Notes for PSWS ClementineSDR - 06-19-2023

My (Dave, KD0EAG) activities during past week:

1. Track/receive Developer kits for CYUSB3kit
   - In hand (for sure) 1 CYSUB3Kit-003 board.
   - Hope to have two more CYSUB3Kit-003 boards by tonight (1 for Majid).
   - In hand (for sure) CYUSB3kit-007 CPLD add on board.
   - Hope to receive at least 1 more CYUSB3kit-007 CPLD add on board by end of month.
2. Productive call with Franco .
   - Discussed project goals and background.
   - Discussed path to hardware design.
     - Agreed that KiCad (free, open source) reference schematic is a good initial goal.
   - Plan to have additional meets with interested participants as needed.
   - Agreed that design might hold some components external to facilitate future flexibility of design.
     - Front-end conditioning (filtering).
     - some aspects of time discipline.
     - some aspects of time stamping.
3. Attempted to keep interested parties informed of activities and interesting found documents. (Let me know if I am not including **you** properly).
4. Reading "SuperSpeed Device Design by Example" by John Hyde [Amazon https://www.amazon.com/dp/1500588059?psc=1].
   - Getting started with examples in this book.
5. Working on "Requirements" spreadsheet derived from:
   "TangerineSDR RF Receiver Module (RXM-5001D)
   Requirements Document"
   Document Number: TSDR-RXM-5001D-REQ,
   version 0.4 Date: Nov. 22, 2019
   provided by Tom McDermott

My action Items:

1. Attempt to build a demo project for the FX3. Maybe more than one.
   - Start with CPLD FX3-Slave FIFO CPLD Demo.
   - Will CPLD functionality be needed in final design (for timing stuff?)
   - Will I2C be needed for control functions?
2. Read BBRF103 and RX-888 code closely to better understand which sort of applications are possible and best suited to SDR designs.

- from reading, it appears that an asynchronous FX3 Slave FIFO design may be the fastest and most appropriate architecture.
- This may be a difficult strategy to design well. Don't know.
- Need to find out what has been done in the past.

3. Choose ADC chips for reference schematic(s).
   - Probably choose LTC2208CUP-14 for first efforts because it is small and I have the DEMO854D-D board in hand.
   - Also have the AD9648-125EBZ board in hand, but it is bigger and looks complicated.
4. Need to discuss these things with Interested parties, esp. Tom McDermott, John Ackerman (maybe Franco, Rob, Phil when they return).
5. Get dev. tools packaged and sent to Majid ASAP (hopefully today if they arrive).
6. What else??