



**EUROPEAN  
SPALLATION  
SOURCE**





# ESTIA NIT's AND NCR's

2020-2021  
EDUIÇÃO DE CRIANÇAS DA SILVA



# NIT's

NIT = NSS Issue tracker



### Total of 15 NIT's for ESTIA in open status

NSS Issue Tracker Tickets / Rich Filter Controller									
<span>Open</span> <span>Resolved</span> <span>Done</span> <span>Bunker</span> <span>S&amp;SS</span> <span>Polarisation</span> <span>BEER</span> <span>BIFROST</span> <span>CSPEC</span> <span>DREAM</span> <span><b>ESTIA</b></span> <span>FREIA</span> <span>HEIMDAL</span> <span>LOKI</span> <span>MAGIC</span> <span>MIRACLES</span> <span>NMX</span> <span>ODIN</span> <span>SKADI</span> <span>TBL</span> <span>TREX</span> <span>VESPA</span>									
<span>No Instrument</span> <span>Global</span> <span>GRT</span> <span>Monitored</span> <span>SciOps</span> <span>Issue source</span> <span>≠ Resolved</span> <span>1</span> <span>Discipline</span> <span>To be resolved before</span> <span>JQL</span> <span>A</span> <span>🔄</span> <span>✕</span>									
NSS Issue Tracker Tickets / Rich Filter Results									
Key	Status	Summary	Instrument	Issue source	To be resolved before	Assignee	Reporter	P	Labels
NIT-823	TO DO	ESTIA Cooling skid needs to be installed and tested	ESTIA	Other	TG6/ ORR	Jesper Ringnér	Joshaniel Cooper	=	None
NIT-820	TO DO	Setting an offset on NICOS axes changes the HW limits on EPICS.	ESTIA	Cold commissioning	TG6/ ORR	Unassigned	Felipe Lopes da Silva	>	ESTIA NICOS
NIT-819	TO DO	implement soft limits via Virtual Source device	ESTIA	Cold commissioning	TG6/ ORR	Renee Helfert	Felipe Lopes da Silva	=	ESTIA NICOS
NIT-817	IN PROGRESS	ESTIA Interferometer not working	ESTIA	Cold commissioning	TG5/iSAR	Felipe Lopes da Silva	Felipe Lopes da Silva	>	ESTIA
NIT-815	TO DO	Integration of Beam monitor HVPS into EPICS/NICOS	ESTIA	Cold commissioning	TG6/ ORR	Nicklas Holmberg	Felipe Lopes da Silva	>	ESTIA
NIT-814	TO DO	Air pads controls and status	ESTIA	Cold commissioning	TG6/ ORR	Unassigned	Felipe Lopes da Silva	=	ESTIA
NIT-813	IN PROGRESS	Hexapod controls	ESTIA	Cold commissioning	TG6/ ORR	Unassigned	Felipe Lopes da Silva	>	ESTIA
NIT-812	TO DO	Mapping of multiple axes on NICOS.	ESTIA	Cold commissioning	TG6/ ORR	Unassigned	Felipe Lopes da Silva	>	ESTIA
NIT-791	TO DO	ESTIA MCA Sample rotation dynamic soft limits	ESTIA	Installation/SAT	TG6/ ORR	Unassigned	Federico Rojas	=	None
NIT-790	TO DO	ESTIA MCA Test SE patch panel channels	ESTIA	Installation/SAT	TG5/iSAR	Unassigned	Federico Rojas	=	None
NIT-789	IN PROGRESS	ESTIA MCA As-built drawings	ESTIA	Installation/SAT	TG6/ ORR	Unassigned	Federico Rojas	=	None
NIT-787	IN PROGRESS	ESTIA: Add Airpads status and errors	ESTIA	Cold commissioning	TG5/iSAR	Federico Rojas	Federico Rojas	=	None
NIT-782	TO DO	ESTIA: Retest Safety Shutter	ESTIA	Cold commissioning	TG6/ ORR	Unassigned	Federico Rojas	=	None
NIT-769	IN PROGRESS	Missing compliance evaluation for false floor fire suppression:	ESTIA	Installation/SAT	iSRR	Tahere Rostami	Giuseppe Aprigliano	>	None
NIT-392	TO DO	Design and install permanenet RH lifting frame for ESTIA Feeder	ESTIA	CDR/TG3	TG6/ ORR	Gabor Laszlo	Gabor Laszlo	>	design

# ESTIA NIT's

## Integrated test results



- 8 NIT's resulted from the integrated test results
- All currently being worked on to be solved asap

not only for ESTIA

NIT-820	TO DO	Setting an offset on NICOS axes changes the HW limits on EPICS.	ESTIA	Cold commissioning	TG6/ ORR
NIT-819	TO DO	implement soft limits via Virtual Source device	ESTIA	Cold commissioning	TG6/ ORR
NIT-817	TO DO	ESTIA Interferometer not working	ESTIA	Cold commissioning	TG6/ ORR
NIT-815	TO DO	Integration of Beam monitor HVPS into EPICS/NICOS		Cold commissioning	TG6/ ORR
NIT-814	TO DO	Air pads controls and status		Cold commissioning	TG6/ ORR
NIT-813	TO DO	Hexapod controls	ESTIA	Cold commissioning	TG6/ ORR
NIT-812	TO DO	Mapping of multiple axes on NICOS.	ESTIA	Cold commissioning	TG6/ ORR
NIT-782	TO DO	ESTIA: Retest Safety Shutter	ESTIA	Cold commissioning	TG6/ ORR

# ESTIA NIT's

## MCAG



- 5 MCAG NIT's
- NIT-787 is related to NIT 814: air pads controls and status
- NIT 791: How to define dynamic soft limits for integration into hexapod/sample environment with motion safety

NIT-814	TO DO	Air pads controls and status	ESTIA	Cold commissioning	TG6/ ORR
NIT-791	TO DO	ESTIA MCA Sample rotation dynamic soft limits	ESTIA	Installation/SAT	TG6/ ORR
NIT-790	TO DO	ESTIA MCA Test SE patch panel channels	ESTIA	Installation/SAT	TG5/iSAR
NIT-789	IN PROGRESS	ESTIA MCA As-built drawings	ESTIA	Installation/SAT	TG6/ ORR
NIT-787	IN PROGRESS	ESTIA: Add Airpads status and errors	ESTIA	Cold commissioning	TG5/iSAR
NIT-782	TO DO	ESTIA: Retest Safety Shutter	ESTIA	Cold commissioning	TG6/ ORR

# ESTIA NIT's

## Integrated test results



### 1 NIT's from CUP

- Know issue for all instruments and being worked on by CUP.

NIT-823	TO DO	ESTIA Cooling skid needs to be installed and tested	ESTIA	Other	TG6/ ORR
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### 1 NIT's from Installation/TG3

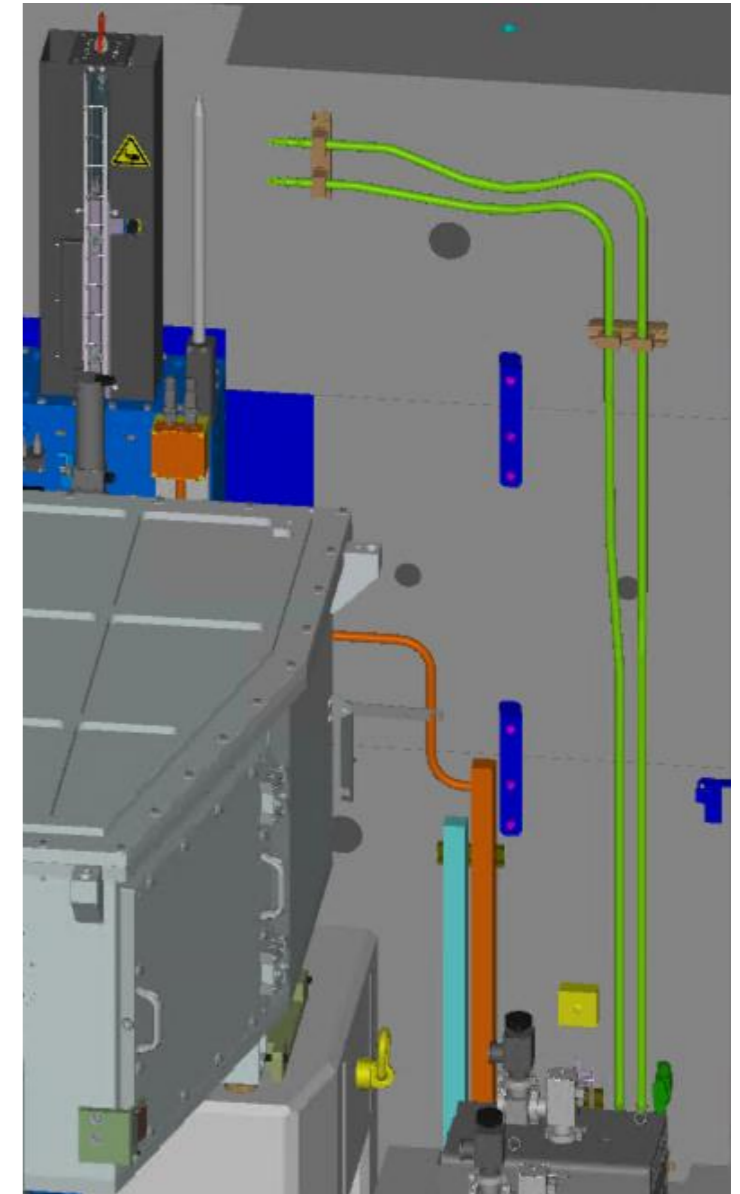
NIT-392	TO DO	Design and install permanenet RH lifting frame for ESTIA Feeder	ESTIA	CDR/TG3	TG6/ ORR
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- NIT-392: expected to improve the RH capability of the component. Currently possible but difficult.
- TPG task associated with it.
- Decision from NSS engineering team to be implemented by the NSS engineering team



## ESTIA: Retest Safety Shutter

- flexible hoses identified as potential source for future mistakes during maintenance.
- Someone accidentally connects the pressurized air to the vacuum pump into the shutter inlet – which would open the shutter.
- A new design has been implemented, Parts have recently arrived and will be installed ASAP.
- After the installation of new parts re-testing is needed.





# Hexapod controls



Hexapod controls issues encountered after the integrated test of ESTIA In-cave components (ESS-6044518):

- Display messages on NICOS rely on EPICS which only shows a number for the status, not really the display text – *Solution was found: the status numbers will be implemented on the IOC layer and NICOS will be able to read them- to be implemented soon*
- Hexapod function “move all” not integrated yet, requires further work (ECDC) – *ongoing progress*
- Coordinate system input in NICOS (expert mode): *Feature already available on EPICS and only meant for expert users*

The screenshot shows the 'Hexapod Controls - Estia\_hexapod' interface. It features a 'Control' tab and three main sections: 'Current Position', 'Absolute Motion', and 'Relative Motion'. The 'Current Position' section displays values for tx, ty, tz, rx, ry, rz, and gmt. The 'Absolute Motion' section has input fields for tx, ty, tz, rx, ry, rz, and gmt, along with 'Start All' and 'Stop All' buttons. The 'Relative Motion' section has buttons for minus and plus for each coordinate and gmt. Below these sections are 'Status' (12) and 'Coordinate System' (Tool) indicators.



## Hexapod controls



Hexapod controls issues encountered after the integrated test of ESTIA In-cave components (ESS-6044518):

- User limits needs to be implemented in EPICS, so we could use it on NICOS
  - *Due to the way the hexapod controls are done, the limits are currently set to 0. NICOS understands this as "no limits" and it is not possible to set user limits.*
  - *We have identified a solution by having a virtual limit boundary bigger than the actual HW limits, that way limits will be possible to be set on NICOS.*
- Mapped devices has to be implemented and tested after user limits can be accessed on NICOS – *being worked on, a preilimnary version already exists*
- Homing nor initialising features of the Hexapod is currently not possible on NICOS/EPICS. – *Already implemented at the EPICS layer, needs to be integrated into NICOS and re-tested.*

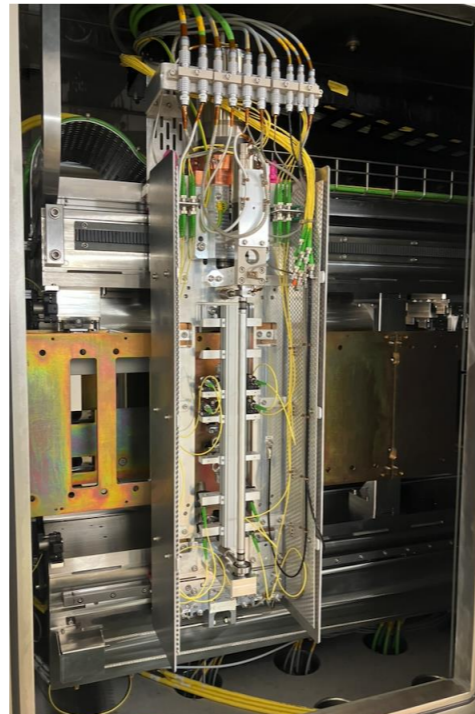




## ESTIA Interferometer not working



- Absolute interferometer with 20 laser fibres
- Measures the positions of all our current 60 mirrors of the Selene guides
- provides the input for the robot adjuster system to align the individual mirror segments
- Alignment routine

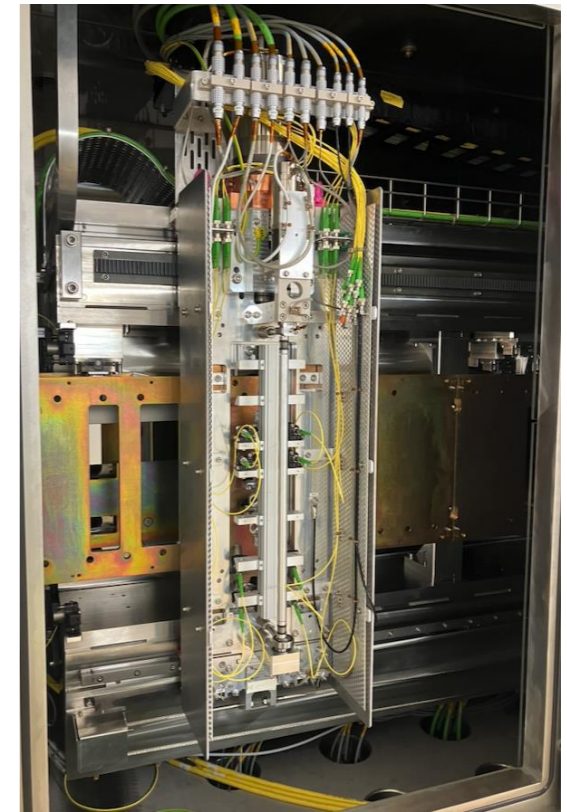
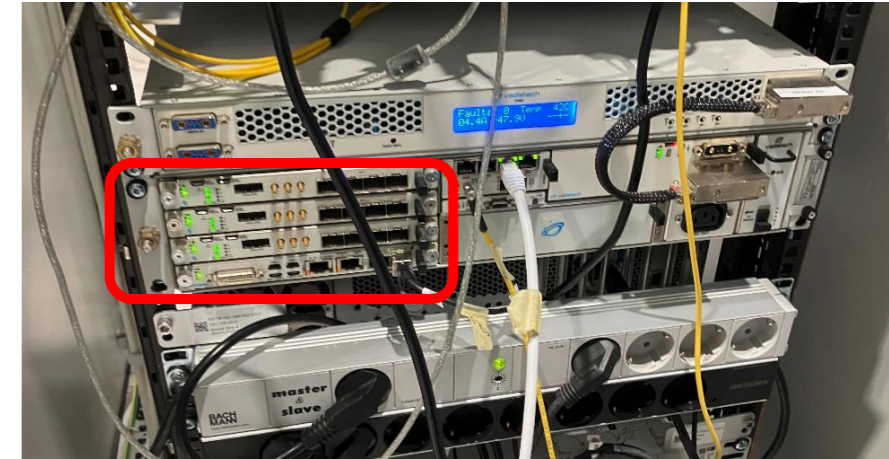




## ESTIA Interferometer not working



- Interferometer was powered off for 2 years at ESS – waiting to be transferred to its proper cabinet. Once transferred and energized one of the modules on the interforemeter hardware would not power up
- It is a module form a third party supplier (VADATECH) of the provider of the hexapod (HEXAGON)
- We finally managed to update the firmware as requested by the third party supplier. It powered back on the module that was off. - PROGRESS.
- Now we are having compatibility problems with new firmware
- In contact with supplier to be able to fix the problem asap.





## ESTIA MCA Sample rotation dynamic soft limits

- For motion safety and machine protection.
- Necessary to identify different sample environments are in place.
- Adapt the soft limits of the rotation stage accordingly.
- A strategy to handle this needs to be defined and implemented.
- Initial idea is to have each different setup with a limit switch on different places, that would physically trigger the limits on the software.





# NCR's

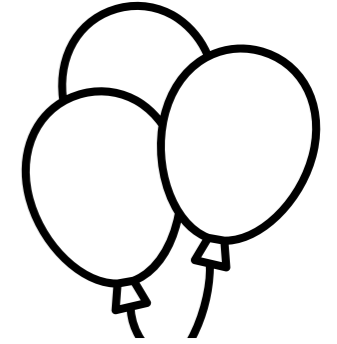
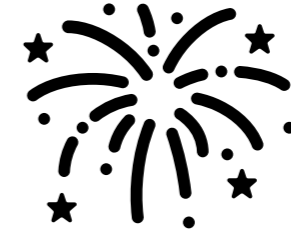
NCR = Non-Conformity Report

# NCR

ESTIA complete lists of NCR's



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# EUROPEAN SPALLATION SOURCE



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Thank you!

Felipe Lopes da Silva



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