

EUROPEAN SPALLATION SOURCE

Phase 2 and TG3 processes

- for the Instrument Teams-

Judith Freita Ramos NSS Instrument Project Tollgate Coordinator

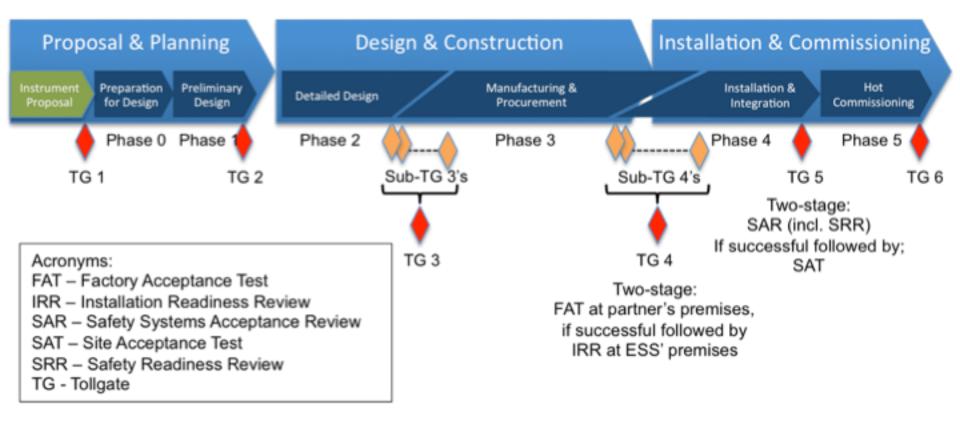
> www.europeanspallationsource.se 11 September 2018



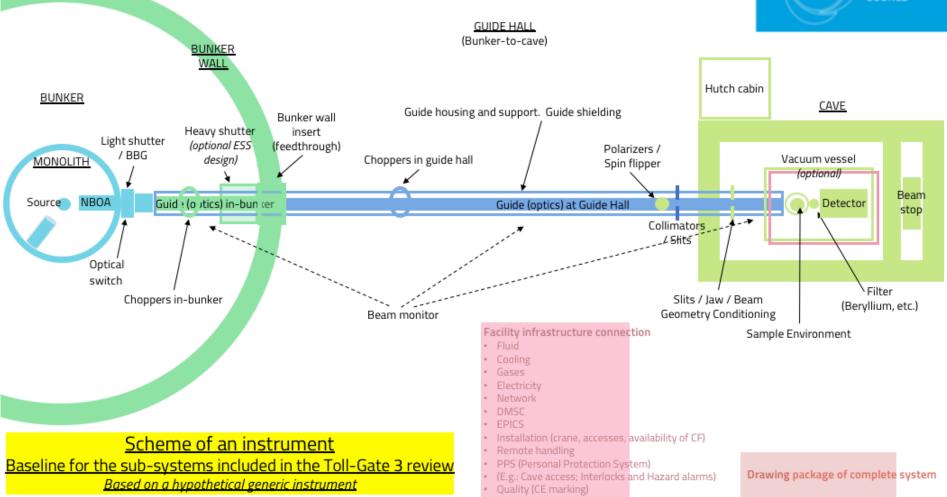
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TG3 schedule (timeline 2018-2021)



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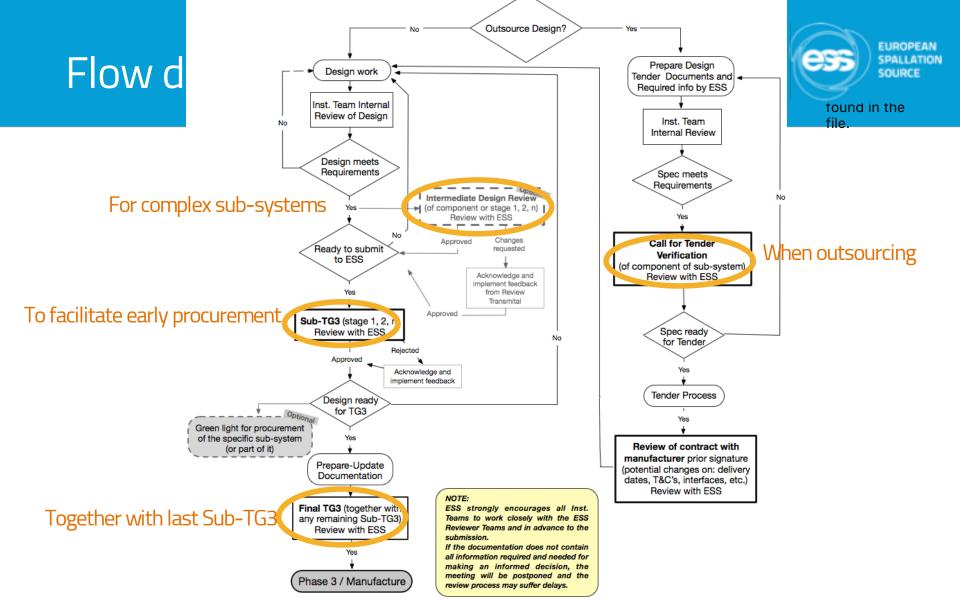
TG3 schedule (motivations)



Meet the requirements of the ESS project delivery schedule (rebaseline schedule for Neutron Beam Instruments –V4.0 May 2018)

Motivations behind this schedule:

- Schedule and preferred cluster of sub-systems by Inst. Teams
- Building access and Installation timelines (Building accesses: E01 and E02.1 Sep'19; E02.2 May'21; Bunker Jul'21; D03 Jan'21; D01 Jun'21)
- ESS reviewer resources
- Short(-work) months
- Prioritisation of instruments
- Cluster of sub-systems and components that are related (interfacing)



Confluence space

Pages / Instrument Projects / TG3 Meetings and additional information 🚡 @

Phase 2 and TG3 processes

Created by Gabor Laszlo, last modified by Judith Freita Ramos just a moment ago

This Confluence page contains the practical information about the Phase 2 and TG3 processes.

Concepts:

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- Three main baseline documents:
- Phase2 and TG3 Process Diagram: PDF
- Calendar link
- Schedule for TG3
- Table: Deliverables; Relevant documents; Process description; Reviewers
- Table of Reviewers per Sub-system Spreadsheet
- · Relevant links:

Edit

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Relevant descenters Research descriptions Residences

Table	Deliverables; Relevant d	locuments; Process description; Revie	wers.								
	Deliverable	Relevant documents	Description, flow and	timeline						Reviewer	
. 8100 B	Call for Tender Verification (CTV) (F sppRoble)	ESS-0212907 (NBS Guideline for Instrument Construction Projects - 103 Review and Decision) Appendix / contains the bit of what the procument?	Cull for Tender Verification (CTV) stage applies to those sub-systems and components which detailed design, and not only the manufacturing, will be outsourced. For the procurement verification ESS requires the tender/contract document(s). The tendering is the responsibility of the instrument Team tegether with its institute. ESS holds the responsibility to verify various project espects.								
	Submission of documentation.	contract should contract.	Aspects subject of revision and revision approach: • The involved ESS Reviewer Group revises the technical content of the tender. They do not provide feedback, only if there is an issue. • The technical specification should comply with the requirements established by the relevant ESS Reviewer Team, as well as the applicable sub-system requirements for Early Procurement stage . • ESS all evaluate if the planning is compatible with the instrument specific and NSS schedule, as well as global resource plan of the instrument suite								
	CHESS document including as either text or annexes): • Schedule (including: kay milestones rouch		The parts of the contract/hander relevant for the requirements above shall be translated to English. If the EEG completeness requirements are not compatible with the partner institutes rules, then the apacific issue has to be discussed and addressed by a common agreement. If the instruments achedule or resource para is conflicting with MSB project planning, then the issue has to be discussed between ESB and the instrument Team and the consequences have to be evaluated. ESB and is respond agreement or request for further details within 7 working days after resoluting all the document(s).								
	as approval points for detailed design-; payment missiones; acceptance testing)		ESS shall be notified if there are changes in the tendening conditions after the call for tender before signing the contract. This is the Review of the Contract, marked on the Flow Diagram. Flow and Timethame of CITA								
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			Submit deliverables to ESI-(NSS Project) Load (ingineer) >3 weeks prior to the publication of the tender	7 working days after receiving all documents	institution's purchase	Instrument Team Institution and the Manufacturer. No ESS involvement.	the design or	Team institution and the Manufacturer.	Detailed design process starts. Typ markine (2) Anarowar (2)Indexelogiel Doens from an early stope		
	Appendix 1 ESG-0212907		Interfinits between the Cutacoursing timeline and the TCD processes.								
	("Fielder to the relevant documents from each ESS Reviewer Team on cest column, and see example at technical content for NMC.		Manufacturer timeline and TG3 for an outsourced detailed engineering (after Call for Tender)								
			Contract signature: Inst. Team Institution-Manufacturer Intermediate Detailed Sub-TG3 Approval of manufacturing							uu	
					n Review (DR) with (SS	\				_	
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			Start of the design & manufacturing proces	Schedule the IDR manufacturer also before the relevan	sat 1,5-2 months	2) The Bevie	Albe scheduled whe wal Transmittal is all 1.1.4. all security or	TG3: will p	based on the Sub- ble groom light to manufacturing of	¬ r	

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onfluence space: ble of Deliverables Relevant ocuments Description, flow and timeline - Reviewer

Intermediate Design ESS-0212907 (NSS Guideline for Review (OP) (priced) Instrument Construction Projects - TG3 Review and Decision) Appendix 7 Submission of contains the list of what the procurement documentation followed by contract should contain. a Presentation at ESS of

The Intermediate Detailed Design Review (IDR) is an optional in-person meeting granted by the ESS for perticularly complex sub-systems and components. It offers the chance for the instrument Team to ensure that the progress on the detailed design is aligned with the ESS requirements. Its ultimate aim is to make the correspondent Sub TG3 more agile by heuring the design informally reviewed by the relevant ESS Reviewer Team(N). Providing that the requests on the Review Transmittal issued by the ESS Load Engineer to the Instrument Team pet addressed, the Sub-TS2 will be a suff step which may be dealt with remotely. IDR meetings shall be motivated via e-mail.

addressed (i.e., all requests on it

All manufacturing drawings

(Detailed Design) are available

(this to be submitted with the

sect of the required deliverables

those prem)

the sub-system/component

ESS-SEDANS (755 Neutron EN-

IDR of: 13 3D model, 23 14 sketch of

The in-person meeting will be

followed by a Reviewal Transmittal

with follow-up questions and changes.

Sub-System Design Description (\$5500)

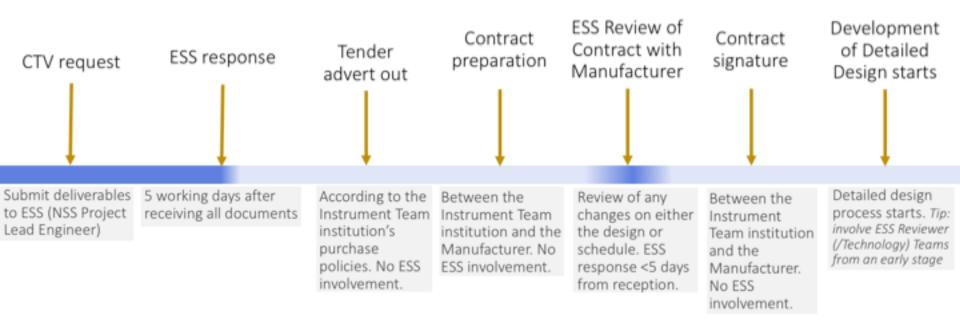
Input from Instrument Teams: CTV

Call for Tender Verification (CTV) timeline

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found in the



CTV: deliverables

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Call for Tender Verification (CTV) timeline

CTV request

Schedule (key milestones; payment milestones; acceptance testing...) Measurements and tests expected during the manufacturing process

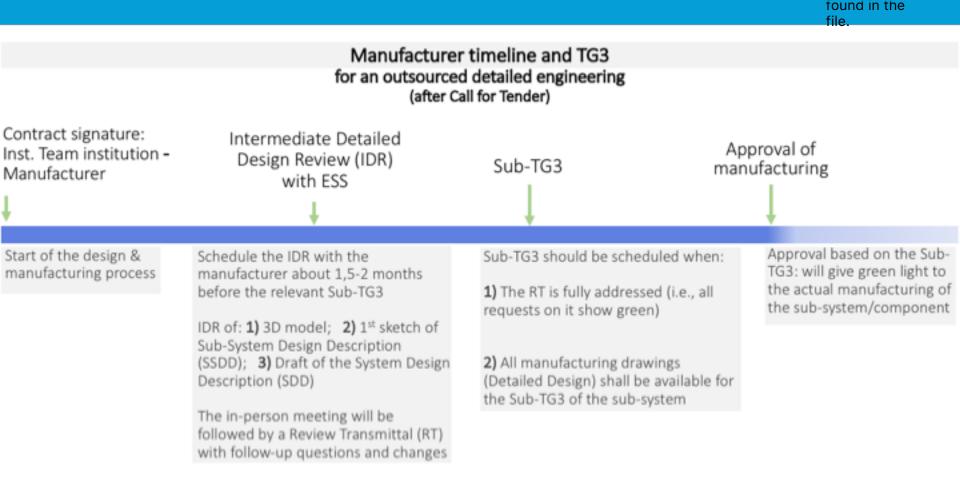
Submit deliverables to ESS (NSS Project Lead Engineer)

Draft of the call for tender

(schedule and technical specification, and warranty clauses)

Declaration of conformity with Appendix 1 <u>ESS-0212907</u>

Manufacturer timeline and TG3



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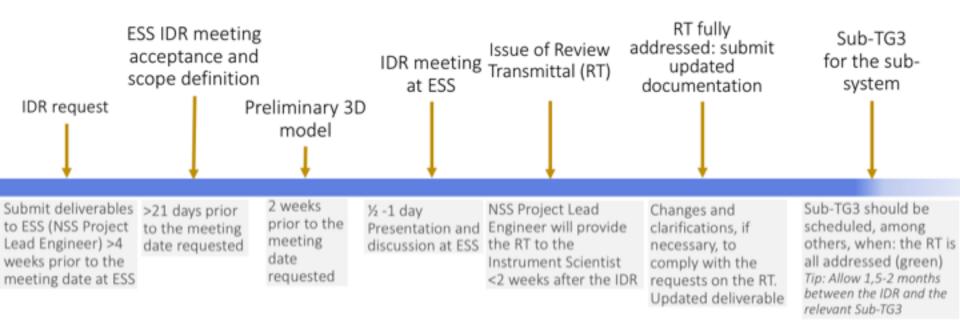
Input from Instrument Teams: IDR

Intermediate Detailed Design Review (IDR) timeline

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IDR: deliverables

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Intermediate Detailed Design Review (IDR) timeline

Draft of SSDD

Submit deliverables to ESS (NSS Project Lead Engineer) >4

meeting date at ESS

IDR request

weeks prior to the

Intro: systematic relation of the sub-system to the wholesystem from operational perspective

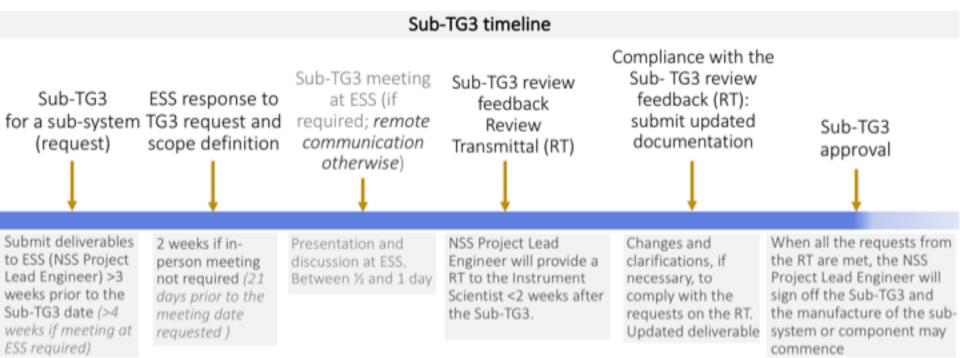
Sub-system requirements

Updated Bill of Materials for Activation Inventory

Prel. 3D model (2 weeks prior to the meeting)

Updated documentation after RT completed

Input from Instrument Teams: Sub-TG3



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found in the

Sub-TG3: deliverables





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found in the file.

Sub-TG3 timeline

Sub-TG3 for a sub-system (request)

Submit deliverables to ESS (NSS Project Lead Engineer) >3 weeks prior to the Sub-TG3 date (>4 weeks if meeting at ESS required)

SSDD Sub-System Design Description

Sub-system requirements

Draft of System Integration and Verification Plan

Draft of System Validation Plan

Systems Operation and Maintenance Manual

Instrument Hazard Analysis

3D Model of the complete system

Updated project documents

Actual Project Schedule

Draft of Project Quality Plan

Updated Bill of Materials for **Activation Inventory**

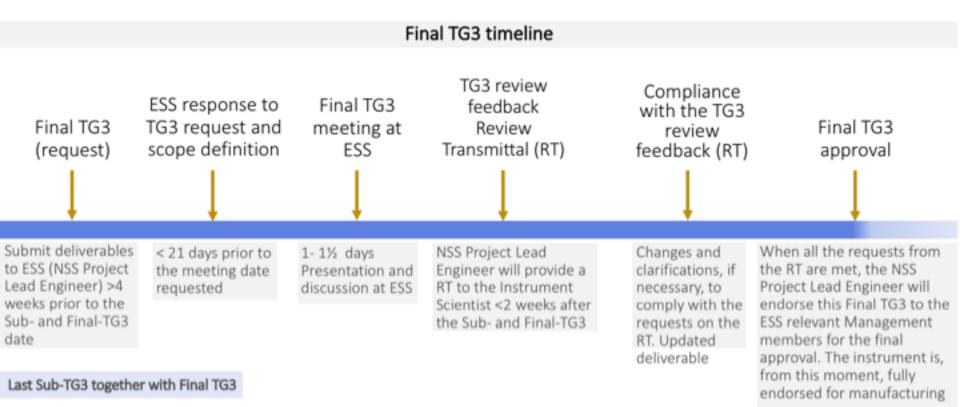
Draft of SDD with complete list of deliverables

Drawings/picts (in English)

Process and Instrumentation diagrams

Hazard analysis

Input from Instrument Teams: Final TG3



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found in the

Final TG3: Deliverables





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found in the file.

Final TG3 timeline

SDD System Design Description

Final TG3 (request)

Submit deliverables to ESS (NSS Project Lead Engineer) >4 weeks prior to the Sub- and Final-TG3 date References to the SSDD's of the previous stages

Description of the external interfaces to the System

System design for integration to Data acquisition and data analysis systems Operational analysis of integration to Sample Environment Equipment and Lab Infrastructure & Logistics

Design of external infrastructural interfaces

Certificate of Conformity for Hazardous Materials and Sustainability

Relevant sub-system requirements

Making TG3 an agile process



DESIGN BEVIEW

IDR for complex sub-systems/components

• Sub-TG3

- Review Transmittal
- NSS Lead Instrument Engineer: hub
- Confluence page for Phase 2 and TG3
- ESS Reviewer Teams available for the Inst. Teams along the development of their detail design

Thank you



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2025 **ESS Construction Phase Complete** 2014 **Construction Starts on Green Field Site** 2023 **ESS Starts** 2009 **User Program Decision to Site ESS** in Lund 2019 Start of Initial **Operations** Phase 2012 **ESS Design Update Phase** Complete

2003 European Design of ESS Completed

Journey to deliver the world's leading facility for research using neutrons