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| Charge  for Installation Readiness Review (IRR)  for the HEBT Beamline |
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# IRR1 meeting place and date

Meeting place: ESS Site, Lund, Sweden

Meeting dates: January 12, 2018

# Purpose of this IRR

The HEBT Beamline is part of the ACCSYS WBS 11.12 Work Package. THE HEBT Beamline and support stands are provided by STFC Daresbury and will be installed by the ESS Vacuum section.

The objective and purpose of this IRR is to evaluate if the system installation procedures, installation equipment, supporting personnel are ready for installing the system elements, components and assemblies in their final positions. The review also assesses the initial reports of fabrication and FAT, inspection reports and material certificates.

# Deliverables for this IRR

The contents of the IRR data package shall be provided to the IRR review board no later than 2 (two) working weeks before the review. As a minimum, the IRR data package shall contain all deliverables specified in Appendix 1. The review board includes the review committee members and other reviewers identified in Appendix 2.

The agenda of the review meeting will be communicated to the Parties no less than 1 (one) working week before the review meeting. The review meeting shall include in depth presentations by the ESS Vacuum section staff responsible for carrying out the installation.

# Charge to the Committee

The Review Committee is composed of the Chairman and members as identified in Appendix 2. This list also shows reviewers, who provide comments and review but are not on the formal committee, and presenters as well.

The Review Committee is asked to undertake the following tasks:

1. REVIEW: The Review Committee is asked to scrutinize and assess the deliverables listed in Appendix 1., presented via the talks at the IRR

2. ANSWER: The Review Committee is asked to answer the questions listed in Appendix 3.

3. DECIDE: The Review Committee is asked to decide if the system installation procedures, installation equipment, supporting personnel are ready for installing the elements, components and assemblies of the HEBT Beamline in their final positions.

The decision should have one of the following forms:

* Approved, without qualifying comments or further actions.
* Approved, but with recommended actions.
* Not approved, but with recommended further actions and inputs, and with a proposal for a follow-on review.

4. REPORT: The Review Committee is asked to document its decision and recommendations on any specific actions and inputs for the Work Unit in a short report to be delivered as soon as possible after the IRR.

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| Appendix 1  **Deliverables for Review** |
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The deliverables for this IRR are:

1. Design Data, to conform with ‘as-built’ and ‘as verified’ configuration, including 3D CAD models and CAD drawings, general arrangement drawings, P&ID, FE models, etc., and detailed interface descriptions including interface identification and definition for controlling interface design.
2. Detailed Installation plan and schedule including, if needed, alignment strategy.
3. Verification Reports, including any updates to the verification plan and verification specifications, and showing the summary of activity, the results/outcomes for each verification activity completed to the date (reports of fabrication and factory acceptance tests, inspection reports, material certificates, in particular: reports of the tests and inspections, documentation for welding procedures including certificates for welding procedure tests, welder examinations and working samples)
4. Work Safety Coordination Plan including all its Annexes (Area Hazard Analysis, Job Hazard Analysis, System Deliverables, Equipment List etc.)
5. Transport and delivery plan including package sizes, weights, identification and handling instructions

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| Appendix 2  **Review Committee and other Reviewers, Presenters and Observers** |
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*List to be finalised and names confirmed prior to IRR*

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| Name | Organisation | Appointment for IRR |
| John Weisend | ESS, ACCSYS Deputy Project Leader, and Group Leader, Specialised Technical Services | Chairman of the Review Committee |
| Kent Wigren | ESS, ACCSYS QA/QC responsible | Review Committee Member |
| TBD | ESS, ACCSYS Safety Engineer | Review Committee Member |
| Hakan Danared | ESS, ACCSYS Installation Manager | Review Committee Member |
| Dennis de Witt | ESS, Tunnel Area Coordinator | Review Committee Member |
| Fabien Rey | ESS, Survey & Alignment Head | Review Committee Member |
| Marcelo Juni Ferreira | ESS, ACCSYS Section Leader Vacuum and WP12 Leader (Vacuum) | Presenter |
| Fabio Ravelli | ESS, Vacuum Engineer | Presenter |
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The IRR Committee conducts this review with the authority of ACCSYS Project Leader, Mats Lindroos, and ESS Director General, John Womerslay.

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| Appendix 3  **HEBT Beamline IRR charge questions** |
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1. Have all the HEBT BeamLine project activities related to preparation to the installation phase been documented sufficiently and presented in an appropriate way to enable review at this IRR?
2. Have all recommendations from the LWU CDR associated with the HEBT Beamline been addressed?
3. Will the HEBT BeamLline fit into its allocated space and can be transported there through the given transport paths and pass by other system components?
4. Have the plan and all required instructions for the HEBT Beamline installation been sufficiently developed?
5. Has the work been properly coordinated with the installation schedule and approved by the area coordinator?
6. Has a suitable alignment strategy been developed?
7. Have sufficient workforces been allocated for the HEBT Beamline installation activities?
8. Are all the applicable ESS site safety training requirements met?
9. Have all installation and transport devices and tools been defined?
10. Have all or a sufficient amount of required quality assurance and quality control activities been planned?
11. Have safety issues and technical risks been identified and eliminated or otherwise mitigated?