



LOKI SAR Documentation Status

19th September 2025

PRESENTED BY: RAVEESH KHEMA

SAR documentation



Green documents

- Concept of Operations
- Requirements specifications
- P&ID
- System Design Descriptions

Orange documents

- Risk Assessment
- Radiation safety reports
- O&M manuals
- V&V plans

Red documents

- FATs or equivalent
- SATs/Local testing
- Integrated testing reports

SAR overview Green documents LoKI

Created by Raweesh Khanna, last modified about 3 hours ago

Concept of Operations, 1 document per instrument	Type of the document	Status
ESS-0108888	concept of operations description	CHESS RELEASED REV 2

Requirements specification - System_Requirements, 1 document per instrument	Type of the document	Status
ESS-0108889	requirement specification	CHESS RELEASED REV 2

Architecture description (e.g. P&ID) 1 document per instrument	Type of the document	Status
ESS-0114574	P&ID description	CHESS RELEASED REV 1

Start adding filters in the filter tools menu.

Level	Tag	Description	Classification	System design description (per large sub-systems)	Status
Document - number, type					
0	=ESS.NSS.H01.LOKI	LoKi	LoKi	ESS-1178832 (system design description)	CHESS RELEASED REV 3
1	=ESS.NSS.H01.LOKI.G01	Vacuum System (LOKi)	Vacuum System	ESS-1108660 (Vacuum SDO)	CHESS RELEASED REV 2
1	=ESS.NSS.H01.LOKI.F01	Personnel Safety System (LoKi PSS)	Safety System	ESS-4077337 (DOS PSS)	To be ready for i-SRR
1	=ESS.NSS.H01.LOKI.A01	Beam Transport and Conditioning	Infrastructure System	Shall be covered in sub nodes below	
2	=ESS.NSS.H01.LOKI.A01.F01	Shielding Bunker to Cave	Shielding System	ESS-1108661 (Shielding SDO)	CHESS RELEASED REV 2
2	=ESS.NSS.H01.LOKI.A01.R03	Beam Cut off (Heavy Shutter)	Beam Cut Off System	ESS-1108639 (Beam cut-off SDO)	CHESS RELEASED REV 3
2	=ESS.NSS.H01.LOKI.A01.R01	Neutron Chopper System	Beam Cut Off System	ESS-1108636	CHESS RELEASED REV 1
2	=ESS.NSS.H01.LOKI.A01.W02	Beam Extraction System	Beam Cut Off System	Shall be covered in sub nodes below	

SAR overview Red documents LoKi

Created by Raweesh Khanna, last modified 28 minutes ago

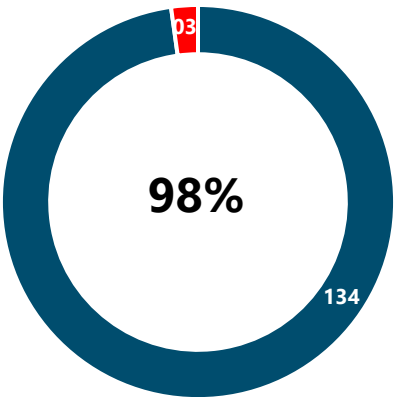
TGS scope deferral document	Type of the document	Status
ESS-5808045	Scope deferral	CHESS RELEASED REV 4

Start adding filters in the filter tools menu.

		FAT reports		SAT reports		Integrated Test reports	
Document number	Status	Document number	Status	Document number	Status	Document number	Status
0	=ESS.NSS.H01.LOKI	LoKi	LoKi			ESS-5773511	CHESS RELEASED REV 1
1	=ESS.NSS.H01.LOKI.G01	Vacuum System (LOKi)	Vacuum System		Covered in SAT	ESS-5726991 (V&V Report for LoKi Vacuum Control System)	CHESS RELEASED REV 1
1	=ESS.NSS.H01.LOKI.F01	Personnel Safety System (LoKi PSS)	Safety System				To be ready for i-SRR
1	=ESS.NSS.H01.LOKI.A01	Beam Transport and Conditioning	Infrastructure System				
2	=ESS.NSS.H01.LOKI.A01.F01	Shielding Bunker to Cave	Shielding System	NA		ESS-5723871 (LoKi Shielding bunker to cave) ESS-5806458 (shielding vent report)	ESS-5723871: CHESS RELEASED REV 1 ESS-5806458: CHESS RELEASED REV 1
2	=ESS.NSS.H01.LOKI.A01.R03	Beam Cut off (heavy Shutter)	Beam Cut Off System	ESS-4598037 (Motion Commissioning and Inspection report - Heavy shutter)	CHESS RELEASED REV 1	ESS-5661563 (safety shutter local test 1) ESS-4972411 SAT2 (local integrated test PSS+CLUP+Motion)	CHESS RELEASED REV 1 CHESS RELEASED REV 1
2	=ESS.NSS.H01.LOKI.A01.R01	Neutron Chopper System	Beam Cut Off System	ESS-4164329 (FAT LoKi Chopper Rack 1) ESS-3832163 (Chopper FAT report) ESS-3820364 (SKF reports FAT) ESS-3820365 (SKF reports FAT)	ESS-4164329: CHESS RELEASED REV 2 ESS-3832163: CHESS RELEASED REV 1 ESS-3820364: CHESS RELEASED REV 1 ESS-3820365: CHESS RELEASED REV 1	ESS-3805769 (Chopper System SAT)	CHESS RELEASED REV 2 ESS-5759105 (Integrated test report)

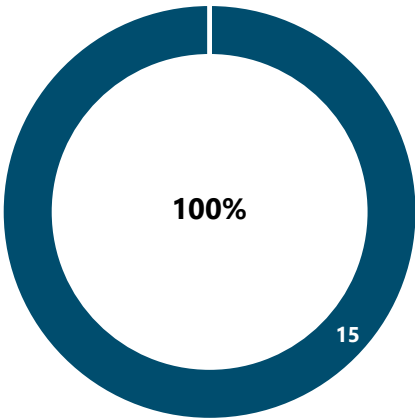


Overall documentation Status

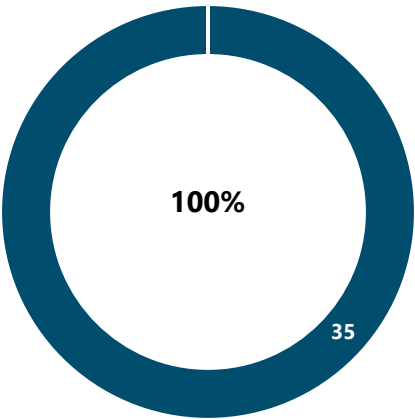


■ CHES released ■ Under CHES review

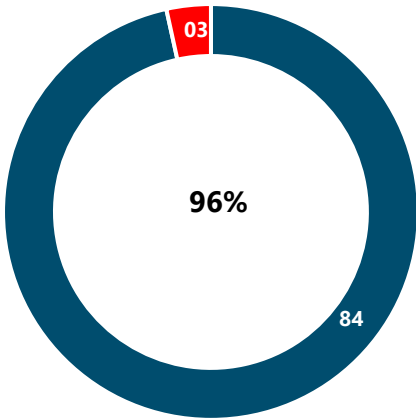
Green documents



Orange documents

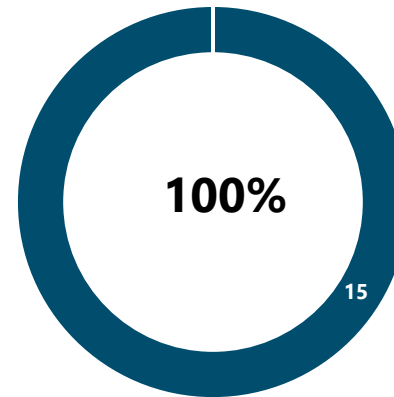


Red documents



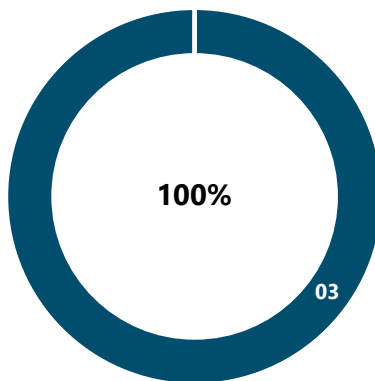


Green documentation Status

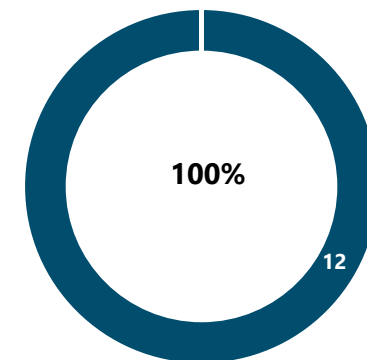


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ConOps/System reqmts spec
/P&ID

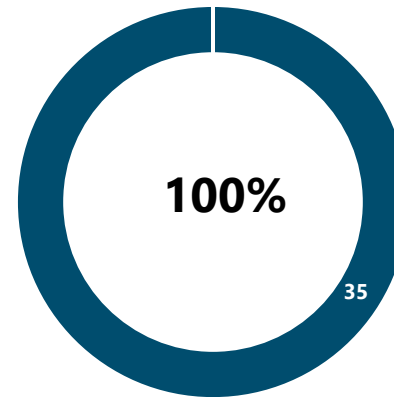


System design descriptions/
equivalent



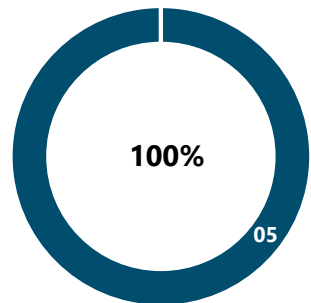


Orange documentation status

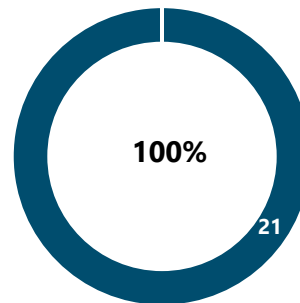


■ CHES released ■ Under CHES review

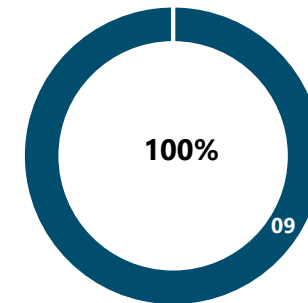
IHA, Radiation safety, Comprehensive radiation safety



Operation and Maintenance manuals/equivalent

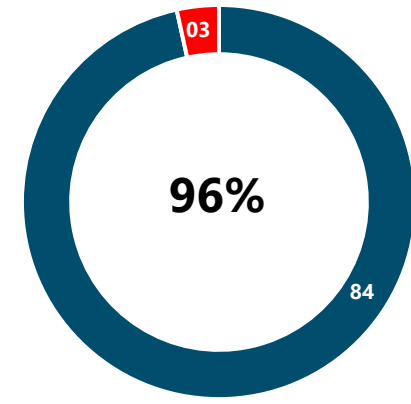


Verification and Validation plans



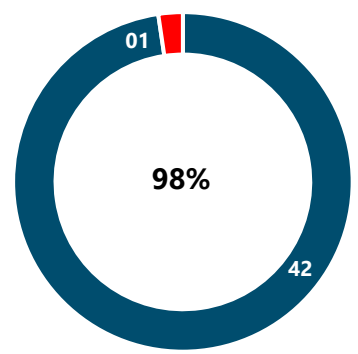


Red documentation Status

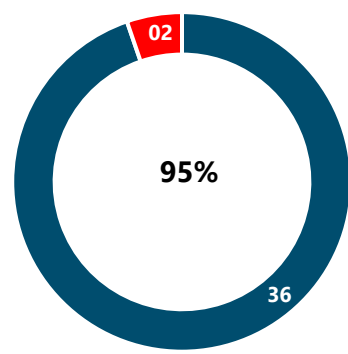


■ CHES released ■ Under CHES review

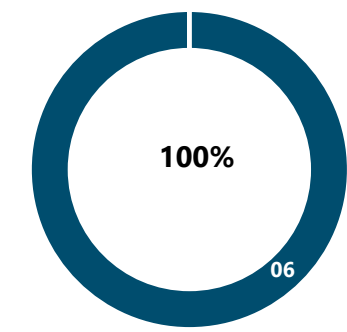
FAT reports or equivalent



SAT reports/Local testing



Integrated Test reports

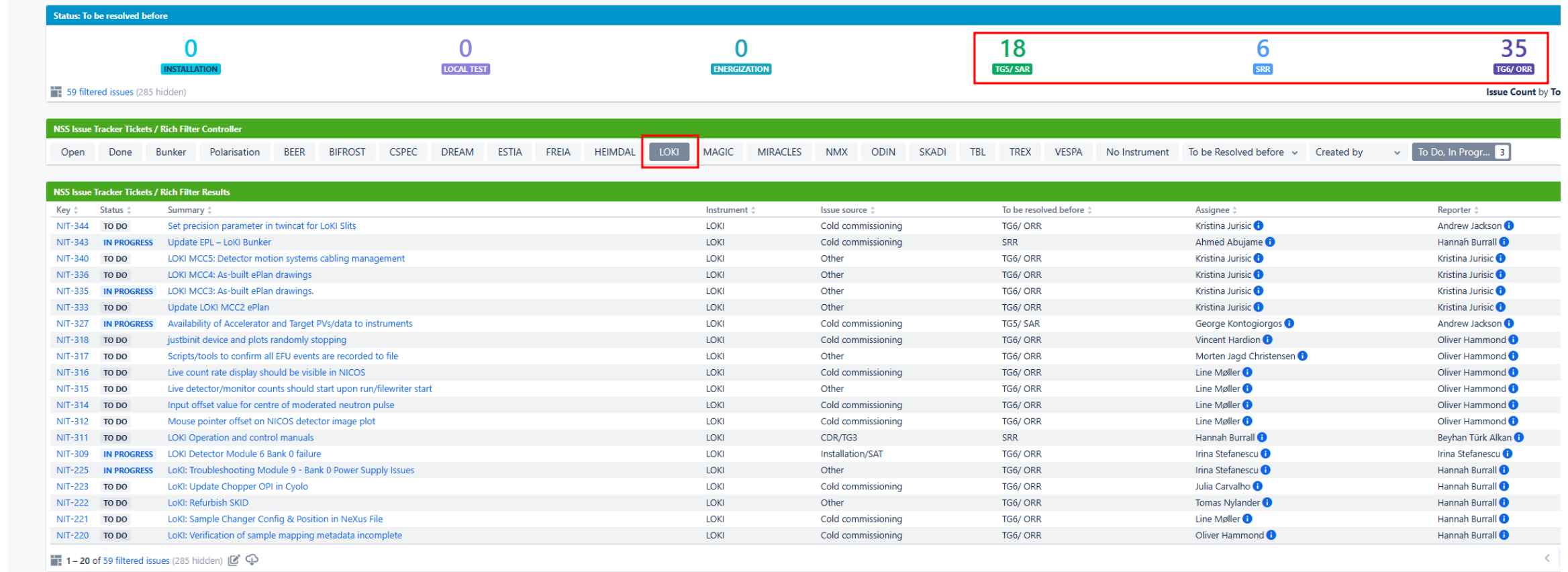


NSS Issue Tracker dashboard



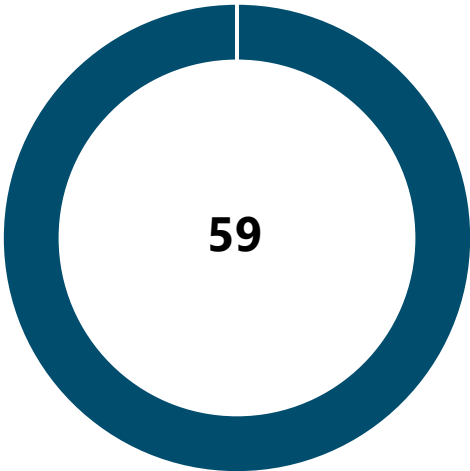
- Project Tool used by NSS to manage , track, and prioritize open issues, critical tasks, related to NSS instrument readiness
- Primary purpose is to log issues, assign responsibilities, set priorities and deadlines and monitor progress on the logged in issues.

• NSS Issue Tracker (NIT)

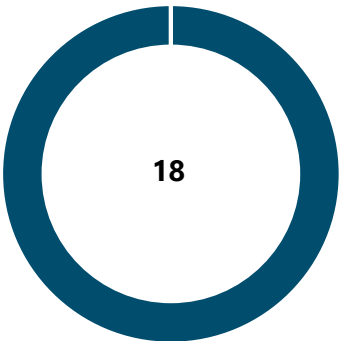




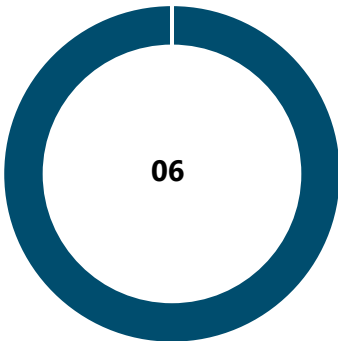
Overall Status of unresolved NITs



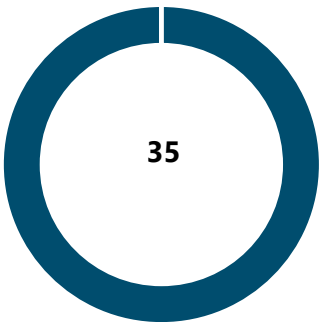
To be resolved before **SAR**



To be resolved before **SRR**



To be resolved before **ORR**



List of NITs to be resolved before TG5/SAR

NSS Issue Tracker Tickets / Rich Filter Controller

Open

Done

Bunker

Polarisation

BEER

BIFROST

CSPEC

DREAM

ESTIA

FREIA

HEIMDAL

LOKI

MAGIC

MIRACLES

NMX

ODIN

SKADI

TBL

TREX

VESPA

No Inst

NSS Issue Tracker Tickets / Rich Filter Results

Key	Status	Summary	Instrument	Issue source	To be resolved before
NIT-327	IN PROGRESS	Availability of Accelerator and Target PVs/data to instruments	LOKI	Cold commissioning	TG5/ SAR
NIT-219	IN PROGRESS	LoKi: Resolve error with sample_stack_positioner	LOKI	Cold commissioning	TG5/ SAR
NIT-218	IN PROGRESS	LoKi: Resolve inconsistent display of error/warning messages in NICOS	LOKI	Cold commissioning	TG5/ SAR
NIT-215	IN PROGRESS	LoKi: Replace encoder reading scale on sample stack Z-axis	LOKI	Cold commissioning	TG5/ SAR
NIT-202	IN PROGRESS	LoKi: Update beamstop_selector park position logic	LOKI	Cold commissioning	TG5/ SAR
NIT-201	IN PROGRESS	LoKi: NICOS routine for selecting and positioning the beamstop arm	LOKI	Cold commissioning	TG5/ SAR
NIT-200	IN PROGRESS	LoKi: Clarify beamstop_x status	LOKI	Cold commissioning	TG5/ SAR
NIT-199	IN PROGRESS	LoKi: Add "park" position for beamstop_x at 1.0	LOKI	Cold commissioning	TG5/ SAR
NIT-198	IN PROGRESS	LoKi: NICOS user limits for beamstop_x should NOT be configurable	LOKI	Cold commissioning	TG5/ SAR
NIT-197	IN REVIEW	LoKi: Ensure Automatic Sync of beamstop_x User and Absolute Limits	LOKI	Cold commissioning	TG5/ SAR
NIT-196	IN PROGRESS	LoKi: Implement NICOS Beam Center Position for beamstop_y motor	LOKI	Cold commissioning	TG5/ SAR
NIT-195	IN REVIEW	LoKi: Default Beamstop Arm Limits to Match MCA/TwinCAT	LOKI	Cold commissioning	TG5/ SAR
NIT-183	IN PROGRESS	LoKi: Rotation Speed Configuration in NICOS (RPM vs. Motor deg/sec)	LOKI	Cold commissioning	TG5/ SAR
NIT-179	IN REVIEW	LoKi: Display chopper alarm, error, or warning messages in NICOS	LOKI	Cold commissioning	TG5/ SAR
NIT-178	IN REVIEW	LoKi: Limit Chopper Set Speed	LOKI	Cold commissioning	TG5/ SAR
NIT-84	IN PROGRESS	Loki shutter NCR 10482 Absence of CE-marking on equipment	LOKI	Q-gate/FAT	TG5/ SAR
NIT-52	IN REVIEW	LOKi: Beam Monitors (M0, M1) electrical compliance	LOKI	Q-gate/FAT	TG5/ SAR
NIT-41	IN PROGRESS	Solve Punch list for LoKi Heavy shutter	LOKI	Installation/SAT	TG5/ SAR

1 – 18 of 18 filtered issues (326 hidden)

1 - 18 of 18 filtered issues (326 hidden)



List of NITs to be resolved before SRR

NSS Issue Tracker Tickets / Rich Filter Controller

Open

Done

Bunker

Polarisation

BEER

BIFROST

CSPEC

DREAM

ESTIA

FREIA

HEIMDAL

LOKI

MAGIC

MIRACLES

NMX

ODIN

SKADI

TBL

TREX

VESPA

No Instrument

NSS Issue Tracker Tickets / Rich Filter Results

Key	Status	Summary	Instrument	Issue source	To be resolved before
NIT-343	IN PROGRESS	Update EPL – LoKi Bunker	LOKI	Cold commissioning	SRR
NIT-311	TO DO	LOKI Operation and control manuals	LOKI	CDR/TG3	SRR
NIT-217	IN REVIEW	LoKi: Missing Error Message Mapping for Safety Shutter in EPICS and NICOS	LOKI	Other	SRR
NIT-214	IN REVIEW	LoKi: Missing Error Message Mapping for Window Guard in EPICS and NICOS	LOKI	Other	SRR
NIT-187	TO DO	LoKi: Clarify the gate valve interlock status PV.	LOKI	Cold commissioning	SRR
NIT-185	IN REVIEW	LoKi: Missing Error Message Mapping for Experiment Shutter in EPICS and NICOS	LOKI	Cold commissioning	SRR

1 – 6 of 6 filtered issues (338 hidden)

List of NITs to be resolved before ORR

NSS Issue Tracker Tickets / Rich Filter Controller

Open

Done

Bunker

Polarisation

BEER

BIFROST

CSPEC

DREAM

ESTIA

FREIA

HEIMDAL

LOKI

MAGIC

MIRACLES

NMX

ODIN

SKADI

TBL

TREX

VESPA

NSS Issue Tracker Tickets / Rich Filter Results

Key	Status	Summary	Instrument	Issue source	To be resolved before
NIT-344	TO DO	Set precision parameter in twincat for LoKi Slits	LOKI	Cold commissioning	TG6/ ORR
NIT-340	TO DO	LOKI MCC5: Detector motion systems cabling management	LOKI	Other	TG6/ ORR
NIT-336	TO DO	LOKI MCC4: As-built ePlan drawings	LOKI	Other	TG6/ ORR
NIT-335	IN PROGRESS	LOKI MCC3: As-built ePlan drawings.	LOKI	Other	TG6/ ORR
NIT-333	TO DO	Update LOKI MCC2 ePlan	LOKI	Other	TG6/ ORR
NIT-318	TO DO	justbinit device and plots randomly stopping	LOKI	Cold commissioning	TG6/ ORR
NIT-317	TO DO	Scripts/tools to confirm all EFU events are recorded to file	LOKI	Other	TG6/ ORR
NIT-316	TO DO	Live count rate display should be visible in NICOS	LOKI	Cold commissioning	TG6/ ORR
NIT-315	TO DO	Live detector/monitor counts should start upon run/filewriter start	LOKI	Other	TG6/ ORR
NIT-314	TO DO	Input offset value for centre of moderated neutron pulse	LOKI	Cold commissioning	TG6/ ORR
NIT-312	TO DO	Mouse pointer offset on NICOS detector image plot	LOKI	Cold commissioning	TG6/ ORR
NIT-309	IN PROGRESS	LOKI Detector Module 6 Bank 0 failure	LOKI	Installation/SAT	TG6/ ORR
NIT-225	IN PROGRESS	LoKi: Troubleshooting Module 9 - Bank 0 Power Supply Issues	LOKI	Other	TG6/ ORR
NIT-223	TO DO	LoKi: Update Chopper OPI in Cyolo	LOKI	Cold commissioning	TG6/ ORR
NIT-222	TO DO	LoKi: Refurbish SKID	LOKI	Other	TG6/ ORR
NIT-221	TO DO	LoKi: Sample Changer Config & Position in NeXus File	LOKI	Cold commissioning	TG6/ ORR
NIT-220	TO DO	LoKi: Verification of sample mapping metadata incomplete	LOKI	Cold commissioning	TG6/ ORR
NIT-216	IN PROGRESS	LoKi: Create Device for Sample Stack in NICOS	LOKI	Cold commissioning	TG6/ ORR
NIT-209	IN REVIEW	LoKi: Develop detector distance transform	LOKI	Cold commissioning	TG6/ ORR
NIT-208	TO DO	LoKi: Macro for Slit Height/Width	LOKI	Cold commissioning	TG6/ ORR

1 – 20 of 35 filtered issues (309 hidden)

1 – 20 of 35 filtered issues (309 hidden)



List of NITs to be resolved before ORR

NSS Issue Tracker Tickets / Rich Filter Controller

Open

Done

Bunker

Polarisation

BEER

BIFROST

CSPEC

DREAM

ESTIA

FREIA

HEIMDAL

LOKI

MAGIC

MIRACLES

NMX

ODIN

SKADI

TBL

TREX

VESPA

No Instrument

TG6

NSS Issue Tracker Tickets / Rich Filter Results

Key	Status	Summary	Instrument	Issue source	To be resolved before
NIT-207	TO DO	LoKi: Adjust Default Motor Speed to Maximum Value	LOKI	Cold commissioning	TG6/ ORR
NIT-205	TO DO	LoKi: Fix filewriting status display	LOKI	Cold commissioning	TG6/ ORR
NIT-204	TO DO	LoKi: Ensure interlock error messages are written to NICOS output	LOKI	Cold commissioning	TG6/ ORR
NIT-203	TO DO	LoKi: Implement NICOS-defined beam monitor/beamstop center position	LOKI	Cold commissioning	TG6/ ORR
NIT-194	TO DO	LoKi: Check and Calibrate Detector Positions Relative to Sample	LOKI	Cold commissioning	TG6/ ORR
NIT-189	TO DO	LoKi: NICOS Speed Parameter Display Not Updating When Auto-Limited	LOKI	Cold commissioning	TG6/ ORR
NIT-188	TO DO	LoKi: Define Fast Shutter Naming Standards and State Assignment Level	LOKI	Cold commissioning	TG6/ ORR
NIT-186	IN REVIEW	LoKi: Rename Temperature PVs from "s_temp_#" to "temp_#"	LOKI	Cold commissioning	TG6/ ORR
NIT-184	TO DO	LoKi: Missing "Jogging" Functionality in NICOS for Rotating Sample Holder Operations	LOKI	Cold commissioning	TG6/ ORR
NIT-182	TO DO	LoKi: Integration of SEE into the LoKi instrument network.	LOKI	Cold commissioning	TG6/ ORR
NIT-181	TO DO	LoKi: MAGIO Julabo integration into the LoKi instrument network.	LOKI	Cold commissioning	TG6/ ORR
NIT-180	TO DO	LoKi: Implement individual levitation commands for chopper disk in NICOS.	LOKI	Cold commissioning	TG6/ ORR
NIT-177	TO DO	LoKi: Update chopper window selection for LoKi	LOKI	Cold commissioning	TG6/ ORR
NIT-176	IN PROGRESS	LoKi: Resolver angle offset for NICOS visualization	LOKI	Cold commissioning	TG6/ ORR
NIT-175	IN REVIEW	LoKi: Change FOC Chopper Device Name in NICOS	LOKI	Cold commissioning	TG6/ ORR

21 – 35 of 35 filtered issues (309 hidden)



Thank You.