

**VEGAS Pulsar Mode Integration Tasks**

**V1 19 March 2014**

Task	Who	fte days	fte weeks
<b>SOFTWARE</b>			
<b>VEGAS Manager Updates</b>	TBD	50	10
1.1 Coherent Mode backend class; update backend base class with concept of 'roach ownership'			
1.2 Incoherent Mode backend class			
1.3 Add parameters unique to pulsar modes with dep/chk/act methods			
1.4 Add samplers specific to GUPPI BOF's??			
1.5 Add parameters unique to pulsar modes in VEGAS coordinator			
1.6 Data buffer API update			
1.7 Config/Status keyword update			
1.8 Unit tests for all backend classes (analogous to DIBAS unit tests)			
<b>Configtool Updates</b>	Melinda	12	2.4
2.1 Add pulsar specific keywords to VEGAS config class		3	
2.2 Identify/implement mechanism to delineate pulsar from spectral line modes		2	
2.3 Routing, parameter setup, checks,		2	
2.4 Configuration of both Guppi and VEGAS simultaneously		5	
<b>Displays</b>	TBD	11	2.2 Note 5
3.1 Bank status aggregation		3	
3.2 Signal level display (e.g. Vegasdm + Cleo?)		3	
3.3 GBT status updates		5	
<b>VEGAS/GUPPI HPC Cleanup/Merge</b>	Joe	71	14.2
4.1 Identify Testing strategies to confirm operation (unit and system tests, test signal datafiles)		5	Note 4
4.2 Identify common codes & merge into library (e.g: date/time, thread management etc.)		5	
4.3 Design component (stage) control/status/data API		8	Note 1
4.4 Prototype ZMQ based pipeline, evaluate performance		3	
4.5 Implement component API (general routines usable for any component)		10	Note 2
4.6 Implement ZMQ based keyword value service for configuration/status		3	
4.7 Revise processing stages to use component API:			
4.7a Vegas Net component		1	Note 3
4.7b Vegas GPU/LBW component		3	Note 3
4.7c Vegas Accumulator component		2	Note 3
4.7d Guppi Net component		1	Note 3
4.7e Guppi Coherent Net component		1	Note 3
4.7f Guppi Folding Component		3	Note 3

4.7g	Guppi De-dispersion component	3	Note 3
4.7h	Combine common components (guppi, e.g net vs codd_net)	3	Note 3
4.7i	Decimation stage for user-displays component (guppi)	2	
4.8	Resolve databuffer format (VEGAS vs. Guppi) issues	3	
4.9	Component Unit tests	10	
4.1	System level tests	5	
5 CP/IO Issues			
	Address Issues (with Paul and Wolfgang)	3	0.6

Note 1 May be more or less depending upon the amount of interaction with external people (e.g. MacMahon)

Note 2 May be more or less depending upon any additions we might want to make to Hashpipe

Note 3 These could be accelerated with aid from Paul/Scott

Note 4 Needs input from Paul/Scott

Note 5 A SWAG since I really have little insight of the requirements/work already done in this area

		days	weeks	months
<b>Totals</b>	TBD	61	12.2	2.8
	Melinda	12	2.4	0.5
	Joe	74	14.8	3.4

TASK	fte-weeks elapsed	
1 1600MHz sampling with tunable DDCs approach . . .		
1.1 Confer with Glenn Jones regarding tunable DDCs, etc.	1	2
1.2 Design and test proof-of-concept 2,048 channel Coherent prototype	10	20
1.3 Design and test proof-of-concept 2,048 channel Incoherent prototype	6	12
1.4 Complete implementation of basic Coherent mode	2	4
1.5 Complete implementation of basic Incoherent mode	2	4
1.6 Build, test, and deliver remaining Coherent modes	1	4
1.7 Build, test, and deliver remaining Incoherent modes	1	4
1.8 Design, build, test, and deliver 100MHz FAST4K mode	2	4
1.9 Design, build, test, and deliver 100MHz FAST8K mode	2	4
<b>Total</b>	<b>27</b>	<b>50</b>

	fte-weeks elapsed	
2 Port existing DIBAS modes / rebuild for 400MHz / data decimation approach . . .		
2.1 Port existing DIBAS modes	1	4
2.2 Rebuild, test, and deliver 2,048 channel Coherent mode at 400MHz	1	2
2.3 Rebuild, test, and deliver 2,048 channel Incoherent mode at 400MHz	1	2
2.4 Design, build, test, and deliver 2,048 channel Coherent mode at 200MHz	4	8
2.5 Design, build, test, and deliver 2,048 channel Incoherent mode at 200MHz	4	8
2.6 Design, build, test, and deliver 2,048 channel Coherent mode at 100MHz	4	8
2.7 Design, build, test, and deliver 2,048 channel Incoherent mode at 100MHz	4	8
2.8 Build, test, and deliver remaining Coherent modes at 400, 200, and 100MHz	2	3
2.9 Build, test, and deliver remaining Incoherent modes at 400, 200, and 100MHz	2	3
2.1 Design, build, test, and deliver 100MHz FAST4K and FAST8K modes	2	4
<b>Total</b>	<b>25</b>	<b>40</b>

Notes "fte weeks" is actual fte weeks, with the assumption that Randy and Jason work side by side. i.e. for option (1), Randy and Jason would each require 13.5 fte weeks

Assumptions in elapsed time?