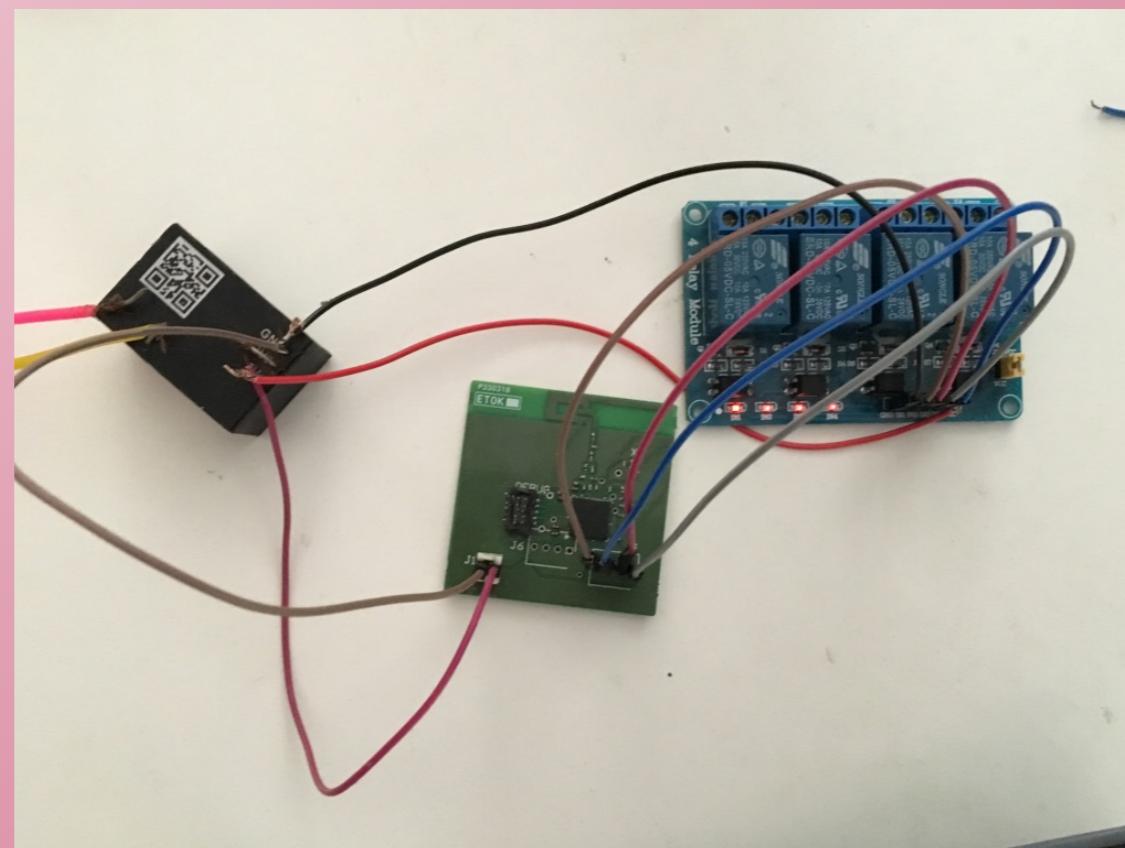
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- ▶ PROTOTYPE - ASSEMBLED THE BOARD AT MAKERVILLAGE. ABLE TO BRINGUP THE BOARD.
- ▶ MVP SWITCH MODULE - DESIGN FOR 4 PORT SWITCHBOARD WITH CURRENT AND VOLTAGE SENSING COMPLETED. FABRICATION PENDING. PROCURED COMPONENTS
- ▶ CASE DESIGN - A MINIMAL 3D DESIGN FOR SWITCH BOARD IS COMPLETED. PENDING FABRICATION
- ▶ SOFTWARE - WORK ON LOCAL-SERVER TO ROUTE THE REQUESTS IN THE ABSENCE OF CLOUD-SERVER. COMPLETED.

# PROTOTYPE

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- ▶ AFTER A COUPLE OF FAILED ATTEMPTS TO ASSEMBLE CC2538 BRINGUP BOARD, WAS ABLE TO BRINGUP THE BOARD SUCCESSFULLY.
- ▶ USING POWER SUPPLY MODULE FROM THIRD PARTY (BRIDGETHINGS) TO POWER THE MODULE.
- ▶ ABLE TO FLASH THE FIRMWARE WE DEVELOPED ON DEVELOPMENT KIT ON TO OUR CUSTOM BOARD.
- ▶ INVERTED F ANTENNA ON OUR CUSTOM BOARD IS WORKING PROPERLY
- ▶ ABLE TO CONTROL THE INPUT/OUTPUT ON GPIO PINS ON OUR CUSTOM BOARD



# PROTOTYPE - ISSUE

► OUR BOARD IS UNABLE TO JOIN THE ROUTER OVER ZIGBEE. NEED TO DEBUG THIS SOFTWARE ISSUE.

Untitled \* - Ubiqua Protocol Analyzer (Evaluation Version) Evaluation

File Tools Device View Window Help

Device Manager

Graphic View

Network Explorer

Traffic View

Packet View - Packet #22

Frame Information: (18 bytes)

- MAC Header: (15 bytes)
- MAC Payload: 0x04
- MAC Footer: 0xFFFF

0x0000	63 C8 87 F5 08 00 00	c.....
0x0007	5A 1E 00 2B 5A 1E 00	Z...+Z...
0x000E	2B 04 FF FF	+++

Properties

- Information
  - Channel: 11 (0x0B), 2405 MHz, OQPSK\_250
  - Protocol: ZigBee
  - PAN: 0xA573
  - Address: 0xCFA7 | 2B:00:1E:5A:2B:00:1E:5A
  - Status: Associated
  - Type: Node
  - Depth: 1
- ZigBee Endpoints
  - None detected

Watch View

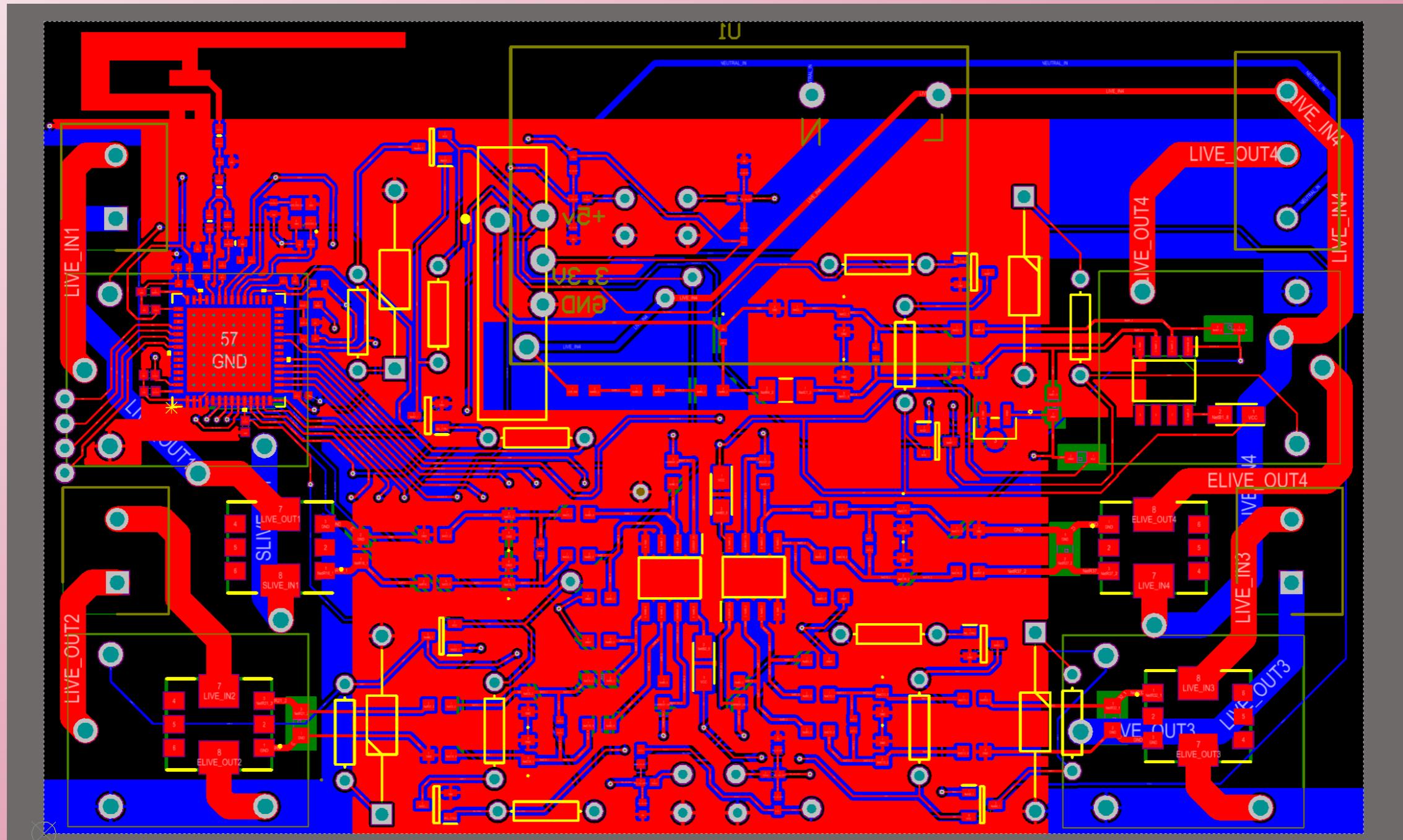
Field Value

Packet 22 of 755 Events: 6

Windows Taskbar: Type here to search, File Explorer, Edge, Microsoft Store, Google Chrome, File Explorer

# MVP SWITCHBOARD ELECTRONIC DESIGN

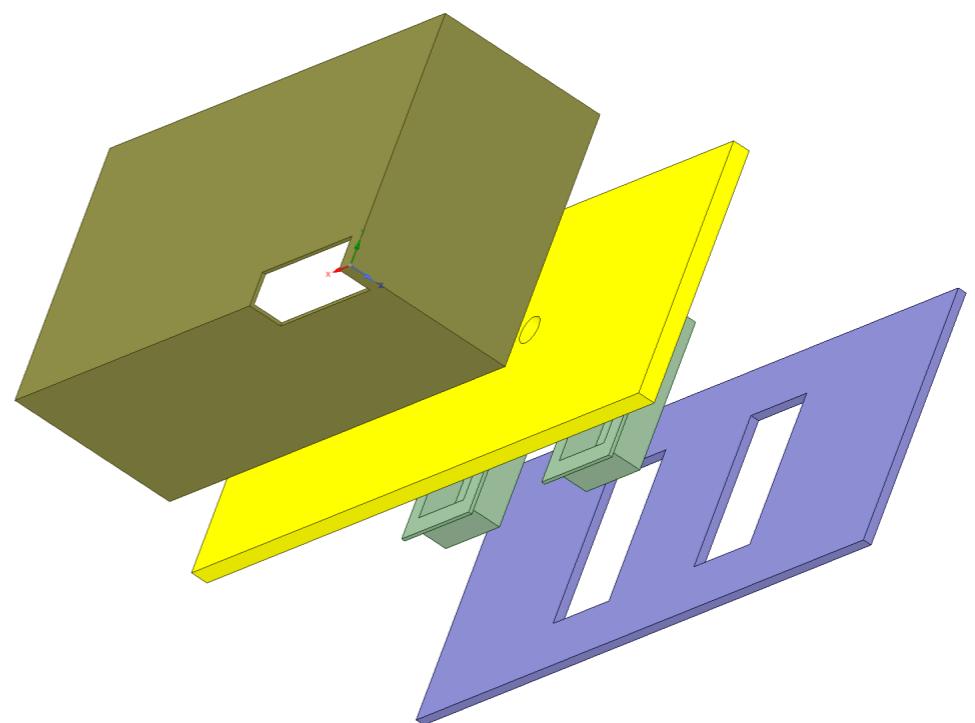
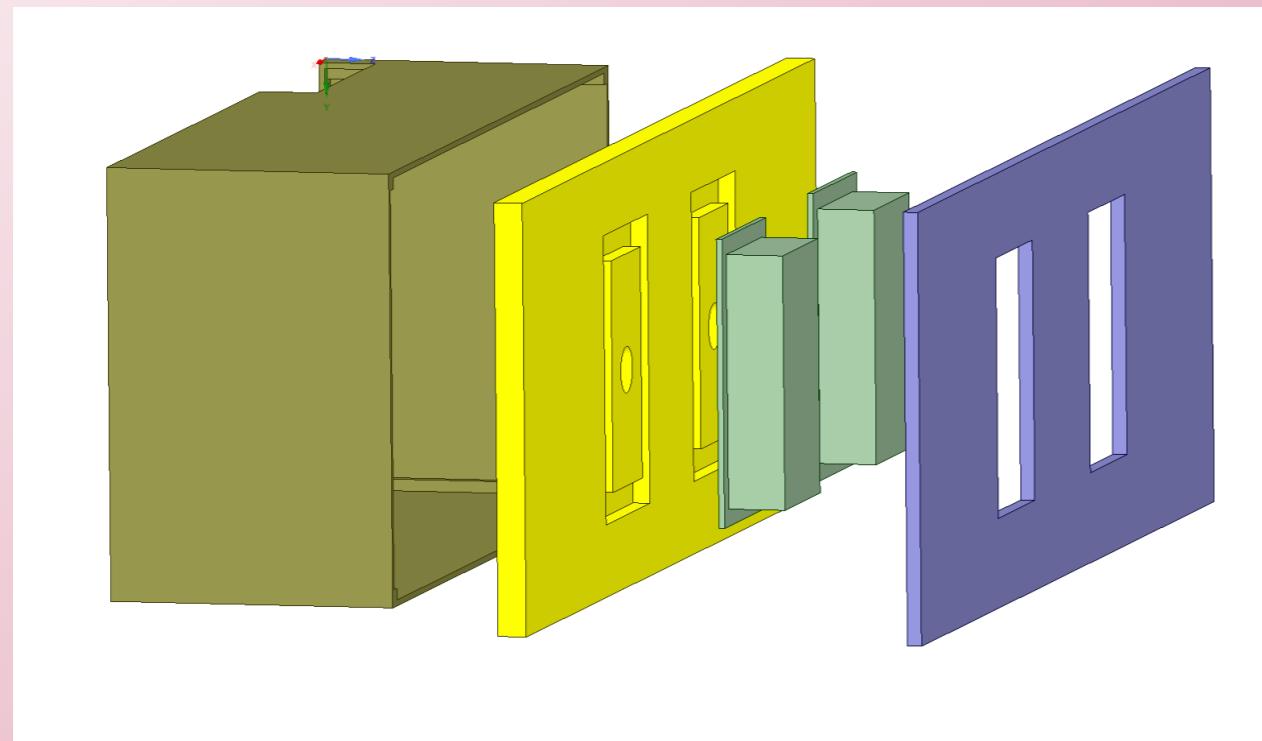
- ▶ DESIGN FOR SWITCHBOARD MOUDLE THAT CAN CONTROL 4 DEVICES AND ALSO SENSE CURRENT AND VOLTAGE IS COMPLETED. PROCURED THE COMPONENTS. PENDING FABRICATION.



# MVP SWITCHBOARD CASE DESIGN

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- ▶ 3D DESIGN FOR A MINIMAL SWITCHBOARD CASE IS COMPLETED. PENDING FABRICATION.



# LOCAL SERVER

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- ▶ PURPOSE - TO ENABLE THE USER TO CONTROL AND MONITOR DEVICES IN THE ABSENCE OF CONNECTION TO CLOUD SERVER.
- ▶ HUB NOW RUNS A LOCAL-SERVER WHICH IS A MINIMAL VERSION OF THE CLOUD SERVER.
- ▶ THIS LOCAL SERVER ACTS AS A BRIDGE BETWEEN CLIENT PROGRAM ON HUB AND THE CLOUD SERVER.
- ▶ THIS CAN ENABLE RENDERING OF USER-INTERFACES AS WELL(WEB AND APPS)

# WHERE ARE WE SUPPOSED TO BE ON APRIL 15, 2018

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- ▶ WE WERE EXPECTED TO COMPLETE PROTOTYPE BOARD WITHOUT CURRENT AND VOLTAGE SENSING CAPACITY BY APRIL 15 2018.
- ▶ IS IT COMPLETED YET ? NO
- ▶ WHAT IS PENDNG? WE WERE UNABLE TO CONNECT OUR PROTOTYPE BOARD WITH CO-ORDINATOR CHIP ON RASPBERRY PI.

# THANKS