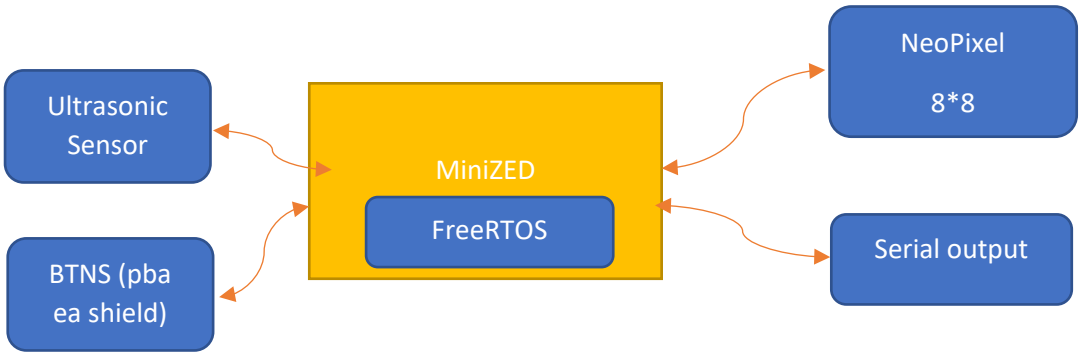
Final Exercise Part 1

- For this Assignment you can work in groups of Max. 3 students, please send an e-mail to vincent.claes@pxl.be before **8/11/2019** with all the group members in CC.
- You can work together but you have to do an individual file upload to blackboard before **6/01/2020.** You have to upload 1 zip file with the following structure:
    - Zip file (your_name_assessment_1.zip)
        - /FPGA [Your Vivado 2019.2 Project]
        - /other [directory containing Other software needed for running your application]
        - /documentation [directory containing very short tutorial on howto start your application]

System Overview:



1) For this project you have to use your Xilinx MiniZED board where you program 2 AXI IP Blocks for controlling a 8*8 Neopixel matrix (WS2812) and reading in a Ultrasonic Sensor
2) The output on the Neopixel and the Serial output has to be the same (RGB Values as an array over Serial line to PC)
3) You can develop your own application but you have to use FreeRTOS with Threads, Queues, Timers, …
    a. For instance: Pong game with ultrasonic sensor as game controller, Flappy bird game with ultrasonic sensor as game controller
    b. Make the game multiplayer so use extra buttons as input (for instance from your pba ea ict shield) for controlling player 2

Quotation: 20 points => 14 points software project (FreeRTOS) + 6 points hardware / IP Block

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