



# ODIN Beam Validation System

## =NSS.H01.ODIN.A01.B01

PRESENTED BY IOANNIS KATSIOLAS (CBMP)

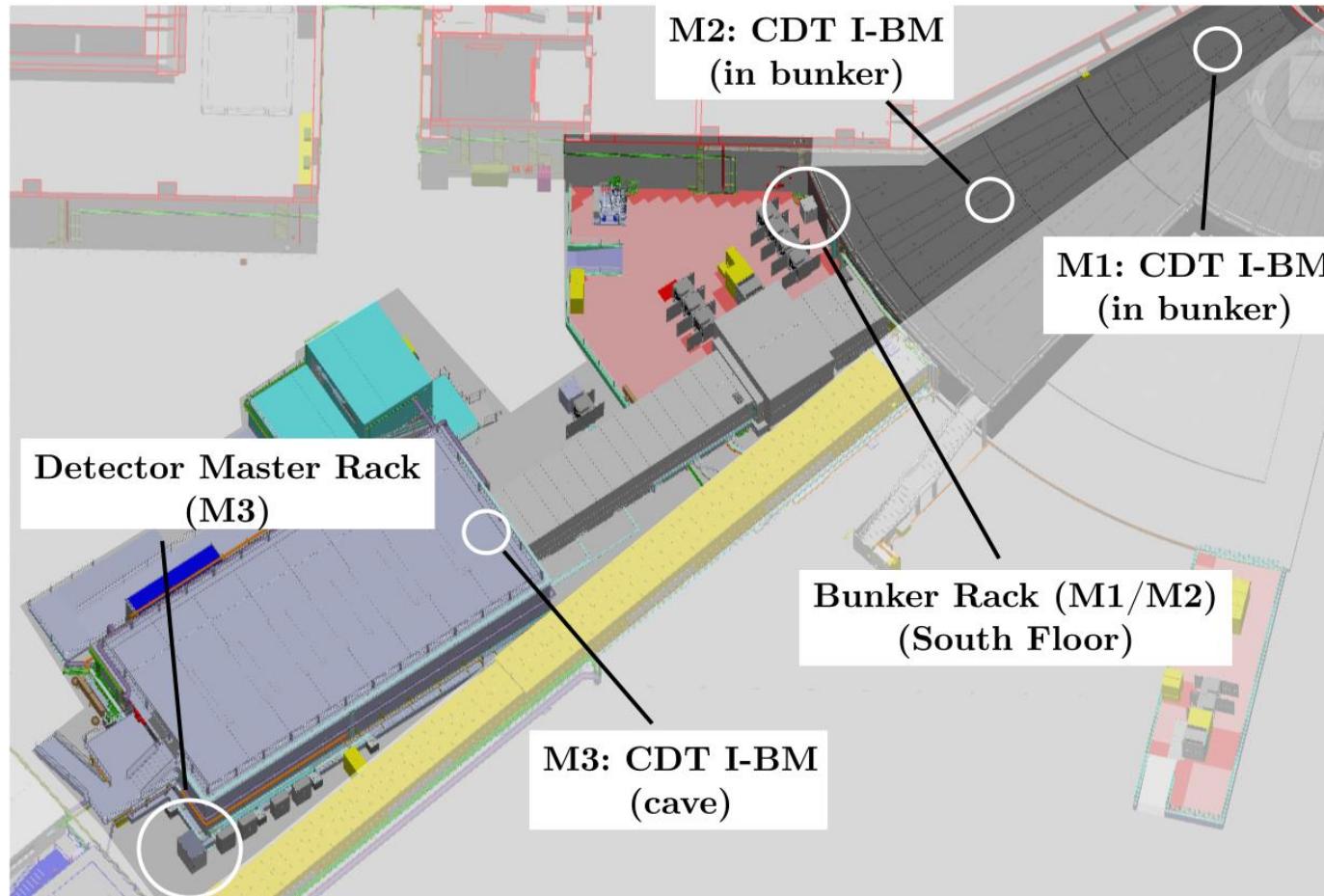
2025- 12- 17

# ODIN Beam Monitor Systems



## ODIN beam monitoring system overview

### ODIN Instrument Overview



# Status Report



## Monitor 1: Band Pass Chopper 1 (BPC1) and monolith flux monitoring

System name	FBS	EPL	FAT	LOCAL SAT	INTEGRATED SAT	COMPLIANCE
ODIN BM M1 Head	NSS.H01.ODIN.A01.B01.B01.B01	ESS-5421648	ESS-5467066	ESS-5859479	ESS-5849585	CE-MARKED ESS-0145020
ODIN BM M1 DAQ System	NSS.H01.ODIN.A01.B01.C01.UH01	ESS-5301290				

### System scope:

Beam intensity and pulse shape monitoring after the monolith for commissioning and diagnostic purposes.

### Status:

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



Monitor 1 head



Rack for M1 & M2 system electronics

# Status Report



## Monitor 2: Frame-Overlap Choppers (FOC) monitoring

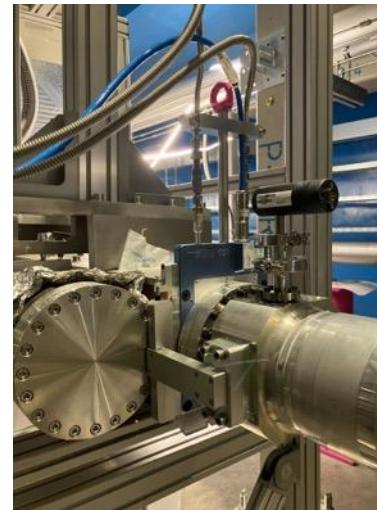
System name	FBS	EPL	FAT	LOCAL SAT	INTEGRATED SAT	COMPLIANCE
ODIN BM M2 Head	NSS.H01.ODIN.A01.B01.B02.B01	ESS-5421650	ESS-5467069	ESS-5859479	ESS-5849585	CE-MARKED ESS-0145020
ODIN BM M2 DAQ System	NSS.H01.ODIN.A01.B01.C01.UH01	ESS-5301290				

### System scope:

Beam intensity, timing, and wavelength-frame integrity assessment at the entrance to the final FOC stages for chopper tuning and system verification.

### Status:

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



Monitor 2 head



Rack for M1 & M2 system electronics

# Status Report

## Monitor 3: Normalisation



System name	FBS	EPL	FAT	LOCAL SAT	INTEGRATED SAT	COMPLIANCE
ODIN BM M3 Head	NSS.H01.ODIN.A01.B01.B03.B01	ESS-5421652	ESS-5467069	ESS-5859479	ESS-5849585	CE-MARKED ESS-0145020
ODIN BM M3 DAQ System	NSS.H01.ODIN.B01.C01.C01.UH01	ESS-5359377				

### System scope:

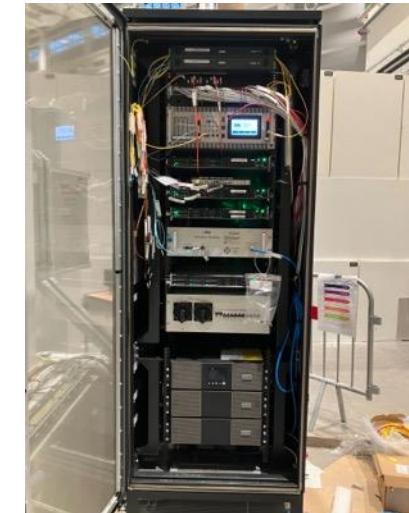
Beam intensity monitoring downstream for data normalization and timing.

### Status:

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



Monitor 3 head



Rack for M1 & M2 system electronics

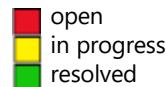
# Open/Resolved Issues after Local SAT

Item	#NIT	Action	Test Case	Description	System Affected	Initial Status	Current Status	Severity	Group Responsible
1	N/A	Exchange I-BM DAQ units for BM 2 & BM3	Visual Inspection	The I-BM DAQ unit was installed at the third location should be exchanged with the one installed at the second position.	M1, M2	Pass with remarks	Resolved	MINOR	DetG
2	NIT-44	Investigate electrical connection between beam monitor head and instrument line.	Visual Inspection	Persistent ~1 Ω unwanted connection between head and line; system correctly installed; source undetermined; further investigation required.	All	Fail	In progress	MAJOR	CEP
3	N/A	Cable tags missing	Visual Inspection	Fiber and cable tags are missing in the two racks.	All	Fail	Resolved	MINOR	DetG
4	DETG-698	Install final gas system between bottle and tubing.	Visual Inspection	Gas system design incomplete. Temporary system in use.	M1	Incomplete	In progress	MINOR	DetG/CUP
5	NIT-536	Piping for in-bunker monitor needs amendments.	Visual Inspection	Gas system installation not according to CBMP requirements.	M1, M2	Fail	Open	MINOR	CUP
6	N/A	"Dry" monitors with gas (flush)	Basic functionality tests	Sparking occurred at voltages above operational levels due to moisture absorption.	M1, M2	Pass with remarks	Resolved	MAJOR	DetG

 open  
 in progress  
 resolved

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

# Open/Resolved Issues after Integrated SAT



**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	ECDC-4248	Read out UPS voltage in EPICS	EPICS, RMM & slow control	The UPS's voltage could not be read out remotely.	All	Fail	In progress	MINOR	ECDC, ICS
2	NIT-284	Power cycle RMM remotely	EPICS, RMM & slow control	The RMM could not be power cycled remotely.	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 (~7.96 m)	I-BM	BPC1 and monolith monitoring
M2	Bunker (~19.3 m)	I-BM	FOC monitoring
M3	Cave (~49 m)	I-BM	Normalisation