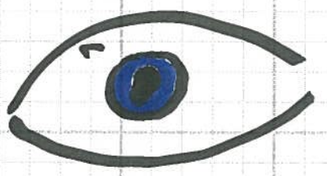
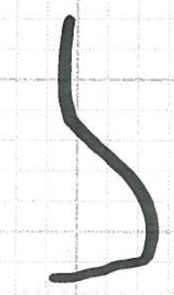
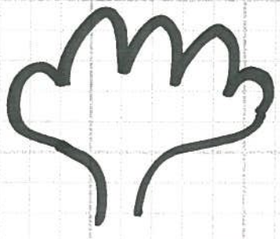
Human Connection - Part 1

Eli Hughes

2014-06-09

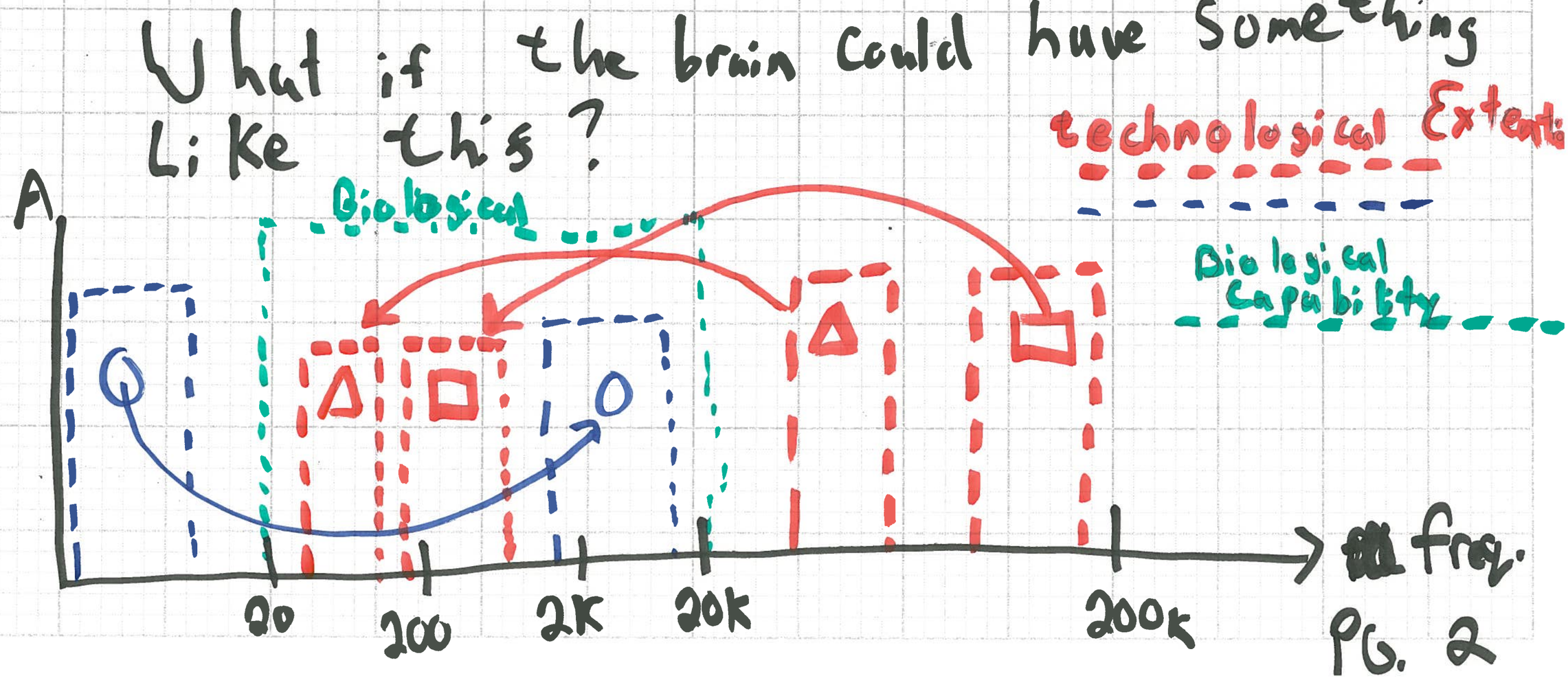
	input	Bandwith	(easily) Hackable
	see	fast	* *
	hear	medium	* * * *
	smell	Slow	*
	touch	Slow	* *
	taste	Slow	*

Human Connection - Part-1

Eli Hughes

fundamentally **transform** the human-universe Connection through Vibration sensor remapping

What if the brain could have something Like this?



2014-06-09

The Human Connection - Part 1

El: Hughes

Inspiration: Star Trek IV - The voyage home

Spock: The president did say the probe's signal were directed at earth's oceans.

Kirk: Uhura .... Can you modify the Probe's Signals accounting for density, temperature and salinity factors

We all Know the rest!

- What if humans had this ability real time?
- What new connections could we make with the physical universe?
- what Could this [redacted] do for the Blind & hearing Impaired?
- What if we want to listen in the Oceans of Europa?

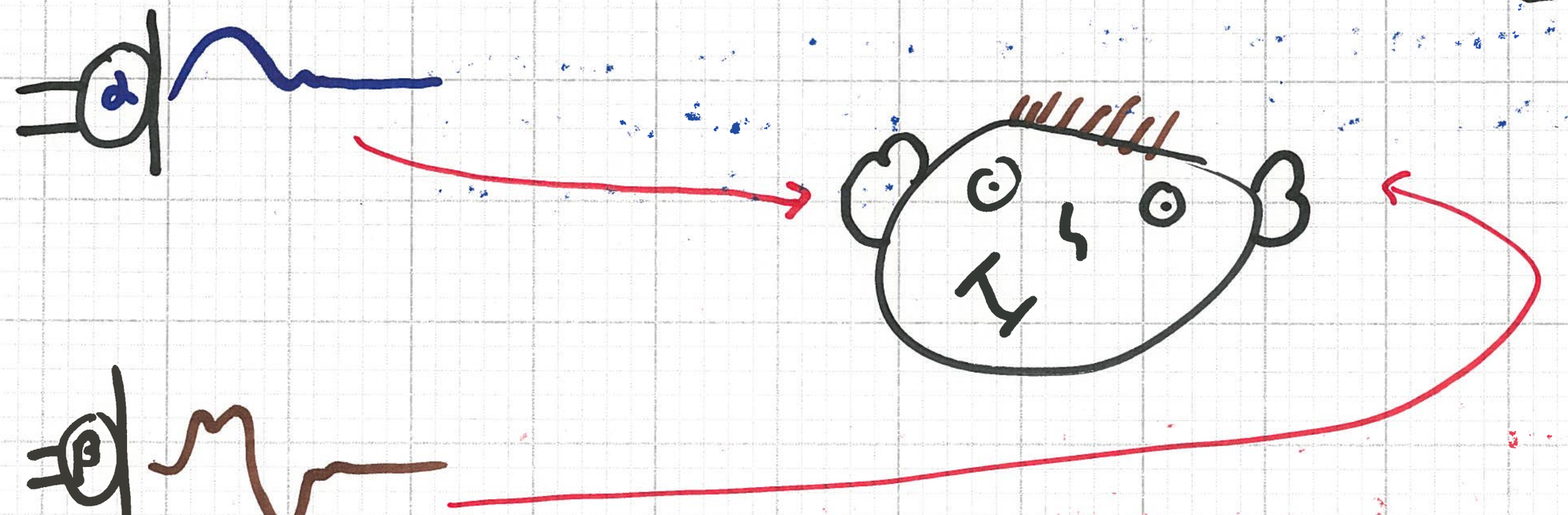
6-23-2014

The Human Connection - Part 7

E. Hughes

High level Conceptual Flow - (1)

Qty 2 Ultrasonic 1 to 100 KHz Fluid pressure sensors
[Microphones]
[Hydrophones]



α and β are nominally sampled at ear location

2004-06-09

The Human Connection - Part -2

E.I. Hughes

High level conceptual flow - (2)

#Important# α and β are to be Considered as 2 Components of linearly independent set i.e. Complex valued

$\tilde{\alpha} + j\tilde{\beta}$

or with more terms (sensors) we may form a

rank N tensor)

for now we will Consider a complex signal

$\alpha_n + j\beta_n$

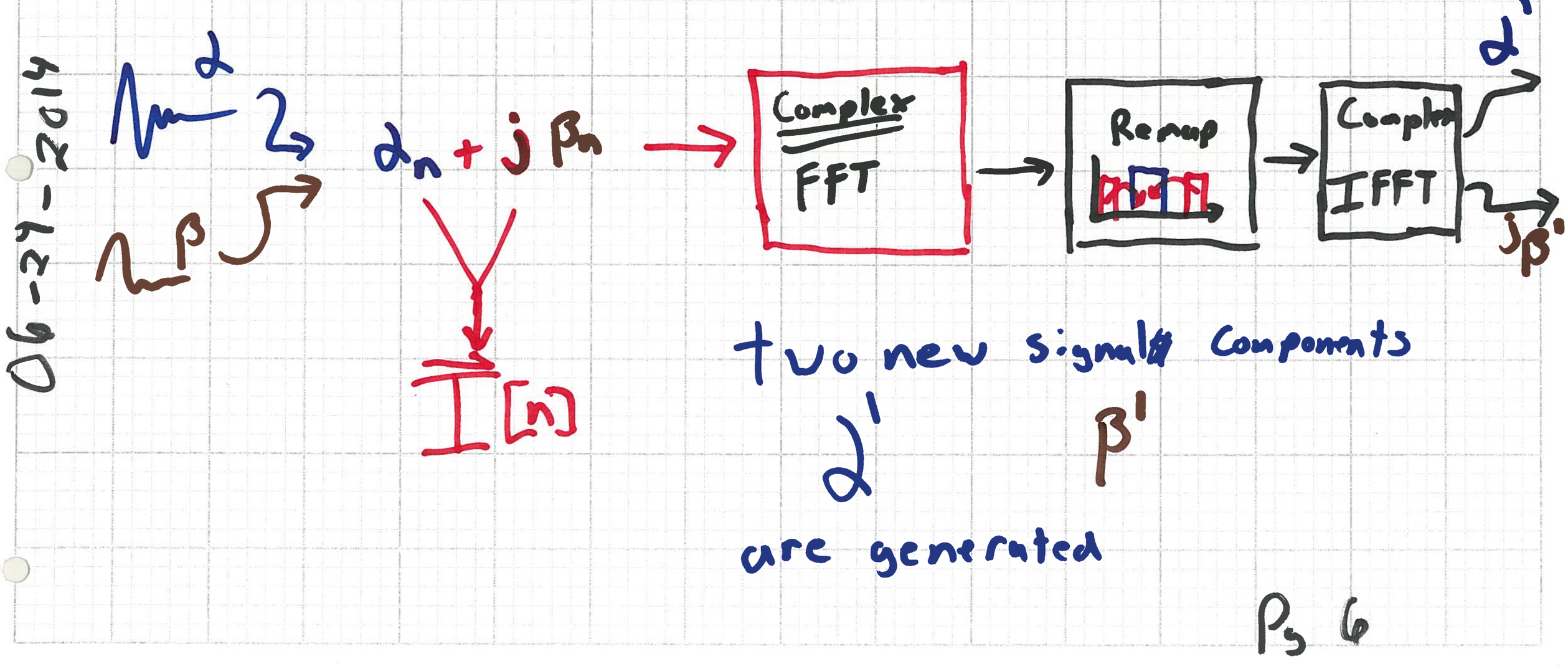
06-24-2014

The Human Connection - Part 1

EI: Hughes

High level Conceptual flow (3)

Now consider a Sampled Signal ($F_s \approx 250$ KHz)



two new signal components

α' β'

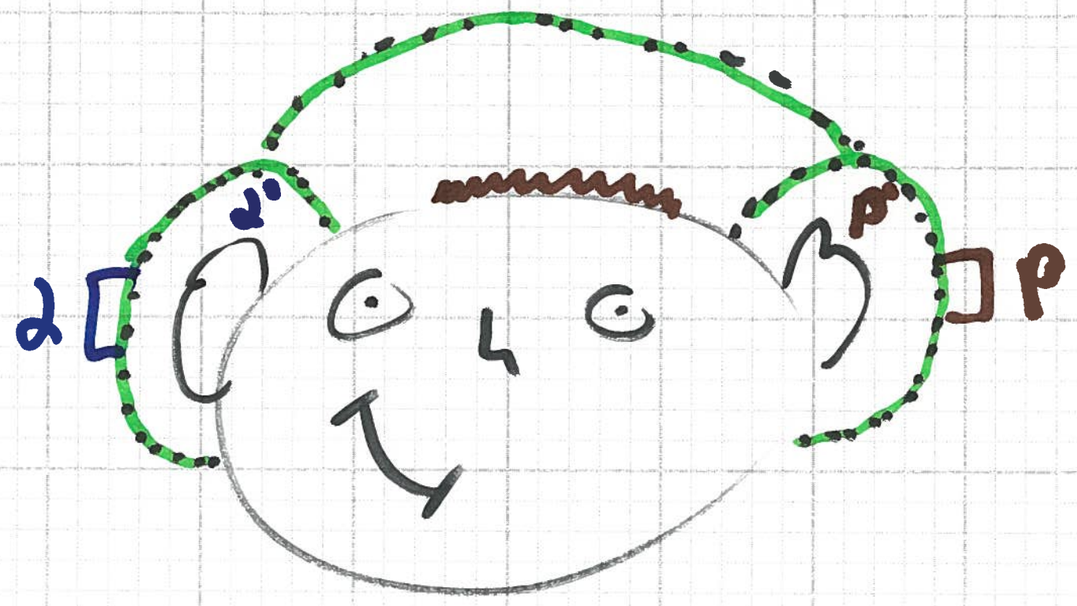
are generated

The Human Connection - Part 2

E.L. Hughes

High level conceptual flow (4)

The new signals α' β' are fed to the human via head phones [now] or direct neural interface [future]



E.L. Hughes

The Human Connection Part 1

E.I. Hughes

6-24-2014

Hardware for Proto

1.) Ultra sonic transducers

2.) LPC-link-2 [used as CPU Board for LPC4370
Triple Core → ARM Cortex M4 DSP
M0 Data
M0 Spare
$20 → low cost

3.) Transducer Interface PCB → All sch + PCB will be on Git Hub

4.) Head phones

Software tools

1.) LPCxpresso (GCC Based)

2.) ARM CMSIS DSP Libraries

3.) All on Github

All will be open for review, hacking, etc.

* Bare Metal C++