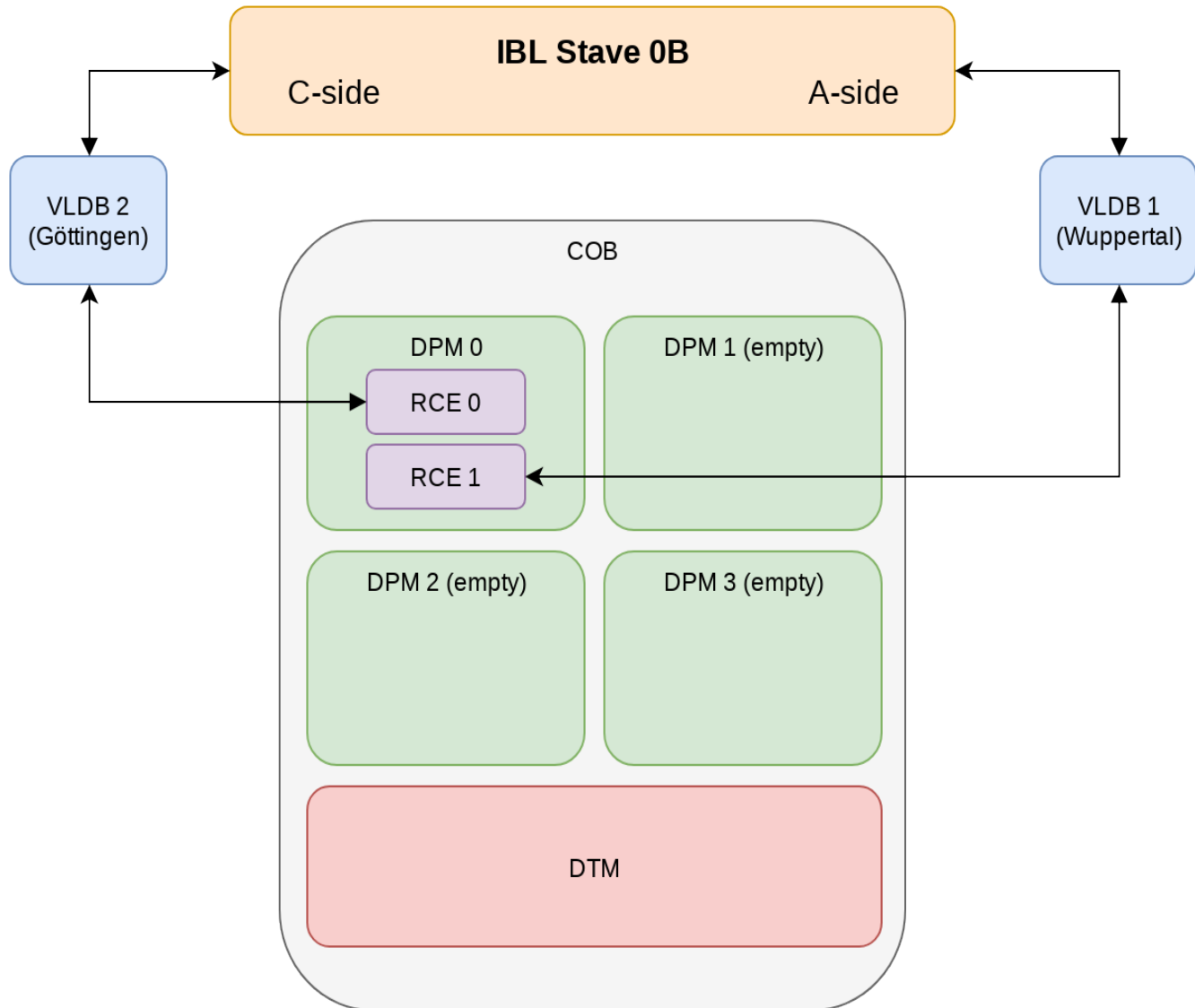


Stave0B - RCE readout test with COB

Introduction

- 2 weeks before Christmas Martin sent me a new DTM with on-board jitter cleaner.
- FW was prepared and tested: See DtmJitterCleaner branch in gitlab.
- Still issues with clock generation (timing?!) resulting in constant resets of the RMB PLL...
- Martin provided a firmware with no RMB PLL problem, which is working fine.

Connectivity



Test results so far

- Found 14 front-ends with good analog scan
- Inconsistencies with previous tests using the Kintex Ultrascale readout.
- Using pixel320.txt for the VLDB config
- Phase alignment in VLDB to be tested (maybe we can get more chips working)

front-end	RCE	Inlink	Outlink	Serial Number	Digital scan	Analog scan	Threshold
M1A1-1	1	0	0	n	-	-	
M1A1-2	1	0	1	n	-	-	
M1A2-1	1	2	2	y	y	y	y
M1A2-2	1	2	3	y	y	y	y
M2A3-1	1	4	4	n	-	-	
M2A3-2	1	4	5	y	y	y	
M2A4-1	1	6	6	y	y	y	
M2A4-2	1	6	7	n	-	-	
M3A5-1	1	8	8	n	-	-	
M3A5-2	1	8	9	y	y	y	
M3A6-1	1	10	10	y	n	-	
M3A6-2	1	10	11	n	-	-	
M4A7-1	1	12	12	n	-	-	-*
M4A7-2	1	12	13	n	-	-	-*
M4A8-1	1	14	14	y	y	y	-*
M4A8-2	1	14	15	n	-	-	-*
M1C1-1	0	14	15	y	y	y	
M1C1-2	0	14	14	y	y	y	
M1C2-1	0	12	13	y	y	y	
M1C2-2	0	12	12	n	-	-	
M2C3-1	0	10	11	y	y	y	
M2C3-2	0	10	10	n	-	-	
M2C4-1	0	8	9	y	y	y	
M2C4-2	0	8	8	n	-	-	
M3C5-1	0	6	7	y	n	n	
M3C5-2	0	6	6	n	-	-	
M3C6-1	0	4	5	y	y	y	
M3C6-2	0	4	4	n	-	-	
M4C7-1	0	2	3	y	y	y	-*
M4C7-2	0	2	2	y	y	y	-*
M4C8-1	0	0	1	n	-	-	-*
M4C8-2	0	0	0	y	n	-	-*
		working		17	14	14	2
		failed		15	3	1	0
		untested		0	15	17	8

Summary

- Successful verification of the new DTM firmware
- RCE readout in Wuppertal has been set-up and is working fine
- Results of IBL stave measurements show some inconsistencies between different readout systems
 - I suspect the phase alignment settings in the VLDB have quite an effect...
 - Will do an manual tuning of the phases (I did already with the Kintex Ultrascale readout with some success)

calibGui configuration (A-side)

Calibration GUI

File Plot

Scan Config Halfstave A Config Halfstave C Config Halfstave A (2) Config Halfstave C (2) Plots

All Off All On

Frontend A1-1 File: 92-02-03_44__cern 5071 Dir: 92-02-03 Type: FEI4B FEID: 92020344 ModID: 92-02-03 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 0 <input type="checkbox"/> Included Outlink: 0 0 Phase: Rce: 1	Frontend A1-2 File: 92-02-03_45__cern 5071 Dir: 92-02-03 Type: FEI4B FEID: 92020345 ModID: 92-02-03 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 0 <input type="checkbox"/> Included Outlink: 1 0 Phase: Rce: 1	Frontend A2-1 File: 92-02-04_50__cern 575 Dir: 92-02-04 Type: FEI4B FEID: 92020450 ModID: 92-02-04 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 2 <input checked="" type="checkbox"/> Included Outlink: 2 0 Phase: Rce: 1	Frontend A2-2 File: 92-02-04_52__cern 575 Dir: 92-02-04 Type: FEI4B FEID: 92020452 ModID: 92-02-04 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 2 <input checked="" type="checkbox"/> Included Outlink: 3 0 Phase: Rce: 1
Frontend A3-1 File: 94-24-02_14__cern 5071 Dir: 94-24-02 Type: FEI4B FEID: 94240214 ModID: 94-24-02 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 4 <input type="checkbox"/> Included Outlink: 4 0 Phase: Rce: 1	Frontend A3-2 File: 94-24-02_11__cern 575 Dir: 94-24-02 Type: FEI4B FEID: 94240211 ModID: 94-24-02 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 4 <input checked="" type="checkbox"/> Included Outlink: 5 0 Phase: Rce: 1	Frontend A4-1 File: 92-23-01_46__cern 575 Dir: 92-23-01 Type: FEI4B FEID: 92230146 ModID: 92-23-01 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 6 <input checked="" type="checkbox"/> Included Outlink: 6 0 Phase: Rce: 1	Frontend A4-2 File: 92-23-01_47__cern 5071 Dir: 92-23-01 Type: FEI4B FEID: 92230147 ModID: 92-23-01 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 6 <input type="checkbox"/> Included Outlink: 7 0 Phase: Rce: 1
Frontend A5-1 File: 94-14-01_45__cern 18 Dir: 94-14-01 Type: FEI4B FEID: 94140145 ModID: 94-14-01 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 8 <input type="checkbox"/> Included Outlink: 8 0 Phase: Rce: 1	Frontend A5-2 File: 94-14-01_44__cern 575 Dir: 94-14-01 Type: FEI4B FEID: 94140144 ModID: 94-14-01 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 8 <input checked="" type="checkbox"/> Included Outlink: 9 0 Phase: Rce: 1	Frontend A6-1 File: 94-19-01_10__cern 556 Dir: 94-19-01 Type: FEI4B FEID: 94190100 ModID: 94-19-01 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 10 <input type="checkbox"/> Included Outlink: 10 0 Phase: Rce: 1	Frontend A6-2 File: 94-19-01_9__cern 18 Dir: 94-19-01 Type: FEI4B FEID: 94190109 ModID: 94-19-01 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 10 <input type="checkbox"/> Included Outlink: 11 0 Phase: Rce: 1
Frontend A7-1 File: 10-23-01_42__cern 5071 Dir: 10-23-01 Type: FEI4B FEID: 10230142 ModID: 10-23-01 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 12 <input type="checkbox"/> Included Outlink: 12 0 Phase: Rce: 1	Frontend A7-2 File: 10-01-08_25__cern 30 Dir: 10-01-08 Type: FEI4B FEID: 10010825 ModID: 10-01-08 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 12 <input type="checkbox"/> Included Outlink: 13 0 Phase: Rce: 1	Frontend A8-1 File: 10-04-08_26__cern 575 Dir: 10-04-08 Type: FEI4B FEID: 10040826 ModID: 10-04-08 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 14 <input checked="" type="checkbox"/> Included Outlink: 14 0 Phase: Rce: 1	Frontend A8-2 File: 10-07-01_30__cern 5071 Dir: 10-07-01 Type: FEI4B FEID: 10070130 ModID: 10-07-01 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 14 <input type="checkbox"/> Included Outlink: 15 0 Phase: Rce: 1

calibGui configuration (C-side)

Calibration GUI

File Plot

Scan Config Halfstave A Config Halfstave C Config Halfstave A (2) Config Halfstave C (2) Plots

All Off All On

Frontend C1-1 File: 94-25-03_35__cern 575 Dir: 94-25-03 Type: FEI4B FEID: 94250335 ModID: 94-25-03 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 14 <input checked="" type="checkbox"/> Included Outlink: 15 0 Phase: Rce: 0	Frontend C1-2 File: 94-25-03_38__cern 575 Dir: 94-25-03 Type: FEI4B FEID: 94250338 ModID: 94-25-03 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 14 <input checked="" type="checkbox"/> Included Outlink: 14 0 Phase: Rce: 0	Frontend C2-1 File: 94-22-04_24__cern 575 Dir: 94-22-04 Type: FEI4B FEID: 94220424 ModID: 94-22-04 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 12 <input checked="" type="checkbox"/> Included Outlink: 13 0 Phase: Rce: 0	Frontend C2-2 File: 94-22-04_25__cern 5071 Dir: 94-22-04 Type: FEI4B FEID: 94220425 ModID: 94-22-04 Choose Reload Edit <input type="checkbox"/> Valid Inlink: 12 <input type="checkbox"/> Included Outlink: 12 0 Phase: Rce: 0
Frontend C3-1 File: 94-19-02_15__cern 575 Dir: 94-19-02 Type: FEI4B FEID: 94190215 ModID: 94-19-02 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 10 <input checked="" type="checkbox"/> Included Outlink: 11 0 Phase: Rce: 0	Frontend C3-2 File: 94-19-02_17__cern 5071 Dir: 94-19-02 Type: FEI4B FEID: 94190217 ModID: 94-19-02 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 10 <input type="checkbox"/> Included Outlink: 10 0 Phase: Rce: 0	Frontend C4-1 File: 94-06-04_46__cern 575 Dir: 94-06-04 Type: FEI4B FEID: 94060446 ModID: 94-06-04 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 8 <input checked="" type="checkbox"/> Included Outlink: 9 0 Phase: Rce: 0	Frontend C4-2 File: 94-06-04_47__cern 5071 Dir: 94-06-04 Type: FEI4B FEID: 94060447 ModID: 94-06-04 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 8 <input type="checkbox"/> Included Outlink: 8 0 Phase: Rce: 0
Frontend C5-1 File: 94-24-03_18__cern 556 Dir: 94-24-03 Type: FEI4B FEID: 94240318 ModID: 94-24-03 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 6 <input type="checkbox"/> Included Outlink: 7 0 Phase: Rce: 0	Frontend C5-2 File: 94-24-03_20__cern 5071 Dir: 94-24-03 Type: FEI4B FEID: 94240320 ModID: 94-24-03 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 6 <input type="checkbox"/> Included Outlink: 6 0 Phase: Rce: 0	Frontend C6-1 File: 94-25-02_32__cern 575 Dir: 94-25-02 Type: FEI4B FEID: 94250232 ModID: 94-25-02 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 4 <input checked="" type="checkbox"/> Included Outlink: 5 0 Phase: Rce: 0	Frontend C6-2 File: 94-25-02_34__cern 5071 Dir: 94-25-02 Type: FEI4B FEID: 94250234 ModID: 94-25-02 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 4 <input type="checkbox"/> Included Outlink: 4 0 Phase: Rce: 0
Frontend C7-1 File: 10-02-04_16__cern 575 Dir: 10-02-04 Type: FEI4B FEID: 10020416 ModID: 10-02-04 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 2 <input checked="" type="checkbox"/> Included Outlink: 3 0 Phase: Rce: 0	Frontend C7-2 File: 60-17-06_7__cern 575 Dir: 60-17-06 Type: FEI4B FEID: 60170607 ModID: 60-17-06 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 2 <input checked="" type="checkbox"/> Included Outlink: 2 0 Phase: Rce: 0	Frontend C8-1 File: 10-08-06_19__cern 5071 Dir: 10-08-06 Type: FEI4B FEID: 10080619 ModID: 10-08-06 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 0 <input type="checkbox"/> Included Outlink: 1 0 Phase: Rce: 0	Frontend C8-2 File: 10-02-08_17__cern 556 Dir: 10-02-08 Type: FEI4B FEID: 10020817 ModID: 10-02-08 Choose Reload Edit <input checked="" type="checkbox"/> Valid Inlink: 0 <input type="checkbox"/> Included Outlink: 0 0 Phase: Rce: 0