

MVTX Status and Plan

Camelia, Grazyna and Ming

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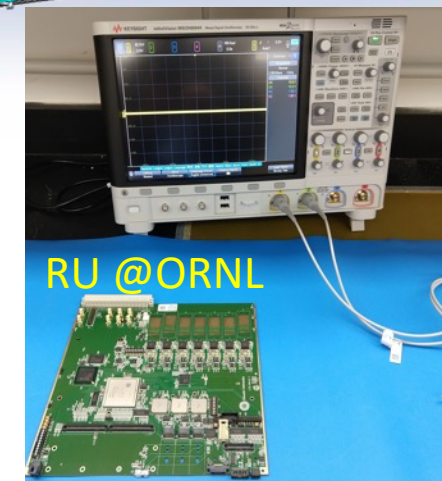
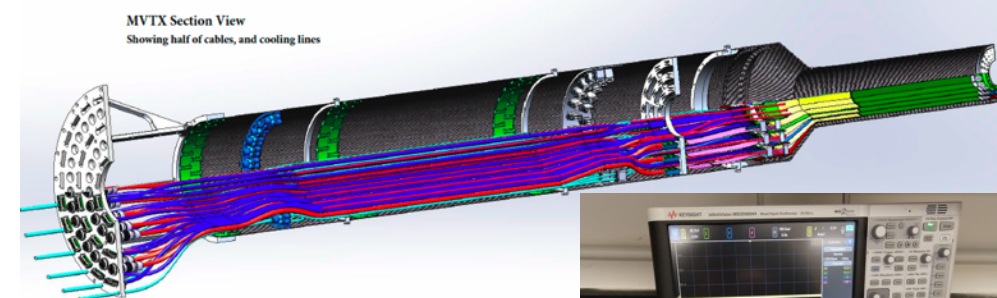
sPHENIX L2 Project Meeting

Project Status & Plan

- Mechanical design and vendor selection
 - WorkShape won the competition to fabricate the carbon structures
 - 3 vendors responded, including LBNL and one commercial company in CA
 - Experience, cost and schedule - within MVTX projected budget
 - First test article (one layer of EndWheels) by the end of November this year
 - Production Readiness Review planned, ~early December, 2020
 - Full production complete by April 2021 (15~17 weeks)
 - Cooling system designed, v2
 - Piping & Instru. Diagram sent to BNL this week for OK/discussion before purchases
 - Cooling plant tests at BNL to decide on the needed customization
 - Insertion system design and mockup in progress
- Readout and control electronics production
 - all 30 power boards assembled and tested at LBNL
 - 60 RUs and cooling plates produced and arrived at ORNL for testing
 - Testbench setup in progress, all testing done by the end of November at ORNL
 - RU and FELIX firmware/software updated
 - Full readout chain system test
 - LANL – restart lab work, paperwork submitted for COVID-19 approval
 - ORNL - will receive one FELIX card soon from BNL
- Stave production and transportation
 - Good progress at CERN, 25+ produced
 - Stave QA test bench under preparation at LBNL

9/24/20

MVTX Status @sPHENIX L2



STAVE-production summary table

IBSTAVE ID	HIC assembly	Ins. after glue	Bonding	Pull test (>=2 lifts + F <7g)	Ins. after bonding	HIC PWR test	Qualification test	Threshold cluster	HIC Matrix	HIC DTU	HIC+SF+C -> Stave	Stave PWR test	Stave test	STAVE metrology	Stave PWR test (long PWR extn.)	STAVE final test (PT100)
TOTAL	53	53	50		50	49	40				32	32	32	25	26	25
A201 (326)	1	1	1	1	1	1	1	1	GOLD	OK	1	1	1	1	1	1
A202*	1	1	1	0	1	1	0	??	PARTIAL	OK						
A203 (144)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
A204 (158)	1	1	1	1	1	1	1	0	GOLD	OK	1	1	1	1	1	1
A205 (167)	1	1	1	4	1	1	1	0	GOLD	CAN	1	1	1	1	1	1
A206 (204)	1	1	1	3	1	1	1	2	GOLD	CAN	1	1	1	1	1	1
B201 (352)	1	1	1	0	1	1	1	0	GOLD	CAN	1	1	1	1	1	1
B202*	1	1	1	0	1	1	0		Broken							
B203 (114)	1	1	1	1	1	1	1	0	GOLD	CAN	1	1	1	1	1	1
B204 (116)	1	1	1	0	1	1	1	1	SILVER	CAN	1	1	1		1	
B205 (115)	1	1	1	2	1	1	1	0	GOLD	CAN	1	1	1	1	1	1
B206 (295)	1	1	1	2	1	1	1	0	GOLD	CAN	1	1	1	1	1	1
F201*	1	1	1	1	1	1	0	??	PARTIAL	OK						
F202 (230)	1	1	1	3	1	1	1	0	GOLD	OK	1	1	1	1	1	1
F204	1	1	1	5	1	1	1	2	GOLD	CAN						
G202 (234)	1	1	1	0	1	1	1	1	GOLD	OK	1	1	1	1	1	1
G203	1	1	1	1	1	1	1	1	GOLD	CAN						
F203*	dummy															
H202 (294)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
H203 (302)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
H204 (354)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
H206	1	1	1	0	1	1	1	??	PARTIAL	OK						
E204 (110)	1	1	1	0	1	1	1	1	GOLD	CAN	1	1	1	1	1	1
E201*	1	1	1	0	1	1	0	3	PARTIAL	CAN						
E202	1	1	1	1	1	1	1	1	GOLD	CAN (bad driver)						
E206 (101)	1	1	1	0	1	1	1	1	GOLD	OK	1	1	1	1	1	1
H205	1	1	1	0	1	1	1	1	SILVER	OK						
I202 (175)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
I203 (187)	1	1	1	0	1	1	1	0	GOLD	CAN	1	1	1	1	1	1
I204*	1	1	1	0	1	1	0	0	PARTIAL	OK						
I205 (266)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
J201*	1	1	1	0	1	1	0	??	PARTIAL	OK						
J202 (207)	1	1	1	0	1	1	1	0	GOLD	CAN	1	1	1	1	1	1
J203 (245) 345 right	1	1	1	0	1	1	1	0	GOLD	CAN	1	1	1	1	1	1
J204 (252)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
J206 (260)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
K202 (122)	1	1	1	0	1	1	1	1	GOLD	OK	1	1	1	1	1	1
K203 (125)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1	1	1	1
K204 (129)	1	1	1	0	1	1	1	0	GOLD	CAN	1	1	1			
K205 (128)	1	1	1	0	1	1	1	1	GOLD	CAN	1	1	1			
K206	1	1	1	0	1	1	1	0	GOLD	CAN						
L202 (130)	1	1	1	0	1	1	1	0	GOLD	CAN	1	1	1			
L203 (139)	1	1	1	0	1	1	1	0	GOLD	CAN	1	1	1			
L204 (127)	1	1	1	0	1	1	1	0	GOLD	CAN	1	1	1			
L205 (136)	1	1	1	0	1	1	1	0	GOLD	OK	1	1	1			
J205	1	1	1	0	1	1	0	??	PARTIAL	CAN						
I201	1	1	1	0	1	1	0	0	PARTIAL	CAN						
L206	1	1	0													
L201	1	1	1	0	1	1	1	1	GOLD	CAN						
S201	1	1	1	0	1	1	1	0	GOLD	CAN						
S202	1	1	1	0	1	1										
S203	9/24/20	1														
S204	1	1	1	0	1											
S205	1	1														

Reported at 09/17/2020
Stave production meeting
- Next meeting in 3 weeks

- 25 golden staves ready for shipping;
- 2nd batch of 6 staves ready for metrology, and final tests in next week or two

Plan at CERN:

- Continue ~10staves/month, finish 84 staves ~ Jan 2021; expect no impact on detector assembly work at LBNL

CERN can hold ~40 staves for ~5 weeks;

- We need to get them to US soon, working with CERN to test commercial transportation options

Issues and Concerns

- Schedule delays due to COVID-19
 - Carbon structure production and test/QA
 - 3~4 months delay in detector design and prototyping
 - FDR(7/2020) postponed to ~Dec. 2020
 - Detector assembly work
 - Lab access at LBNL, schedule etc.
 - Stave transportation plan change
 - Commercial option, expect no impact on assembly
 - Tight schedule for the installation, May 2022
- Funding for FY21
 - Need to use some contingency reserve for engineering work
 - MIT and LANL
 - ORNL – to support RU and other electronics test work
 - Previously assigned to UT-A, under Jo's responsibility
 - Draft SOW ready for review

Pre-COVID19 Schedule

