DREAM Beam Validation System

=NSS.H01.DREAM.A01.B01

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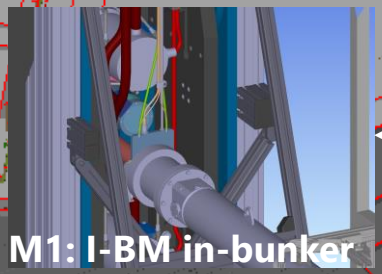
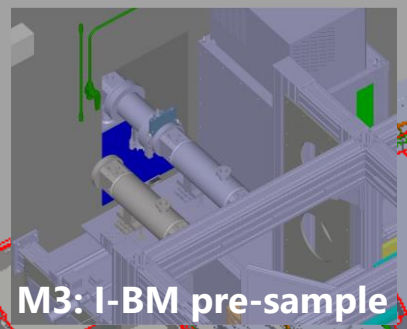
DREAM Beam Monitor Systems

Overview



M1: I-BM in-bunker



M3: I-BM pre-sample

Cave DAQ unit (M3)

Bunker rack (M1)

Cave rack (M3)
Master rack

Status Report

Monitor 1: Flux and TOF spectrum monitoring after monolith and PSC Choppers assembly

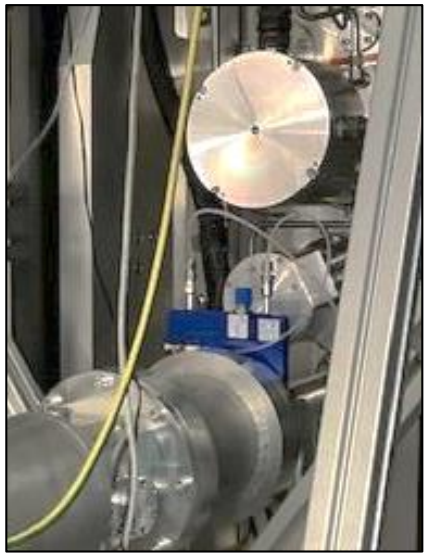
System name	FBS	EPL	FAT	LOCAL SAT	INTEGRATED SAT	COMPLIANCE
DREAM BM M1 Head	ESS.NSS.H01.DREAM.A01.B01.B01.B01	ESS-3873832	ESS-5509304	ESS-5993807	ESS-6018288	CE-MARKED ESS-0145020
DREAM BM M1 DAQ System	ESS.NSS.H01.DREAM.A01.B01.C01.UH01.TF01	ESS-5159400				

System scope:

Setting and refining of phases of PSC1 & PSC2 chopper disks. Monitoring of beam intensity and pulse shaping (TOF spectrum) downstream of the monolith and chopper system for commissioning and diagnostics.

Status:

- Tested with neutrons
- Local SAT complete
- Integrated SAT complete



Monitor 1 head

Rack for M1 system electronics

Status Report

Monitor 3: Normalisation

System name	FBS	EPL	FAT	LOCAL SAT	INTEGRATED SAT	COMPLIANCE
DREAM BM M3 Head	ESS.NSS.H01.DREAM.A01.B01.B03	ESS-5159399	ESS-5509300	ESS-5993807	ESS-6018288	CE-MARKED ESS-0145020
DREAM BM M3 DAQ System	ESS.NSS.H01.DREAM.A01.B01.C02.TF01	ESS-5533648				

System scope:

Monitoring of beam intensity and TOF spectrum upstream of the sample position for data reduction, normalisation, and experiment control.

Status:

- Tested with neutrons
- Local SAT complete
- Integrated SAT complete

Monitor 3 head

Monitor 3 DAQ unit

Rack for M3 system electronics (Detector rack)

Open/Resolved Issues after Local SAT (ESS-5993807)

Item	#NIT	Action	Test Case	Description	System Affected	Initial Status	Current Status	Severity	Group Responsible
1	NIT-44	Investigate electrical connection between beam monitor head and instrument line.	Visual Inspection	Persistent few Ω unwanted connection between head and line; system correctly installed; source undetermined; further investigation required.	All	Fail	In progress	MINOR	CEP
2	NIT-704	CUP to investigate accordance to requirements	Visual Inspection	Single gas supply line feeding bunker beam monitor(s). CUP to verify acceptability of flow regulation location.	M1	Fail	OPEN	MINOR	CUP
3	NIT-436	Route gas exhaust out of cave	Visual Inspection	Gas exhaust from cave beam monitor terminates inside the cave.	M3	Fail	OPEN	MINOR	CUP
4	DETG-761	Monitor noise its relation to grounding	Basic functionality tests	Occasional low-amplitude noise observed during acquisition. Monitor during future operation.	All	Pass with remarks	In progress	MINOR	DetG/DREAM

open
in progress
resolved

MINOR = Testing & operation NOT affected
MAJOR = Testing & operation IS affected

Local Test Data Analysis Results for the DREAM Beam Monitoring Systems (ESS-6014035)

Open/Resolved Issues after Integrated SAT (ESS-6018288)

open
in progress
resolved

MINOR = Testing & operation NOT affected
MAJOR = Testing & operation IS affected

Item	#NIT	Action	Test Case	Description	System Affected	Initial Status	Current Status	Severity	Group Responsible
1	TECHFORCE-123	Timestamp data with ESS global timing	Event Formation Unit	The system could not be tested with ESS global timing. Master Oscillator non-integer frequency causing timestamp drift in Neutron Detectors	All	Fail	In progress	**MAJOR**	ECDC, ICS
2	NIT-670	Setup of an ADC threshold on signal output.	NICOS & Post-EFU processing	A good to have option. Beamline operators should be able to define the ADC thresholds on both DREAM monitors from NICOS. This operation should only be available under Administrator rights.	All	Fail	In progress	MINOR	ECDC, ICS

Hot commissioning

Beam Validation System

Systems ready for hot-commissioning

CBMP & DetG planned activities:

- Oversee open and in-progress activities to fully complete the system according to requirements

No displaced working hours or on-call support currently anticipated

- but can be provided if the need arises

Monitor	Location	Type	Function
M1	Bunker (6.55 m)	I-BM	Chopper assembly and monolith monitoring
M3	Cave (70.96 m)	I-BM	Normalisation