



Kiruna March 7, 2018

EISCAT Scientific Association Call for Expression of Interest for First Stage Receiver Unit

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|---|-------------------|
| Expression of interest closing date: | 2018-03-29 |
| Tendering specifications dialogue closing date: | 2018-04-20 |
| Closing date for offers: | 2018-05-15 |
| Latest validity date for offers: | 2018-08-31 |

1 General instructions

EISCAT would like to emphasize that it is very important that all potential bidders monitor the specific tendering area in the EISCAT web-site (<http://eiscat.se/tenders>) on a regular basis in order to get access to possible changes and/or clarifications of the procurement, cancellations, questions & answers and all other information relating to this expression of interest.

EISCAT responsibility for the correctness and accuracy of the documentation for this call for expression of interest is limited to the documentation published on EISCAT homepage and/or sent out by e-mail.

This call for expression of interest consists of two parts and two appendices. The first part consists of requirements for tender and Tenderer. The second part, starting at page 10, describes the intended terms and conditions of any future contract. The appendices include the preliminary technical description for the First Stage Receiver Unit (FSRU) and the requirements answer template to be used when responding to this call for expression of interest.

In order to qualify as Tenderer and to be invited to the tendering session, a Tenderer must consider and reply, using the requirements answer template, to all requirements stipulated in this call for expression of interest. The expression of interest must be received by EISCAT, at the latest, at the stipulated closing date, 2018-03-29.

2 Introduction

2.1 EISCAT_3D

The EISCAT Scientific Association (EISCAT) conducts research on the lower, middle and upper atmosphere, and ionosphere using the incoherent scatter radar technique. At present, EISCAT operates three incoherent scatter radar systems in Northern Fenno-Scandinavia and on Svalbard. EISCAT is funded and operated by research institutes and research councils of Norway, Sweden, Finland, Japan, China and the United Kingdom.

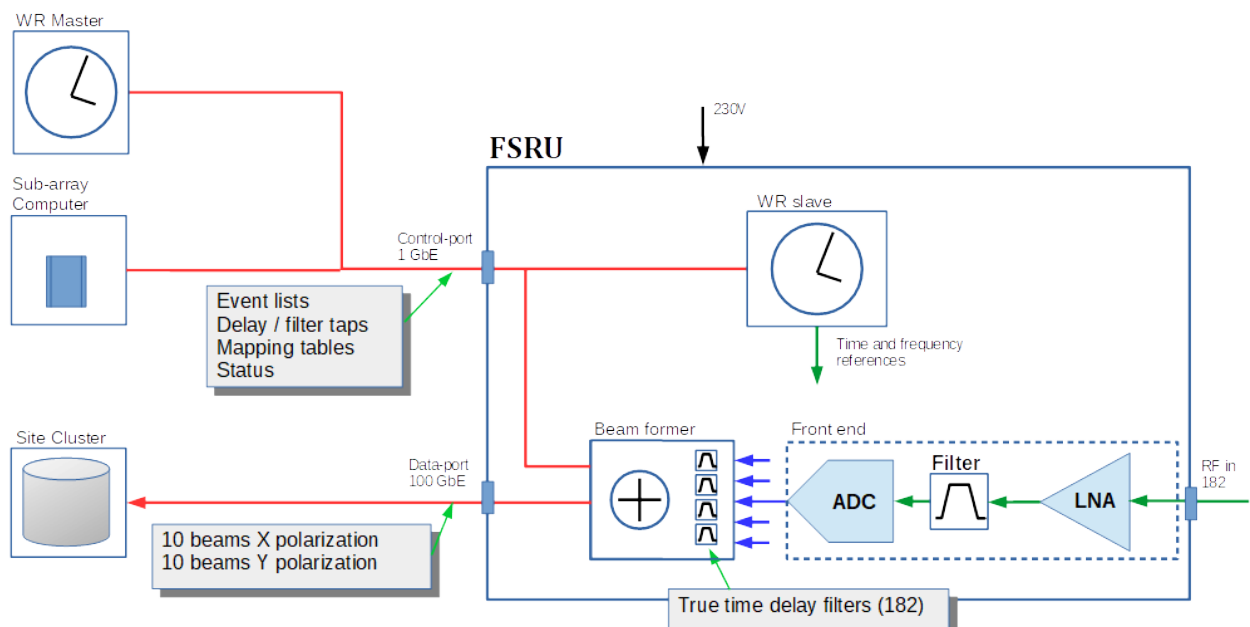


EISCAT has now started the construction of EISCAT_3D, a new radar system which will be the next generation incoherent scatter radar capable of providing 3D monitoring of the atmosphere and ionosphere.

The full EISCAT_3D system will consist of five phased-array antenna fields located in the northernmost areas of Finland, Norway and Sweden, each with 9919 crossed dipole antenna elements. One of these sites (at Skibotn, Norway) will transmit radio waves at 233 MHz, and all five sites will have sensitive receivers to measure the returned radio signals. Digital control of the transmission and low-level digitisation of the received signal will permit instantaneous electronic steering of the transmitted beam and measurements using multiple simultaneous beams. The active antenna array in Skibotn will be surrounded by smaller outlying arrays which will facilitate aperture synthesis imaging to acquire sub-beam transverse spatial resolution. Each antenna array will be of a size of about 80 m from side to side, and the receive-only sites will be located at a distance of 90 km to 250 km from the core site in order to be able to optimize the system measurements at the altitudes of interest.

In the first stage of implementation, EISCAT_3D Stage 1 (E3DS1), three sites, the active array at Skibotn, Norway and receive-only arrays at Kaiseniemi, Sweden, and Karesuvanto, Finland, will be built.

The FSRU procurement covers the low noise amplifier, analogue-to-digital converter and the first stage beamformer system receiver chain for each of the E3D antennas at the three sites. Since each E3D antenna receive in two polarisations, the total number of receive channels is 19 838 for a fully deployed site. Due to potential funding constraints, a part of system build-up will be handled as options that may be ordered later, but before the final regular deliveries are done.



First Stage Receiver Unit

The EISCAT_3D system will be built as sub-arrays with 91 antennas in each block. The system should integrate the resulting 182 receive channels (for each 91-antenna sub-array) in a common FSRU unit.



2.2 Definitions and Abbreviations

| | |
|---------------------------|---|
| <i>Procurement Object</i> | <p>FSRU description:</p> <ul style="list-style-type: none">• A single FSRU unit has 182 analogue inputs, a 1 GbE port for control, timing and monitoring and a 100 GbE port for data. Each unit should fit in a standard 19” rack and should not exceed 935 mm (21 rack units) vertical space. Each unit should connect to 230 V mains by a single plug and should draw less than 1 kW <p>For more details, the <i>Procurement Object</i> First Stage Receiver Unit is further described in Technical Specification ref. [1].</p> |
|---------------------------|---|

2.3 References

| Ref. No. | Title |
|----------|--|
| 1. | Preliminary Technical Specification for the FSRU |
| 2. | Requirements answer template used for responding to this call for expression of interest |

3 Procurement procedure

3.1 Competitive procedure with negotiation

The procurement procedure comprises of a call for expression of interest followed by the actual tender process. The tendering process will start with a dialogue period before setting the final requirements. Tenderers invited to the tendering phase are encouraged to be active in the dialogue process. EISCAT will ensure equality of treatment among all Tenderers and will not reveal to other Tenderers solutions proposed or other confidential information communicated by a Tenderer participating in the dialogue without prior agreement. The EISCAT web-site will be used as the primary tool for communication.

3.2 Procurement documents and information flow

1. Expression of Interest (open)
 - Call for Expression of Interest
 - FSRU Requirements
 - Requirements answer template for the expression of interest
2. Invitation to Tender (restricted to invited Tenderers only)
 - Enquiry
 - Technical Specification for the FSRU
 - Statement of Work for the FSRU
 - Contract Data Requirements List for the FSRU
 - Requirements answer template for the FSRU
 - General terms for supply of goods ALOS 05
3. Dialogue (open)
 - Questions and Answers published and updated on-line



4. Final specifications

Updated specifications as needed (open)

Updated tendering documents as needed (restricted to invited Tenderers only)

4 Scope

4.1 Scope

The products/services that the Contractor shall supply are shown in the table of scope.

| <i>Item</i> | <i>Description</i> | <i>Quantity and unit</i> |
|-------------|---|----------------------------|
| 1 | Initial contract phase: R&D, final design assessment, first article (one 182-channel FSRU unit), including shipping to the present EISCAT site near Tromsø, Norway. | Price for all deliverables |
| 2 | Second contract phase, <i>Procurement Object 1</i> : Delivery of 119 FSRU units, including shipping to the new EISCAT_3D site in Northern Norway. | Price per item |
| 3 | Third contract phase, <i>Procurement Object 2</i> : Delivery of 50 FSRU units, including shipping to the new EISCAT_3D site in Northern Sweden. | Price per item |
| 4 | Third contract phase, <i>Procurement Object 3</i> : Delivery of 50 FSRU units, including shipping to the new EISCAT_3D site in Northern Finland. | Price per item |
| 5 | Changes and additions. Hourly rate per hour of additional production | Price per hour |
| 6 | Changes and additions. Additional material is debited with cost purchase price plus added surcharge | Surcharge in percent |

4.2 Options

EISCAT shall have the right but not the obligation to, no later than 12 months before the expiry of the contract, order the following deliverables under the conditions of this contract:

| <i>Item</i> | <i>Description</i> | <i>Quantity and unit</i> |
|-------------|--|--------------------------|
| 1 | Optional contract phase, <i>Procurement Object 4</i> : Delivery of 10 - 59 FSRU units, including shipping to the new EISCAT_3D site in Northern Sweden. | Price per FSRU unit |
| 2 | Optional contract phase, <i>Procurement Object 5</i> : Delivery of 10 - 59 FSRU units, including shipping to the new EISCAT_3D site in Northern Finland. | Price per FSRU unit |



| <i>Item</i> | <i>Description</i> | <i>Quantity and unit</i> |
|-------------|--|--------------------------|
| 3 | Optional contract phase: Changes and additions. Hourly rate per hour of additional production | Price per hour |
| 4 | Optional contract phase: Changes and additions. Additional material is debited with cost purchase price plus added surcharge | Surcharge in percent |

5 Specification

5.1 Technical specification and operational undertakings

The following technical specification and operational undertakings shall apply:

- Appendix 1 Technical Specification for First Stage Receiver Unit

6 DELIVERY

6.1 Delivery time in accordance with EISCAT's time schedule

Delivery shall be made in accordance with the following time schedule:

| <i>Item</i> | <i>Description</i> | <i>Delivery date</i> |
|-------------|--|--------------------------------------|
| 1 | Initial contract phase: R&D and first article | <9 months after signed contract |
| 2 | Second contract phase, <i>Procurement Object 1</i> | September 2019 |
| 3 | Second contract phase, <i>Procurement Object 2</i> | September 2020 |
| 4 | Third contract phase, <i>Procurement Object 3</i> | September 2020 |
| 5 | Changes and additions | Agreed after the contract is awarded |

6.2 Delivery time - option

Delivery time after any exercise of option including rate of delivery will be agreed after the contract is awarded.

7 Delivery and invoice addresses

7.1 EISCAT delivery addresses

The First Stage Receiver Units shall be delivered to the following addresses:

| |
|--|
| First Article |
| EISCAT Scientific Association Ramfjordmoen N-9027 Ramfjordbotn |



| Procurement Object 1 | Procurement Object 2 and option Object 4 | Procurement Object 3 and option Object 5 |
|--|--|---|
| EISCAT Scientific Association <i>Street address not set yet</i> N-9143 Skibotn | EISCAT Scientific Association <i>Street address not set yet</i> SE-981 95 Kiruna | EISCAT Scientific Association <i>Street address not set yet</i> FIN-99470 Karesuvanto |

7.2 EISCAT invoice addresses

The cost items will be invoiced in/to the country of final location. For common cost items, a cost distribution will be agreed later. The addresses are the following:

| Finland | Norway | Sweden |
|---|--|---|
| EISCAT Scientific Association Tähteläntie 54B FIN-99600 Sodankylä | EISCAT Scientific Association Ramfjordmoen N-9027 Ramfjordbotn | EISCAT Scientific Association Rymdcampus 1 SE-981 92 Kiruna |

8 FORM OF CONTRACT

8.1 Price

EISCAT awaits tenders using the form(s) of contract and observing the conditions described below. The prices of all offered items and any options must be quoted in one of SEK, EUR, NOK, GBP, JPY or CNY exclusive of VAT.

8.2 Fixed price

Fixed price means that the price shall not be adjusted for foreign exchange and/or index, or in any other way.

8.3 Envisaged payment schedule

Exclusive of any options.

| | |
|-------------------------|-----|
| At contract award | 20% |
| Design phase milestones | 20% |
| Ready for Production | 15% |
| Shipped from Factory | 10% |
| Ready for Installation | 15% |
| Final Acceptance | 20% |

9 Advance payment conditions

9.1 Advance payment

Any advance payments by EISCAT shall be covered by Tenderer advance payment guarantees issued by bank or a corporate entity.



10 Verification of qualification of Tenderers

EISCAT's requirements for Tenderers are stipulated below. EISCAT will examine if the Tenderer fulfils these requirements before a tender is further evaluated.

10.1 Exclusion of Tenderer

Candidates or tenderers are excluded from participation in procurement procedures if:

- they are bankrupt or are having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matters, or are in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- they have been convicted of an offence concerning applicable laws and regulations of the environment, human rights, working conditions, anti-corruption, gender equality and diversity.
- they are banned or restricted from doing business in the European Union.

10.2 Requirement for registration

To enable EISCAT to appropriate control, the registration at the Register of companies, commercial enterprises or associations, whichever is applicable, shall be attached to the reply (verified by a registration certificate or special certificate from a competent authority).

If there is no such official register as referred to above in the country where the Tenderer is established, the Tenderer shall provide a certificate containing corresponding details signed by a competent authority or an authorised accountant or equivalent.

The above certificates shall not be more than six months old.

10.3 Requirement for technical and professional capacity

The qualification criteria relating to technical and professional capacity are designed to show whether the Tenderer has the capacity needed to perform the contract or not.

The following qualifications are required and evidence has to be included in the reply:

1. a list of the principal customers in the past three years with the sums involved and whether it is public or private customers;
2. short description of two completed reference projects (with relevant need for technical and professional capacity as this expression of interest) for two different customers. The completion of the reference project cannot be older than three years and contact details must be included to enable verification.
3. CV's for two persons that are employed by the Tenderer and have technical and professional capacity to perform the contract,
4. description of the test facilities where the verification is planned to take place and contact details of the person responsible for booking of the facility,

10.4 Requirement for financial and economic capacity

The qualification criteria relating to financial and economic capacity are designed to show whether the Tenderer has the capacity needed to perform the contract:



1. the economic value of the contract must be less than 40% of the annual turnover for the last two years. To be able to verify this, copies of the annual reports for the last two financial years must be submitted.
2. Alternatively, for start-up Tenderers, or consortias, please demonstrate the financial structure established to cover the contract commitment.

11 Award of contract

EISCAT will accept the tender that meets the requirements, or has given reasonable justifications for the requirements that are not met, and is the most economically and technically advantageous.

11.1 Subcontractors

The Tenderer shall in its tender state to what extent parts of the Contract and/or which parts of the Contract it intends to subcontract to third parties and which subcontractors are proposed.

12 Commercial secrecy

If the Tenderer considers that the data which have been submitted within the procurement are subject to commercial secrecy, the Tenderer should in writing request commercial secrecy, giving details of the data involved and what damage the Tenderer might suffer if the data are disclosed. EISCAT will thereafter conduct an independent examination of whether commercial secrecy in accordance with the above referenced law may be deemed to apply or not.

13 Instructions for submission of the expression of interest

13.1 Language

All documentation in this procurement matter including all correspondence shall be in the English language.

13.2 Disposition

The reply must be complete on the basis of what is stipulated in this expression of interest. The disposition of this document shall be followed. The reply shall contain comments on all requirements and any award criteria stipulated.

If no comment is made in respect of a stipulated requirement, EISCAT shall be entitled to interpret this to mean that the requirement is not accepted by the Tenderer.

13.3 Tenderer data

The reply shall show the Tenderer's:

- Name
- Address
- Registration number
- Telephone number
- E-mail address



13.4 Submission

Expression of interests are accepted in original and via email (PDF format). The reply shall be (electronically/scanned) signed by the Tenderer and marked with “EXPRESSION OF INTEREST, E3DS1 FSRU” and the stipulated closing date for submission.

The expression of interest shall be addressed to the following postal address:

*EISCAT Scientific Association
Rymdcampus 1
SE-981 92 Kiruna
Sweden*

Replies submitted by email shall be sent to the following email addresses:

*Johan.Svensson@eiscat.se and
Harri.Hellgren@eiscat.se*

EISCAT must receive the expression of interest, at the latest, by 22.00 Central European Time (CET) on the closing date.

13.5 Expression of Interests received too late or being incomplete

An expression of interest received after the closing date may not be considered. Submissions lacking requested supporting material, and/or not provided using the requirements answer template for the expression of interest, will not be considered.

14 Applicable law

For this procurement, Swedish law applies.

15 Miscellaneous

15.1 Information regarding the expression of interest

Questions regarding this expression of interest shall be submitted in writing and may be addressed to:

*Johan.Svensson@eiscat.se and
Harri.Hellgren@eiscat.se*

Questions will be received until four days before the closing date. Relevant answers will be published on EISCAT's web site (at <http://eiscat.se/tenders>).

Updates will be published regularly, however not after two days before the closing.



Contract draft (second part of the document)

Terms and conditions for the contract

Terms and conditions for the contract

1 Contract Parties

This contract is made between,

EISCAT Scientific Association hereinafter called EISCAT

and

<name of the organisation with the winning tender> hereinafter called Contractor

2 Contract Scope

2.1 Scope of delivery

The Contractor shall, in accordance with the terms and conditions of this Contract and, where applicable, accompanying appendices, deliver:

| <i>Item</i> | <i>Description</i> | <i>Quantity and unit</i> |
|-------------|---|----------------------------|
| 1 | Initial contract phase: R&D, final design assessment, first article (one 182 channel FSRU unit), including shipping to the present EISCAT site near Tromsø, Norway. Preliminary completion: early 2019. | Price for all deliverables |
| 2 | Second contract phase, <i>Procurement Object 1</i> : Delivery of 119 FSRU units, including shipping to the new EISCAT_3D site in Northern Norway. Preliminary delivery: September 2019 | Price per item |
| 3 | Third contract phase, <i>Procurement Object 2</i> : Delivery of 50 FSRU units, including shipping to the new EISCAT_3D site in Northern Sweden. Preliminary delivery: September 2020. | Price per item |
| 4 | Third contract phase, <i>Procurement Object 3</i> : Delivery of 50 FSRU units, including shipping to the new EISCAT_3D site in Northern Finland. Preliminary delivery: September 2020. | Price per item |
| 5 | Changes and additions. Hourly rate per hour of additional production | Price per hour |



2.2 General terms and conditions

Clause 2 to 27 in the General terms for supply of goods ALOS 05 applies for this Contract, the word “Purchaser” is in that appendix replaces the word “EISCAT” and the word “Seller” replaces the word “Contractor”.

3 Specifications

The Contractor shall deliver in accordance with the following specifications:

Appendix 1 Technical Specification for First Stage Receiver Unit

Appendix 2 Statement of Work for First Stage Receiver Unit

Appendix 3 Contract Data Requirements List for First Stage Receiver Unit

Appendix 4 Requirements Answer Template for First Stage Receiver Unit

Appendix 5 General terms for supply of goods ALOS 05

The Contractor shall fulfil all accepted requirements stated in the specifications above. The Contractor shall ensure that all accepted requirements also are fulfilled by any subcontractors used.

Management systems

4 Quality Management System

Requirements for quality management systems shall be met in accordance with the CDRL.

4.1 Safety Management System

Requirements for safety management systems shall be met in accordance with the CDRL.

4.2 Environmental Management System

Requirements for Environmental management systems shall be met accordance with the CDRL

5 Title and rights of use

Information submitted by EISCAT shall remain the property of EISCAT. However, information owned by a third party and submitted by EISCAT to the Contractor, shall remain the property of the third party. Without the written consent of EISCAT the Contractor may not use, copy or reproduce such information, with the exception of internal use only when submitting tenders to EISCAT or carrying out work for EISCAT.

For its own needs EISCAT shall – free of charge and free of intellectual property rights – be entitled to use information in order to assemble, install, activate, operate and maintain (including repairs) all parts of the *Procurement Object*.

EISCAT has the right to copy, reproduce, compile and translate information to the extent necessary for EISCAT for its mentioned use.

For the *Procurement Object* or part of the *Procurement Object* which have been developed especially for and at the expense of EISCAT, EISCAT shall be entitled to use information among other things for procurement, development, modification and production. EISCAT shall notify the receiving party of the Contractor’s title.

The Contractor shall secure all intellectual property rights necessary for EISCAT to use the *Procurement Object* to the extent and in manner agreed. The Contractor is responsible for that the



use described in this section does not infringe upon the rights of third parties and that information can be used to the extent and in the manner agreed.

In case the *Procurement Object* has been developed especially for and at the expense of EISCAT, the information is not to be assigned to a third party without the written consent of EISCAT. Should the Contractor thus assign other information, it shall reserve the rights of EISCAT.

6 Insurance

The Contractor shall at its own expense carry general liability insurance in the amount, and having all divisions of coverage, necessary with regard to the Contract and scope. The Contractor shall provide a copy of the insurance policy when requested by EISCAT.

7 EISCAT-Supplied Resources

The Contractor has *responsibility* and *liability* for all EISCAT Supplied Resources until they are returned to EISCAT.

8 Amendments

Requests for amendments and additions shall be made in writing. Amendments and additions shall be in writing and signed by an authorized representative of the respective Party.

Precedence between contractual documents

If the contract text, the attachments other references which explicitly been included in the contract, owns in cases of conflict of validity of this order:

1. Technical specification for First Stage Receiver Unit
2. Statement of Work for First Stage Receiver Unit
3. Contract Data Requirements List for First Stage Receiver Unit
4. Requirements Answer Template for First Stage Receiver Unit
5. General terms for supply of goods ALOS 05

9 Options

EISCAT shall have the right but not the obligation, to no later than 3 months before the expiry of this contract ordering the following deliverables to the conditions of this contract:

| <i>Item</i> | <i>Description</i> | <i>Quantity and unit</i> |
|-------------|--|--------------------------|
| 1 | Optional contract phase, <i>Procurement Object 4</i> : Delivery of 10 - 59 FSRU units, including shipping to the new EISCAT_3D site in Northern Sweden. Preliminary delivery: to be agreed. | Price per FSRU unit |
| 2 | Optional contract phase, <i>Procurement Object 5</i> : Delivery of 10 - 59 FSRU units, including shipping to the new EISCAT_3D site in Northern Finland. Preliminary delivery: to be agreed. | Price per FSRU unit |
| 3 | Optional contract phase: Changes and additions. Hourly rate per hour of additional production. | Price per hour |



| <i>Item</i> | <i>Description</i> | <i>Quantity and unit</i> |
|-------------|---|--------------------------|
| 4 | Optional contract phase: Changes and additions. Additional material is debited with cost purchase price plus added surcharge. | Surcharge in percent |