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Team Bumblebee Preliminary Design Review

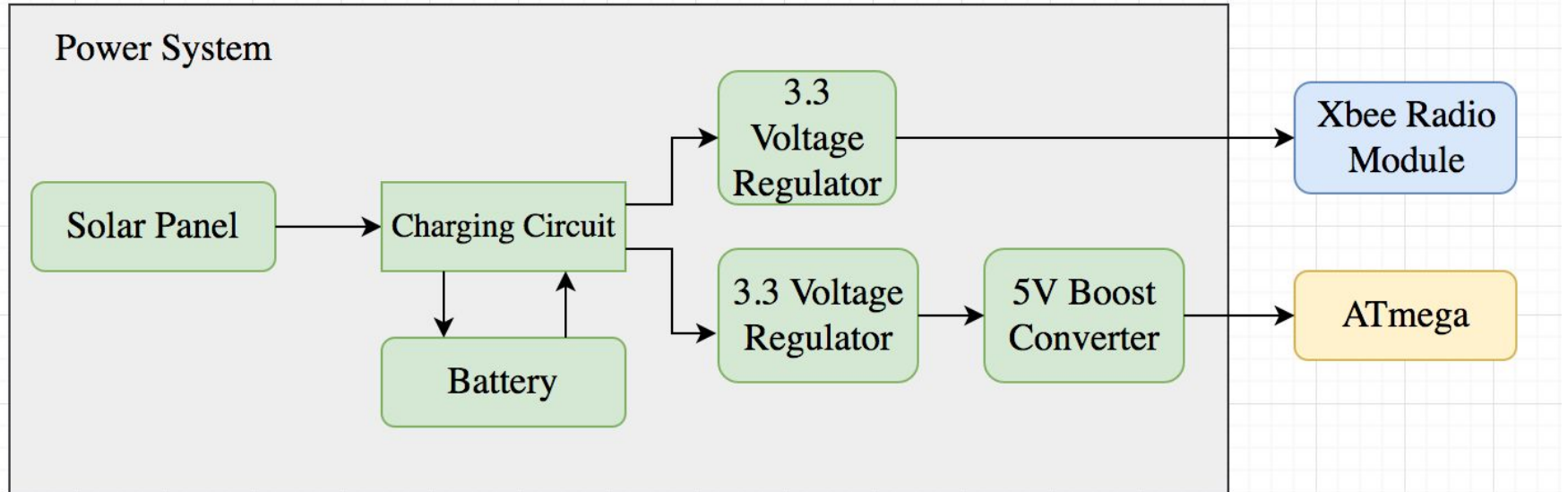
Isaiah Aribal & Kayla Amano



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Block Diagram (Power)

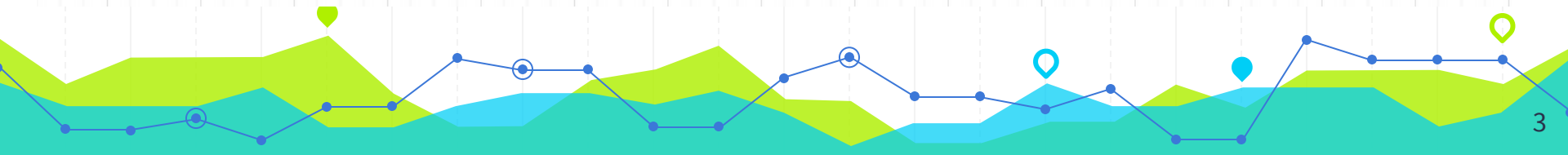
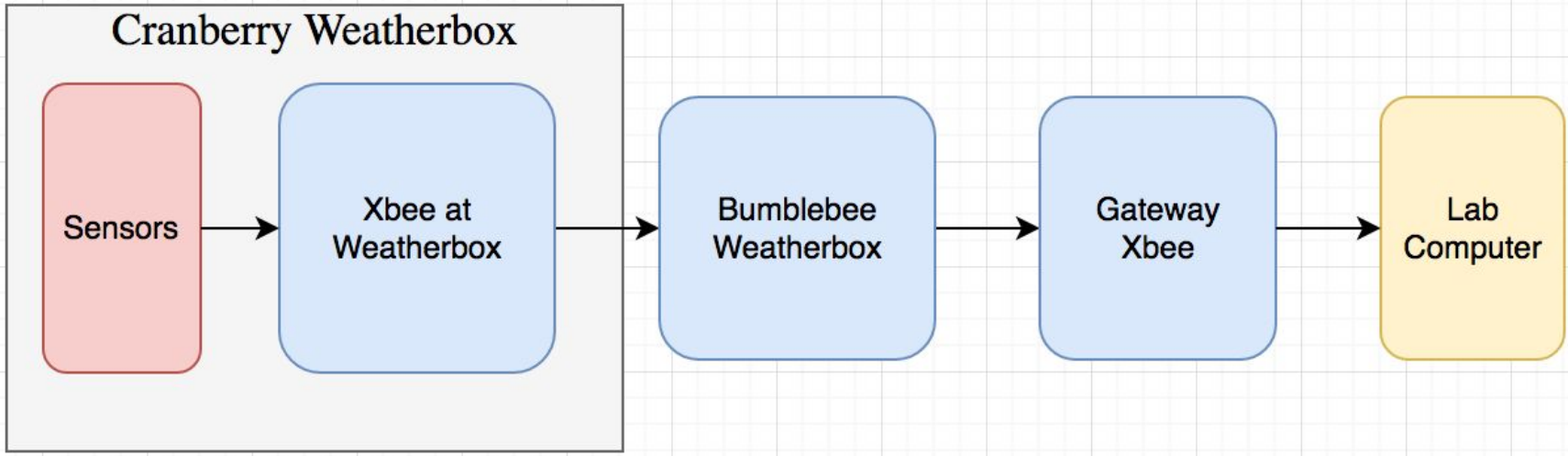




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Block Diagram (Signal/Communication)



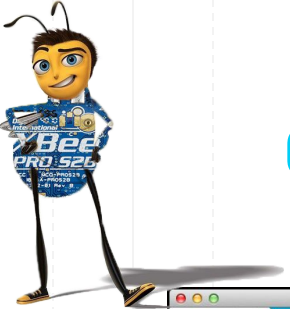


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Team Progress

- Xbee communication tests
 - Computer to computer
 - Computer to arduino with xbee shield



Computer(Sending) to Arduino with Xbee Shield(Receiving)



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XCTU

Bumblebee3 - 0013A20040E95C53

Radio Modules

- Name: Bumblebee3
- Function: ZigBe...API
- Port: usbse...API 2
- MAC: 0013...5C53

1 remote modules

- Name: Bu...e1
- Function: Zig...API
- MAC: 00...CC

Frames log

ID	Time	Length	Frame
0	14:16:53...	44	Transmit Request
1	14:16:53...	7	Transmit Status

RF data

ASCII HEX

This is for Bumblebee's PDR :)

Checksum

Send frames

Name	Type
frame_0	Transmit Request
frame_1	Transmit Request

Send a single frame

Send selected frame

Send sequence

Transmit interval (ms): 500

Repeat times: 1

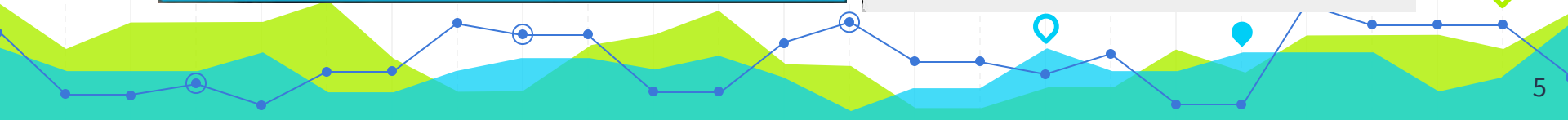
Loop infinitely

Start sequence

/dev/cu

This is for Bumblebee's PDR :)

Autoscroll



Computer(Receiving) to Arduino with Xbee Shield(Sending)



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The screenshot displays the XCTU software interface. On the left, a panel shows the configuration for a radio module named 'Bumblebee3'. The configuration includes: Name: Bumblebee3, Function: ZigBe...r API, Port: usbse...API 2, and MAC: 0013...5C53. Below this, a list of remote modules shows 'Bu...ee1' with Function: Zig...API and MAC: 00...CC.

The main window shows the 'Frames log' for the module 'Bumblebee3 - 0013A20040E95C53'. The log contains 14 entries, all labeled 'Receive Packet'.

ID	Time	Length	Frame
4	14:19:31....	14	Receive Packet
5	14:19:33....	14	Receive Packet
6	14:19:35....	14	Receive Packet
7	14:19:37....	14	Receive Packet
8	14:19:40....	14	Receive Packet
9	14:19:42....	14	Receive Packet
10	14:19:44....	14	Receive Packet
11	14:19:46....	14	Receive Packet
12	14:19:48....	14	Receive Packet
13	14:19:51....	14	Receive Packet
14	14:19:53....	14	Receive Packet

The 'Frame details' panel shows the received data in ASCII as 'HI' and the checksum as 'D7'. The 'Send frames' panel shows a list of frames to be transmitted: 'frame_0' and 'frame_1', both of type 'Transmit Request'. The 'Send a single frame' section has a 'Send selected frame' button. The 'Send sequence' section has a 'Transmit interval (ms): 500' field, 'Repeat times 1' selected, and a 'Start sequence' button.





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Resolved Problems

- Unable to send and receive packets between two computers
 - Emailed Andrew and he worked magic
- Errors when receiving packets on Arduino with xbee shield
 - Found new code to use



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Problems/Issues

- Unable to send and receive packets between computer and bare arduino
 - The code is not the problem
 - Possible problems
 - Wiring between the xbee and the atmega
- Unable to program bare Arduino
 - Temporary fix: Hit the reset button while programming



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What Needs to Be Finished

- Two way communication between
 - computer and board
 - Two boards
- Range testing
 - Distance
 - Weather
 - Obstacles (buildings/walls)
- Designing, fabrication, & testing of PCB
- Weatherbox network



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QUESTIONS?





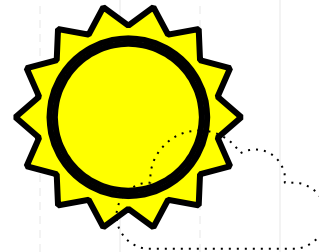
SlidesCarnival icons are editable shapes.

This means that you can:

- Resize them without losing quality.
- Change fill color and opacity.
- Change line color, width and style.

Isn't that nice? :)

Examples:





Now you can use any emoji as an icon!

And of course it resizes without losing quality and you can change the color.

How? Follow Google instructions

<https://twitter.com/googledocs/status/730087240156643328>

