

PURCHASE CONTRACT [No.: 074/22]

concluded in accordance with Section 2079 et seq. of Act No. 89/2012 Coll., the Civil Code, as amended (hereinafter the "**Civil Code**" and the "**Contract**")

1. Parties

1.1. Buyer:

Ústav jaderné fyziky AV ČR, v. v. i.

(Nuclear Physics Institute of the Czech Academy of Sciences, public research institution)

registered office: Husinec - Řež 130, 250 68, Czech Republic

represented by: Ing. Ondřej Svoboda, Ph.D., Director

registered in the Register of Public Research Institutions administered by the Ministry of Education, Youth and Sports of the Czech Republic

bank details:

ID No.: 61389005

Tax ID: CZ61389005

(hereinafter the "**Buyer**")

and

1.2. Seller:

NUVIA a.s.

registered office: Modřínová 1094, Třebíč 674 01, Czech Republic

represented by Martin Pazúr, Chairman of the Board

registered in the Companies Register held by the Regional Court in Brno (Czech Republic), Part B, Insert 2461

bank details:

ID No.: 25506331

Tax ID: CZ25506331

(hereinafter the "**Seller**")

(the Buyer and the Seller also referred to as the "**Parties**").

2. INITIAL PROVISIONS

- 2.1. The Buyer is a party to the In-Kind Contribution Agreement as of June 3rd, 2021 (hereinafter the "**IKCA**"), including its annex „Schedule NSS 6.6 #4" (hereinafter the "**NIK Annex**"), under which the Buyer is obliged to make an **in-kind** contribution, comprising the System under this Contract, into large research infrastructure – European Spallation Source ERIC, Reg. No. SW 768200-0018, a European Research Infrastructure Consortium, established by European Commission Decision (EU) No. 2015/1478 in accordance with Regulation (EC) No. 723/2009, which is based in Lund, Kingdom of Sweden (hereinafter the "**ESS**") for the European Spallation Source project (<https://europeanspallationsource.se>, hereinafter referred to as "**Project**"). The manufacture and delivery of the System under this Contract is financed by the ESS funds granted to the Buyer under the Project.
- 2.2. The purpose hereof is delivery of a safety shutter for the BEER (Beamline for European Engineering Research) diffractometer at the ESS (European Spallation Source), which is the in-kind contribution to be made on behalf of the Czech Republic into the construction of the ESS large research infrastructure. Supply of this equipment will provide Czech researchers with increased access to ESS measurement capacity. At the same time, related individual research will be carried out within the Project. For the implementation of the Project professional competencies and close coordination between many entities (including the Seller, Buyer, foreign partners and ESS) is needed to deliver a supply that meets all the standards and requirements (including radiation safety requirements) for integrating the System into the BEER instrument within the ESS infrastructure for research, development and innovation. The Buyer cooperates on design, construction and implementation of this instrument with ESS and their partners.
- 2.3. Manufacture and delivery of the System hereunder represents the necessary prerequisite for successfully implementing the Project and making the in-kind contribution (on behalf of the Czech Republic) into the ESS. Based on that contribution the System to be delivered by the Seller hereunder will become part of the BEER instrument within the ESS infrastructure for research, development and innovation in accordance with the IKCA and the NIK Annex; the BEER instrument including the System thus contributed will be also used to carry out research projects within the Project.
- 2.4. The Seller has been selected, based on its bid (hereinafter referred to as "**Bid**") submitted to the following procedure, as the winning bidder in the below-the-limit public contract awarded in the form of open procedure named "Instrument Shutter for the diffractometer BEER at ESS" (hereinafter referred to as "**Procurement Procedure**") in accordance with Section 56 of Act No. 134/2016 Coll., on public procurement, as amended (hereinafter the "**Act on Public Procurement**").
- 2.5. Supply of the System hereunder shall be based on the following Annexes which form an integral part hereof:
- 2.5.1. **Annex 1**, which contains detailed technical specifications for the System and consists

of the following documents which shall, in the event of a conflict, apply in the following order, from highest to lowest priority:

- a) the specification itself named "TECHNICAL SPECIFICATIONS AND REQUIREMENTS",
- b) the Technical report, which has been drafted by the Seller and submitted within the Bid
- c) annex to the above specification named "BEER INSTRUMENT SHUTTER – Design Description" with design description and
- d) the relevant 3D model named "BEER Shutter ESS-14480781_00257376"

(hereinafter referred to jointly as "**Annex 1**");

2.5.2. **Project schedule**, which has been part of the Bid, forms **Annex 2** hereto and contains especially a timetable for delivery of the System and execution of Payments by the Buyer (hereinafter the "**Annex 2**"); and

2.5.3. **Incentive and Risk Management Instruments** represents a document constituting **Annex 3** hereto, which includes sanctions and other incentive mechanisms for timely and proper performance of the Contract according to the required specifications in the highest possible quality (hereinafter the "**Annex 3**").

2.6. In case of any discrepancy between the provisions of this Contract and the provisions of its Annexes the provisions of this Contract shall prevail, except for the provisions of Annexes containing conditions and specifications that are more favourable to the Buyer (i.e. higher technical specification values and/or more technically advanced or demanding solutions etc.), in which case such provisions of Annexes shall prevail. In case of any discrepancy between the provisions of the Annexes the provisions containing conditions and specifications that are more favourable to the Buyer shall prevail.

2.7. The Seller acknowledges that the Buyer cannot be classified as an entrepreneur in relation to the subject matter hereof, nor it is connected with the Buyer's business activities.

2.8. The Seller declares that in accordance with Section 5 (1) of the Civil Code, it is able to perform this Contract with the required knowledge, diligence and due care that is associated and expected of well-experienced experts in its profession and that its potential performance lacking such professional care would give rise to corresponding liability on its part. The Seller shall not misuse its professional expertise or its economic position to create or exploit the weaker party's dependence or to seek to achieve a clear and unjustified imbalance in the mutual rights and obligations. The Seller represents that it has all the professional prerequisites required for the proper fulfilment of this Contract, is fully authorized to perform this Contract and there exist no obstacles on its part that would prevent it from manufacturing the System hereunder.

2.9. The Seller declares that it assumes the risk of a change in circumstances within the

meaning of Section 1765 (2) of the Civil Code.

- 2.10. The Seller acknowledges that the deadlines for the manufacture and delivery of the System or its parts hereunder as specified in Annexes 1 and 2 are fundamentally essential for the Buyer given the follow-on activities within the framework of the Project and the respective deadlines by which the tasks under the Project should be completed and relevant in-kind contribution should be made, and that if these deadlines will not be observed, the Buyer may incur damage. The Buyer has duly informed the Seller about the fact that the deadlines set out herein are linked to deadlines within the Project.

3. SUBJECT-MATTER

- 3.1. This Contract concerns supply of instrument shutter as a part of the “Beamline for European Engineering Research” (BEER) instrument, including the necessary research and development activities, manufacture, documentation and other performance in accordance with Annexes 1 and 2 hereto and delivery of the system to the Buyer at the ESS address in Lund, Kingdom of Sweden, as defined below, including a free licence to use the system for the needs of the Project and its follow-up phases and installation and alignment of the system (hereinafter the “**System**”).
- 3.2. The Seller shall be obliged to supply the System described in Annex 1 meeting parameters defined therein within the deadlines and stages specified in Annex 2.
- 3.3. By signing this Contract, the Seller agrees to the Technical Specifications of the System as defined in Annex 1, and declares, at the time of execution hereof, that it is not aware of any deficiencies therein and that it will be able, on the basis of these Technical Specifications, to manufacture and deliver the System fully and in the required quality without the need for any additional changes. For the entire term hereof, the Buyer shall provide any required assistance in order to engage the Seller in possible negotiations with the ESS concerning changes in the NIK Annex, that - as a result of negotiations between the Buyer and the ESS - comprises requirements on the BEER instrument including the System under this Contract and the binding conditions for performance of the in-kind contribution.
- 3.4. **Variations:** Given the experimental nature of the BEER instrument including the System and potential development of the specifications on the part of the ESS, it may be necessary to modify specification for the System, particularly due to possible changes in the terms of the NIK Annex. Therefore, the Buyer may request modifications to the System or parts thereof at any time before Delivery of the System or during the warranty period, by means of a written notification addressed to the Seller. Should the Parties not agree in writing otherwise, the Seller shall, within ten (10) business days following the receipt of such notification, propose documentation defining modification of the performance and submit it in the form of a “**Modification Order**” to the Buyer for its approval. The Seller is entitled to appraise the costs related to the requested modification as increased or reduced costs. The final price considering this

increased or reduced costs will be specified in the Modification Order.

- 3.5. Each Modification Order proposed by the Seller shall include in particular the following:
 - 3.5.1. detailed description of the modification;
 - 3.5.2. impact of the modification on the deadlines for the delivery of the System stipulated herein;
 - 3.5.3. impact of the modification on other Buyer's or ESS's facilities in the context of the System;
 - 3.5.4. impact of the modification on the contract price of the System;
 - 3.5.5. effect of the modification on other provisions hereof;
 - 3.5.6. calculation of the costs of the modification; and
 - 3.5.7. a proposal for the method of reimbursement of the costs associated with such modification.
- 3.6. The value of the agreed reduced costs will be deducted of the total price of the System.
- 3.7. A written agreement of the Parties shall be necessary in order that modifications under the above Article 3.5 are considered valid and billable.
- 3.8. The Parties acknowledge that for the conclusion of an agreement on modifications under the above Article 3.5, particularly those implementing contractual changes in terms of schedule and price, the Buyer is obliged to comply with the valid legislation and Project rules as well as to respect the budget capacity of the Buyer and the ESS.
- 3.9. The Seller acknowledges and agrees that the Buyer is not obliged hereunder to order any modifications under the above Article 3.5 from the Seller. Therefore, the Seller may not seek from the Buyer any modifications in connection with this Contract, or require the Buyer to pay any amounts other than the price for the actually ordered and delivered modifications.

4. DOCUMENTS

- 4.1. During performance hereof, the Seller shall provide the Buyer with all documentation required and described in Annex 1; these documents shall be made in English, unless specified in Annex 1 otherwise.

5. TERM AND PERFORMANCE DEADLINES

- 5.1. The Parties agree that the System shall be delivered by the Seller within the delivery period of 11 months after the Contract signature. Partial deliveries of the System shall

be executed by the Seller according to the milestones specified in Annex 2 hereto.

- 5.2. The Seller shall notify to the Buyer at least 3 weeks in advance the actual delivery date of the System to the ESS Site in accordance with this Contract. Unless agreed by the Parties otherwise, the Buyer shall ensure that ESS accepts storage of a duly and timely performed delivery of the System. Costs incurred by the Seller due to the Buyer's failure to meet these obligations shall be reimbursed to the Seller.
- 5.3. The Buyer reserves the right to postpone the milestones specified in Annex 2 referring to installation and alignment performances which are part of the System in cases when these Seller's performances objectively cannot be performed due to (i) Buyer's incurred delay with related performance(s) from a third party (including ESS) and/or (ii) delay with readiness of site for Seller's performance, as the previous performance(s) of a third party and/or the readiness of site for Seller's performance are a necessary prerequisite for the Seller's performance; the Buyer shall have right to postpone the milestones only if the delay under (i) or (ii) was not been caused intentionally or negligently by the Buyer's failure to meet its obligation or the existence of such delay was known to the Buyer at the time of signing of the Contract; the maximal time for which the deadline can be postponed is equal to the duration of the sum of all delays described in (i) and (ii). The Buyer shall inform the Seller of any such postponement without undue delay. Without prejudice to Article 3.4 Variations, the Buyer shall not be obliged to reimburse the Seller for any costs incurred due to milestone postponement pursuant hereto, unless Buyer's failure to inform the Seller in accordance with this paragraph.
- 5.4. Postponing of a milestone according to Article 5.3 of this Contract beyond the end of delivery period set in Article 5.1 of this Contract causes also prolongation of the delivery period set in Article 5.1 of this Contract. The delivery period prolonged in this way shall end at the date of last milestone postponed in accordance with Article 5.3 of this Contract. Notwithstanding, the milestones stipulated for production and delivery of the System to the site shall not be postponed nor exceed the initial timeframe of 11-month delivery period after the Contract signature.

6. SITE FOR DELIVERY

- 6.1. The Site for delivery of the System shall be the ESS premises in Lund, Kingdom of Sweden (hereinafter the "**Site**").

7. ACCEPTANCE OF PERFORMANCE; ACCEPTANCE PROCEDURE

- 7.1. **ESS role:** The Buyer shall be jointly liable with the ESS Team for final assessment of the Seller's supply of the System. The appointed expert group shall review and evaluate the System as to its technical aspects.

- 7.2. **Acceptance procedure and conditions:** The acceptance procedure phases, acceptance tests (FAT/SAT) and other prerequisites of acceptance of the System and its parts are described in Annex 1.

8. PRICE OF THE SYSTEM; INVOICING; PAYMENTS

- 8.1. The purchase price for the System has been agreed by the Parties as the total non-exceed-able price in the amount of **EUR 119 500 excluding VAT** (in words one hundred nineteen thousand five hundred Euros excluding VAT). The applicable VAT rate is 25 %, the VAT is EUR 29 875 and the total price including VAT is EUR 149 375.
- 8.2. VAT shall be imposed on top of all payments made hereunder according to valid legislation. The Seller shall be liable for registration to VAT in Sweden as a VAT payer and for VAT payments according to valid legislation.
- 8.3. The price of the System shall cover any and all performance provided by the Seller hereunder and include all of the Seller's activities executed and all of the Seller's costs accrued or associated with the proper performance hereof. The price shall include especially all expenses related to production engineering, production, transport, delivery and handover of the System, including documentation, installation and alignment of the System, warranty service, any customs duties, fees, insurance, packaging and its disposal and all other Seller's costs required to meet his obligations hereunder as well as the costs associated with creation and protection of intellectual property and Seller's claims arising on the basis of intellectual property laws. The costs for installation and alignment of the System included in the price for the System shall include, without limitation, all travel expenses and expenses related to the stay of the Seller's employees.
- 8.4. The Parties agreed that the price of the System will be paid in instalments according to the schedule in Annex 2 hereto.
- 8.5. **Change in the schedule of payments:** At the request of the Seller, the Buyer is entitled to unilaterally modify the schedule of payments in Annex 2 effective upon delivery of the modified Annex 2 to the Seller. The purpose of this Buyer's option is to enable the Seller to proceed with the manufacture of the System and minimise project risks while maintaining the appropriate standard of public funds management practices entrusted to the Buyer in accordance with the so-called "private creditor" principle.
- 8.6. The invoices issued by the Seller will become due for payment in thirty (30) calendar days upon delivering them to the Buyer, based on acceptance of System delivery, unless specified otherwise in Annex 2 (hereinafter the "**Due Date**"). Payment of invoiced amount shall be understood as the date on which it was remitted to the Seller's account.
- 8.7. Tax documents – invoices issued by the Seller pursuant to this Contract shall, in accordance with relevant Czech legislation, include in particular the following data:

- 8.7.1. business name / name and registered office of the Buyer;
- 8.7.2. tax identification number of the Buyer;
- 8.7.3. business name / name and registered office of the Seller;
- 8.7.4. tax identification number of the Seller;
- 8.7.5. serial number of the tax document;
- 8.7.6. scope and subject-matter of performance;
- 8.7.7. date of the tax document;
- 8.7.8. date of the performance or the date of receipt of the payment, whichever happens first, if different from the date of the tax document;
- 8.7.9. Due Date;
- 8.7.10. price of the performance provided;
- 8.7.11. a statement that the invoiced performance is provided for the purposes of the relevant Project (or another project as indicated by the Buyer); and
- 8.7.12. number of the Buyer's order (if any).
- 8.8. Tax documents – invoices shall comply with double taxation treaties, if applicable.
- 8.9. All invoices shall include an annex with detailed breakdowns of the amounts invoiced.
- 8.10. Except for the first invoice upon signing the Contract, all invoices shall include an annex demonstrating handover and takeover of the performance provided / acceptance certificate signed by the Buyer and the Seller (e.g. Protocol).
- 8.11. The last invoice in each calendar year needs to be delivered by the Seller to the Buyer by the 15th of December of the respective calendar year.
- 8.12. The Buyer shall not be obliged to effect payments based on incorrectly issued tax documents – invoices. If the tax document – invoice is not issued in accordance with the payment terms stipulated in the Contract or will not meet the required legal requirements or if it is not delivered to the Buyer by the date specified above, the Buyer is entitled to return the tax document – invoice as incomplete or incorrectly issued to the Seller for completion or for new issue within ten (10) business days after its delivery to the Buyer. In such a case, the Buyer shall not be deemed to be in delay with payment of the price for the System or its part, and the Seller shall issue a corrected invoice with a new Due Date for payment in the full period of the same duration starting again upon the delivery of the corrected or newly issued tax document – invoice to the Buyer.
- 8.13. The Buyer's invoicing data are provided in Article 1.1 hereof.

9. RIGHTS AND OBLIGATIONS OF THE PARTIES

- 9.1. The Seller undertakes to fulfil all obligations arising here from with due professional care, at his expense and risk, within the deadlines specified in Annex 2 hereto for the price defined in Article 7.2 of this Contract.
- 9.2. The Buyer shall, without undue delay, provide the Seller with all documents or other information which are necessary for the manufacture of the System and which the Seller has reasonably requested from the Buyer under Article 13.5 hereof, provided that the Seller has made such request in good time ensuring that the deadlines can be met. Such documents or other information include especially those necessary upon the conclusion hereof (and during implementation hereof it may become necessary to obtain additional specific data or documents).
- 9.3. This obligation under the Article 9.2 above may be also met by handover of documents or information requested by the Seller by the ESS or their partners. In the event of any inconsistencies between documents or information provided to the Seller by ESS or their partners and this Contract or, where relevant, documents provided or instructions given directly by the Buyer, this Contract shall prevail or, where relevant, documents or instructions of the Buyer shall prevail, but the Seller shall promptly notify the Buyer of any such inconsistency. If there is any delay with submission of the documents or information which the Seller requested from the Buyer hereunder, and the Seller presumes that such delay may lead to delay in the Seller's delivery in accordance with deadline specified in this Contract (including its Annexes), the Seller shall promptly notify the Buyer thereof. The Seller shall demonstrate that such a delay may actually lead to delay in delivery in question, otherwise provision of documents will be considered to be made on time, rather than delayed within the meaning of Article 9.7 hereof.
- 9.4. The Seller shall be obliged to record progress in manufacture and delivery of the System in reports and to submit these reports to the Buyer in the manner specified in Annex 1.
- 9.5. In the event of the Seller's delay with delivery of the System exceeding the deadlines in Annex 2, the Seller undertakes to pay to the Buyer contractual penalty in accordance with Annex 3 hereto. Unless herein stipulated otherwise, the Seller shall pay any of the contractual penalties charged under this Contract no later than within thirty (30) calendar days from the day, on which the Buyer enumerated its claim for the contractual penalty.
- 9.6. In the event of the Buyer's delay with payment of the price of the System or any part thereof, the Buyer undertakes to pay the Seller late payment interest in accordance with Annex 3 hereto.
- 9.7. For the avoidance of any doubt, the Parties agree that during a Party's delay the other

Party's liability for delay is excluded; in that case the respective performance deadlines of the latter Party are adequately extended for the period of that delay.

- 9.8. The Buyer is entitled to offset at any time its claims for the payment of the contractual penalty under this Contract against any claims of the Seller for the payment of any part of the price for the System.
- 9.9. The Parties exclude application of Section 2050 of the Civil Code, and agree that the Buyer, in addition to the contractual penalty under this Article 9, is also entitled to compensation for any damage in excess of contractual penalties hereunder actually paid by the Seller.
- 9.10. If a Party violates any obligation hereunder or if it knows or should know of such violation, that Party shall, without undue delay, notify the other Party which may incur harm to that effect and shall inform it of the possible consequences; in such a case, the injured Party is not entitled to compensation for the harm it could have prevented after the notification.
- 9.11. Under the terms hereof, the Seller undertakes, in accordance with the Buyer's instructions and exercising all due professional care, to:
 - 9.11.1. archive all documents produced in connection with the manufacture of the System, and allow the Buyer at any time during that period to access to these archived documents for a period of ten (10) years after the Delivery under the Contract, but at least until the year 2033. The Buyer shall be entitled to take possession of the above documents from the Seller free of charge after the period of ten (10) years from the end of performance under the Contract;
 - 9.11.2. cooperate within the framework of potential financial control procedures pursuant to Act No. 320/2001 Coll., on financial control, as amended, which includes, but is not limited to, allowing the competent authorities access to the parts of the bid submitted in the Procurement Procedure, Contract, Orders, subcontracts for work and related documents that are subject to protection under specific legislation, provided that all legislative requirements for the manner of conducting such controls are met; the Seller is also obliged to bind its potential subcontractors to fulfilling this obligation;
 - 9.11.3. observe and enable observance of any publicity obligations stemming from the rules of the Project; and
 - 9.11.4. enable the Buyer as Contacting Authority to fulfil its obligations pursuant to the Act on Public Procurement and the Act on Register of Contracts.

10. DELIVERY AND PASSAGE OF OWNERSHIP RIGHT TO THE SYSTEM

- 10.1. The System shall be delivered to the Site according to DAP Incoterms 2010, unless specified otherwise in this Contract. The Seller is responsible for the System delivery

including completion of its unloading at the ESS premises at Site.

- 10.2. The Parties agreed that the handover and takeover procedure of the System shall be subject to a handover protocol which shall be drawn up and executed by the Parties; the protocol must include:
 - 10.2.1. details on the Seller and Buyer;
 - 10.2.2. description of the items that are the subject of handover and takeover;
 - 10.2.3. declaration of the Buyer as to whether the Buyer accepts the supply without reservation, accepts the supply with reservation of ascertained defects and agreed date for their removal or the extent to which the Buyer does not accept the supply;
 - 10.2.4. the date of execution of the protocol on handover and takeover of the supply
(hereinafter the “**Protocol**”).
- 10.3. The System is delivered by official handover / acceptance in the form of signing of a Protocol by both Parties that shall occur after completed unloading of the System at the ESS premises at Site (hereinafter the “**Delivery**”).
- 10.4. The ownership right to the System or any part thereof as well as the risk of damage to the System passes to the Buyer upon the Delivery confirmed by signing the Protocol by both Parties.
- 10.5. The Parties agree that the Seller shall handover the System for purpose of Delivery within the period of 11 month after the Contract signature of both Parties.

11. CONFIDENTIALITY, PUBLISHING, PUBLICITY

- 11.1. **Confidential information:** For the purposes of this Contract, confidential information means any data or information which is owned or possessed by one of the Parties and is not generally known to the public, or which has not yet been made available, whether in tangible or intangible form, at any time and place, and which the Party explicitly marks as confidential information or business secret. Examples of such information include:
 - 11.1.1. scientific or technical information, inventions, designs, processes, procedures, formulae, improvements, technologies or methods;
 - 11.1.2. concepts, samples, news, data, know-how, progress work, designs, drawings, photographs, development tools, technical data, software, source code, object code, flowcharts and databases;
 - 11.1.3. marketing strategies, plans, financial data or estimates, operations, sales estimates, business plans and performance results relating to past, present or future business

activities of the Party or its branches, subsidiaries and affiliates;

11.1.4. business secret; product or service plans and lists of clients or suppliers; or

11.1.5. any other information that could reasonably be considered confidential by the Parties.

11.2. The Parties hereby acknowledge that business secrets / confidential information protected by each of the Parties have been developed and obtained through a considerable effort, and are therefore viewed and held as business secrets / confidential information (hereinafter the "**Confidential Information**").

11.3. **Originality:** The Parties have agreed that Confidential Information does not have to be original, unique, patentable, and it does not have to be subject to copyright or constitute a business secret to be classified as Confidential Information and therefore protected.

11.4. **Designation:** In case of written documents, information communicated orally, or written documents which are not designated, Confidential Information must be designated as such by notifying the other Party of the confidential nature of the information disclosed. This notification must be made orally, by e-mail or written correspondence or by other appropriate means of communication.

11.5. **Notifier and Recipient:** For the purposes of this Contract, the Party that discloses Confidential Information under the terms set forth herein to the other Party is considered the notifier (hereinafter the "**Notifier**"). Similarly, the Party that receives Confidential Information is considered the recipient (hereinafter the "**Recipient**").

11.6. **Exclusion of protection:** Notwithstanding the above, Confidential Information excludes information which:

11.6.1. is already publicly known at the time of its disclosure by the Notifier to the Recipient or become publicly known thereafter without any breach of the terms herein;

11.6.2. was known to the Recipient prior to the disclosure (subject to the provision of appropriate evidence or a written record of such disclosure);

11.6.3. is subsequently made available to the Recipient by a third party that acquired it legally and has no confidentiality obligation towards the Notifier;

11.6.4. becomes publicly accessible in a way other than the violation of the Recipient's confidentiality obligation (i.e. other than the result of the Recipient's fault or omission);

11.6.5. is (or was) developed/acquired by employees, advisors or representatives of the Recipient completely independently of its provision stipulated in this Contract (to be sufficiently demonstrated) without violating the provisions hereof or access to any Confidential Information concerning the Parties; or

11.6.6. is or was provided by the Recipient based on a binding and final act of a public authority

(including a requirement of control and audit authorities to submit the documents).

- 11.7. **Purpose of disclosure of Confidential Information:** The Notifier, in connection with the exercise of rights and obligations under this Contract or in the context of related negotiations, may provide the Recipient with Confidential Information. The Recipient undertakes to use Confidential Information solely for the purpose intended by the Parties under this Contract and is not entitled to use Confidential Information for any other purpose nor disclose it to third parties without the prior written consent of the Notifier.
- 11.8. **Confidentiality obligation:** The Recipient shall not disclose and shall maintain confidentiality of the information received, with the exception of its employees, representatives or agents (on the part of the Recipient – Buyer, such authorized representatives also include the ESS) who need access to Confidential Information for the fulfilment of their obligations in connection with the agreed subject-matter of the Contract. The Recipient shall inform them of the confidentiality of the information received and ensure that they keep confidentiality under the conditions set out in this Contract. The Recipient must ensure compliance with these confidentiality obligations and the prohibition of use contained herein, strictly observe them and assume full responsibility for any acts or omissions concerning and caused by its employees or representatives.
- 11.9. **Publications:** The Parties undertake to not include in their publications any Confidential Information, unless the prior written consent of the Notifier is given for such publication (it is sufficient in the form of data communication, e.g. e-mail, etc.). The Seller undertakes that as part of its publishing activity concerning the subject-matter of this Contract, it shall provide information about the Project and sources of financing in accordance with the publicity rules applicable to the Project, especially in the Acknowledgments section of the publication. In the publications about the subject-matter of this Contract, the Buyer undertakes to indicate, in an appropriate manner, the Seller as the authorized supplier. The Seller undertakes to adhere to any applicable publicity rules resulting from the binding documentation of the Operational Programme and/or Project. The Parties undertake that in their publishing activities they shall protect the legitimate interests of the other Party.

12. INTELLECTUAL PROPERTY RIGHTS

- 12.1. If, **in connection** with the performance of the Contract, the System or any part of it constitutes an author's work within the meaning of Act No. 121/2000 Coll., on copyright, on rights related to copyright and amending certain acts, as amended (hereinafter the "**Copyright Act**"), it is a contract work in the sense of Section 61 of the Copyright Act. In this case, the Seller grants to the Buyer a royalty-free licence to use the author's work (or part thereof) for the purposes of this Contract and/or for the purposes of research and education for the duration of the property rights to author's works on the territory of the whole World, including sub-licence for the purpose of

implementing the Project, including its follow-up phases and the alternative award of the supply of the System to another contractor.

- 12.2. For the purposes of this Contract, author's works and industrial rights are hereinafter jointly referred to as intellectual property rights. In the event that a work or part thereof is created in connection with the performance of the Contract, and the Seller is entitled to register such work or part thereof through any of the forms of industrial property rights (i.e. trademark, patent or invention, utility or industrial design, etc.) protected under applicable legislation of the Czech Republic, foreign State or an international or supranational organization, the Seller shall grant to the Buyer, for the duration of the protection of the relevant industrial property rights, a royalty-free licence to use the work for the purposes of the Project and other research and educational activities, as well as for the purposes of this Contract on the territory of the whole World. Safe for the purpose hereof (including delivery of the System to ESS) as well as Article 12.3 hereof, the Buyer hereby undertakes not to provide the results of the work to third parties without the prior consent of the Seller.
- 12.3. When the in-kind contribution is made, the intellectual property rights shall pass to the ESS for the duration of the protection of the relevant intellectual property rights and/or for the duration of the property rights to author's works on the territory of the whole World.
- 12.4. The Parties have agreed that the Seller's fee for granting the licence under paragraphs 1 and 2 of this Article 12 is already reflected and included in the price under Article 7.2 of this Contract.
- 12.5. In the event that any intellectual property rights arising hereunder are infringed, their owner is entitled to enforce them with the competent public authorities or bodies. The licensee is obliged to inform the owner of the intellectual property rights without undue delay if the licensee becomes aware of the infringement under the previous sentence.
- 12.6. In the event that the author's work or part thereof is created as a result of a joint activity of the Seller and the Buyer, the two Parties undertake to file a joint application for any intellectual property rights as co-authors.
- 12.7. In the event that any products constituting intellectual property rights are created or co-created by the Seller under the relevant financial contribution under this Contract is commercialized by the Seller in the future, the Seller undertakes to pay to the Buyer from its own proceeds of such commercialization a share corresponding to the financing rate under this Contract. This provision does not apply if the share of profit so determined does not exceed 0.1 % of the gross proceeds of commercialization.

13. REPRESENTATIVES, NOTIFICATIONS

- 13.1. The Seller has authorized the following representatives responsible for managing the

manufacture of the System under the Contract and communicating with the Buyer:

In technical matters:

- Ing. Radim Švejda, Project Manager
E-mail: radim.svejda@nuvia.com

In contract matters:

- Mgr. Aleš Dokulil, Commercial Director
E-mail: ales.dokulil@nuvia.com

- 13.2. The Buyer has authorized these representatives responsible for communicating with the Seller in the manufacture of the System under this Contract:

In technical matters:

- RNDr. Jan Šaroun, CSc.
E-mail:

In contract matters:

- RNDr. Petr Lukáš, CSc.
E-mail:

- 13.3. The contact person of the ESS for the Seller's communication with the ESS in technical matters is:

- Ing. Přemysl Beran, PhD.
E-mail:

The Client may identify other contact persons and means of communication.

- 13.4. All notifications between the Parties under this Contract must be made in writing and delivered to the other Party by an authorised delivery service, in person (with written confirmation of receipt), by registered mail sent using a postal service provider, or may be made by electronic communication with an electronic signature to the Buyer at and to the Seller at

- 13.5. In design, expert or technical matters (e.g. claiming the warranty, etc.), electronic communication through the above representatives is permitted.

14. TERMINATION OF CONTRACT, FORCE MAJEURE

- 14.1. This Contract may be terminated by its completion, by agreement of the Parties or by withdrawal from the Contract for reasons specified the Contract or by valid law.

- 14.2. The Buyer is entitled to withdraw from the entire Contract or from a relevant part hereof without any sanction in the case of any of the following:

- 14.2.1. expenses or part of the expenses incurred under this Contract is identified as ineligible for payment by the ESS; or

- 14.2.2. it has become obvious, considering all pertinent facts and circumstances, that the Seller

will not be able to fulfil his material obligations under this Contract, especially that the Seller will not be able to manufacture the System;

- 14.2.3. any of the reports submitted to the Buyer under this Contract do not meet the technical or other parameters foreseen by this Contract, even after the Buyer has requested the Seller twice to meet or supplement them;
- 14.2.4. the Seller enters liquidation;
- 14.2.5. insolvency proceedings were commenced against the assets of the Seller (or similar proceedings under the laws of another country), where a decision on bankruptcy was issued, or insolvency petition rejected because of insufficient assets to cover the costs of insolvency proceedings, or where bankruptcy was cancelled because property was completely insufficient or receivership was introduced by special legislation;
- 14.2.6. it is revealed that the Seller stated in the bid certain information or submitted documents which do not correspond to reality and which had or could have had impact on the results of the tender that lead to the execution of this Contract [Section 223 Paragraph 2 letter c) Act on Public Procurement];
- 14.2.7. the System or any part thereof has a material defect (e.g. a defect that prevents the proper use of the System for the intended purpose) and the Seller fails to remove the defect within the deadlines stipulated herein or it cannot be removed; or
- 14.2.8. the failure or delay of the Seller to perform his obligations under the Contract because of an event of Force Majeure has lasted for more than six (6) consecutive months.
- 14.3. The Seller is entitled to withdraw from this Contract without any sanction:
 - 14.3.1. in its entirety or relevant part, if the Buyer is in delay with the payment of any invoice or its part for more than ninety (90) days after an additional period for the payment of this invoice or a part thereof had been provided.
- 14.4. The withdrawal from the Contract takes effect on the date when the written notification of the withdrawal from the Contract by one of the Parties is delivered to the other Party, the Contract being terminated "*ex nunc*".
- 14.5. In the event of termination of this Contract by a withdrawal of the Buyer for reasons stipulated by valid law or given in Article 14.2.7 hereof, the Seller shall not be entitled to any portion of price for the System. In the event of termination of this Contract by the Buyer for reasons stipulated in the Contract (except for the reason under Article 14.2.7 hereof), the Seller shall be entitled to a portion of price for the System for parts of the System actually manufactured in accordance with the Contract prior to the termination. Things, rights and any other values whose price was paid for by the Buyer to the Seller according to this provision shall pass, by payment, into the ownership of the Buyer, and the Seller shall be obliged to allow the Buyer to dispose with such accordingly. The Parties shall strive and cooperate to avoid or minimize further cost that might arise as a consequence of the Contract termination (e.g. to cancel order, etc.).

- 14.6. Circumstances excluding liability are considered to include an obstacle that has occurred independently of the will of the obligated Party and prevents it from fulfilling its obligation, unless it can be reasonably assumed that the obligated Party could have averted or overcome such an obstacle or its consequences and, in addition, that it could have anticipated this obstacle upon the creation of the obligation (hereinafter the “*Force Majeure*”). Liability is not excluded by an obstacle which occurred only when the Seller was in delay with fulfilling its duty or arose out of its economic circumstances. Effects excluding liability are limited only to the duration of the obstacle with which these effects are associated. Force Majeure under this Contract does not include the Seller’s research and development risks in the execution of the Work.
- 14.7. In the event that a Party considers a situation to be an event of Force Majeure and the situation may affect the fulfilment of its obligations, it shall promptly notify the other Party and shall endeavour to continue to fulfil its obligations to the extent reasonably possible. At the same time, such Party shall notify the other Party of all proposals, including any alternative means of performance, but shall not proceed to provide such performance without the consent of the other Party.
- 14.8. If case of Force Majeure, the deadlines stipulated in the Contract will be extended for a period corresponding to the duration of a Force Majeure event. Upon termination of event of Force Majeure, the prevented Party shall forthwith resume performance of the Contract.

15. BANK GUARANTEE

- 15.1. The Seller shall provide to the Buyer, no later than with the first invoice for advanced payment, an original of bank guarantee securing proper manufacture and delivery of the System to the Site in the amount of 50 % of the sum of advance payment proposed by the Seller for milestone “Procurement contract signed” and advance payment for milestone “Detailed design approved (RFM)” (i.e. the first and second milestones within the project of System delivery); the scope of the milestones is defined by the Buyer in Annex 1 hereto, while the amounts of advance payments are defined by the Seller in Annex 2 hereto. For avoidance of doubt, the Parties state that the Seller is under this Article 15 obliged to provide the bank guarantee only if the Seller requests/proposes an advance payment for milestone “Procurement contract signed” and/or “Detailed design approved (RFM)”.
- 15.2. The above guarantee shall remain valid and effective for the entire period until the milestone “Delivered to site (SAI)” proposed by the Seller in Annex 2 hereto is met. The Seller undertakes to keep the guarantee valid and effective for that period even if extended under this Contract.
- 15.3. The Seller declares that the bank guarantee is irrevocable, unconditional and payable on demand, i.e. the bank guarantee permits unconditional draw down, without the bank having recourse to objections within the meaning of Section 2035 Civil Code, without the need for the Buyer to notify the Seller to observe his obligations, in all cases

where the Seller may default on any of his obligations defined herein.

- 15.4. The bank guarantee shall cover financial claims of the Buyer against the Seller (statutory or contractual sanctions including contractual penalties, damages including reimbursement for damage caused to the Buyer by the Seller and/or its subcontractor(s), sanctions resulting from delays with any Item/Task under this Contract etc.), which may arise due to the breach of the Seller's obligations under this Contract in terms of proper execution of the supply in agreed quality and timeframe. The bank guarantee shall also cover the above obligation of the Seller to keep the bank guarantee valid and effective for the entire above period until the relevant milestone is met.

16. GOVERNING LAW, DISPUTE SETTLEMENT

- 16.1. This Contract and any and all legal relationships arising there from are governed by the laws of the Czech Republic.
- 16.2. The Parties acknowledge that areas not expressly regulated by this Contract are governed by the relevant provisions of the Civil Code (the Act No. 89/2012 Coll., as amended).
- 16.3. Any and all disputes arising out of this Contract or legal relationships related thereto shall be settled by mutual negotiation between the Parties. If a dispute cannot be settled amicably by negotiation within sixty (60) days, such a dispute shall be decided by the competent court in the Czech Republic having jurisdiction according to the registered office of the Buyer based on application of any of the Parties.

17. TRANSITIONAL AND FINAL PROVISIONS

- 17.1. This Contract constitutes the complete and comprehensive agreement between the Buyer and the Seller.
- 17.2. The Seller shall not be entitled to transfer rights and duties from this Contract or its part on third parties, to transfer its claims against the Buyer that arose on the basis or in connection with this Contract on third parties, nor to set off any of its claims or his debtor's claims against the Buyer's claims.
- 17.3. If any Party breaches any duty under this Contract and knows or should have known about such breach, the Party shall notify and warn the other Party of possible consequences.
- 17.4. If any provision of this Contract becomes or is declared null, ineffective, non-existent or unenforceable, then such nullity, ineffectiveness, non-existence or unenforceability shall not make the Contract null, ineffective, non-existent or unenforceable as a whole. In such a case, the Parties shall without undue delay clarify such a defective provision

within the meaning of Section 553 (2) of the Civil Code, or replace it, to the extent permitted by the applicable laws, by mutual agreement with a new provision, whose meaning is as close as possible to the intention of the Parties at the conclusion of this Contract.

- 17.5. This Contract becomes valid and effective on the date of its signature by the authorised persons of both Parties.
- 17.6. This Contract may be changed or supplemented solely by means of written numbered amendments, indicating time and place of conclusion, and signed by duly authorized representatives of the Parties. Within the meaning of Section 564 of the Civil Code, the Parties expressly exclude the possibility to amend the Contract by any other means in any different form.
- 17.7. This Contract is made in the English language and executed in four (4) counterparts each of which is deemed original. Each of the Parties shall receive two (2) counterparts.

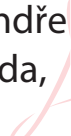
In witness of the agreement with all the contents of the Contract, the Parties attach their signatures:


In Řež, on __. __. 2022

In Třebíč, on __. __. 2022

On behalf of: the Buyer

On behalf of: the Seller

Ing. Ondřej
Svoboda,
Ph.D.  Datum: 2022.08.03
12:58:20 +02'00'

 Martin Pazúr
2022.07.28
08:36:22 +02'00'

Name: Ing. Ondřej Svoboda, Ph.D.
Position: Director

Name: Martin Pazúr
Position: Chairman of the Board

Annex 1 - Technical Specification

TECHNICAL SPECIFICATIONS AND REQUIREMENTS

The document is attached hereto below.

Technical report submitted by the Seller within the Bid

The proposal of the technical solution as described in Annex 1 (ii) and Annex 1 (iii) will create basis for the inquired device. Both frames will be manufactured as a welded steel structures. The frames will be capped to limit contamination inside the frame. The surface of the frames will be medium blasted and powder coated. The steel ball SA 2,5 grade blasting medium will be used to condition the frame surfaces before powder coating. The surface of the frame will be fully cleaned and degreased before applying two layers of the powder coat. Both layers will be individually baked on (circa 180°C for the base coat and 150°C for the top coat), 24 hours of technological break between the first and second layer will be observed, to let the base coat fully cure. 70-90 µm of POLYFLEX® EP-20 epoxy powder will be used as a base coat, 70-80 µm of POLYFLEX® PES will create a top layer. Both layers of the paint have epoxy base which is in line with the provided SHUTTER - Design Description (Annex 1 (ii)). The frame is thought to be delivered in RAL 7035 shade. The contact points between fixed and movable parts of the device will be redesigned with aim of improving durability, serviceability and amount of backlash in the system to meet the requested design modifications set out in Annex 1 (i). The main hinges connecting the two frames will be fitted with bearing units to ensure better accuracy of the movement. Side guides will be added to the system to ensure that parts of the frame will not damage the beam lines on both sides of the shutter in cases of unexpected side loading or fault states. The parts of the frame coming into contact with shock absorbers and adjustable back stops will be equipped with hardened plates to aid wear resistance and on site servicing. The design of the shock absorber consoles will be improved with regards to the design proposal and pinned to the main frame to limit shear loading of the connecting bolts.

The layout of the shielding block will be modified to aid machining and installation. Thickness of individual copper sheets will be optimised, instead of 10 x 50 mm thick copper sheets, 50 x 10 mm copper sheets will be used. The layout of the PE +5%B will be changed in similar fashion. It means that the 100 mm thick plate of PE +5%B will be replaced by 5 layers of 20 mm thick PE +5%B plates. The total outer dimensions and density of the shielding block will be kept according to the current specification, i.e. we do not consider an update of the existing radiation analyses. Mechanical safety braces and means of manual lifting of the shielding to the upper position will be added to the frame design to aid safety and serviceability of the system.

For installation, we assume in that the location and space in which the shutter will be placed will be free of any spatial obstructions in the form of other equipment, structures, wiring, etc. In the offer we consider that the unloading at ESS and the transport of the shutter components from the unloading site to the installation site will be provided by the Client. The provision of lifting equipment at the installation site during the installation will also be provided by the Client.

BEER INSTRUMENT SHUTTER – Design Description

Forms a separate document attached hereto.

BEER Shutter ESS-14480781_00257376 (3D model)

Forms a separate document attached hereto.



INSTRUMENT SHUTTER FOR THE BEER INSTRUMENT AT ESS

TECHNICAL SPECIFICATIONS AND REQUIREMENTS

Status: Draft
Revision: 1.4
Date: 21/12/2021

Annexes:

Annex 1 - BEER Instrument Shutter – Design description

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1. TERMS OF REFERENCE

1.1. Scope of this document

This document in conjunction with referenced annexes establishes the requirements for the tendering, procurement, manufacturing, delivery and installation of the BEER Instrument Shutter to be installed at the European Spallation Source in Lund, Sweden.

1.2. Terms

Herein, the term '*Contractor*' shall refer to the parties responsible for providing the scope of work defined below. The term '*Customer*' shall refer to the purchaser and its representatives, including the ESS.

The *Contractor* is responsible for fabrication, inspection, testing, packaging, shipping, and other stipulated services in accordance with the requirements of this specification.

The terms '*System*' or '*Shutter*' refer to the whole *BEER Instrument Shutter* as described in Section 3. (scope of work). For historical reasons, the term '*Safety Shutter*' is equivalently used in some of the referenced documents.

Requirement level interpretation

The key words "*must*", "*shall*" and "*should*" in this document are to be interpreted as follows:

1. "*must*" or "*shall*" is an absolute requirement of the specification.
2. "*should*" means that there may exist valid reasons in certain circumstances to ignore a particular item or ease a requirement, but the full implications should be understood and carefully weighed, and mutually agreed, before choosing a different course.

1.3. Exceptions

Any exceptions to the specifications in this document shall be clearly noted as such in the *Contractor's* proposal documentation. If the *Contractor* proposes exceptions from this specification, alternative solutions shall be presented. The *Customer* shall form a validation team to examine the feasibility of the proposed alternatives. Conditions for design modifications are described in Section 4.4..

1.4. Applicable documents

The delivered assembly, including accessories, shall follow:

- European directives
- Swedish laws and standards
- Relevant Europeans and ISO standards
- ESS standards and regulations

The list of applicable documents is provided in Section 11..

2. INFORMATION

2.1. Introduction to the European Spallation Source

The European Spallation Source ERIC (ESS) is a European Research Infrastructure Consortium (ERIC), a multi-disciplinary research facility based on the world's most powerful neutron source with a vision to enable scientific breakthroughs in research related to materials, energy, health and the environment, and address some of the most important societal challenges of our time. The initial suite of neutron instruments will consist of 15 instruments and a test beam line with further integration of instruments following to complete the projected suite of 22 instruments. Instruments will include hardware and software necessary to conduct neutron scattering experiments, to collect data and to distribute to users and archive all necessary information related to the experiments. Specific experimental conditions or preparations that may be required by the experimental programs will be supported by ESS laboratories or other partner laboratories.

Details about the project can be found under:

<https://europeanspallationsource.se/ess-mandate>

The facility will host several neutron beamlines that are being constructed by so-called in-kind partner institutes. The Nuclear Physics Institute of the CAS, V. V. I. (NPI) from the Czech Republic participates in the design and construction of the BEER instrument, together with Helmholtz-Zentrum Hereon in Geesthacht, Germany.

2.2. Introduction to the BEER instrument

The BEER project (Beamline for European Engineering Materials Research) is realized as a part of multidisciplinary complex of international research centre ESS – European Spallation Source constructed in Lund in Sweden. 17 partner European countries participate in its construction mainly in form of in-kind contribution, thus the development and supplement of individual scientific and technological units.

The diffractometer BEER is an experimental device focused on research of advanced materials for wide field of applications - i.e. research in engineering materials with various degrees of complexity as for example in-situ and in-operando experiments for material characterization, thermo-mechanical processing or joining of materials. The continuous development of advanced structural materials and novel manufacturing processes are key for European manufacturing industry to stay competitive and ensure clean transport and clean energy generation. This includes the development of sustainable material and processing solutions protecting natural resources. More about BEER instrument can be found here:

<https://europeanspallationsource.se/instruments/beer>

Please refer to BEER – System Design Description [[ESS-1138650](#)] and BEER - Concept of Operation [[ESS-0124310](#)] for further information.

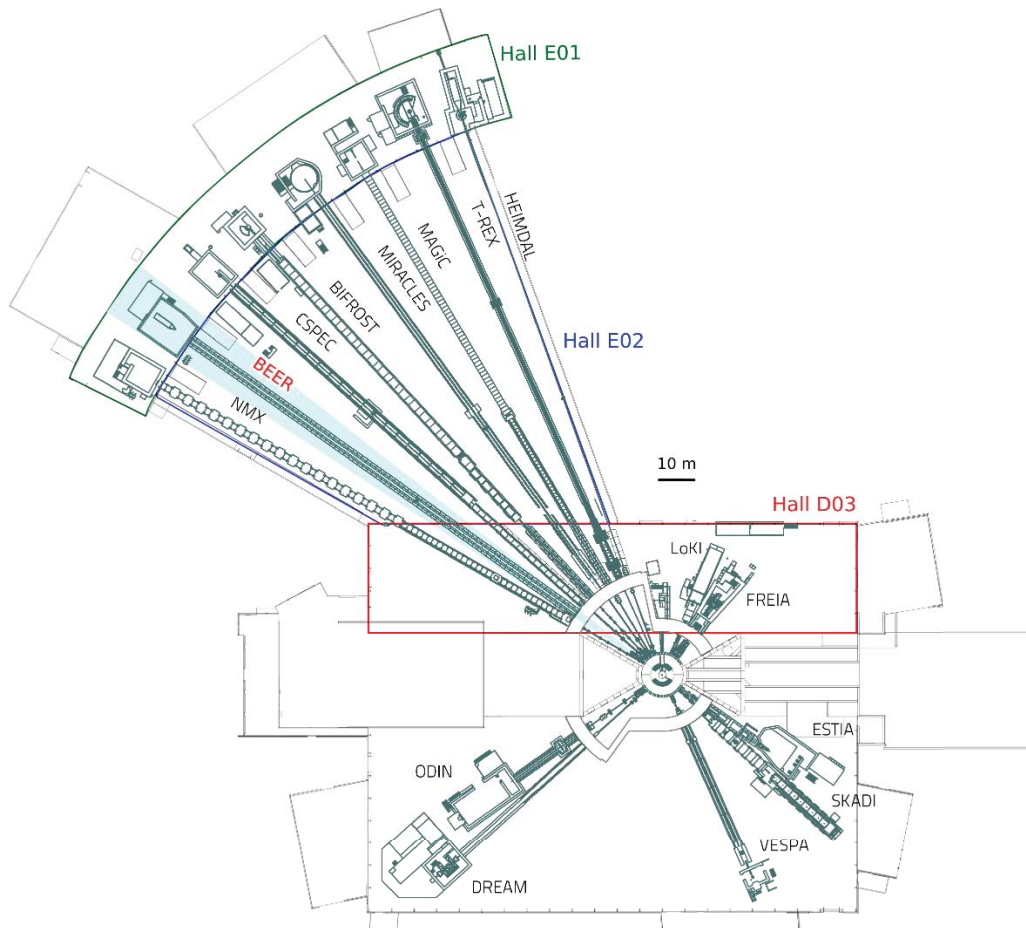


Figure 1. Layout of ESS instruments with highlighted BEER sector.

2.3. Introduction to the Instrument Shutter

To enable experiment preparation, sample exchange during standard ESS operation periods, and also a safe personal access, an Instrument Shutter is needed at a position after the first DLS (Direct Line of Sight) closure. This shutter closes the thermal neutron beam and shields also other radiation propagating downstream, especially high energy neutrons, in order to secure radiation safety in the experimental cave. The shutter will also enable safe maintenance of downstream equipment including the neutron guides and the chopper placed in the guide hall E02. The Instrument Shutter is designed as a radiation safety component which interacts with the Personal Safety System (PSS).

The Instrument Shutter system (see Figure 2) consists of a block of shielding material (mostly Cu, combined with borated PE and B4C layers) and a neutron guide segment. Both the shielding and neutron guide are mounted on an inverse pendulum mechanism, which allows to switch between two operation positions: (i) **closed**, when the shielding block is centred at the neutron beam, and (ii) **open**, when the neutron guide is aligned with the neutron beam and neutron optics elements before and after the shutter. For safety reasons, the mechanism must move the System in the closed position in a case of failure (lost electricity or compressed air). This is achieved automatically by action of gravity.

NOTE: the neutron beam guide is not part of the shutter delivery. The shutter system only includes a mounting platform for it.

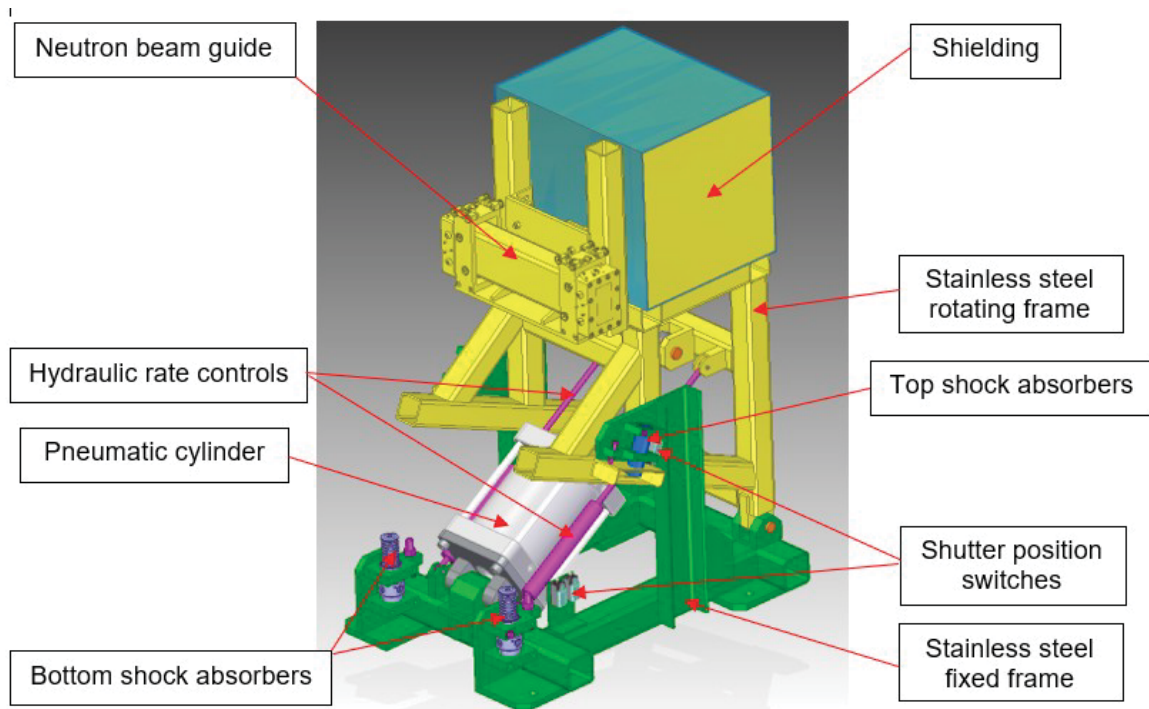


Figure 2: 3D view of the Instrument Shutter for the BEER instrument.

The Instrument Shutter will be installed in a shielding pit just after the bunker wall at 28 m from the source in D03 hall (see Figure 3).

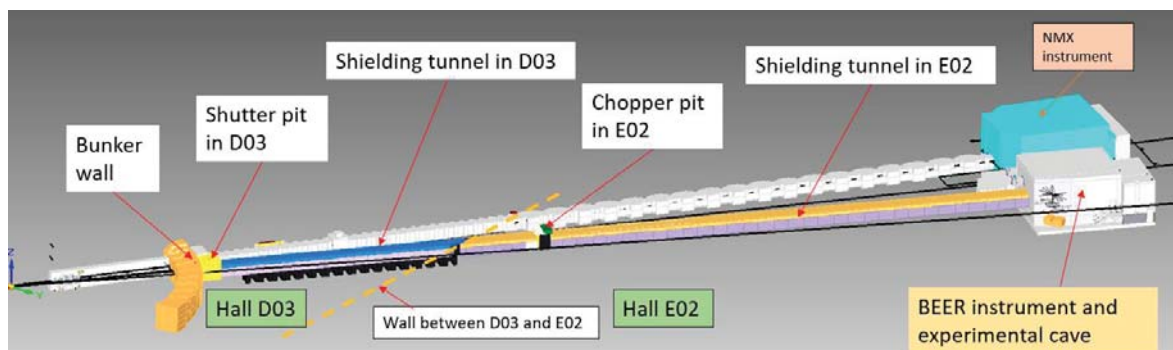


Figure 3: Scheme of beamline shielding of the BEER instrument.

2.4. Construction phases and review process

The ESS instrument construction is divided into three phases, which are concluded by acceptance process called Tollgate reviews (TG):

Phase 2 – Detailed Design (TG3)

Phase 3 - Manufacturing and procurement (TG4)

Phase 4 - Installation and integration (TG5)

This contract concerns finalization of Phase 2 and execution of Phases 3 and 4 for the Instrument Shutter.

2.5. Current status and options for modifications

The BEER instrument is in the design phase, except of the neutron optics system (neutron guides), which is already in production. The detailed design documentation for the Shutter has been finished and evaluated by ESS within the TG3 review. The Contractor may propose modifications or alternative solutions in the offer under the conditions described on Section 4.4..

3. SCOPE OF WORK

The Contractor shall be responsible for the procurements, manufacturing, delivery, installation, integration and commissioning of the complete *Instrument Shutter* to ESS. The following deliverables and services are expected to be delivered with the Instrument Shutter system:

Physical deliverables

- The Instrument Shutter system as described in the Annex 1, including pneumatic actuator and flow control valves (Annex 1, Figure 20, red box).
- Material samples for the copper and steel components supposed to be exposed to the neutron beam during operation.

Services

- Update and verification of the design according to the design specification.
- Preparation of design documents for CDR
- Factory acceptance tests (FAT)
- Delivery to ESS storage facility
- Transport to ESS site, installation and alignment
- Cold commissioning of the Shutter at ESS facility (SAT)
- Training of operating staff at ESS premises

Documentation

- Documentation as described in Section 5..

Excluded parts

Following components are explicitly excluded from the scope of work:

- The neutron guide segment with its vacuum housing and alignment features
- The pneumatic control (valves and pressure control) as described in Annex 1, Figure 20 (green box).
- Electrical signalling switches for MCA and PSS, see Annex 1, Sect. 2.7.2.10
- Electric control of the pneumatic system including the connection boxes for switches, see Annex 1, Sect. 2.7.2.11.
- Compressed air supply

4. SPECIFICATIONS

4.1. General requirements

The System has to be designed and manufactured according to ESS and European standards. A selection of documents describing ESS standards and requirements which are relevant for this contract is given in Section BEER project documents 11.1. and ESS Guidelines and regulations 11.2.. These documents will be provided to the Contractor on request. In case of uncertainty or need of additional information, the Contractor shall contact the Customer and/or representatives of the relevant ESS technical groups.

The delivered sub-systems have to comply with European standards (see Section 11.3.). EU declaration of conformity will be required as a part of the final System documentation.

4.2. System requirements

The list of System requirements and compliance matrix for the current design are provided in Annex 1, Section 7.

4.3. Detailed description of the Instrument Shutter system

The detailed technical description with drawings, material specifications and interface description is provided in the **Annex 1** (*BEER Instrument Shutter – Design description*), which makes an integral part of the System specifications.

4.4. Design changes

Modifications of the design details given in Annex 1 are possible under following conditions:

Before CDR:

The Contractor may propose modifications or alternative solutions provided that they comply with the System requirements (Section 4.2.). In such a case, the Contractor shall describe the concept of the proposed modifications in a technical report as a part of the offer documents. The level of details of this description must allow to evaluate feasibility and compliance of the proposed modifications with the System requirements. If accepted, the Contractor shall implement these modifications in the detailed design documents to be submitted for CDR in the first stage of the project. These documents must prove that the modifications do not negatively affect the functional and safety properties of the System.

In particular, changes of the dimensions and material composition of the shielding block should be avoided. If necessary for technical, safety or economic reasons, such design modification must be accompanied by radiation safety analysis proving that the modified design meets the radiation safety requirements for the whole instrument. An updated Bill of Materials for Activation Inventory must be provided.

Specific component types proposed in the design specification (Annex 1) can be replaced by other types with equivalent parameters, unless this option is explicitly excluded

After CDR:

Any changes are possible only through the formal procedure starting with submission of a 'Design Changes Request' with reasoning and analysis of consequences for costing, performance and safety and compatibility (interfaces) with other sub-systems. The proposed changes must be evaluated and approved by both the Customer and by ESS prior any further steps in their implementation are taken. The changes are only possible if necessary due to (i) physical constraints (ii) conflicts with interfaces to other sub-systems (iii) ESS safety and operational requirements or (iv) on request of the Customer.

4.5. Requested design modifications

On top of the design changes proposed by the Contractor as described in Section 4.3., the Client requests following modifications with respect to the detailed design described in Annex 1.

1. Propose paths and mounting for electric connections, compressed air pipes and the vacuum pipe for the shutter guide so that the performance of the shutter is not affected.

2. Implement *modified shape of support pads* which fix the shutter to the floor. The requirement is keeping safe distance from the support block edges (see drawing).
3. During normal operation or guide alignment, the shutter has to be kept open precisely at the end position by the air pressure. However, the shutter is required to close automatically in a case of air or electricity supply failure. *Implementation of manual locking* for maintenance or alignment of the shutter in open position is therefore necessary to ensure personal safety in the confinement space of the shutter pit.
4. Increase of the number of cycles without heavy maintenance from 10 000 to at least 40 000 should be considered (see requirement R15 in Section 7 of Annex 1)
5. *Verify and adapt* the holding brackets for the PSS and MCA switches (provided by ESS/in-kind partner) with respect to the design presented in Section 2.7.2.10 of Annex 1, propose placement of the connection boxes (provided by ESS/in-kind partner) as an interface towards MCA and PSS switches.



Figure 4. In red: proposed modification of support pad for fixing the shutter on the floor. The purpose is to avoid interference with the cut-out in the floor on the to-left side of the figure.

5. DOCUMENTATION REQUIREMENTS

5.1. Documentation in the tender response

Following information shall be provided by the Contractor as part of the offer in the tender response:

- Technical report describing the offered system. The report shall describe any proposed modifications and alternative solutions with respect to the System description in Annex 1 (see Section 4.4.). The level of details of the report should be sufficient to assess the compliance of the offer with tender requirements.
- Costing of all items, services and documentation described in this document.
- Project schedule.
- Previous documented history of delivering similar systems (especially systems involving pneumatic motion systems of similar payload and accuracy).

5.2. Design and manufacturing documentation

The present detailed design documentation (see Annex 1) with drawings will be provided by the Customer. The Contractor is expected to implement any changes to this design (see 4.4.) and provide:

- 3D model in .stp or CATIA v6 format

- Detailed production drawings in .pdf
- Updated Bill of Materials for Activation Inventory

5.3. System documentation

- Detailed design description
- Interface description
- System integration and verification plan, including
 - FAT and SAT procedures description
 - Installation plan
 - Requirements on resources (heavy equipment, special tools, staff etc.) required for installation, integration and verification of the System.
- System Operation & Maintenance Manual, including, but not limited to:
 - Maintenance periods and lifetime assessment
 - List of recommended spare parts
 - Specifications for utilities (compressed air, electricity), tools and other systems required for operation and maintenance, including process schemes
 - Required test equipment
 - Requirements for storage, transportation, handling and packaging

5.4. Shipment documents

See Section 8.6.. for details

5.5. Project documents

- Project Quality Plan (PQP)
- FAT reports, including measurements qualifying key dimensions, and functionality.
- Non-conformance and deviation reports
- Welding processes qualification/documentation
 - ISO 3834-2 certification for the welding company
 - ISO 15614 welding procedure qualification for all welding
 - Welders qualification acc. to ISO 9606 / ISO 14732 / certificates of welders
 - Welding Procedures Specification
 - Welds Test Schedule
 - Welding inspection reports
- Surface treatment certificates
- Materials certificates/data sheets and traceability reports
- Dimensional report
- Inspection certificates for friction grip joints
- Visual inspection report
- Certificates/data sheets for included components if applicable (e.g. pneumatic control and electrical components)
- Risk assessment and Method Statement (RAMS)
- EU declaration of conformity for CE marking according to DIN EN ISO/IEC 17050-1

6. QUALITY ASSURANCE REQUIREMENTS

6.1. Quality Management System

The contractor must maintain and apply a quality management system compliant with ISO-9001 for all processes and services needed to make the product.

6.2. Project Quality Plan (PQP)

The contractor must create and apply a PQP. The PQP lists, in the correct order, all critical task, processes, inspections, and tests of the phases 'manufacturing' and 'assembly'. The PQP must be released at the CDR with defined witness points, hold points, and report indications. A template for a PQP is shown in ESS Template for Project Quality Plan [[ESS-0037830](#)].

6.3. Declaration of conformity

The Contractor shall provide EU declaration of conformity for CE marking according to DIN EN ISO/IEC 17050-1.

6.4. Sub-contractors and/or suppliers

The contractor must apply the same project management and quality assurance requirements of this requirements specification for its sub-contractors and suppliers. The Customer reserves the right to visit the supplier's or sub-supplier's premises upon prior notice to perform an audit or review the progress of the contractual agreed deliverables.

7. PROJECT MANAGEMENT

7.1. Project stages and milestones

The execution of the contract scope of work is expected in following stages:

Stage 1: Design: Verification and (if necessary) update of the detailed design documentation described in Annex 1. Presentation of the detailed design at the Critical Design Review (CDR) at ESS. The documentation and CDR shall cover all modifications with respect to the existing Instrument Shutter design. Transition to the Stage 2 is subject to the ESS approval of manufacturing readiness (RFM).

Stage 2: Production: Manufacturing and assembly of the Shutter components at the Contractor's premises. The production phase is completed by FAT and delivery to the ESS site. Transition to the Stage 3 is subject to the ESS approval of installation readiness (RFI).

Stage 3: Installation: The Shutter system shall be installed, aligned with the neutron optics system and cold commissioned in accordance with the installation plan for the Neutron Scattering Systems (NSS) of the ESS. The project is completed by site acceptance tests (SAT).

Completion of one stage and transition to another one is conditioned by ESS approval through the review procedures as indicated in the list above. Close cooperation between the Contractor, the Customer and ESS teams is therefore necessary for successful and timely completion of the project.

7.2. Project schedule

The contractor must set up a project schedule and this shall be set before the contract is signed. The project schedule starts with the kick-off meeting and ends with the final acceptance. The planning must indicate:

- All defined milestones

- Delivery dates for review documents to the Customer.
- Time needed to approve review documents by the Customer (approx. 10 working days)
- Dates of Customer's deliverables to contractor's site (if applicable)
- All main tasks
- Actual timeline
- Delivery dates of the ordered products/batches to ESS
- FAT and SAT dates

7.3. Acceptance tests and reviews

The reviews are organized as meetings or carried out by email communication. The form and location of the reviews may be changed in mutual agreement. The list of expected reviews is given in Table 2.

The Contractor should provide all necessary documentation for each review at least 2 weeks before the review date. For details about the reviews and tests, see Section 8.

Table 2: Review meetings approvals and tests to be performed

ID	Name of Meeting / Review	Form
KOM	Kick-off Meeting	meeting
CDR	Critical Design Review	meeting
RFM	Ready for Manufacturing	e-mail
FAT	Factory Acceptance Test	meeting
RFD	Ready for Delivery	e-mail
SAI	Site arrival inspection	e-mail
RFI	Ready for Installation	meeting
SAT	Site Acceptance Test	meeting

7.4. Communication

The delivery of relevant data between the Contractor and Customer, such as review documents, data files or open issues must be formally transferred via email and should be done by the persons defined for communication.

The Contractor shall inform the Customer about the project progress and issues of concern at least once per month in progress reports.

Meetings can be held on-line via videoconference tools if agreed by both parties. The inviting party shall prepare an agenda and meeting minutes. The actions resulting from these meetings shall be clearly defined and distributed, along with the minutes themselves, to all responsible persons. Open issues shall be recorded in an open issue list maintained by the Contractor.

All communication, drawings, material certificates, and related documentation must be in English.

The Contractor should provide, where possible, recommendations and design optimizations where these can offer a reduction in costs and risks, or improve the performance.

7.4.1. *Point of contact*

The principal point of contact for the project execution and coordination between the Contractor and ESS is the Lead Instrument Scientist for BEER nominated by the Customer:

Premysl Beran (Premysl.Beran@ess.eu), tel. +46721792504, ESS Technical Directorate, Instrument Scientists Group

The Customer can nominate other contacts for communication for particular project stages or tasks.

8. EXECUTION OF THE PROJECT

8.1. Kick-off Meeting (KOM)

The 'project kick-off meeting' should be held within 2 weeks after the contract is signed. The list below summarises the minimum that shall be discussed:

- Project Schedule
- Communication Strategy
- Requirements for design modifications and CDR

8.2. Critical Design Review (CDR)

All modifications of the detailed design implemented by the Contractor shall be reviewed by the Customer and by ESS representatives at the CDR. For this review, the Contractor shall provide

- Production version of the Detailed Technical Design (DTD), as specified in section 5.2.
- Preliminary version of the System integration and verification plan as specified in section 5.3.

8.3. Ready for manufacturing (RFM)

Manufacturing readiness shall be approved by ESS and confirmed by the Customer on the basis of CDR output. The approved CDR documentation and released Project Quality Plan are required for the RFM review.

8.4. Factory Acceptance Test (FAT)

Representatives of the Customer and ESS (if required) shall be present during the FAT. The Contractor shall inform the Customer team at least 20 working days before the tests. At the end of the tests, a report shall be sent to the Customer for validation.

The content of the FAT and required equipment shall be described in the Quality Plan (Section 6.2.). The FAT shall include, but is not limited to:

- Measurement of critical dimensions
- Test of the pneumatic control unit
- Test of the Shutter motion speed between operation positions (on/off)
- Test of the signals from end switches
- Measurements of end positions accuracy
- Measurements of end positions repeatability
- Test of safety functions (closing on air/electricity supply failure)

The Contractor shall provide measurement tools and media (electric and compressed air supplies) required for FAT. A mock-up of the shutter neutron guide is required for testing.

8.5. Ready for Delivery (RFD)

Readiness for delivery must be approved by the ESS and confirmed by the Customer. Necessary documents to be provided by the Contractor include:

- Approved FAT protocol (see [8.4.](#)).
- Design documentation in “as manufactured” state (see [5.2.](#))
- Materials and components certificates/data sheets (see [5.5.](#))
- Shipment documents (see 5.3.)
- Detailed installation and alignment plan
- Requirements for resources required for handling and storage

8.6. Delivery

All tangible deliverables shall be delivered in accordance with DAP (2010 Incoterms), at the ESS premises in Lund, Sweden or such other final destination defined by ESS.

All deliveries shall be pre-advised 48h prior to the arrival at destination via email to logistics@ess.se, a confirmation with slot time for unloading will follow to the sender of the pre-advice.

All deliverables shall be executed in accordance with the Logistics Guidelines [[ESS-0042559](#)] (i.e. technical guideline regarding transportation further specifying: delivery notice time, minimum packaging specs, delivery notes, opening hours of receiving at ESS ERIC or warehouse, time of storage at Partner premises without charge after FAT, etc.)

All deliveries shall also be accompanied by an appropriate pro-forma invoice (evidencing the replacement value of the delivered equipment) and such other delivery documentation to enable ESS ERIC to properly store and insure the equipment.

For goods/material/equipment purchased by ESS ERIC and delivered to the Supplier for use in execution of this scope of work, that are expected to be returned to ESS ERIC, the Supplier shall consult the ESS ERIC procedure for the Off-site Lending of Hardware [[ESS-0048868](#)]. The procedure describes the responsibilities, routines and processes in regards to lending of equipment.

8.6.1. Delivery address

Site location: Transportgatan 5 F03 / Gate E, 225 92 Lund, Sweden

Site owner: European Spallation Source ERIC, Address: Box 176, S-221 00 Lund, Sweden.

8.6.2. Shipment

The start of the shipment will be communicated to ESS by email at least **14 days** prior to shipment and confirmed once the shipment is sent.

Prior to shipment, the Contractor must inform ESS about the delivery dates, quantity, size and weight of the packaging, resources required for unloading and storage, as well as requirements for safe handling and storage of all packages.

No shipment can be made without previous agreement by ESS.

The components delivered to ESS must be accompanied by

- Parts list for all replaceable parts with appropriate identification and specifications
- Materials certificates/data sheets (if not included in FAT)

8.6.3. Handling and packing

- The packing must have means to use classical handling tools. The packed parts must be protected during transport and storage against possible harms such as weather elements, mechanical shocks, strain, and rubbing which can damage surfaces.
- Packing-cases must be of a stout and robust nature suitable for lifting and transportation without damage using a forklift truck or crane.
- The contractor must inform ESS about the amount and size of packages.
- Each package must contain a packing list, indicating at least:
 - Serial number
 - Item description
 - Quantity ordered
 - Quantity shipped
 - Packed in sub-package number
- The package must be marked with:
 - The Customer's and ESS contact email addresses and phone numbers
 - Weight of the package
 - Support points for transport and lifting

ESS will supply the local handling tools for unloading the goods at ESS.

8.6.4. Identification and Marking of Components

In order to provide traceability of the components, any loose or pre-assembled component should have an identification marking. Where this is not feasible, exceptions shall be communicated and agreed. The marking should be permanently fixed on an exposed surface showing, at least:

- Weight of the element,
- ESS Identifier (provided by the Customer)
- Part number
- Drawing number

8.7. Site Arrival Inspection (SAI)

Upon arrival at the ESS site, staff appointed by the Customer shall inspect the Shutter elements to ensure the integrity of the transport. The inspection should include at minimum the document control, visual inspection and metrology on critical parts. If the SAI fulfils the requirements, the Customer shall accept provisional reception.

8.8. Ready for Installation (RFI)

For the RFI to be concluded, the Contractor shall provide detailed installation and alignment plan including:

- Clear assembly plans
- Updated installation schedule
- Risk assessments and method statements (RAMS)
- Information on any temporary services needed

8.9. Installation

Installation works at ESS site will be coordinated by the Installation Package Leader appointed by the Customer. ESS shall be responsible for the operation of the forklift or crane but the Contractor is responsible for the delivery, integration, and commissioning of the final assembly. Any external

resources (services, personnel, tools) required by the Contractor from the Customer or ESS must be specified and agreed in advance (see RFI).

For the activities performed by the Contractor's staff at the ESS site, the Contractor must fill in the RAMS (Risk assessment and Method Statement) according to the ESS template [[ESS-2071941](#)]. The staff of the Contractor working on site is subject to ESS regulations [[ESS-0093892](#)]. The Contractor is responsible for necessary work permits and training of its staff.

The anticipated requirements for mounting of the shutter and step-by-step installation procedure are provided in Annex 1.

8.10. Site Acceptance Test (SAT)

The preliminary plan for SAT is described in the BEER System Integration and Verification Plan [[ESS-0432367](#)]. The SAT shall include, but is not limited to:

- Check that all shutter components are installed on site according to documentation package.
- Visual check of main components and their finishing.
- Test of the adjustment operation of the neutron beam guide (including mechanical hard stops) fixed to the shutter by operator (operator access, accuracy, time required).
- Test of opening/closing of shutter with normal operation (repeated number of cycles), including
 - Accuracy and repeatability
 - Clearances to avoid any risks of clashes
 - Sensors signals
 - Time required to open/close the shutter
- Test of maintainability (considering space limitation in shutter pit)
- Test of access to components during inspection of the shutter.
- Test of access to components around shutter (bunker window, fixed neutron guide).
- Test of the shutter fail safe function in case of air/electric supply loss
- Training of operators

8.11. Final project acceptance

The project shall be deemed complete upon signing of the SAT report and all final documentation, including:

- As built technical drawings (electrical, mechanical, pneumatic & process schemes).
- Performed FAT Protocol.
- Recommended spare parts list.
- Materials certificates/data sheets.
- Main equipment data sheets.
- Instruments calibration certificates.
- Welding Processes qualification/documentation
- Maintenance and User's manual.
- Certificate of compliance with the requirements
- EU declaration of conformity

9. WARRANTY

The warranty on workmanship and stability of the Shutter components shall be 5 years from the SAT. Rights to request services under the warranty period shall be transferred to the ESS.

10. SUGGESTED MILESTONES AND PAYMENTS

The main milestones with tentative completion dates and proposed payments are given in the following table:

Table 3. Tentative milestones, schedule and payments.

ID	Milestone	Tentative date	Payment
WP01.2.2	Procurement contract signed	D	5%
WP01.2.3	Detailed design approved (RFM)	D + 3 month	25%
WP01.2.4	Delivered to site (SAI)	D + 10 months	55%
WP01.2.5	Start of installation (RFI)	D + 10.5 months	--
WP01.2.6	Installed (SAT)	D + 11 months	15%

The time schedule shall be studied so that it is compatible with the installation of the bunker insert and the E02 neutron transport guide.

11. REFERENCES

The documents marked as *ESS-xxxxxxx* are documents from the ESS repository. Their current versions can be found at the ESS CHESS repository. If the Contractor does not have access rights for this repository, the Customer will provide necessary documents on request.

11.1. BEER project documents

Design	
BEER - System Design Description	ESS-1138650
BEER – Concept of Operation	ESS-0124310
BEER - Sub-System Design Description – Beam Transport and Conditioning	ESS-0432123
BEER - Interface Description	ESS-0432366
BEER - Radiation Safety Analysis	ESS-0432365
BEER - Complete 3D Model of the instrument	ESS-0432373
BEER - Material inventory for activation analysis	ESS-1416976
Quality management	
BEER - System Validation Plan	ESS-0432370
BEER - System integration and verification plan	ESS-0432367
BEER - System Operations and Maintenance Manual	ESS-0432372
BEER - Instrument Hazard Analysis	ESS-0432364
BEER - Project Quality Plan	ESS-0432363

11.2. ESS Guidelines and regulations

Design and construction	
Main coordinate systems at the ESS	ESS-0035090
ESS Instrument Technical Interfaces	ESS-0403282
MCA Components Standard	ESS-0439471
ESS Generic Requirements for Documentation of Technical Systems	ESS-0094092
Engineering Drawing Standards Manual	ESS-0002955
Neutron Instrument Design and Construction - Phase 2 Technical Data Package Specification	ESS-0099059
Neutron Instrument Design and Construction - Phase 3 Technical Data Package Specification (to be published)	ESS-0099060
Neutron Instrument Design and Construction - Phase 4 Technical Data Package Specification (to be published)	ESS-0099061
Safety requirements	
ESS Guideline for Instrument Hazard Analysis	ESS-0047810
Template for Instrument Hazard Analysis	ESS-0100583
Machine Protection Risk Management Plan	ESS-0320782
ESS rule for identification and classification of safety important components	ESS-0016468
Activation Study of Various Alloys in the Beam Extraction Area	ESS-0185932
Fire Protection - Semi Detailed Requirements on Radiation Safety & Protection of Property	ESS-0002642
Risk assessment and Method Statement (RAMS)	ESS-2071941
Project management	
ESS Procedure for Change Control of ESS Facility	ESS-0001879
Guideline for Shipping	ESS-0042559
ESS ERIC procedure for the Off-site Lending of Hardware	ESS-0048868
Information to contractors working on site	ESS-0093892
Quality management	
ESS Template for Project Quality Plan	ESS-0037830
ESS Guideline for Factory Acceptance Test (FAT) and Site Acceptance Test (SAT)	ESS-0094204
ESS Rules for CE marking	ESS-0127031

EU Declaration of Incorporation	ESS-0145023
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11.3. EU Directives, Standards and Regulations

Norm	Description
2006/42/EC	Machine Directive
EN 1993 EUROCODE 3	Design of steel structures
ISO 129-1	Technical product documentation (TPD) – Presentation of dimensions and tolerances – Part 1: General principles
EN ISO 1101	Geometrical product specifications (GPS) — Geometrical tolerancing
EN 61355	Classification and designation of documents for plants, systems and equipment
EN 60617	Graphical symbols for diagrams
ISO 5725-1	Accuracy (trueness and precision) of measurement methods and results — Part 1: General principles and definitions
EN ISO 12100	Safety of machinery. General principles for design. Risk assessment and risk reduction
EN ISO 13857	Safety of machinery. Safety distances to prevent hazard zones being reached by upper and lower limbs
EN ISO 13850	Safety of machinery. Emergency stop function. Principles for design
EN ISO 9606-1	Qualification testing of welders — Fusion welding — Part 1: Steels
EN ISO 14731	Welding coordination – Tasks and responsibilities
EN ISO 14732	Welding personnel — Qualification testing of welding operators and weld setters for mechanized and automatic welding of metallic materials
EN ISO 9712	Non-destructive testing — Qualification and certification of NDT personnel
EN ISO 9001	Quality management systems — Requirements
ISO 10005	Quality management – Guidelines for quality plans
EN 1090	Execution of Steel Structures and Aluminium Structures
EN 10029	Hot-rolled steel plates 3 mm thick or above - Tolerances on dimensions and shape
EN ISO 898	Mechanical properties of fasteners made of carbon steel and alloy steel -
EN 10204	Metallic products - Types of inspection documents
EN 10025	Hot rolled products of structural steels
EN 10163	Delivery requirements for surface condition of hot-rolled steel plates, wide flats and sections
EN 10021	General technical delivery conditions for steel products.

12. GLOSSARY

Name	Explanation
CDR	Critical Design Review
ESS	European Spallation Source ERIC
FAT	Factory acceptance test

KOM	Kick-off meeting
MCA	Motion Control and Automation
PQP	Project quality plan
PSS	Personal Safety System
RAMS	Risk assessment and Method Statement
RFD	Ready for delivery
RFI	Ready for installation
RFM	Ready for manufacturing
SAI	Site acceptance inspection
SAT	Site acceptance test
TGn	Tollgate review <i>n</i>

Annex 2
Project schedule

Instrument shutter for the BEER instrument at ESS, project schedule					
ID	Název úkolu	Zahájení	Dokončení		
1	Instrument shutter for the BEER at ESS	31.03. 22	28.02. 23		
2	Procurement contract signed	31.03. 22	31.03. 22		
3	Detailed design submitted to the Client	14.06. 22	14.06. 22		
4	Detailed design approved by the Client	30.06. 22	30.06. 22		
5	Factory Acceptance Test (FAT)	24.01. 23	24.01. 23		
6	Shutter components delivered on site	07.02. 23	07.02. 23		
7	Start of installation	15.02. 23	15.02. 23		
8	Shutter installed	28.02. 23	28.02. 23		
9	Site Acceptance Test (SAT)	28.02. 23	28.02. 23		

Annex 3

Incentive Tools and Tools to Reduce and Eliminate Risks

1. Motivation mechanisms

1.1. Contractual penalties – Seller's delay

- 1.1.1. The rate of contractual penalty for each day of Seller's delay with delivery of the System or any part thereof according to the delivery periods defined in the Contract (including its Annexes) is 0.1 % of the price of the System as specified in Article 8.1 of the Contract for each day of delay after the expiry of an additional period of thirty (30) days specified in the Buyer's written request.
- 1.2. The due date of all contractual penalties stipulated herein shall be thirty (30) days from delivery of the complaining Party's notification to the other Party. The notification under this paragraph shall include description and date of the particular event that entitles one of the Parties to impose a contractual penalty on the other Party. In case of delay with payment of the contractual penalty the breaching party undertakes to pay to the other party also an interest at the statutory rate.
- 1.3. **Late payment interest of the Buyer:** The rate of late payment interest concerning the Buyer's delay with the payment of the price of the System or any part thereof is 0.01 % of the due part of the price of the System for each day of delay after the expiry of an additional time limit of thirty (30) days specified by the Seller in a written request.
- 1.4. **Liability for damage:** The Parties are mutually liable for any damage caused by breach of this Contract. The compensation for damage is limited to 100 % of the price of the System as specified in Article 8.1 of this Contract.

2. Risk minimization tools

- 2.1. **Insurance:** The Seller is obliged to ensure adequate insurance of the System components/materials during the period of storage at the Seller's premises, the coverage being equivalent to their value under standard conditions. Furthermore, the Seller is obliged to maintain general third-party liability insurance for the duration of the duration of the Contract, the coverage being equivalent to the value of the System. Additionally, the Seller is obliged to take out risk insurance with the same coverage for the transport of the System to the ESS Site in Lund, Kingdom of Sweden.
- 2.2. **Warranty:**
- 2.2.1. The System has defects if the System, its part, execution or results do not formally or materially correspond to the conditions, specifications, requirements, purposes or results set forth in this Contract.
- 2.2.2. The Seller is liable for any defects of the System or its part at the time of its Delivery, and is also liable for any defects of the System found during the entire Warranty period

(quality warranty).

- 2.2.3. The Seller guarantees that in the course of the Warranty period, the System shall have properties laid down in this Contract, applicable legal regulations and standards and usual properties, if applicable. The Seller further guarantees that the System or any of its parts will in all material respects be and remain free from errors, defects and deficiencies, especially those which will prevent the components of the System to be used materially as intended, i.e. that all such components are in accordance with agreed specifications and fully functioning and will work properly for this period.
- 2.2.4. The Seller provides a quality warranty on any part of the System of sixty (60) months (the "**Warranty period**").
- 2.2.5. The Warranty period for the System and each of its part shall commence on the day of Delivery. If the Protocol lists any deficiencies, the Warranty period shall begin on the day, which follows the day, in which the last deficiency was removed.
- 2.2.6. The Seller shall pass any existing components warranty to the Buyer. If on the warranty list or other document submitted by the Seller the warranty period is of longer duration, then this longer warranty period shall have priority over the period stated in this Contract.
- 2.2.7. The Buyer shall request the Seller to remove the defects of the System or a part thereof during the Warranty period in writing without undue delay upon their discovery, but no later than on the last day of the Warranty period (hereinafter the "**Claim**"). Even a Claim asserted by the Buyer on the last day of the Warranty period is considered to have been asserted in due time.
- 2.2.8. The Seller undertakes to examine the Claim, notify the Buyer of whether or not it accepts the Claim, and provide in writing the deadline for the removal of the defect within two (2) weeks from the delivery of the Claim by the Buyer.
- 2.2.9. The Seller undertakes to gratuitously remove any defects of the System or its part without undue delay and shall bear all the expenses related with removal of the defects. The deadline for the removal of the defect (excluding the necessary time spent for transporting the defective parts of the System from and to the Site) is one (1) month from the delivery of the Claim, unless otherwise agreed between the Seller and the Buyer, and if the nature of the defect so permits.
- 2.2.10. The Seller is obliged to remove the defects of the System within the specified time limit, even if it believes that it is not liable for the defects. The costs of removing the defects in these disputed cases shall be borne by the Seller until the clarification or resolution of the conflict.
- 2.2.11. The Parties shall make a report concerning the removal of the claimed defect which will confirm such removal. The Warranty period is extended by the period that elapsed between the assertion of the claim and the removal of the defect.

- 2.2.12. In case that the Seller does not remove the defect within the stipulated or mutually agreed period or if the Seller refuses to remove the defect, then the Buyer shall be entitled to remove the defect at his own costs and the Seller shall reimburse these costs within one (1) month after the Buyer's request to do so. In such a case the existing warranty remains intact.
- 2.2.13. The acts of the Parties constitute claims under this Article if they are made in writing or by electronic communication by one of the representatives of the Party concerned under the Contract to the address of the other Party.
- 2.2.14. Irrespectively of the warranty for the System set out herein above, the Seller shall be responsible for procuring industry standard, commercially available warranties on all procured components of the System from the respective manufacturer or supplier and shall pass all such warranties on to the Buyer, or to the extent such warranties are not transferable, shall assign all benefits of such warranties on to the Buyer forthwith and without any additional charge. The Buyer shall be entitled to pass any of the warranties hereunder, including the rights to Claim warranty and request services within the Warranty period, to ESS while the Seller shall be obliged from the warranty in favour of ESS if a warranty claim is raised either by the Buyer or ESS.