

BI LIU-PS



Status 2018-LS2

Instrumentation covered:

- 1) BGI
- 2) Injection SEM grid
- 3) Turn by Turn
- 4) Injection BTV
- 5) BLM Ring

Ana Guerrero
On behalf of the BE/BI Group



BGI H & V | BLM (IC)

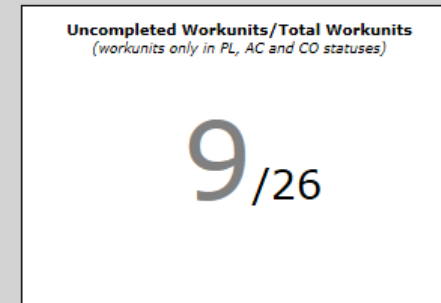
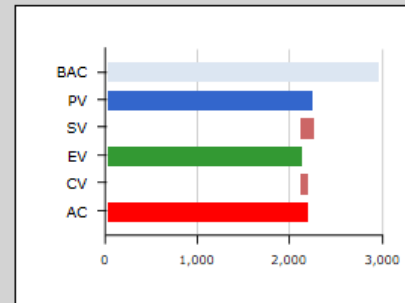
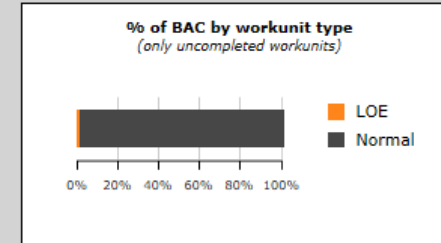
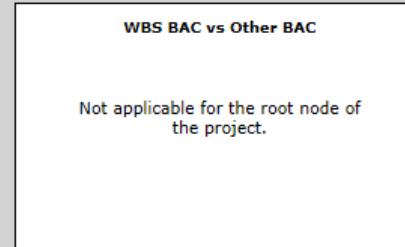
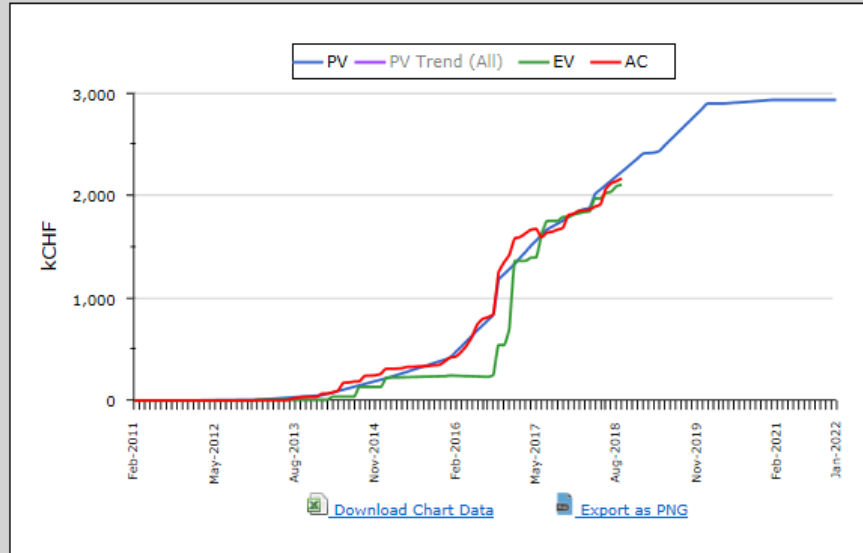
- Horizontal
 - New high speed readout (x8) to be installed in TS2
 - FESA integration ongoing
 - <http://bgi-web.web.cern.ch/bgi-web/images/beam-pixelmap.mp4>
- Vertical
 - ECR to be submitted in October
 - Mechanical designs finished by the end of the year (job open)
 - Production in 2019 (Jan - Sept): ready in October
 - Installation in April 2020: margin to be on time
 - Magnet designed: working on integration
 - Impedance WG already involved
- BLM ring commissioning ongoing (old vs new system):
 - Daily report on the comparison of one hour of logged data
 - Student has prepared scripts for comparing data



BTV 42 | Semgrid 42 | Semgrid TxT

- New BTV installed in parallel with the one to be taken out:
 - Now operational
 - Filters in production
- Semgrid 42: Plans being finalized
 - Priority given to PSB: work stopped
 - Purchase of external elements this year
 - On time for end of 2019
- TxT electronics:
 - Installed in June, prototype in test
 - Amplifiers ready end of 2018
 - On time for installation in 2019

LIU-PS EVM Curves



Metrics on the 28-Aug-2018

PV (kCHF)	EV (kCHF)	AC (kCHF)	BAC (kCHF)	PV Trend (All) (kCHF)	SV (kCHF)	SPI (%)	CV (kCHF)	CPI (%)	SV(t) (months)
2,225	2,103	2,164	2,164	2,930	2,220	-122	95	-61	97

-2.81

LIU-PS EVM Metrics from Project Start to Date



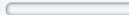








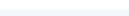




















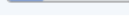



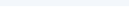
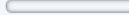


	From Project Start To Date					Total
	CV	SV	PV	EV	AC	PV
64030 - LIU-PS Beam Instrumentation	-333	0	607,000	607,000	607,333	607,000
64031 - LIU-PS BPM Upgrades (BPM & WCM)	404	0	5,400	5,400	4,996	5,400
64032 - LIU-PS Profile Measurement Upgrades (SEM & BTV)	-26,277	-75,184	124,329	49,145	75,422	178,000
64033 - LIU-PS Wirescanner Upgrade	-252	0	47,000	47,000	47,252	47,000
64034 - LIU-PS Ionisation Profile Monitor	2,124	2,614	385,636	388,250	386,126	622,000
64035 - LIU-PS BLM Upgrades (ring & diamond)	225	0	736,000	736,000	735,775	736,000
64036 - LIU-PS mechanical production and installation	-5,175	-15,136	101,136	86,000	91,175	272,500
64037 - LIU-PS electronics production and cables	-11,393	-14,300	137,648	123,348	134,741	321,000
64038 - LIU-PS mechanical commercial components	3,534	-4,073	24,273	20,200	16,666	37,000
64039 - LIU-PS control electronics	-23,188	-15,350	56,500	41,150	64,338	104,000
Grand Total	-60,331	-121,429	2,224,922	2,103,493	2,163,825	2,929,900

	Budget Code Description	Department	Group	Project	Charged to Budget Code (CHF)	Annual Commitment (CHF)	Annual Open Commitment (CHF)	Payment Budget (CHF)	Pipeline (CHF)
LIU-PS	64032 LIU-PS Profile Measurement Upgrades (SEM & BTV)	BE	BI	LIU-PS	37,489.64	51,486.32	13,996.68	125,000.00	0.00
	64033 LIU-PS Wirescanner Upgrade	BE	BI	LIU-PS	0.00	0.00	0.00	0.00	0.00
	64034 LIU-PS Ionisation Profile Monitor	BE	BI	LIU-PS	40,231.77	73,823.68	33,591.91	63,000.00	0.00
	64035 LIU-PS BLM Upgrades (ring & diamond)	BE	BI	LIU-PS	5.22	5.22	0.00	0.00	0.00
	64036 LIU-PS mechanical production and installation	BE	BI	LIU-PS	65,205.54	106,294.99	41,089.45	137,000.00	0.00
	64037 LIU-PS electronics production and cables	BE	BI	LIU-PS	134,741.09	140,103.18	5,362.09	154,000.00	14,465.68
	64038 LIU-PS mechanical commercial components	BE	BI	LIU-PS	3,674.16	24,593.10	20,918.94	24,000.00	0.00
	64039 LIU-PS control electronics	BE	BI	LIU-PS	35,252.34	39,226.82	3,974.48	57,000.00	184.36
Grand Total:					316,599.76	435,533.31	118,933.55	560,000.00	14,650.04

LIU-PS Active Workunits

▲ ID		Completion	Status	LOE	Description	WBS	Holder	Start Date	Finish Date	BAC(kCHF)	PV(kCHF)	EV (kCHF)	SV (kCHF)	SV (Months)
179014	≡			No	New SEM Grid (transfer line PSB-PS)	LIU-PS 6.2	Federico Roncarolo (BE-BI)	01-Jan-2016	31-Dec-2019	100	65	10	-55	-10.23
179022	≡			No	SEM Turn by Turn in the ring	LIU-PS 6	Federico Roncarolo (BE-BI)	01-Jan-2016	31-Dec-2019	50	35	23	-12	-4.84
179024	≡			No	BTV (PSB-PS : 41)	LIU-PS 6	Stephane Burger (BE-BI)	01-Jan-2016	31-Dec-2019	22	21	13	-8	-12.68
190721	≡			No	Mechanics production and installation for PS operational BWS (4 devices)	LIU-PS 6	Raymond Veness (BE-BI)	01-Jan-2017	31-Dec-2020	273	101	86	-15	-0.97
190722	≡			No	Procure mechanical commercial components for PS BWS	LIU-PS 6	Raymond Veness (BE-BI)	01-Jan-2017	31-Dec-2020	37	24	20	-4	-1.26
190731	≡			No	Control electronics for PS wire-scanners	LIU-PS 6	Federico Roncarolo (BE-BI)	01-Jan-2017	31-Dec-2020	104	57	41	-15	-2.06
190732	≡			No	Acquisition electronics and cables for PS wire-scanners	LIU-PS 6	Federico Roncarolo (BE-BI)	01-Jan-2017	31-Dec-2020	321	138	123	-14	-3.81
190767	≡			No	Provide vertical BGI device	LIU-PS 6.6	James William Storey (BE-BI)	01-Jan-2018	31-Dec-2020	270	34	36	3	0.52
191848	≡			Yes	Not yet defined BI activities	LIU-PS 6	Lars Jensen (BE-BI)	01-Jan-2018	31-Dec-2018	6	4	4	0	0.0

LIII-PS Active Deliverables

Workunit ID	Workunit desc.	Deliverable desc.	Completion (%)	BAC (CHF)	PV (CHF)	EV (CHF)	Start date	Finish date	Last progress
179014	 New SEM Grid (transfer line PSB-PS)	Procurement (2017)		7,000	7,000	0	01-Oct-2017	28-Feb-2018	13-Aug-2018
179014	 New SEM Grid (transfer line PSB-PS)	Design & Procurement (2018)		73,000	48,000	0	01-Jan-2018	31-Dec-2018	13-Aug-2018
179022	 SEM Turn by Turn in the ring	Electronics design + procurement		15,000	15,000	13,500	01-Jan-2017	31-Aug-2018	13-Aug-2018
179022	 SEM Turn by Turn in the ring	Electronics production (2018)		30,000	19,726	9,000	01-Jan-2018	31-Dec-2018	13-Aug-2018
179022	 SEM Turn by Turn in the ring	Installation		5,000	0	0	01-Sep-2018	31-Dec-2019	13-Aug-2018
179024	 BTV (PSB-PS : 41)	Mechanical design		9,000	9,000	7,200	01-Oct-2016	25-Jan-2019	09-Jul-2018
179024	 BTV (PSB-PS : 41)	Mechanical production		11,000	11,000	5,500	01-Jan-2017	31-Mar-2019	09-Jul-2018
179024	 BTV (PSB-PS : 41)	Installation		2,000	658	0	01-Jan-2018	31-Dec-2019	09-Jul-2018
190721	 Mechanics production and installation for PS operational BWS (4 devices)	Production vacuum tanks and chambers 2018		100,000	54,545	30,000	01-Apr-2018	31-Dec-2018	27-Jul-2018
190721	 Mechanics production and installation for PS operational BWS (4 devices)	Production and special components 2018		30,000	16,364	27,000	01-Apr-2018	31-Dec-2018	27-Jul-2018
190721	 Mechanics production and installation for PS operational BWS (4 devices)	Vacuum pipes, supports and assembly 2018		5,000	2,727	1,500	01-Apr-2018	31-Dec-2018	27-Jul-2018
190721	 Mechanics production and installation for PS operational BWS (4 devices)	Scanners operational		0	0	0	01-Jun-2017	31-Dec-2020	27-Jul-2018
190722	 Procure mechanical commercial components for PS BWS	Resolvers, optical and feedthrough (2018)		16,000	8,727	6,400	01-Apr-2018	31-Dec-2018	27-Jul-2018
190722	 Procure mechanical commercial components for PS BWS	Procure viewports and fasteners (2018)		12,000	6,545	4,800	01-Apr-2018	31-Dec-2018	27-Jul-2018
190731	 Control electronics for PS wire-scanners	Design office 2018		13,000	7,091	1,950	01-Apr-2018	31-Dec-2018	13-Aug-2018
190731	 Control electronics for PS wire-scanners	VFC production (control) 2018		22,000	12,000	0	01-Apr-2018	31-Dec-2018	13-Aug-2018
190731	 Control electronics for PS wire-scanners	Int drive, inverter and DC bus (2018)		20,000	10,909	12,000	01-Apr-2018	31-Dec-2018	13-Aug-2018
190731	 Control electronics for PS wire-scanners	Procure electronics (2018)		6,000	3,273	4,200	01-Apr-2018	31-Dec-2018	13-Aug-2018
190731	 Control electronics for PS wire-scanners	Cabling assembly and test (2018)		5,000	2,727	2,500	01-Apr-2018	31-Dec-2018	13-Aug-2018
190732	 Acquisition electronics and cables for PS wire-scanners	VME crates and standard BE/CO modules (2017)		4,997	5,000	1,499	01-Jun-2017	31-Jul-2018	17-May-2018
190732	 Acquisition electronics and cables for PS wire-scanners	VME crates and standard BE/CO modules (2018)		4,997	2,079	0	01-Jun-2018	31-Dec-2018	17-May-2018
190732	 Acquisition electronics and cables for PS wire-scanners	VFC production (acquisition) 2018		10,993	6,000	0	01-Apr-2018	31-Dec-2018	17-May-2018
190732	 Acquisition electronics and cables for PS wire-scanners	ADC mezzanines (2018)		1,199	655	0	01-Apr-2018	31-Dec-2018	17-May-2018
190732	 Acquisition electronics and cables for PS wire-scanners	Produce GEFE (2018)		8,994	4,909	0	01-Apr-2018	31-Dec-2018	17-May-2018
190732	 Acquisition electronics and cables for PS wire-scanners	Procure HV PS (2018)		3,498	1,909	3,323	01-Apr-2018	31-Dec-2018	17-May-2018
190732	 Acquisition electronics and cables for PS wire-scanners	Procure detectors + assembly (2018)		3,998	2,182	3,598	01-Apr-2018	31-Dec-2018	17-May-2018
190767	 Provide vertical BGI device	Mechanical design (2018)		12,000	0	0	01-Sep-2018	31-Dec-2018	16-Jul-2018
190767	 Provide vertical BGI device	Produce electronics (2018)		25,000	13,636	18,750	01-Apr-2018	31-Dec-2018	16-Jul-2018
190767	 Provide vertical BGI device	H device - Produce and assemble acquisition electronics		10,000	10,000	7,500	01-Apr-2018	31-Jul-2018	16-Jul-2018



Budget

- BGI: Trying to advance as much as possible
 - 63k for 2018, 71k committed (-8k): 12k design 18k committed
- Semgrid: Big expense to come: ~70k-80k
- TxT on time: Budget ok for PS production if there are no surprises
 - 50k in total, 51k used, minor expense expected for mounting
 - installation done only for 1, thus variance
- BTV ok but needs update in EVM

BGI software (spare)

- Possible to take measurements without the presence of the BI BGI team.
- The software consists of:
 - BGIPXL FESA class to turn the instrument on & off (high voltage, detector power supplies, cooling & instrument protection) and to set the time in the cycle for profile measurements.
 - C++/Qt application (specifically for BE-OP) to configure the Timepix3 chips and acquire data.
 - Python library to facilitate the analysis of the measurements.

TxT electronics for injection SEM-grids (spare)

- Common design PSB and PS
 - Amplification adapted to the machine
- System includes
 - ADC to be installed in a VME crate with RS-422 interface for amplification control
 - Power supply and control electronics for amplification
 - Amplifier crates in the tunnel
- Foreseen to install the prototype in the last TS of the run on 1 grid
 - Control electronics to be received by March
 - Amplifiers expected in June
 - ADC prototype OK for assembly
 - Skeleton of FESA class available for test