



# Head-Impact Data Recording System for Football Injuries Progress Report 2

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# Overview

The 'kit' will be designed to help medical professionals in football (or other sports) to evaluate, treat, and perhaps prevent traumas and injuries from impacts to the head of a player.

The 'kit' will consist of 2 parts – a part to be installed in the player's helmet (SENSOR), and a part that will connect to a side-line laptop (DAQ).

The SENSOR will detect high-g impacts and wirelessly transmit the data to the DAQ.

The DAQ will control operations of the SENSOR, and transmit data to a laptop for storage.

# Accomplished So Far

Acquired all parts for breadboard prototype

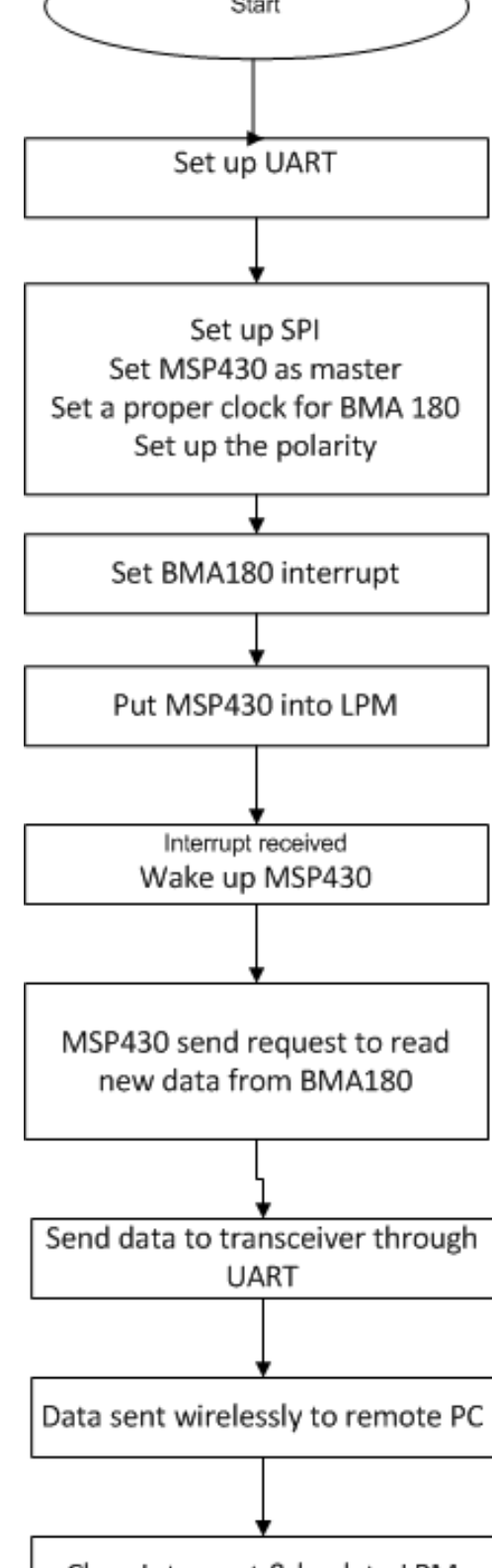
Preliminary board schematic and layout complete

Preliminary SPI communication tested using example code

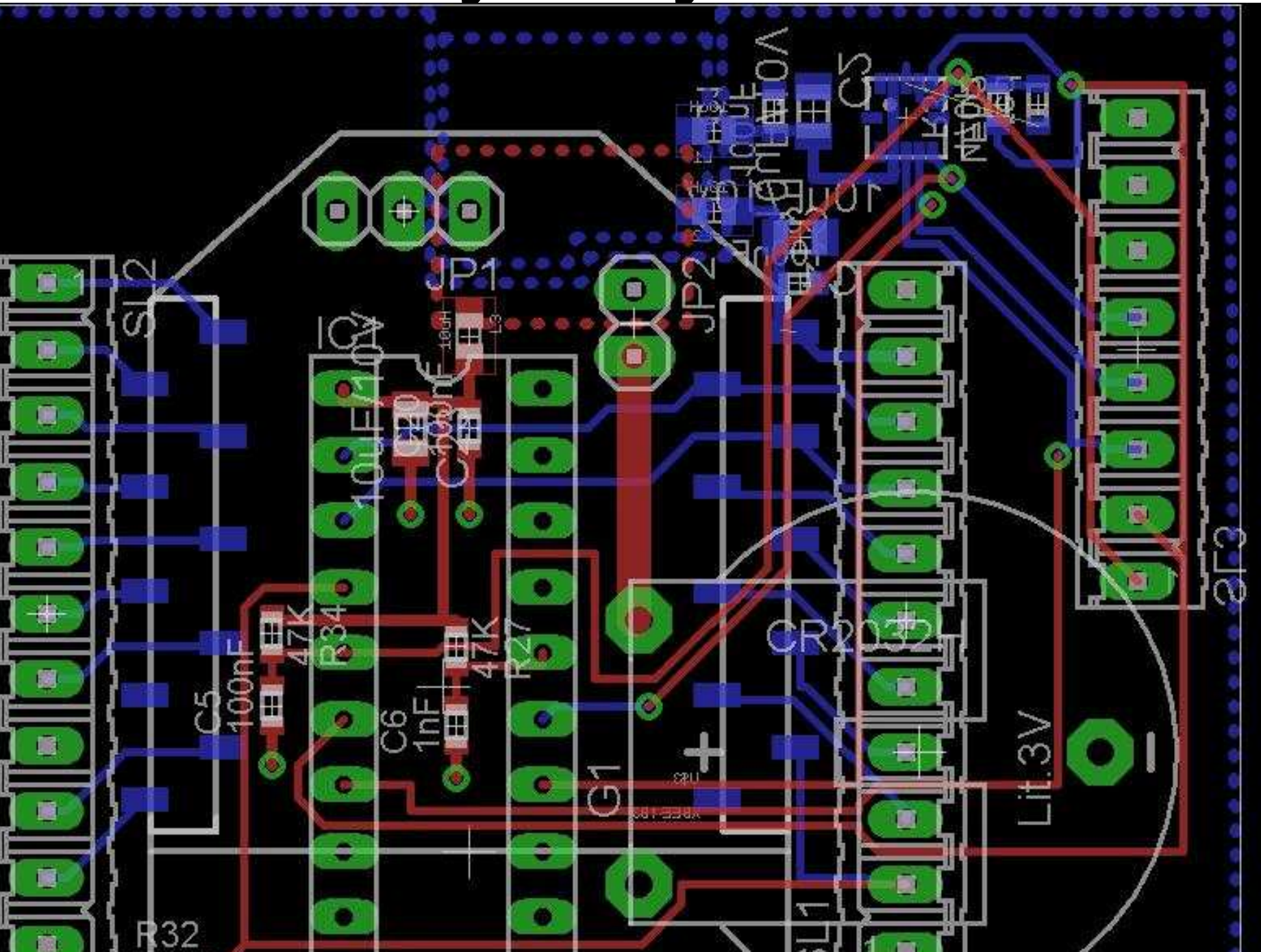
Preliminary MSP430 SPI + UART Integration tested

XBEE wireless components configured and working with MSP430

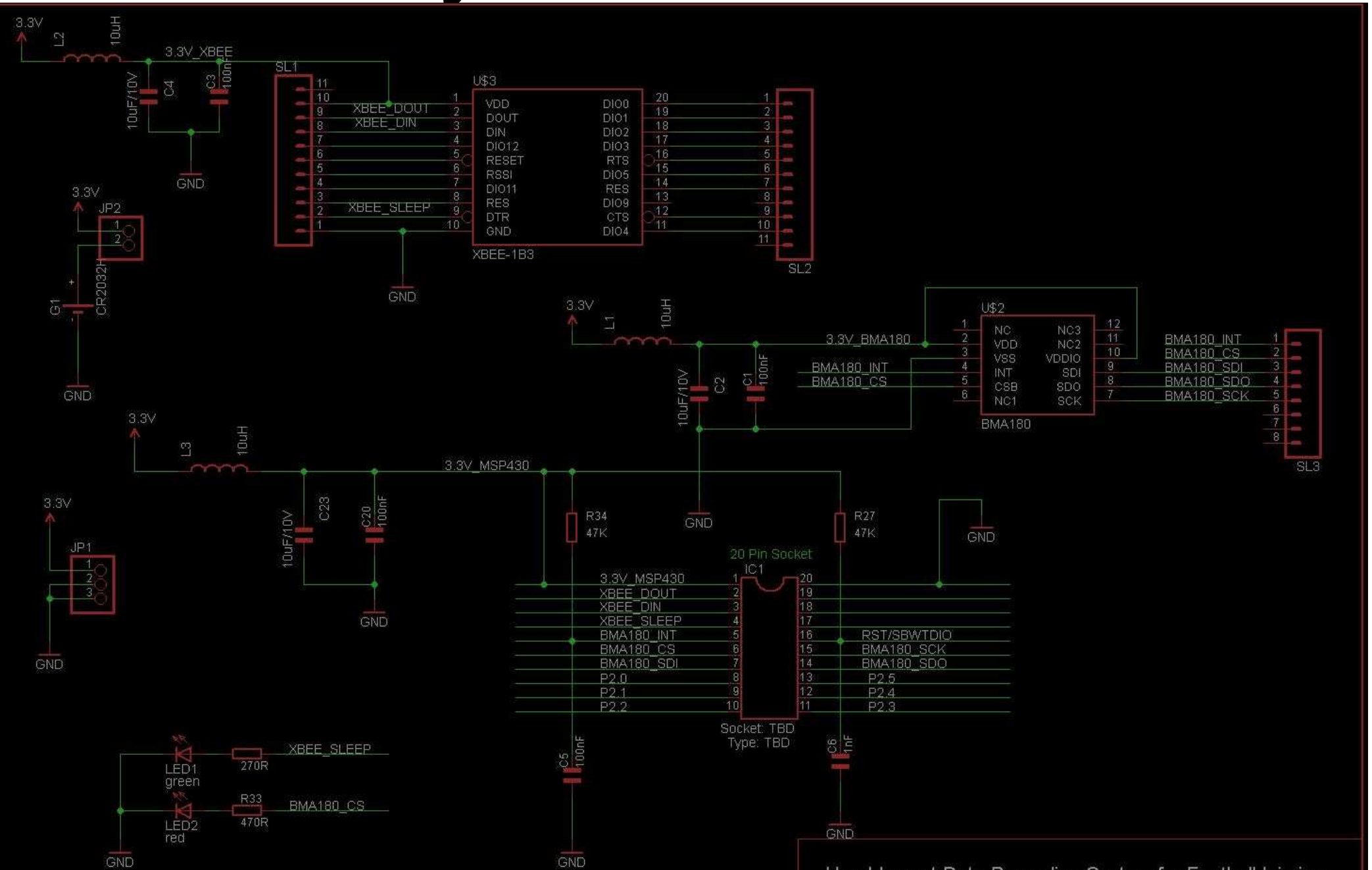
# Preliminary Flowchart



# Preliminary Layout



# Preliminary Schematic



# Whats Left and Responsibilities

SPI communication with BMA180

- Esaim and Yassine

Functional integration

- Yassine and Yassine

Power and interrupt management

- Michael

Finalize board layout and send for fab

- Michael (and group review)

# Timeline

## November 19<sup>th</sup>

- Board layout complete, ready for FAB
- Order all components needed for PCB
- Establish SPI communication with BMA180

## November 26<sup>th</sup>

- Board assembly and testing
- BMA180 configuration done, and 'good' data is received
- Power and Interrupt scheme tested
- Integration testing with BMA180, MSP430, and XBEE started

## December 3<sup>rd</sup>

- System testing (accelerometer thresholds, etc)
- Fixing bugs, and writing report



That's all



Folks