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TG2 Review Process for Neutron Chopper Systems

Nikolaos Tsapatsaris
on behalf of the Neutron Chopper Group

NEUTRON CHOPPER GROUP

confluence: ess-ics.atlassian.net/wiki/display/CG

IKON11 14-16 September 2016

SUPPORT
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Presentation outline

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- NCG <-> instrument interaction in P1
- NCG TG2 instrument review process
- P1 timeline
- Steps towards TG2

NCG Instrument Support

1. An ESS neutron chopper responsible is assigned to each instrument project team for the duration of their project.

   Confluence: “NCG representatives”

2. Official Instrument Technologies Documentation
   - Standards & requirements
   - Guidelines
   - Design space holders
   - Ballpark Costing
3. Neutron chopper systems review
   - NCS Questionnaire for P1
   - NCS TG2 Review Summary

WEB: ess-ics.atlassian.net/wiki/display/CG/NCG+documentation

USB/hardcopy: Ask your contact

NCS Questionnaire – ESS-0059934

Dialogue document

- Basic technical information is lacking from the TG2 documentation to allow review
- Summarizes detailed important information that may have serious impact on: facility compatibility, instrument cost and schedule
- Used as input to the TG2 review summary document

Project schedule

Costing

Technical risks

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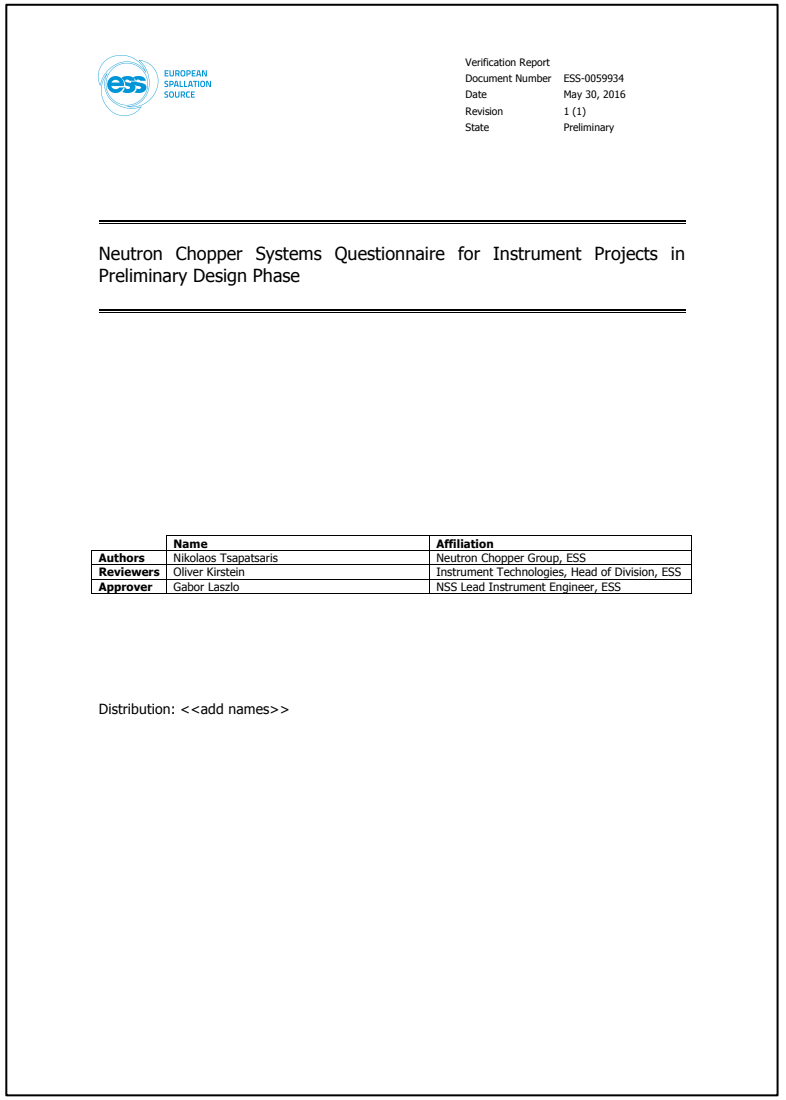
Mechanical integration

Control systems integration

Standard design chopper/T0

Technical feasibility and neutronics



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Verification Report
Document Number ESS-0059934
Date May 30, 2016
Revision 1 (1)
State Preliminary

Neutron Chopper Systems Questionnaire for Instrument Projects in Preliminary Design Phase

	Name	Affiliation
Authors	Nikolaos Tsapatsaris	Neutron Chopper Group, ESS
Reviewers	Oliver Kirstein	Instrument Technologies, Head of Division, ESS
Approver	Gabor Laszlo	NSS Lead Instrument Engineer, ESS

Distribution: <<add names>>

NCS Questionnaire – Example questions

Schedule

Have you established a schedule for your chopper system?

If yes, would you please supply the project schedule to your NCG contact?

Has the lead-time for the manufacture of all chopper components been factored in?

CHIM Guideline – ESS-0041170

Size and weight

Is the width of each chopper module less than 900mm ?

Is the height of each chopper module less than 1800mm ?

Is the length of each chopper module less than 2000mm ?

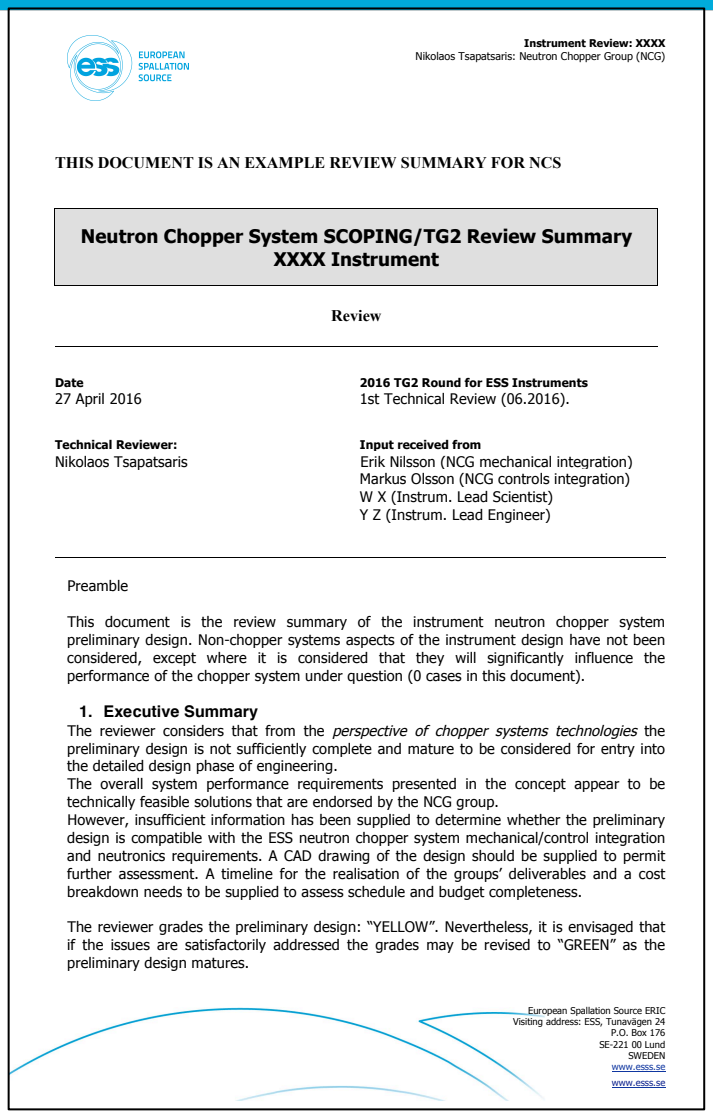
Is the total mass of an extractable assembly lower than 2000kg?

CHIM variants

Have only endorsed installation variants been selected?

If you are proposing to use an unendorsed variant has an evaluation of the proposed variant been carried out?

NCS TG2 Review Summary – ESS-0060423



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Instrument Review: XXXX
Nikolaos Tsapatsaris: Neutron Chopper Group (NCG)

THIS DOCUMENT IS AN EXAMPLE REVIEW SUMMARY FOR NCS

Neutron Chopper System SCOPING/TG2 Review Summary
XXXX Instrument

Review

Date
27 April 2016

2016 TG2 Round for ESS Instruments
1st Technical Review (06.2016).

Technical Reviewer:
Nikolaos Tsapatsaris

Input received from
Erik Nilsson (NCG mechanical integration)
Markus Olsson (NCG controls integration)
W X (Instrum. Lead Scientist)
Y Z (Instrum. Lead Engineer)

Preamble

This document is the review summary of the instrument neutron chopper system preliminary design. Non-chopper systems aspects of the instrument design have not been considered, except where it is considered that they will significantly influence the performance of the chopper system under question (0 cases in this document).

1. Executive Summary

The reviewer considers that from the *perspective of chopper systems technologies* the preliminary design is not sufficiently complete and mature to be considered for entry into the detailed design phase of engineering.
The overall system performance requirements presented in the concept appear to be technically feasible solutions that are endorsed by the NCG group.
However, insufficient information has been supplied to determine whether the preliminary design is compatible with the ESS neutron chopper system mechanical/control integration and neutronics requirements. A CAD drawing of the design should be supplied to permit further assessment. A timeline for the realisation of the groups' deliverables and a cost breakdown needs to be supplied to assess schedule and budget completeness.

The reviewer grades the preliminary design: "YELLOW". Nevertheless, it is envisaged that if the issues are satisfactorily addressed the grades may be revised to "GREEN" as the preliminary design matures.

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Main review criteria

- Project schedule
- System costing
- Technical Feasibility
- Facility Compatibility

Stakeholders

- Instrument team
- Instrument Class Coordinator
- NSS management

NCS TG2 Review Criteria - traffic lights

Criteria	Project	Mechanical Integration	Control Systems Integration	Technical Feasibility and Neutronics
Overall	▲	▲	▲	▲
Maturity	▲	▲	▲	▲
Compatibility	▲	▲	▲	N/A
Feasibility	▲	▲	▲	▲
Risks	▲	▲	▲	▲
Budget completeness	▲	N/A	N/A	N/A
Schedule	▲	N/A	N/A	N/A

"GREEN": All aspects of the criterion have been addressed satisfactorily to permit endorsement by the NCG to the detailed design phase.

"ORANGE": Some aspects of the criterion have not been addressed satisfactorily. However, if additional information is supplied, NCG endorsement of the instrument to the detailed design phase may be possible.

"RED": Some aspects of the criterion have not been addressed satisfactorily and there are reasons to doubt they can be achieved without changes. Currently it is not recommended to proceed.

Grades are indicated as traffic lights:

● = green, ▲ = orange, ■ = red.

NCS TG2 Review – Example assessment

Currently identified issues

Maturity: The requirements need to be expanded in more detail to commence the detailed engineer design phase.

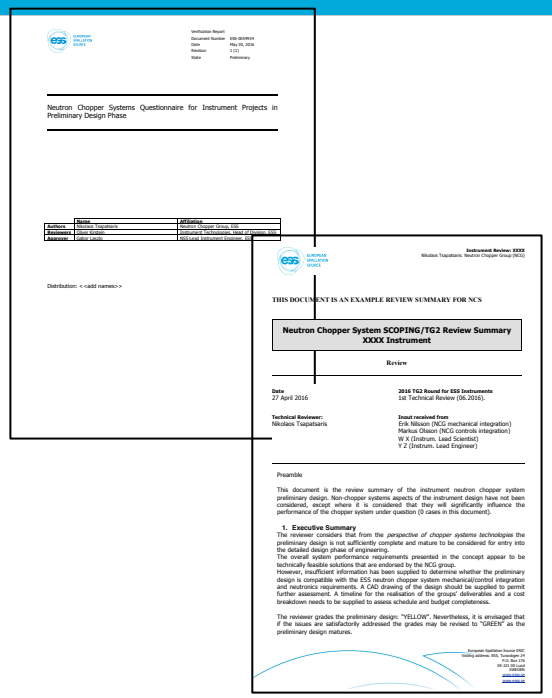
Compatibility: The specification of the preliminary chopper system design appear to be in partial compatibility with the ESS neutron chopper systems requirements documentation.
A CAD drawing of the design should be supplied to permit further assessment.

Feasibility: The overall system performance requirements presented in the concept are technically feasible

Budget completeness: The total cost indicated for the chopper systems is considered realistic. A cost breakdown needs to be supplied to assess budget completeness
Schedule: A timeline for the realisation of the groups' deliverables has not been supplied to the NCG contact.

Steps towards TG2

- Discuss ASAP with your NCG contact about completing the questionnaire
- Your contact will then fill the review document and send it to the team leader especially in cases where there is serious concern
- The instrument team should attempt to rectify and address concerns at least 4 weeks before TG2**. <u>A simple explanation that can easily be addressed in P2 may be sufficient.</u>**
- The NCG contact sends the final Review summary to the instrument class coordinator, the instrument team and the **<u>NSS management 2 weeks before the TG2 review</u>**



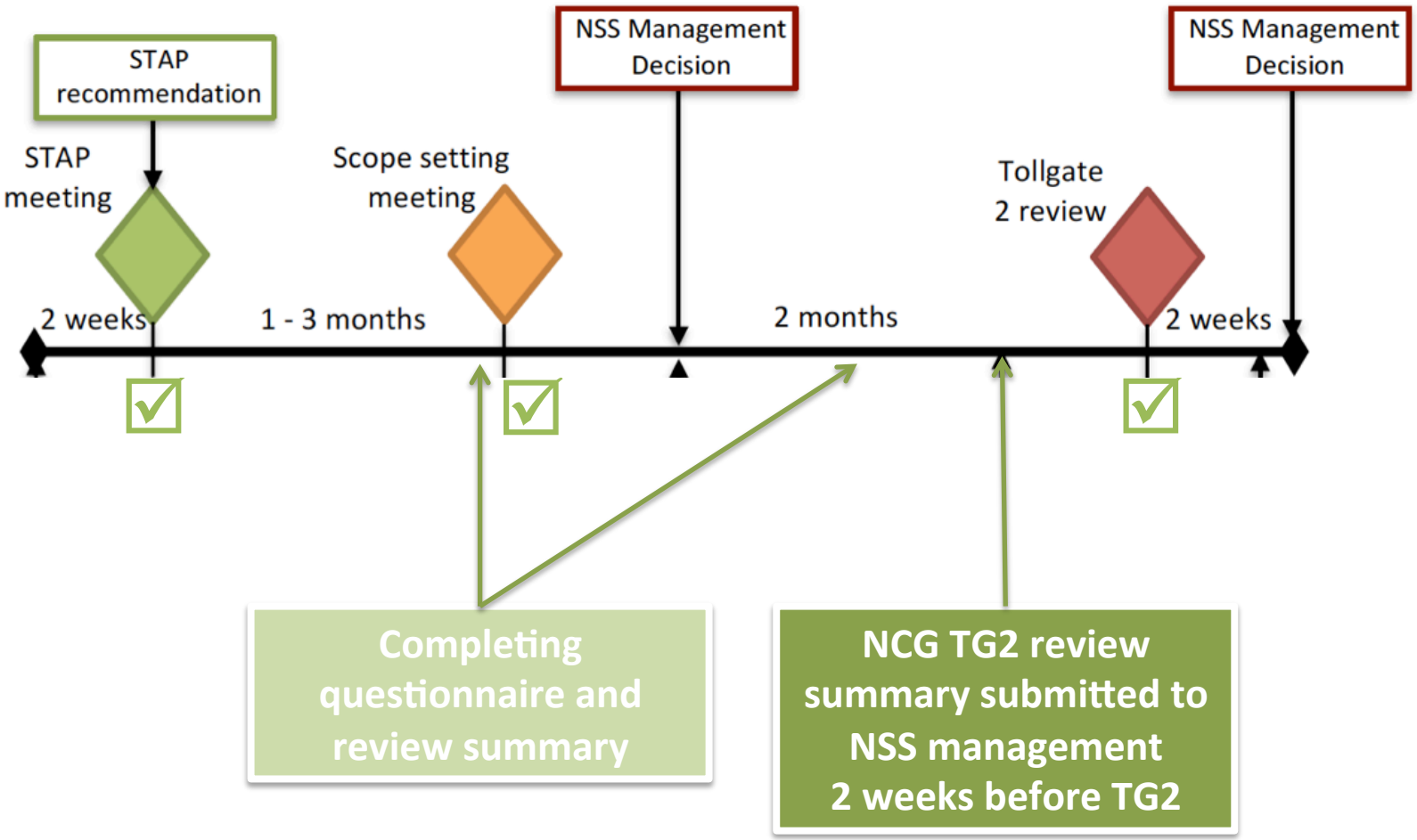
Neutron Chopper Systems Questionnaire for Instrument Projects in Preliminary Design Phase

THIS DOCUMENT IS AN EXAMPLE REVIEW SUMMARY FOR NCS

Neutron Chopper System SCOPING/TG2 Review Summary
XXXX Instrument

Review

Phase 1 - Timeline



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All presentations will be uploaded on indico

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Thank you for your attention