

WIR SCHAFFEN WISSEN – HEUTE FÜR MORGEN



Manuel Morgano, Markus Strobl :: Paul Scherrer Institut

# Update from PSI

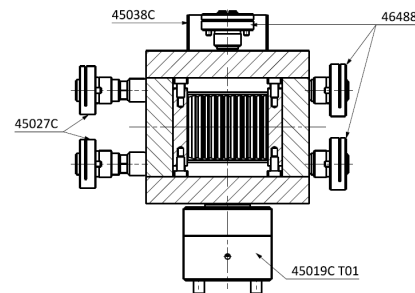
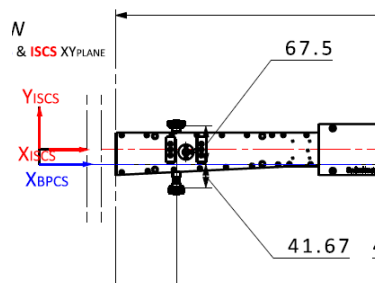
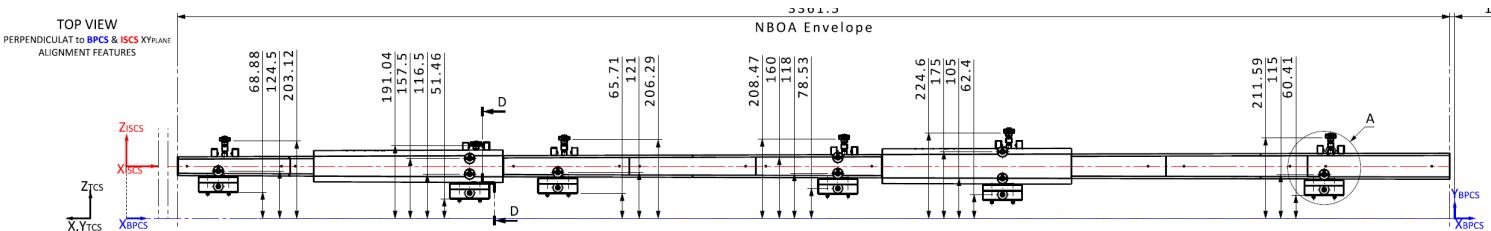
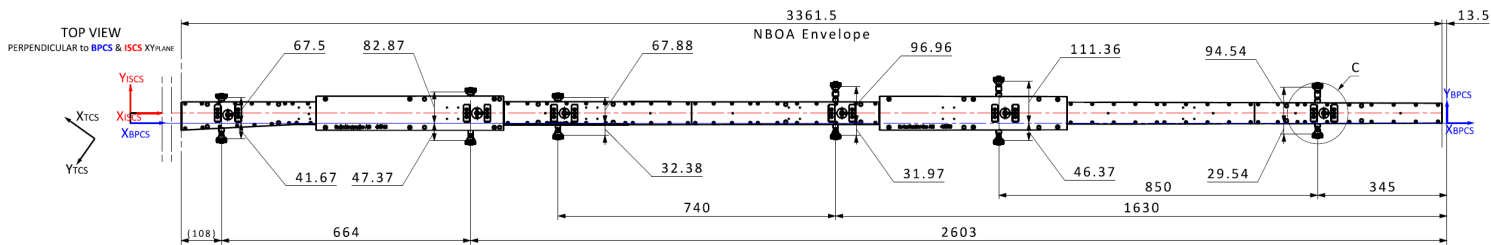


# Topics

- Contracts
- NBOA
- Guide system
- Cave interior
- Detectors
- Hot topics



- NBOA manufacturing contract was signed last year
- Simplification of the design was requested from SNAG
- PDR was held on August 13<sup>th</sup>
- Detailed design is now ready
- Pending manufacturability check from FZJ



- Tender published in May
- Answers from vendors received at the deadline on the 1<sup>st</sup> of July
- Only Axilon+SNAG placed an offer
- Budget: 1.76 MEUR (including NBOA and contingency)
- Price requested: 1.753MEUR (excluding 171kEUR NBOA)
- Discussion with vendor is ongoing

|  |  |                       |
|--|--|-----------------------|
|  PAUL SCHERRER INSTITUT |  | Project<br><b>ESS</b> |
| System name<br><b>Neutron guide system for the ODIN instrument</b>   | Document identification<br><b>PSI-ESS-MU33-0</b> |                       |
| Type of document<br>Requirement specification  | Revision index (if necessary)<br><b>2.3</b>      |                       |
| Author<br>Manuel Morgano (PSI) Peter Fischer (PSI), Peter Ming (PSI)                                       |  |                       |

**Summary**

This document specifies the requirements for the detailed technical design manufacturing and installation of a sub-systems of the neutron beam delivery system of the ESS instrument that are being specified and acquired by PSI as Swiss In-Kii partner. The relevant components represent the neutron optics of the instrument, more specifically the neutron guides, their housings, interfaces and supports, which are located outside the monolith. This includes also the Bridge Beam Guide (BBG) situated in the moving light shutter just outside the monolith.

The ODIN team, through PSI, has provided general guide geometries, coating requirements and envelope. The contractor will be responsible for the detailed design and production of the optics components as well as the vacuum vessel containing them. On the ESS site, the optics will be installed and aligned by the contractor consistently with the access plans provided by the ESS. The BBG and the feedthrough in the bunker will be installed by relevant ESS personnel, so the contractor only has to provide the optics and alignment.



Grey highlighted sentences indicate that it is an action within a project phase.

| Organization   | Amount           | E-mail address  | Assigned by name  | Responsible for   | Date                | Signature |
|----------------|------------------|---|---|---|---------------------|-----------|
| PSI            | 1                | <a href="mailto:manuel.morgano@psi.ch">manuel.morgano@psi.ch</a> (Project original) | Markus Strobl (PSI)<br>Michael Lerche (TUM)<br>Gabor Laszlo (ESS) | NIAG<br>ODIN lead scientist<br>NSS head instrument engineer |                     |           |
| <b>Release</b> |                  |   |   | Released revisions:   |                     |           |
|                |                  |   | Name  | Function  | Date                | Signature |
|                |                  |   | Gabor Laszlo (ESS)  | ESS CIV responsible   |                     |           |
|                |                  |   | Peter Ming (PSI)  | QA Purchase dept.   |                     |           |
|                |                  |   | Christian Ruegg (PSI)   | Head NUM dept.  |                     |           |
| File Name:     | PSI-ESS-MU33-001 |   | Date:   | Name of author  | Signature of author |           |
| Template:      |                  |   |   |   |                     |           |


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## UPDATE from Thursday:

New offer received:

1.645 MEUR for the same scope as before

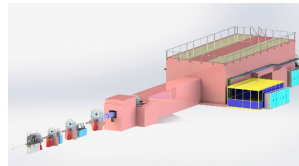
Potential for 100kEUR savings with descoping of the substrates

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| Template:    |                  |   |   |   |                     |           |

- Procurement contract in preparation
- Tech specs being revised from ~1 year ago
- Jan Hovind is currently working on the design of some of the components
- Current concept with a false floor to accommodate for the “elephant foot”

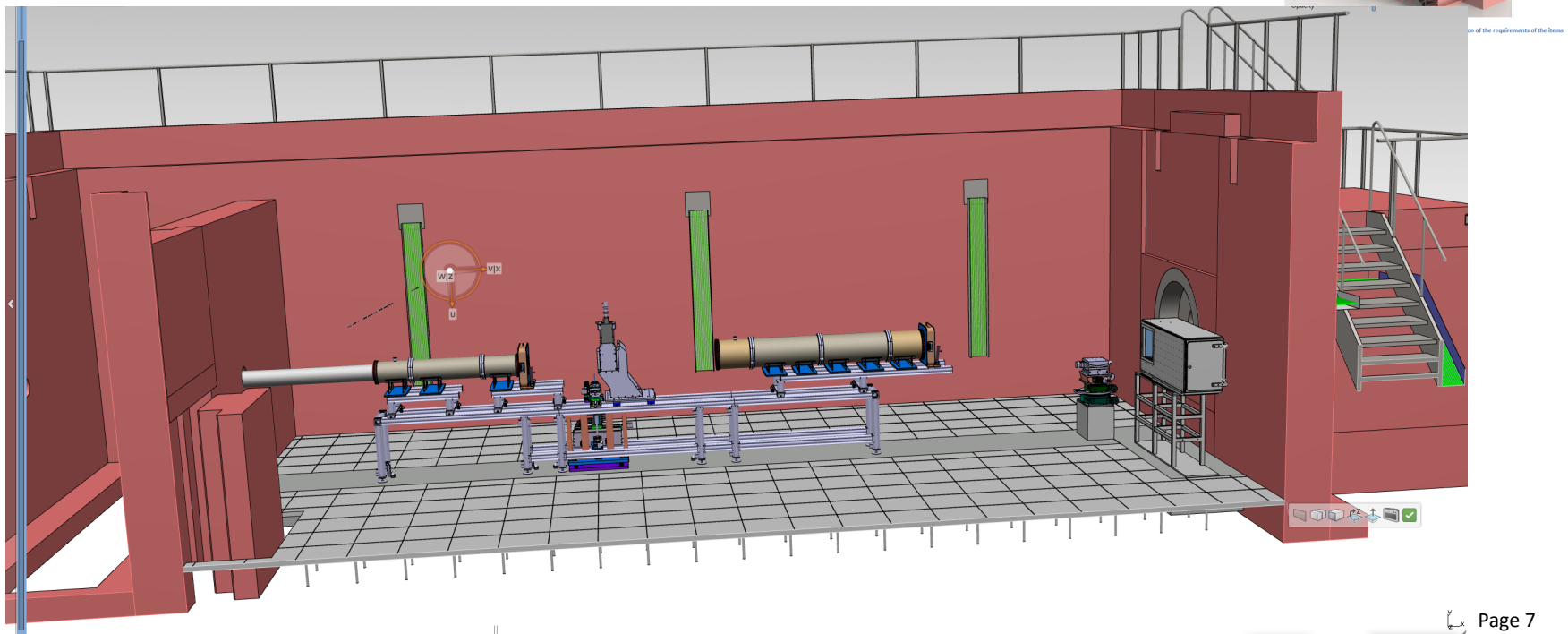
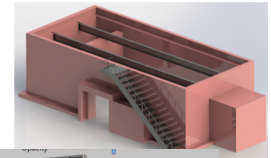
## Specification and requirements for the design and realization of the ODIN experimental end-station

### Introduction

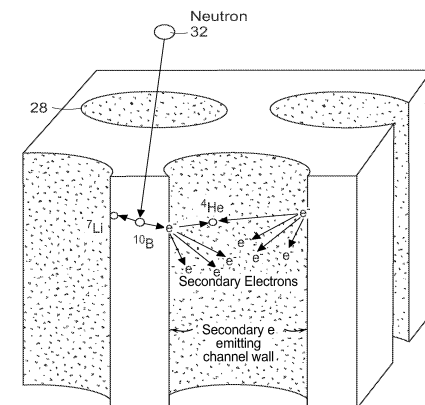
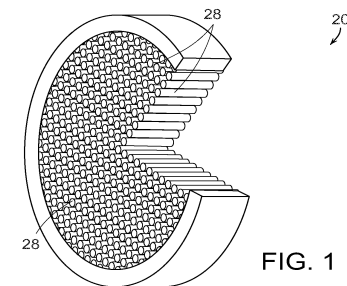
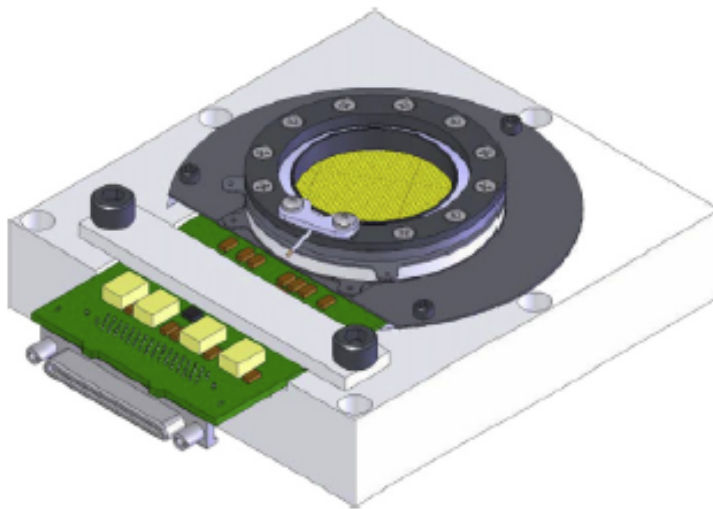
ODIN will be the only imaging instrument initially installed at the European Spallation Source, now in construction in Lund, Sweden. It will be a day-1 instrument, meaning that it is planned to start accepting neutrons in the experimental cave in 2020. In order for this instrument to be successful, the end-station must be carefully design and realized, so that the operators can focus mainly on the science behind the experiments and not on the technicalities that make an experimental setup function.

The ODIN project is a collaboration between PSI and TUM, with ESS being a most relevant stakeholder. The latter institution has the lead of the project and thus has appointed a lead engineer that is tasked, among other things, to ensure the compatibility between interfacing WPs realized by different entities. Most relevant for this project is the interface between the cave shielding and the cave interior. The first sets the available space and physical boundary conditions in which the latter should be placed. Other interfaces are between the requirements given by ESS in terms of types of motors, materials and so on that are allowed in the cave.

This documents lists the various WPs needed to complete the project “design and realization of the ODIN experimental end-station” and details their specifications to the best of the knowledge of the instrument team at the time of drafting it.



- Detector from UC Berkeley acquired and used for beamtime here and abroad
- GP2 detector from ISIS tested
- Data analysis chain better defined
- Discussion about data reduction, instrument control and detector integration projects as Swiss contribution started
- Development and integration project of next-gen MCP detector under discussion



- VAT

A letter detailing ESS position about VAT was expected by the end of August. We received only an informal email saying that a letter was forthcoming.

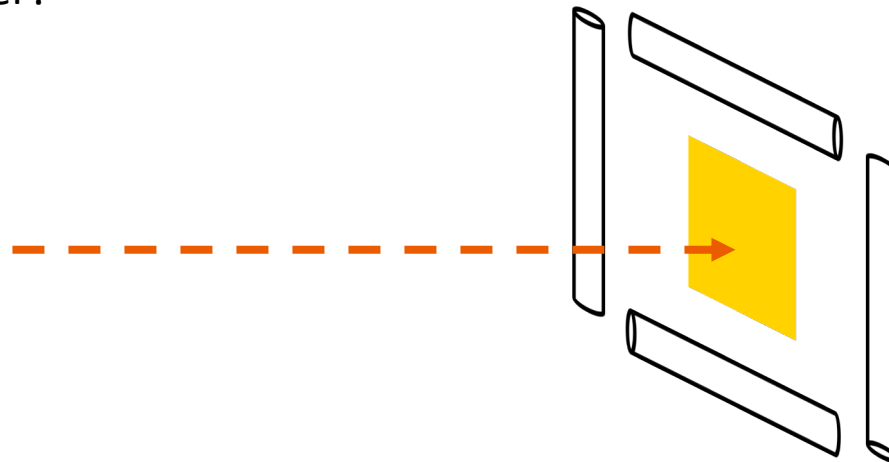
- Guide system tender mismatch

Information have been collected at ESS to explain potential reasons for the high cost. Another meeting with the vendor will be needed to clarify further details.

- Neutron beam monitors:

Common beam monitor project is still being considered, but a backup plan is in preparation

Discussion with ESTIA about design with Vanadium foil and He detectors  
Fission chamber?



Thank you

