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Christian Mammen
JJ X Ray A/S
Scion-DTU
Dr. Neergaards Vej 5D
2970 Hoersholm
Denmark

21/09/17

Dear Christian,

Contract Title: RE17215 Supply of CRISP Beamline Coarse Jaws
Contract Reference: RE17215

The Contract shall be subject to the UK Shared Business Services Ltd GS1 Terms and Conditions for the Purchase of Goods and the following Schedules and Appendices:

- Schedule 1 - Contract for the Purchase of Goods
- Schedule 2 - Pro Forma Purchase Order Form
- Schedule 3 - The Services

Please note that this Contract is subject to signed Contract Acceptance

Yours Sincerely,

Sharon Keiller
Procurement Category Manager
Research
Procurement – Scientific Research
UK Shared Business Services Ltd
Sharon.Keiller@uksbs.co.uk

CONTRACT FOR THE PURCHASE OF GOODS

SECTION A

This Contract is dated 21st September 2017.

Parties

- (1) **Science & Technologies Facilities Council** Polaris House, North Star Avenue, Swindon SN2 1ET (**the Contracting Authority**).
- (2) JJ X-RAY A/S, a company incorporated and registered in Denmark with company number 1012229557 and registered VAT number DK29523215 whose registered office is at Dr Neergaards Vej 5, D, DK-2970 Horsholm (**the Supplier**).

Background

The Contracting Authority wishes the Supplier to supply, and the Supplier wishes to supply, the Goods (as defined below) in accordance with the terms of the Contract (as defined below).

Agreed terms

A1 Interpretation

A1-1 **Definitions.** In the Contract (as defined below), the following definitions apply:

Associated Bodies and Authorised Entities: Associated Bodies and Authorised Entities include but are not limited to The Science and Technology Facilities Council, The Medical Research Council, The Engineering and Physical Sciences Research Council, The Economic and Social Research Council, The Natural Environment Research Council, The Arts and Humanities Research Council, The Biotechnology and Biological Sciences Research Council, UK SBS Ltd, Central Government Departments and their Agencies, Non Departmental Public Bodies, NHS bodies, Local Authorities, Voluntary Sector Charities, and/or other private organisations acting as managing agents or procuring on behalf of these UK bodies. Further details of these organisations can be found at:

<http://www.uksbs.co.uk/services/procure/contracts/Pages/default.aspx>

Business Day: a day (other than a Saturday, Sunday or public holiday) when banks in London are open for business.

Conditions: the terms and conditions set out in this document as amended from time to time in accordance with clause C7-11.

Confidential Information: any confidential information, know how and data (in any form or medium) which relates to UK SBS, the Contracting Authority or the Supplier, including information relating to the businesses of UK SBS, the Contracting Authority or the Supplier and information relating to their staff, finances, policies and procedures. This includes information identified as confidential in the Order or the Special Conditions (if any).

Contract: the contract between the Contracting Authority and the Supplier for the sale and purchase of the Goods, in accordance with the terms of this Contract, any Special Conditions and the Order only.

Contracting Authority: Science and Technology Facilities Council, as specified at Section A (1) and any replacement or successor organisation.

Delivery Date: the date for delivery of the Goods specified in the Order or, if no such date is specified, within 28 days of the date of the Order.

Delivery Location: has the meaning set out in clause B2-2-3.

Delivery Note: has the meaning set out in clause B2-1-2.

EIR: the Environmental Information Regulations 2004 together with any guidance and/or codes of practice issued by the Information Commissioner or relevant government department in relation to such regulations.

FOIA: the Freedom of Information Act 2000 and any subordinate legislation made under the Act from time to time, together with any guidance and/or codes of practice issued by the Information Commissioner or relevant government department in relation to such legislation.

Goods: the goods (or any part of them) set out in the Order.

Information: has the meaning given under section 84 of FOIA.

Order: the Contracting Authorities order for the Goods and/or associated services necessary as part of the provision of the Goods, as set out in the Contracting Authorities completed purchase order form (including any Specification) which is in the format of the pro forma order form attached at 0. For the avoidance of doubt, if the Contracting Authorities purchase order form is not in the format of the pro forma order form at 0, it will not constitute an Order.

Public Body: any part of the government of the United Kingdom including but not limited to the Northern Ireland Assembly and Executive Committee, the Scottish Executive and the National Assembly for Wales, local authorities, government ministers and government departments and government agencies.

Request for Information: a request for Information or an apparent request under FOIA or EIR.

Special Conditions: the special conditions (if any) set out in **Fejl!**
Henvisningskilde ikke fundet..

Specification: any specification for the Goods, including any related plans and drawings that is supplied to the Supplier by the Contracting Authority, or produced by the Supplier and agreed in writing by the Contracting Authority.

Supplier or Suppliers: the parties to the contract as named in Section A (2)

Supplier's Associate: any individual or entity associated with the Supplier including, without limitation, the Supplier's subsidiary, affiliated or holding companies and any employees, agents or contractors of the Supplier and / or its subsidiary, affiliated or holding companies or any entity that provides Goods or associated services necessary as part of the provision of the Goods, for or on behalf of the Supplier.

UK SBS: UK Shared Business Services Limited (a limited company registered in England and Wales with company number 06330639). Acting as an agent on behalf of the Contracting Authority.

Working Day: any Business Day excluding 27, 28, 29, 30 and 31 December in any year.

A1-2 **Construction.** In the Contract, unless the context requires otherwise, the following rules apply:

A1-2-1 A **person** includes a natural person, corporate or unincorporated body (whether or not having separate legal personality).

A1-2-2 A reference to a party includes its personal representatives, successors or permitted assigns.

A1-2-3 A reference to a statute or statutory provision is a reference to such statute or provision as amended or re-enacted. A reference to a statute or statutory provision includes any subordinate legislation made under that statute or statutory provision, as amended or re-enacted.

A1-2-4 Any phrase introduced by the terms **including, include, in particular** or any similar expression shall be construed as illustrative and shall not limit the sense of the words preceding those terms.

A1-2-5 The headings in the Contract are for ease of reference only and do not affect the interpretation or construction of the Contract.

A1-2-6 A reference to **writing** or **written** includes faxes and e-mails.

A2 Basis of contract

A2-1 UK SBS is not the Contracting Authority, UK SBS is the agent of the Contracting Authority for the purpose of procurement and is authorised to negotiate and enter into contracts for the supply of goods on behalf of the Contracting Authority. UK SBS will not itself be a party to, nor have any liability under, the Contract unless it is expressly specified as the Contracting Authority in the Order.

A2-2 The terms of this Contract, any Special Conditions and the Order apply to the Contract to the exclusion of all other terms and conditions, including any other terms that the Supplier seeks to impose or incorporate (whether in any quotation, confirmation of order, in correspondence or in any other context), or which are implied by trade, custom, practice or course of dealing.

A2-3 If there is any conflict or inconsistency between the terms of this Contract, the Special Conditions (if any) and the Order (including any Specification), the terms of this Contract will prevail over the Special Conditions and the Special Conditions will prevail over the Order (including any Specification), in each case to the extent necessary to resolve that conflict or inconsistency

A2-4 The Order constitutes an offer by the Contracting Authority to purchase the Goods in accordance with the terms of this Contract (and any Special Conditions). This offer shall remain valid for acceptance by the Supplier, in accordance with clause A2-5, for 28 days from the date of the Order. Notwithstanding that after 28 days the offer will have expired, the Contracting Authority may, at its discretion, nevertheless treat the offer as still valid and may elect to accept acceptance by the Supplier, in accordance with clause A2-5, as valid acceptance of the offer.

A2-5 Subject to clause A2-4, the Order shall be deemed to be accepted on the date on which authorised representatives of both parties have signed a copy of this Contract, at which point the Contract shall come into existence. The Contract shall remain in force until all the parties' obligations have been performed in accordance with the Contract, at which point it shall expire, or until the Contract has been terminated in accordance with clause A3.

A3 Termination

A3-1 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority may terminate the Contract in whole or in part at any time

before delivery with immediate effect by giving the Supplier written notice, whereupon the Supplier shall discontinue all work on the Contract. The Contracting Authority shall pay the Supplier fair and reasonable compensation for work-in-progress at the time of termination, but such compensation shall not include loss of anticipated profits or any consequential loss. The Supplier shall have a duty to mitigate its costs and shall on request provide proof of expenditure for any compensation claimed.

A3-2 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority may terminate the Contract with immediate effect by giving written notice to the Supplier if:

A3-2-1 the circumstances set out in clauses B3-1-1, C3-1 or C4-1 apply; or

A3-2-2 the Supplier breaches any term of the Contract and (if such breach is remediable) fails to remedy that breach within 30 days of being notified in writing of the breach; or

A3-2-3 the Supplier suspends, or threatens to suspend, payment of its debts or is unable to pay its debts as they fall due or admits inability to pay its debts or (being a company) is deemed unable to pay its debts within the meaning of section 123 of the Insolvency Act 1986, or (being an individual) is deemed either unable to pay its debts or as having no reasonable prospect of so doing, in either case, within the meaning of section 268 of the Insolvency Act 1986, or (being a partnership) has any partner to whom any of the foregoing apply; or

A3-2-4 the Supplier commences negotiations with all or any class of its creditors with a view to rescheduling any of its debts, or makes a proposal for or enters into any compromise or arrangement with its creditors; or

A3-2-5 (being a company) a petition is filed, a notice is given, a resolution is passed, or an order is made, for or in connection with the winding up of the Supplier; or

A3-2-6 (being an individual) the Supplier is the subject of a bankruptcy petition or order; or

A3-2-7 a creditor or encumbrancer of the Supplier attaches or takes possession of, or a distress, execution, sequestration or other such process is levied or enforced on or sued against, the whole or any part of its assets and such attachment or process is not discharged within 14 days; or

A3-2-8 (being a company) an application is made to court, or an order is made, for the appointment of an administrator or if a notice of intention to appoint an administrator is given or if an administrator is appointed over the Supplier; or

A3-2-9 (being a company) a floating charge holder over the Supplier's assets has become entitled to appoint or has appointed an administrative receiver; or

A3-2-10 a person becomes entitled to appoint a receiver over the Supplier's assets or a receiver is appointed over the Supplier's assets; or

A3-2-11 any event occurs, or proceeding is taken, with respect to the Supplier in any jurisdiction to which it is subject that has an effect equivalent or similar to any of the events mentioned in clause A3-2-3 to clause A3-2-10 inclusive; or

A3-2-12 there is a change of control of the Supplier (within the meaning of section 1124 of the Corporation Tax Act 2010); or

A3-2-13 the Supplier suspends, or threatens to suspend, or ceases or threatens to cease to carry on, all or substantially the whole of its business; or

- A3-2-14 the Supplier's financial position deteriorates to such an extent that in the Contracting Authorities opinion the Supplier's capability to adequately fulfil its obligations under the Contract has been placed in jeopardy; or
- A3-2-15 (being an individual) the Supplier dies or, by reason of illness or incapacity (whether mental or physical), is incapable of managing his or her own affairs or becomes a patient under any mental health legislation.
- A3-3 Termination of the Contract, however arising, shall not affect any of the parties' rights and remedies that have accrued as at termination. Clauses which expressly or by implication survive termination or expiry of the Contract shall continue in full force and effect.
- A3-4 Without prejudice to clause A3-3, clauses B1, B2, B3, B4, B6, B7, B8, C1, C2, C6 and C7 shall survive the termination or expiry of the Contract and shall continue in full force and effect.
- A3-5 Upon termination or expiry of the Contract, the Supplier shall immediately:
- A3-5-1 cease all work on the Contract;
 - A3-5-2 deliver to the Contracting Authorities all Goods which are ready for delivery (upon the Contracting Authorities or UK SBS's acting as an agent on behalf of the Contracting Authority's election);
 - A3-5-3 cease use of and return (or, at the Contracting Authorities or UK SBS's acting as an agent on behalf of the Contracting Authority's election, destroy) all of the Contracting Authorities Materials in the Supplier's possession or control; and
 - A3-5-4 cease all use of, and delete all copies of, the Contracting Authorities or UK SBS's Confidential Information.

SECTION B

B1 The goods

- B1-1 The Supplier shall supply all Goods in accordance with the Contract. In particular, the Supplier warrants that the Goods shall:
- B1-1-1 correspond with their description in the Order (including any Special Conditions and any applicable Specification)
 - B1-1-2 be of satisfactory quality (within the meaning of the Sale of Goods Act 1979, as amended) and fit for any purpose held out by the Supplier or made known to the Supplier by Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority expressly or by implication, and in this respect the Contracting Authority relies on the Supplier's skill and judgement;
 - B1-1-3 where applicable, be free from defects in design, material and workmanship and remain so for 12 months after delivery;
 - B1-1-4 comply with all applicable statutory and regulatory requirements relating to the manufacture, labelling, packaging, storage, handling and delivery of the Goods;
 - B1-1-5 be supplied in accordance with all applicable legislation in force from time to time; and
 - B1-1-6 be destined for supply into, and fully compliant for use in, the United Kingdom (unless specifically stated otherwise in the Order).

- B1-2 The Supplier shall ensure that at all times it has and maintains all the licences, permissions, authorisations, consents and permits that it needs to carry out its obligations under the Contract
- B1-3 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority shall have the right to inspect and test the Goods at any time before delivery.
- B1-4 If following such inspection or testing The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority considers that the Goods do not conform or are unlikely to comply with the Supplier's undertakings at clause B1-1, the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority shall inform the Supplier and the Supplier shall immediately take such remedial action as is necessary to ensure compliance.
- B1-5 Notwithstanding any such inspection or testing, the Supplier shall remain fully responsible for the Goods and any such inspection or testing shall not reduce or otherwise affect the Supplier's obligations under the Contract, and the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority shall have the right to conduct further inspections and tests after the Supplier has carried out its remedial actions.
- B1-6 The Contracting Authorities under the Contract are without prejudice to and in addition to the statutory terms implied in favour of the Contracting Authority under the Sale of Goods Act 1979, the Supply of Goods and Services Act 1982 and any other applicable legislation.

B2 Delivery

- B2-1 The Supplier shall ensure that:

B2-1-1 the Goods are properly packed and secured in such manner as to enable them to reach their destination in good condition;

B2-1-2 each delivery of the Goods is accompanied by a delivery note which shows the date of the Order, the Order number (if any), the type and quantity of the Goods (including the code number of the Goods, where applicable), special storage instructions (if any) and, if the Goods are being delivered by instalments, the outstanding balance of Goods remaining to be delivered (the **Delivery Note**); and

B2-1-3 if the Supplier requires the Contracting Authority to return any packaging material to the Supplier, that fact is clearly stated on the Delivery Note. Any such packaging material shall be returned to the Supplier at the Supplier's cost.

- B2-2 The Supplier shall deliver the Goods:

B2-2-1 on the Delivery Date;

B2-2-2 carriage paid;

B2-2-3 to the location or locations as is or are set out in the Order, or as instructed by the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority in writing prior to delivery (the **Delivery Location**);

B2-2-4 during the Contracting Authorities normal business hours on a Working Day, or as instructed by the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority.

- B2-3 Delivery of the Goods shall be completed on the completion of unloading the Goods at the Delivery Location and in accordance with the provisions of this clause B2. The Supplier will unload the Goods at its own risk as directed by the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority. The Goods will remain at the risk of the Supplier until delivery to the Contracting Authority (including unloading) is complete, including that the Supplier has obtained sign-off of the Delivery Note by or on behalf of the Contracting Authority, at which point ownership of the Goods shall transfer to the Contracting Authority.
- B2-4 If the Supplier delivers to the Contracting Authority more than the quantity of Goods ordered, the Contracting Authority will not be bound to pay for the excess and any excess will remain at the Supplier's risk and will be returnable to the Supplier at the Supplier's expense.
- B2-5 If the Supplier delivers more or less than the quantity of Goods ordered, and the Contracting Authority accepts the delivery, a pro rata adjustment shall be made to the invoice for the Goods.
- B2-6 The Supplier shall not deliver the Goods in instalments without the Contracting Authorities or UK SBS acting as an agent on behalf of the Contracting Authority's prior written consent. Where it is agreed that the Goods are to be delivered in instalments, they may be invoiced and paid for separately. However, failure by the Supplier to deliver any one instalment on time, or at all, or any defect in an instalment, shall entitle the Contracting Authority to the remedies set out in clause B3.
- B2-7 The Supplier shall:
- B2-7-1 obtain, at its risk and expense, any export and import licences or other authorisations necessary for the export and import of the Goods and their transit through any country or territory; and
 - B2-7-2 deal with all customs formalities necessary for the export, import and transit of the Goods, and will bear the costs of complying with those formalities and all duties, taxes and other charges payable for export, import and transit.
- B2-8 Without prejudice to the Contracting Authorities statutory rights, the Contracting Authority will not be deemed to have accepted any Goods until the Contracting Authority has had at least 14 Working Days after delivery to inspect them and the Contracting Authority also has the right to reject any Goods as though they had not been accepted for 14 Working Days after any latent defect in the Goods has become apparent.
- B2-9 If, in connection with the supply of the Goods, the Contracting Authority permits any employees or representatives of the Supplier to have access to any of the Contracting Authorities premises, the Supplier will ensure that, whilst on the Contracting Authorities premises, the Supplier's employees and representatives comply with
- B2-9-1 all applicable health and safety, security, environmental and other legislation which may be in force from time to time; and
 - B2-9-2 any Contracting Authority policy, regulation, code of practice or instruction relating to health and safety, security, the environment or access to and use of any Contracting Authority laboratory, facility or equipment which is brought to their attention or given to them whilst they are on Contracting Authorities premises by any employee or representative of the Contracting Authority.

B3 Remedies

B3-1 If the Goods, or any part of them, including any instalment(s), are not delivered on the Delivery Date, or do not comply with the undertakings set out in clause B1-1 or any requirements set out in the Special Conditions (if any), or the Supplier has otherwise not supplied the Goods in accordance with, or the Supplier has failed to comply with, any of the terms of the Contract, then, without limiting any of its other rights or remedies, the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority shall have the right, at its discretion, to any one or more of the following remedies, whether or not it has accepted the Goods or any part of them:

B3-1-1 to terminate the Contract in whole or in part without liability to the Supplier;

B3-1-2 at its discretion reject any of the Goods which have been delivered by the Delivery Date and refuse to accept any subsequent delivery of Goods that the Supplier attempts to make (and any such rejected Goods shall be stored and are returnable at the Supplier's sole risk and expense);

B3-1-3 purchase substitute Goods from elsewhere;

B3-1-4 accept late delivery of the Goods;

B3-1-5 to require the Supplier to remedy any defect in, repair or replace the rejected Goods, or to provide a full refund of the price of the rejected Goods;

B3-1-6 to recover from the Supplier any costs incurred by the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority in obtaining substitute goods from a third party; and

B3-1-7 to claim damages for any other costs, loss or expenses incurred by the Contracting Authority or UK SBS whilst acting as the agent on behalf of the Contracting Authority, which are in any way attributable to the Supplier's failure to carry out its obligations under the Contract.

B3-2 The Contract shall apply to any repaired or replacement Goods supplied by the Supplier.

B3-3 The Supplier shall indemnify, and shall keep indemnified the Contracting Authority and UK SBS acting as an agent on behalf of the Contracting Authority, in full and hold the Contracting Authority and UK SBS harmless against all claims, costs, expenses, damages and losses, whether direct or indirect (including loss of profits, loss of business, depletion of goodwill and similar losses), including any interest, penalties, and legal and other professional fees and expenses awarded against or incurred or paid by the Contracting Authority and UK SBS acting as an agent on behalf of the Contracting Authority as a result of or in connection with:

B3-3-1 any claim made against the Contracting Authority or UK SBS for actual or alleged infringement of a third party's intellectual property rights arising out of, or in connection with, the manufacture, supply or use of the Goods, to the extent that the claim is attributable to the acts or omissions of the Supplier, its employees, agents or subcontractors;

B3-3-2 any claim made against the Contracting Authority or UK SBS by a third party arising out of, or in connection with, the supply of the Goods, to the extent that such claim arises out of the breach, negligent performance or failure or delay in performance of the Contract by the Supplier, its employees, agents or subcontractors; and

B3-3-3 any claim made against the Contracting Authority or UK SBS by a third party for death, personal injury or damage to property arising out of, or in connection with, defects in Goods, to the extent that the defect in the Goods is attributable to the acts or omissions of the Supplier, its employees, agents or subcontractors.

This clause B3-3 shall survive termination or expiry of the Contract.

B3-4 The Contracting Authorities rights and remedies under the Contract are in addition to its rights and remedies implied by statute and common law.

B3-5 The Supplier warrants that it has full clear and unencumbered title to the Goods and that upon completion of delivery the Supplier has full and unrestricted rights to sell and transfer absolutely all Goods to the Contracting Authority.

B4 Title, risk and use

B4-1 Title and risk in the Goods shall pass to the Contracting Authority on completion of delivery.

B5 Price and payment

B5-1 The price of the Goods shall be the price set out in the Order.

B5-2 The price of the Goods excludes amounts in respect of value added tax (**VAT**) or other applicable sales tax, but includes the costs of all materials, costs charges, expenses, packaging, insurance and carriage of the Goods. No extra charges shall be effective unless agreed in writing and signed by or on behalf of the Contracting Authority.

B5-3 The Contracting Authority shall, on receipt of a valid VAT invoice from the Supplier, pay to the Supplier such additional amounts in respect of VAT as are chargeable on the supply of the Goods at the statutory rate in force at the relevant time.

B5-4 The Supplier may invoice the Contracting Authority for the Goods on or at any time after the completion of delivery.

B5-5 The Contracting Authority shall pay correctly rendered invoices within 30 days of receipt of the invoice. Payment shall be made to the bank account nominated in writing by the Supplier unless the Contracting Authority agrees in writing to another payment method.

B5-6 The Supplier shall not be entitled to assert any credit, set-off or counterclaim against the Contracting Authority in order to justify withholding payment of any such amount in whole or in part. The Contracting Authority may, without limiting any other rights or remedies it may have, set off any amount owed to it by the Supplier against any amounts payable by it to the Supplier under the Contract.

B5-7 The Supplier acknowledges and agrees that it will pay correctly rendered invoices from any of its suppliers or other sub-contractors within 30 days of receipt of the invoice.

B6 Contracting Authority property

B6-1 The Supplier acknowledges that all information (including confidential information), equipment and tools, drawings, specifications, data, software and any other materials supplied by the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority to the Supplier (**Contracting Authorities Materials**) and all rights in the Contracting Authorities Materials are and shall remain at all times the exclusive property of the Contracting Authority and UK SBS

(as appropriate). The Supplier shall keep the Contracting Authorities Materials in safe custody at its own risk, maintain them in good condition until returned to the Contracting Authority or UK SBS, and not dispose or use the same other than for the sole purpose of performing the Supplier's obligations under the Contract and in accordance with written instructions or authorisation from the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority.

B7 Insurance

- B7-1 During the term of the Contract and for a period of 3 years thereafter, the Supplier shall maintain in force the following insurance policies with reputable insurance companies:
- B7-1-1 public liability insurance for not less than £1 million per claim (unlimited claims);
 - B7-1-2 employer liability insurance for not less than £1 million per claim (unlimited claims); and
 - B7-1-3 product liability insurance for not less than £1 million for claims arising from any single event and not less than £2 million in aggregate for all claims arising in a year.
- B7-2 The Supplier shall ensure that the Contracting Authorities interest is noted on each insurance policy, or that a generic interest clause has been included.
- B7-3 On request from the Contracting Authorities or UK SBS acting as an agent on behalf of the Contracting Authority, the Supplier shall provide the Contracting Authority or UK SBS with copies of the insurance policy certificates and details of the cover provided.
- B7-4 The Supplier shall ensure that any subcontractors also maintain adequate insurance having regard to the obligations under the Contract which they are contracted to fulfil.
- B7-5 The Supplier shall:
- B7-5-1 do nothing to invalidate any insurance policy or to prejudice the Contracting Authorities entitlement under it; and
 - B7-5-2 notify the Contracting Authority if any policy is (or will be) cancelled or its terms are (or will be) subject to any material change.
- B7-6 The Supplier's liabilities under the Contract shall not be deemed to be released or limited by the Supplier taking out the insurance policies referred to in clause B7-1.
- B7-7 If the Supplier fails or is unable to maintain insurance in accordance with clause B7-1, the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority may, so far as it is able, purchase such alternative insurance cover as it deems to be reasonably necessary and shall be entitled to recover all reasonable costs and expenses it incurs in doing so from the Supplier.

B8 Liability

- B8-1 In this clause B8, a reference to the Contracting Authority or UK SBS's liability for something is a reference to any liability whatsoever which the Contracting Authority or UK SBS might have for it, its consequences, and any direct, indirect or consequential loss, damage, costs or expenses resulting from it or its consequences, whether the liability arises under the Contract, in tort or otherwise, and even if it results from the Contracting Authorities or UK SBS's negligence or from negligence for which the Contracting Authority or UK SBS would otherwise be liable.

- B8-2 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority is not in breach of the Contract, and neither the Contracting Authority nor UK SBS have any liability for anything, to the extent that the apparent breach or liability is attributable to the Supplier's breach of the Contract.
- B8-3 Subject to clause B8-6, neither the Contracting Authority nor UK SBS acting as agent on behalf of the Contracting Authority shall have any liability for:
- B8-3-1 any indirect or consequential loss or damage;
 - B8-3-2 any loss of business, rent, profit or anticipated savings;
 - B8-3-3 any damage to goodwill or reputation;
 - B8-3-4 loss, theft, damage or destruction to any equipment, tools, machinery, vehicles or other equipment brought onto the Contracting Authorities premises by or on behalf of the Supplier; or
 - B8-3-5 any loss, damage, costs or expenses suffered or incurred by any third party.
- B8-4 Subject to clause B8-6, the Contracting Authority and UK SBS's total liability shall be limited to the price of the Goods.
- B8-5 Subject to clause B8-6, the Supplier's total liability in connection with the Contract shall be limited to £1,000,000.
- B8-6 Nothing in the Contract restricts either the Contracting Authority, UK SBS or the Supplier's liability for:
- B8-6-1 death or personal injury resulting from its negligence; or
 - B8-6-2 its fraud (including fraudulent misrepresentation); or
 - B8-6-3 breach of any obligations as to title implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Service Act 1982.

SECTION C

C1 Confidential information

- C1-1 A party who receives Confidential Information shall keep in strict confidence (both during the term of the Contract and after its expiry or termination) all Confidential Information which is disclosed to it. That party shall only disclose such Confidential Information to those of its employees, agents or subcontractors who need to know the same for the purpose of discharging that party's obligations under the Contract, and shall ensure that such employees, agents or subcontractors shall keep all such information confidential in accordance with this clause C1. Neither party shall, without the prior written consent of the other party, disclose to any third party any Confidential Information, unless the information:
- C1-1-1 was public knowledge or already known to that party at the time of disclosure; or
 - C1-1-2 subsequently becomes public knowledge other than by breach of the Contract; or
 - C1-1-3 subsequently comes lawfully into the possession of that party from a third party; or

C1-1-4 is agreed by the parties not to be confidential or to be disclosable.

- C1-2 To the extent necessary to implement the provisions of the Contract (but not further or otherwise), either party may disclose the Confidential Information to any relevant governmental or other authority or regulatory body, provided that before any such disclosure that party shall make those persons aware of its obligations of confidentiality under the Contract and shall use reasonable endeavours to obtain a binding undertaking as to confidentiality from all such persons.
- C1-3 All documents and other records (in whatever form) containing Confidential Information supplied to or acquired by a party from the other party shall be returned promptly to the other party (or, at the election of the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority, destroyed) on expiry or termination of the Contract, and no copies shall be kept.

C2 Transparency

- C2-1 The Supplier acknowledges that the United Kingdom Government's transparency agenda requires that contracts, such as the Contract, and any sourcing document, such as the invitation to sourcing, are published on a designated, publicly searchable website.
- C2-2 The Supplier acknowledges that, except for any information which is exempt from disclosure in accordance with the provisions of FOIA, the content of the Contract is not Confidential Information. The Contracting Authority and or UK SBS acting as an agent on behalf of the Contracting Authority shall be responsible for determining in their absolute discretion whether any of the content of the Contract is exempt from disclosure in accordance with the provisions of FOIA.
- C2-3 Notwithstanding any other Contracting Authority and or UK SBS publishing the Contract in its entirety, (but with any information which is exempt from disclosure in accordance with the provisions of FOIA redacted) including from time to time agreed changes to the Contract, to the general public.

C3 Force majeure

- C3-1 If any event or circumstance that is beyond the reasonable control of the Supplier, and which by its nature could not have been foreseen by the Supplier or, if it could have been foreseen, was unavoidable, (provided that the Supplier shall use all reasonable endeavours to cure any such events or circumstances and resume performance under the Contract) prevent the Supplier from carrying out its obligations under the Contract for a continuous period of more than 10 Business Days, the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority may terminate this Contract immediately by giving written notice to the Supplier.

C4 Corruption

- C4-1 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority shall be entitled to terminate the Contract immediately and to recover from the Supplier the amount of any loss resulting from such termination if the Supplier or a Supplier's Associate:

C4-1-1 offers or agrees to give any person working for or engaged by the Contracting Authority, UK SBS or any Public Body any favour, gift or other consideration, which could act as an inducement or a reward for any act or failure to act connected to the Contract, or any other agreement between the Supplier and the Contracting Authority, UK SBS or any Public Body, including its award to the Supplier or a Supplier's Associate and any of the

rights and obligations contained within it;

C4-1-2 has entered into the Contract if it has knowledge that, in connection with it, any money has been, or will be, paid to any person working for or engaged by the Contracting Authority, UK SBS or any Public Body by or for the Supplier, or that an agreement has been reached to that effect, unless details of any such arrangement have been disclosed in writing to the Contracting Authority or UK SBS before the Contract is entered into;

C4-1-3 breaches the provisions of the Prevention of Corruption Acts 1889 to 1916, or the Bribery Act 2010; or

C4-1-4 gives any fee or reward the receipt of which is an offence under Section 117(2) of the Local Government Act 1972.

C4-2 For the purposes of clause C4-1, "loss" shall include, but shall not be limited to:

C4-2-1 The Contracting Authorities or UK SBS's costs in finding a replacement supplier;

C4-2-2 direct, indirect and consequential losses; and

C4-2-3 any loss suffered by the Contracting Authority or UK SBS as a result of a delay in its receipt of the Goods.

C5 Data protection

C5-1 The Supplier shall comply at all times with all data protection legislation applicable in the UK from time to time.

C6 Freedom of information

C6-1 The Supplier acknowledges that the Contracting Authority and or UK SBS may be subject to the requirements of FOIA and EIR and shall assist and co-operate with the Contracting Authority and or UK SBS to enable them to comply with its obligations under FOIA and EIR.

C6-2 The Supplier shall and shall procure that its employees, agents, sub-contractors and any other representatives shall provide all necessary assistance as reasonably requested by the Contracting Authority and or UK SBS acting as an agent on behalf of the Contracting Authority to enable the Contracting Authority and or UK SBS to respond to a Request for Information within the time for compliance set out in section 10 of FOIA or regulation 5 of EIR.

C6-3 The Contracting Authority and or UK SBS acting as an agent on behalf of the Contracting Authority shall be responsible for determining (in its absolute discretion) whether any Information:

C6-3-1 is exempt from disclosure in accordance with the provisions of FOIA or EIR;

C6-3-2 is to be disclosed in response to a Request for Information,

and in no event shall the Supplier respond directly to a Request for Information unless expressly authorised to do so in writing by the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority.

C6-4 The Supplier acknowledges that the Contracting Authority or UK SBS may be obliged under the FOIA or EIR to disclose Information, in some cases even where that Information is commercially sensitive:

C6-4-1 without consulting with the Supplier, or

C6-4-2 following consultation with the Supplier and having taken its views into account.

- C6-5 Where clause C6-4-2 applies the Contracting Authority and or UK SBS shall, in accordance with any recommendations issued under any code of practice issued under section 45 of FOIA, take reasonable steps, where appropriate, to give the Supplier advanced notice, or failing that, to draw the disclosure to the Supplier's attention as soon as practicable after any such disclosure.
- C6-6 Where the Supplier organisation is subject to the requirements of the FOIA and EIR, C6-7 will supersede C6-2 – C6-5. Where the Supplier organisation is not subject to the requirements of the FOIA and EIR, C6-7 will not apply.
- C6-7 The Contracting Authority and UK SBS acknowledge that the Supplier may be subject to the requirements of the FOIA and EIR and shall assist and co-operate with the Supplier to enable them to comply with its obligations under the FOIA and EIR.

C7 General

C7-1 Entire agreement.

C7-1-1 The Contract constitutes the entire agreement between the Contracting Authority and the Supplier in relation to the supply of the Goods and the Contract supersedes any earlier agreements, arrangements and understandings relating to that subject matter.

C7-2 Liability.

C7-2-1 Where the Contracting Authority is more than one person, the liability of each such person for their respective obligations and liabilities under the Contract shall be several and shall extend only to any loss or damage arising out of each such person's own breaches.

C7-2-2 Where the Contracting Authority is more than one person and more than one of such persons is liable for the same obligation or liability, liability for the total sum recoverable will be attributed to the relevant persons in proportion to the price payable by each of them under the Contract.

C7-3 Assignment and subcontracting.

C7-3-1 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority may at any time assign, transfer, charge, subcontract or deal in any other manner with any or all of its rights or obligations under the Contract.

C7-3-2 The Supplier may not assign, transfer, charge, subcontract or deal in any other manner with any or all of its rights or obligations under the Contract without the Contracting Authorities or UK SBS's, acting as an agent on behalf of the Contracting Authority's prior written consent.

C7-4 Further assurance.

C7-4-1 The Supplier will promptly at the request of the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority do (or procure to be done) all such further acts and things, including the execution of all such other documents, as the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority may from time to time require

for the purpose of securing for the Contracting Authority the full benefit of the Contract, including ensuring that all title in the Goods is transferred absolutely to the Contracting Authority.

C7-5 Publicity

C7-5-1 The Supplier shall not make any press announcements or publicise this Contract in any way without prior written consent from the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority.

C7-5-2 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority shall be entitled to publicise this Contract in accordance with any legal obligation upon the Contracting Authority or UK SBS, including any examination of this Contract by the National Audit Office pursuant to the National Audit Act 1983 or otherwise.

C7-5-3 The Supplier shall not do anything or cause anything to be done, which may damage the reputation of the Contracting Authority or UK SBS or bring the Contracting Authorities or UK SBS's into disrepute.

C7-6 Notices.

C7-6-1 Any notice or other communication given to a party under or in connection with the Contract shall be in writing, addressed to:

C7-6-1-a in the case of the Contracting Authority: Simon Cooper; Address: Polaris House, North Star Avenue, Swindon, Wiltshire SN2 1ET; Fax: N/A; Email: Simon.Cooper@stfc.ac.uk (and a copy of such notice or communication shall be sent to: Sharon Keiller, Polaris House, North Star Avenue, Swindon, Wiltshire SN2 1ET; Email: Sharon.keiller@uksbs.co.uk

C7-6-1-b in the case of the Supplier: the address, fax number and email address set out in the Order, or any other address, fax number or email address which that party may have specified to the other party in writing in accordance with this clause C7-6, and shall be delivered personally, or sent by pre-paid first-class post, recorded delivery, commercial courier, fax or e-mail.

or any other address or fax number which that party may have specified to the other party in writing in accordance with this clause C7-6, and shall be delivered personally, or sent by pre-paid first-class post, recorded delivery, commercial courier or fax.

C7-6-2 A notice or other communication shall be deemed to have been received: if delivered personally, when left at the address referred to in clause C7-6-1; if sent by pre-paid first-class post or recorded delivery, at 9.00 am on the second Working Day after posting; if delivered by commercial courier, on the date and at the time that the courier's delivery receipt is signed; or, if sent by fax or e-mail between the hours of 9.00am and 5.00pm on a Working Day, upon successful transmission (provided that the sender holds written confirmation automatically produced by the sender's fax machine of error free and complete transmission of that fax to the other party's fax number), or if sent by fax or e-mail outside the hours of 9.00am and 5.00pm on a Working Day, at 9.00am on the next Working Day following successful transmission (provided that the sender holds written confirmation automatically produced by the sender's fax machine of error free and complete transmission of that fax to the other party's fax number).

C7-6-3 This clause C7-6-3 shall only apply where UK SBS is not the Contracting Authority. In such cases, UK SBS may give or receive any notice under the Contract on behalf of the Contracting Authority and any notice given or received by UK SBS will be deemed to have been given or received by the Contracting Authority.

C7-6-4 Except for clause **Fejl! Henvisningskilde ikke fundet.**, the provisions of this clause C7-6-4 shall not apply to the service of any proceedings or other documents in any legal action.

C7-7 Severance

C7-7-1 If any court or competent authority finds that any provision of the Contract (or part of any provision) is invalid, illegal or unenforceable, that provision or part-provision shall, to the extent required, be deemed to be deleted, and the validity and enforceability of the other provisions of the Contract shall not be affected.

C7-7-2 If any invalid, unenforceable or illegal provision of the Contract would be valid, enforceable and legal if some part of it were deleted, the provision shall apply with the minimum modification necessary to make it legal, valid and enforceable.

C7-8 **Waiver.** A waiver of any right or remedy under the Contract is only effective if given in writing and shall not be deemed a waiver of any subsequent breach or default. No failure or delay by a party to exercise any right or remedy provided under the Contract or by law shall constitute a waiver of that or any other right or remedy, nor shall it preclude or restrict the further exercise of that or any other right or remedy. No single or partial exercise of such right or remedy shall preclude or restrict the further exercise of that or any other right or remedy.

C7-9 **No partnership, employment or agency.** Nothing in the Contract creates any partnership or joint venture, nor any relationship of employment, between the Supplier and either the Contracting Authority or UK SBS. Nothing in the Contract creates any agency between the Supplier and either the Contracting Authority or UK SBS.

C7-10 **Third party rights.** A person who is not a party to this Contract shall not have any rights under or in connection with it, except that UK SBS and any member of the UK SBS, Associated Bodies or Authorised Entities that derives benefit under this Contract may directly enforce or rely on any terms of this Contract.

C7-11 **Variation.** Any variation to the Contract, including any changes to the Goods, the Special Conditions or the Order, including the introduction of any additional terms and conditions, shall only be binding when agreed in writing by the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority and the Supplier.

C7-12 **Counterparts.** The Contract may be signed in counterparts, each of which, when signed, shall be an original and both of which together evidence the same agreement.

C7-13 Governing law and jurisdiction.

C7-13-1 Subject to clause C7-13-2, the Contract, and any dispute or claim arising out of or in connection with it or its subject matter or formation (including non-contractual disputes or claims), shall be governed by, and construed in accordance with, English law, and the parties irrevocably submit to the exclusive jurisdiction of the courts of England and Wales.

C7-13-2 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority shall be free to enforce its intellectual property rights in any jurisdiction.

C7-14 Modern Slavery Act 2015

C7-14-1 During the Term or any extension of the Contract, the Contracting Authority is committed to ensuring that its supply chain complies with the above Act. The Supplier shall provide such assurances, on the anniversary of the commencement date or completion of the Contract, if less than 12 months.

C7-14-2 The Supplier shall provide a report covering the following but not limited to areas as relevant and proportionate to the Contract evidencing the actions taken, relevant to the Supplier and their supply chain associated with the Contract.

C7-14-2-a Impact assessments undertaken

C7-14-2-b Steps taken to address risk/actual instances of modern slavery and how actions have been prioritised

C7-14-2-c Evidence of stakeholder engagement

C7-14-2-d Evidence of ongoing awareness training

C7-14-2-e Business-level grievance mechanisms in place to address modern slavery

C7-14-2-f Actions taken to embed respect for human rights and zero tolerance of modern slavery throughout the organisation

C7-14-3 The Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority reserves the sole right to audit any and all reports submitted by the Supplier to an extent as deemed necessary and the Supplier shall unreservedly assist the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority in doing so. Any financial burden incurred by the Supplier in doing so shall not be reimbursable.

C7-15 Changes in costs resulting from changes to Government Legislation, Levies or Statutory Payments

The Contracting Authority will reimburse during any term or extension (or, where such costs, awards or damages arise following termination/expiry) of this Agreement, any increases in the Supplier's cost of providing the Goods by reason of any modification or alteration to the Government legislation duties or levies or other statutory payments (including but not limited to National Insurance and/or VAT and/or introduction of or amendment to working time minimum wages). Subject always to open book access to the Supplier's records and always after a period of due diligence carried out by the Contracting Authority, relevant and proportionate to the value concerned.

C7-16 Taxation obligations of the Supplier

C7-16-1 The relationship between the Contracting Authority, UK SBS and the Supplier will be that of "independent contractor" which means that the Supplier is not an employee, worker, agent or partner of the Contracting Authority or UK SBS and the Supplier will not give the impression that they are.

C7-16-2 As this is not an employment Contract the Supplier will be fully responsible for all their own tax including any national insurance contributions arising from carrying out the Services. If the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority has to pay any such tax then the Supplier will pay back to the Contracting Authority or UK SBS in full, any money that the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority has to pay, and they will also pay back the Contracting Authority or UK SBS for any fine or other punishment imposed on the Contracting Authority or UK SBS because the tax or national insurance was not paid by the Supplier.

C7-17 Cyber essentials questionnaire

The supplier agrees that during any term or extension, at the sole discretion of the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority, to complete the attached questionnaire as many times as is required within 14 days from notice, and shall send this information as directed by the Contracting Authority or UK SBS acting as an agent on behalf of the Contracting Authority. The Contracting Authority and UK SBS acting as an agent on behalf of the Contracting Authority is required to provide such assurances to comply with government legislation. Any financial burden associated with the completion and submission of this questionnaire shall be at the suppliers cost and will not be reimbursable.



Copy of Statement
of Assurance Questionnaire

Schedule 2 Purchase Order Form to follow

Schedule 3 The Services

1. Duration of Contract

This Contract shall commence on 21st September 2017 and subject to any provisions for earlier termination contained in the Standard Terms, shall end on 20th September 2019.

2. Scope of Specification

Definitions and abbreviations within this specification

STFC	- Science & Technology Facilities Council
RAL	- Rutherford Appleton Laboratory, Chilton, UK
ISIS	- Facilities department within STFC concerned with procuring equipment
Supplier	- Company who is awarded the contract
CRISP	- One of 34 experiment areas within the STFC neutron facility
FAT	- Factory Acceptance Testing
SAT	- Site Acceptance Testing

The terms slit-set and jaws are used interchangeably to refer to the same component.

Accuracy	Maximum deviation of a measurement from a known standard or value.
Repeatability	The ability to obtain the same value from multiple and repeated measurements with the same system variables.
Resolution	The smallest increment that can be made and detected by a system.

1 Technical Requirements

The requirement is for one fully assembled neutron beam slit-set for defining the beam aperture on the CRISP beamline along with motion control cables. The jaws of the slit-set will consist of four independently controlled axes of motion (consisting of two Y and two Z axes) mounted upon a structure. Each axis will drive a neutron absorbing 'blade' in order to define a neutron beam to the required rectangular aperture.

The following sections of this document detail the motion, blade, operational and electrical requirements of this system.

1.1 Motion Requirements

1.1.1 Motion Overview

The following specification requirements apply locally¹ to all of the slit-set's axes of motion at operating temperature (60-65°C).

¹ 'Locally' distinguishes these requirements from global specification requirements which would incorporate any errors from the "Jaw translation assembly"

Type of Drive	Servo or Stepper Motors
Speed (minimum)	5mm.s ⁻¹
Positional Accuracy	±50µm locally (over full range)
Positional Repeatability	±50µm locally (home position from a high precision limit switch)
Travel Restriction	Limit switch at both ends of all axes
Type of Feedback	Resolver or Encoder (2 or 3 channel, differential pair) suitable for high radiation area
Power Off Condition	Self-supporting mechanism capable of holding blade mass without a brake such as use of leadscrews. Feedback device shall stay live at all times.

Table 1 : Motion Overview

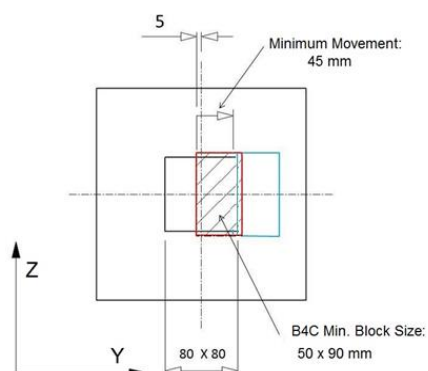
The Supplier shall consider the temperature and vacuum environmental conditions of any motors selected. As an example, if the Supplier decided to use stepper motors, the Phytron Vacuum Stepper Motor range, or equivalent, would be suitable if the jaws were designed in such a way that the motors fell within the operational vacuum of the housing. Radiation levels are not deemed high enough to pose a threat to any motors or switches however considerations should be made when selecting the type of feedback to utilise such that it is sufficiently resistant to radiation and other environmental conditions present. STFC have not made recommendations on the type of feedback to use or whether it shall be linear or rotary feedback. The supplier is responsible for specifying this feedback device to meet the requirements of the project and justifying their selection.

(http://www.phytron-elektronik.de/antrieb/index.php?Set_ID=160&PID=3)

1.1.2 Aperture Dimensions

The beam aperture through the slit-set jaws shall be a maximum of 80mm x 80mm as defined by the blades. The beam shall be able to be completely closed down with a 5mm minimum achievable overlap between blades to guarantee that no beam is able to pass through a closed 0mm x 0mm aperture. Alignment and perpendicularity of the aperture to the beam will be managed through kinematic mounts on the slit-set jaws vacuum enclosure.

To ensure there are no shine paths around blades, a minimum border of 5mm outside the maximum aperture will be required when fully closed in addition to this, each blade is required to translate 5mm past the centre line and right to the edge of the aperture (at either +/-40mm). This will result in a minimum blade width of 50mm.



1.2 Blades

1.2.1 Material

The blades within the slit-set are to be made from 10mm thick sintered B₄C, this material cannot be drilled or screwed and

Figure 1 : Blade Travel Dimensions

can only be clamped or bonded. STFC will free issue the blades but the Supplier is required to determine the blade size required before this can occur, STFC will also require 6-8 weeks to procure the blades before they can be sent to the Supplier. The Supplier shall take responsibility for the fitment of blades and shall ensure blade edges are parallel and square to their adjacent pair. Assuming a blade size of 50mm width by 90mm height, which allows for the 5mm required overlap and travel required, the blade mass would be 112g given a 10mm thick blade with the density of sintered B4C being 2480 Kg/m³.

1.2.2 Arrangement

On the CRISP beamline, vertical divergence is more damaging to measurement than horizontal divergence, as a result of this, the pair of blades which correct for vertical divergence, North and South, should be downstream and closer to the sample than the orthogonal pair, East and West, due to the distance of this jaw set from the sample however, this requirement is not essential. The blade pairs; horizontal East and West, and vertical North and South, shall be separated by no more than 30mm (front of one pair to the front of the other pair). Each blade shall have minimal offset from its partner blade while retaining the ability to overlap the partner blade, to close the beam entirely, without clashing.

Upon meeting these requirements, the offset of blades in each pair and separation of blade pairs, should be minimised as much as possible.

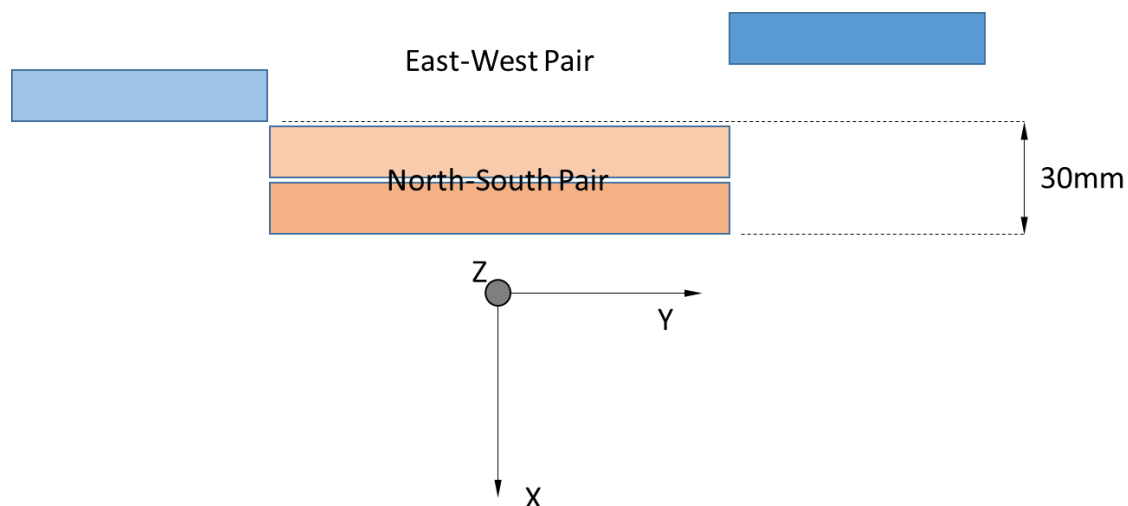


Figure 2 : Staggered Blade Arrangement

1.2.3 Mounting

During operation, only the blades are allowed to pass within the active area (the maximum beam aperture area) of the slit-set. All other structures, motion control equipment and mounting features will stay clear of this active area.

Mounting features are required to ensure the blades are positioned reliably and accurately. A fastening method that allows for maintenance, such as blade replacement, is preferred but adhesives can be used if necessary. The Supplier should also take care to consider the operational temperature and vacuum requirements of the system when selecting any resins and adhesives.

Blades shall be mounted perpendicular and parallel to each other within 0.6mm and 0.1mm respectively.

1.3 Operational Environment

1.3.1 Vacuum Environment

The slit-set vacuum enclosure will be subject to atmospheric pressure but shall operate with an internal vacuum of 1×10^{-3} mbar with a leak rate less than 1×10^{-6} mbar.L.s⁻¹.

A DN160 seal face, co-seal groove and clamp screw PCD, is required, front and back.

The supplied slit-set assembly shall be suitably cleaned for a vacuum environment and all trapped volumes shall be vented. All equipment operating within the vacuum shall have been proven to perform well within a similar vacuum range. Evidence will be required for any equipment without a vacuum rating. Lubricants and outgassing material should be kept to a minimum.

1.3.2 Space Envelope

The slit set vacuum enclosure, including electrical connectors, should fit in to an area of 400mm H x 400mm W x 150mm D. The Supplier should also make considerations for the bend radiuses required of the selected cables. This volume can be increased if the Supplier believes this space to be inadequate so the Supplier should aim to make the enclosure as compact as possible and shall state in the returned quotation what they believe to be the achievable space envelope required for the system.

The Supplier should investigate the feasibility of placing the electrical connectors on different faces if this were to pose a benefit to reducing the required space envelope for the slit-set assembly and cable routing.

1.3.3 Radiation Environment

Due to the close proximity of the slit-set to the target station wall and beam energy chopper, the slit-set should be capable of operating within an ISIS instrument area that receives relatively high amounts of neutron and gamma radiation. The induced radiation currently measured at the T-Zero blocking blade can vary from 100 microsieverts/hr to 200 microsieverts/hr. Aluminium alloys should be used for construction and stainless steel for fasteners where possible.

1.3.4 Magnetic Environment

CRISP does not utilise a polarised beam at this point in the beamline so there is no restriction on the use of magnetic feedback devices, motors or other components.

1.3.5 Operational Temperature

The slit-set shall operate in a temperature range between 60°C and 65°C and shall meet specification at these operational temperatures. This temperature range is due to the close proximity of the mounting location to the T-Zero chopper and seasonal variations. The selection of feedback devices and other components may be impacted if the ambient temperature is affected by more extreme experiments. The system shall be tested against the specification stated in section 1.1.1 at an ambient air temperature of approximately 23°C and verified using external devices and also be subjected to a closed loop test using the built in feedback devices at a representative operational temperature of 65°C.

1.3.6 Operational Duty

During normal operation, the blades could be moved through their full range of motion up to five times per day but then be left stationary for long periods. The slit-set jaws will have an

anticipated service life of 10 years. This equates to approximately 5000 cycles. The homing procedure to enable reliable positioning must be robust as the jaw set will be inaccessible in normal use.

5 cycles per day x 100 days per year x 10 years.

1.3.7 Installation and Maintenance

The slit-set installation area will only have direct access from above. After this time, the area will be surrounded by radiation shielding. The design shall incorporate features to assist in installation and removal for blade maintenance. This should be in the form of features such as a top mounted handle, all mounting fasteners accessible from above and all connectors accessible from above.

The enclosure shall utilise M4 p-clips for any cable routing.

1.3.8 Handling

The internal mechanisms of the slit-set should be robust enough to withstand general handling and assembly of the blades. The jaws and offsetting assembly shall be designed to be manually lifted and shall thus weigh less than 15kg.

1.4 Motion Control and Electrical Requirements

1.4.1 Connectors

The Supplier shall aim to use the LEMO B-series range of connectors for all electrical connections to the slit-set enclosure. As the CRISP slit-set is being used to investigate the reduction of cabling between slit-set and motion control rack, the Supplier shall aim to consolidate all feedback devices in to a single connector, all limit switches in to a single connector and all servo/stepper drives to a single connector, if viable. As outlined in the following sections, care shall be taken to follow the keying alignment stated in each section (sometimes as part of the part number). Reducing the overall connector count is considered a high priority and the Supplier should aim to ensure this target is met but if this is not viable, or would increase complexity of the delivered item, the Bidder shall state this reasoning to STFC at the tender return stage of the project. The Supplier shall present the selected connectors at the PDR stage of the project and will be responsible for defining an appropriate pin configuration for the connectors.

The following sections specify the use of hermetically sealed sockets/receptacles on the jaws, if however, the design is such that the connectors would not be required to hold a vacuum, the supplier may utilise non-sealed Lemo alternatives as long as they adhere to the outlined keying arrangements.

1.4.1.1 Feedback

The feedback connector used on the slit-set should be a hermetically sealed socket as defined by the following LEMO part number:

HGK 4B 324 CLA PV

The mating plug to this socket is available in either a straight or elbow variant.

Straight Plug :	LEMO FGK 4B 324 CYPD 13
Elbow Plug:	LEMO FHK 4B 324 CYPD 13

The design shall specify the recommended plug dependent on socket position used to conform to the space envelope constraints of the slit-set. The supplier shall specify appropriate cable collets and accessories in their provided cable assembly.

1.4.1.2 Limit Switches

The connector used for limit switches should be a hermetically sealed socket as defined by the following LEMO part number:

HGL 3B 324 CLA PV

The mating plug to this socket is available in either a straight or elbow variant.

Straight Plug:	LEMO FGL 3B 324 CYPD 11
Elbow Plug:	LEMO FHL 3B 324 CYPD 11

The design shall specify the recommended plug dependent on socket position used to conform to the space envelope constraints of the slit-set. The supplier shall specify appropriate cable collets and accessories in their provided cable assembly.

1.4.1.3 Motors

The connector for the motors shall be a hermetically sealed socket from the LEMO B-series range of connectors. The supplier is responsible for determining the electrical requirements of this connector, based on the servo or stepper motors selected for actuation of the blades, and should aim to reduce all motor connections in to a single connector of smallest viable size. The Supplier shall discuss with STFC if this is not a viable approach. Any LEMO connector selected for drive shall be keyed with the 'J' alignment.

1.4.2 Cables

The Supplier is expected to supply motion control cables, 10m in length, as part of the deliverables for this contract. STFC has made the following cable recommendations for feedback and limits based on the requirements of the project and utilising commercially available off-the-shelf² cables. No cable has been specified for the motors and it shall be the responsibility of the Supplier to select this cable based on the connector specified as part of section 1.4.1.3; the Supplier should aim to use either LAPP or Helukabel as the supplier. The Supplier is permitted to recommend other cable variants and suppliers as alternatives to

² Non-bespoke cable. Not custom made and readily available.

those listed below if they believe the design and resulting slit-set would benefit from this but these changes shall be presented to STFC for approval before any decision is made.

The slit-set shall be designed to allow for the physical dimensions and bend radiuses of these cables and their resulting assemblies. The following information is purely for advisory purposes and the Supplier shall refer to the respective datasheets for more accurate information.

1.4.2.1 Feedback Cable

LAPP 0034044 : 10 x (2 x 0.22). This is a copper braided cable consisting of 10 individual, foil-wrapped, twisted pairs of conductor size 0.22mm² produced by LAPP. The outer-diameter of this cable is 12.5mm and the bend radius is 125mm. If resolvers are used as the feedback device, blades on the Y axis of motion, and likewise on the Z axis of motion, shall share a single twisted pair for their COM phase connections. Likewise, encoders shall be permitted to share power connections however if the design calls for three channel encoders the Z pairs will be passed through the limit switch cable of section 0.

1.4.2.2 Limit Switch Cable

HELUKABEL 21042 : 12 x 2 x 0.25. This is a copper braided cable with twisted pairs of conductor size 0.25mm². The outer diameter of this cable is 11.4mm and the bend radius is 57mm. All limit switches are permitted to use a single common ground connection but the Supplier should ensure this is suitable. As stated in section 0, the additional cores available on this cable are permitted to be used for the Z channel of encoders if 3 channel encoders are selected.

2 Qualifications, Inspections and Testing

2.1 Conformity to Motion Specification

Testing of the motion system will be initially conducted at the Supplier's site and witnessed by STFC to ensure that motion system operates and complies with the specification outlined in section 0. These tests shall be conducted at the expected operating temperature of 65°C. STFC will also witness the assembly when the power is turned off to ensure there is no drift in blade positioning.

When designing the system, suitable datum and alignment features should be added to ensure that both the accuracy and repeatability of the system can be determined using dial test indicators. Qualitative requirements will also be commented upon.

These tests shall be conducted using motion control equipment supplied by the Supplier. As previously stated, Bidders shall state during the quotation process if they do not have access to the appropriate motion control equipment, that supports all the components required, for testing this type of system.

2.2 Vacuum and Leak Tests

The slit-set assembly shall be sealed with suitable blanking flanges and evacuated to below 1x10⁻³mbar. The use of vacuum grease is not permitted and the pump used cannot be oil

based. For the final leak rate acceptance test, helium gas will be applied to the external surfaces of the enclosure assembly and leak detection, with a helium mass-spectrometer connected to the enclosure, shall not give a global leak rate larger than $1 \times 10^{-6} \text{mbar.L.s}^{-1}$. The leak detector shall be connected directly to the vessel, using no additional flanges, and certification shall be provided proving that the machine has been calibrated within the twelve months prior to the testing date.

The supplier shall be completely responsible for the leak testing and supply of all the necessary equipment. This includes vacuum pumps, helium leak detectors, gauges, pipe work, blanking flanges, pumping ports and fixings. If the Supplier has any concerns regarding this specific requirement they shall contact STFC to discuss these matters.

All four axes shall be tested, while holding vacuum conditions, along their full lengths of travel with the aim being to ensure that all motion control components work and the resolvers provide readouts under these conditions. Tests shall also be carried out under the expected operating temperature of 65°C.

The test will need to be witnessed by STFC in order to be approved.

2.3 Site Acceptance Tests

Upon receiving the complete slit-set assembly, STFC will inspect the assembly for visible signs of damage. STFC will then operate each axis, ensuring that the performance is comparable to that which was observed during the FAT.

3 Additional Deliverables

3.1 Design Review

At the Design Review meeting, the Supplier must present the detailed final design in person or via videoconference and provide the following items:

- a. 3D CAD files of complete assembly for the purpose of determining space envelope requirements. STFC operates Solid Edge as its 3D CAD system but compatible files are acceptable.
- b. Complete set of assembly drawings.
- c. Detailed design of the system including alignment methods.
- d. Detailed list of actuators, feedback devices and switches.
- e. Motion control requirements.
- f. Design calculations showing proposed actuators, motors, gearboxes, feedback devices, switches and amplifiers meeting the specification requirements.
- g. A programme with regular milestones to allow progress checking up to the point of delivery.
- h. Details of proposed acceptance tests to establish performance of the system against the agreed specification.

Unless otherwise agreed in writing by STFC, the Supplier should not proceed to order any materials, components or equipment required to fulfil this contract until STFC has approved the final design presented at the design review.

In the event that significant issues are raised through this design review, it may be necessary to repeat the review. The Supplier must honour any STFC request for further reviews and bear any costs that may be incurred as a result of this.

Any outcome of the design review will not relieve the Supplier from the responsibility of delivering to the specification or the contracted delivery date.

3.2 Documentation

The supplier shall supply the following documentation, in an electronic format at minimum, all of which should be clearly presented in English:

- a. Design Review (FDR) documentation.
- b. Factory acceptance test procedures.
- c. Factory acceptance test reports. These are required before equipment can be delivered.
- d. Full supporting documentation of equipment supplied, including installation, operation and maintenance manuals.
- e. Full set of assembly drawings for all equipment supplied with all dimensions listed in metric units. These should be "as built", two-dimensional, detailed, engineering drawings. Drawings shall be supplied in .dwg or .dxf formats.
- f. Complete 3D CAD model of the final assembly, for space envelope purposes, compatible with STFC's preferred software packages of Solid Edge for 3D models.
- g. List of recommended spare items, additional items and their relevant costs.
- h. Safety report.
- i. Quality assurance report.
- j. All relevant mechanical and electrical calculations used in the design of the equipment.
- k. Electrical connection schematics supplied in a format compatible with STFC's preferred software package of AutoCAD for electrical drawings.

3.3 Manuals

Detailed installation, operation and maintenance manuals, in English, shall be supplied in an electronic format alongside a hard-copy version. The manuals shall include the following items:

- a. Instructions for correct operation.
- b. Detailed assembly and disassembly instructions.
- c. Routine maintenance requirements including a detail description of tasks, the conditions under which they must be performed and the estimated time required to complete this task.
- d. Fault diagnosis instructions.
- e. Relevant mechanical and electrical drawings.
- f. Decommissioning and disposal route for equipment at end of service.

Terms and Conditions

Bidders are to note that any requested modifications to the Contracting Authority Terms and Conditions on the grounds of statutory and legal matters only, shall be raised as a formal clarification during the permitted clarification period.

Commercials

The total value of the contract shall not exceed £22,261.00 excluding VAT and is broken down as follows:

Contract Number:

AW5.2 Price Schedule



SOURCING REFERENCE	RE17215
SOURCING DOCUMENT TITLE	CRSP Beamlane Jaws
BIDDER NAME	JJ K Ray AS

Item Number	Description	Quantity	List Price	Discounted Price	Total Price	Notes & Comments
1	Supply of CRSP Beamlane Jaws	1	£ 18,802.00	£ 18,802.00	£ 18,802.00	
2	Tending	1	£ 1,225.00	£ 1,225.00	£ 1,225.00	
3	Motion Cables	1	£ 1,944.00	£ 1,944.00	£ 1,944.00	
4	Delivery	1	£ 200.00	£ 200.00	£ 200.00	
5	Warranty	1	£ -	£ -	£ -	2 years of warranty is standard on all our equipment
TOTAL					£ 22,261.00	

All prices are firm and fixed
All prices are exclusive of VAT

for and on behalf of [THE SUPPLIER]

Signed

Name

Position

Date

Henning Bro Pedersen.....

CTO.....

27 September 2017.....

for and on behalf of [THE CONTRACTING
AUTHORITY]

Signed

Name

Position

Date

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THIS IS THE LAST PAGE OF THESE TERMS & CONDITIONS