



Invitation to Quote

**Invitation to Quote (ITQ) on behalf of the Natural Environment
Research Council.**

**Subject UK SBS: North Seeking Attitude Heading Reference
System (AHRs)**

Sourcing reference number: PR17065

UK Shared Business Services Ltd (UK SBS)
www.uksbs.co.uk

Registered in England and Wales as a limited company. Company Number 6330639.
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UKSBS

Shared Business Services

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Section 1 – About UK Shared Business Services

Putting the business into shared services

UK Shared Business Services Ltd (UK SBS) brings a commercial attitude to the public sector; helping our customers improve efficiency, generate savings and modernise.

It is our vision to become the leading provider for our customers of shared business services in the UK public sector, continuously reducing cost and improving quality of business services for Government and the public sector.

Our broad range of expert services is shared by our customers. This allows our customers the freedom to focus resources on core activities; innovating and transforming their own organisations.

Core services include Procurement, Finance, Grants Admissions, Human Resources, Payroll, ISS, and Property Asset Management all underpinned by our Service Delivery and Contact Centre teams.

UK SBS is a people rather than task focused business. It's what makes us different to the traditional transactional shared services centre. What is more, being a not-for-profit organisation owned by its customers, UK SBS' goals are aligned with the public sector and delivering best value for the UK taxpayer.

UK Shared Business Services Ltd changed its name from RCUK Shared Services Centre Ltd in March 2013.

Our Customers

Growing from a foundation of supporting the Research Councils, 2012/13 saw Business, Energy and Industrial Strategy (BEIS) transition their procurement to UK SBS and Crown Commercial Services (CCS – previously Government Procurement Service) agree a Memorandum of Understanding with UK SBS to deliver two major procurement categories (construction and research) across Government.

UK SBS currently manages £700m expenditure for its Customers.

Our Customers who have access to our services and Contracts are detailed [here](#).

Section 2 – About Our Customer

Natural Environment Research Council (NERC)

NERC is the UK's main agency for funding and managing research, training and knowledge exchange in the environmental sciences.

NERC's work covers the full range of atmospheric, Earth, biological, terrestrial and aquatic science, from the deep oceans to the upper atmosphere and from the poles to the equator.

The organisation coordinates some of the world's most exciting research projects, tackling major issues such as climate change, environmental influences on human health, the genetic make-up of life on Earth, and much more.

Working internationally, NERC have bases at some of the most hostile places on the planet; running a fleet of research ships and aircraft and investing in satellite technology to monitor gradual environmental change on a global scale. NERC provide forewarning of, and solutions to, the key environmental challenges facing society.

Examples of funded research

- Showing the importance of mature tropical forests to the global climate.
- Developing a safer and cleaner way to mine gold by reducing the use of mercury.
- Studying the hole in the ozone layer - discovered by our British Antarctic Survey - and monitoring climate change.
- Playing a major role in the International Census of Marine Life that monitors our oceans.

NERC also runs six organisations of world renown:

- British Antarctic Survey, in Cambridge.
- British Geological Survey, in Nottingham.
- National Oceanography Centre, in Southampton.
- Centre for Ecology & Hydrology, in Oxfordshire.
- National Centre for Atmospheric Science, in Leeds.
- National Centre for Earth Observation, Swindon.

www.nerc.ac.uk

Section 3 - Working with UK Shared Business Services Ltd.

In this section you will find details of your Procurement contact point and the timescales relating to this opportunity.

| Section 3 – Contact details | | |
|-----------------------------|---|--|
| 3.1 | Customer Name and address | Natural Environment Research Council National Oceanography Centre Southampton SO14 3ZH |
| 3.2 | Buyer name | Elizabeth Gage |
| 3.3 | Buyer contact details | Majorprojects@uksbs.co.uk |
| 3.4 | Estimated value of the Opportunity | £140K - £150K |
| 3.5 | Process for the submission of clarifications and Bids | All correspondence shall be submitted within the Emptoris e-sourcing tool. Guidance Notes to support the use of Emptoris is available here. Please note submission of a Bid to any email address including the Buyer <u>will</u> result in the Bid <u>not</u> being considered. |

| Section 3 - Timescales | | |
|------------------------|--|---------------------------------|
| 3.6 | Date of Issue of Contract Advert and location of original Advert | 14/06/2017 Contract's Finder |
| 3.7 | Latest date/time ITQ clarification questions should be received through Emptoris messaging system | 20/06/2017 14:00 |
| 3.8 | Latest date/time ITQ clarification answers should be sent to all potential Bidders by the Buyer through Emptoris | 23/06/2017 14:00 |
| 3.9 | Latest date/time ITQ Bid shall be submitted through Emptoris | 30/06/2017 14:00 |
| 3.10 | Date/time Bidders should be available if face to face clarifications are required | N/A |
| 3.12 | Anticipated Award date | 18/07/2017 |
| 3.13 | Anticipated Contract Start date | 28/07/2017 |
| 3.14 | Anticipated Contract End date | 27/07/2018 |
| 3.15 | Bid Validity Period | 60 Days |

Section 4 – Specification

Background

Operation and Error Sources

The primary purpose of the system is to provide as accurate as possible heading estimates in real time to the AUV system. Update rate should be 1 Hz minimum. Roll and pitch information is also needed by the AUV, but for the applications considered, the accuracy required for these will pose no significant technical challenge.

The AHRS system will be provided with velocity updates, but as the AUV will not be within DVL bottom track range at all times (when it will rely on speed through the water measurements), the system performance accuracy must be characterised for a given (unknown at run time) error in the velocity aiding.

Furthermore, although the system will be provided with position updates, there will be occasions when position error (critically, the latitude error) is moderately large. Therefore the system must be characterised for moderate latitude errors.

The AHRS must be declared to operate at, and with accuracy characterised at, high latitudes, with the unit is aided with erroneous velocity (or speed) and latitude.

Housing and environmental

The AHRS will be housed within a dry space in the AUV, hence the AHRS can be assumed to operate in a benign atmosphere.

When the AUV is operating the pressure vessel housing, the AHRS will be evacuated to a pressure not lower than 650 milli bars (65 k Pa).

Operating relative humidity will be less than 5%.

The effect of temperature and temperature changes on performance

At the point of switch on, the AHRS temperature will typically be at room temperature (10 to 30 Celsius).

When launched 30 minutes later, the temperature will drop rapidly to the temperature of the surrounding water (which could be as low as -2.0 C).

The supplier is requested to comment whether any significant performance or functional issues are presented by:

- relatively rapid temperature changes during the initial alignment phase
- significantly lower temperatures during the operation than at the time of initial switch on and alignment

The supplier is also asked to consider whether there are any opportunities for reducing heading errors as a result of the mission being carried out at a substantially constant temperature. E.g. can rate gyro biases be re-estimated a long time into the mission?

System performance validation

The supplier is to provide evidence of the performance characteristics of the AHRS at high latitude (see questionnaire).

Power Supplies

Power will be preferably provided by the AUV in a range from 18 to 25 volts. The reason for the wide range of supply voltage is that for reasons of efficiency the AHRS will be provided

with unregulated power from the vehicle's battery.

It is expected that the power consumption of the unit will fall into the range 12 W to 20 W. Lower power consumption is preferred as this will result in longer autonomy time for the AUV (note that the energy consumed by the AHRS will be comparable with the energy consumed by all other systems on the AUV, including propulsion).

Size and Mass

The ALR pressure vessel and buoyancy system will lie close to the boundary between mass and volume limited, hence either the mass or the size of the AHRS could be important criteria. If there are OEM (Original Equipment Manufacturer) versions of the AHRS which offer substantial savings in size or weight, then these should be considered. However, do not offer this if the savings are relatively small (<10%), as the practical advantage of having a splash protected case would exceed the benefit of reduced size or weight.

Critical Criteria

It is essential that the following points are considered as critical criteria and not satisfying any of these will render any tender as unsatisfactory:

| Criteria Name | Rationale |
|---|--|
| <p>Operation at high latitude: Will the AHRS function with 1 sigma heading accuracy (RMS error averaged over 0 to 360 degree range) of better than 3.0 degrees with the following condition and input data?</p> <p>AUV true latitude: 88.0 degrees North AUV true speed: 0.3 m/s northward</p> <p>Aiding latitude sent to AHRS: 88.5 degrees North Aiding speed sent to AHRS: 0.0 m/s northward</p> <p>Temperature at initial switch on is 15.0 Celsius. High latitude measurement is 30 days later, and at a temperature of 0.0 Celsius.</p> | This represents the minimal requirement. |
| Communications interface which must be supported is RS232, 19200 baud. | Compatibility with existing AUV system hardware and software |
| Power Supply Voltage Range supported includes the range 18 to 25 volts | Compatibility with existing AUV system hardware |
| Mass is less than 15 kg | Affecting overall buoyancy and energy contingency |
| Evidence that the unit has been successfully used by customers | Risk reduction |

Desirable Criteria – Questionnaire.

These criteria are not essential, but will be used in assessing the value of the tender.

| Criteria Name | Rationale |
|----------------------|------------------|
|----------------------|------------------|

| | |
|---|---|
| <p>State the 1 sigma heading accuracy (RMS error averaged over 0 to 360 degree range) with the following conditions and input data:</p> <p>AUV true latitude: 88.0 degrees North AUV true speed: 0.3 m/s northward</p> <p>Aiding latitude sent to AHRS: 88.5 degrees North Aiding speed sent to AHRS: 0.0 m/s northward</p> <p><i>Temperature at initial switch on and alignment is at 15.0 Celsius. High latitude measurement is 30 days later, and at a temperature of 0.0 Celsius.</i></p> | A measure of performance |
| State the alignment time following power reboot at 78 degrees north. | Initial start-up conditions – e.g. at Svalbard |
| State the alignment time following power reboot at 88 degrees north (if this is possible). | Possible power saving measure by slaving AHRS to another heading sensor. |
| State the average power taken from the supply | Affecting AUV range and endurance |
| State the MTBF (mean time before failure) | Reliability |
| What are the export restrictions from UK? | Preference given to systems which can be more freely exported from the UK to EU or non EU destinations. |

Spares Provision

Spares are not required within this tender.

Required Documentation

- System Description
- Pre-use checks
- Operator guide
- Recommended planned maintenance
- Test procedures for all systems and sub-systems
- Data sheets and details for all components in the system

Delivery

Required by Date

Delivery of less than 8 weeks post purchase order issue.

Freighting Terms

Warranty

It is required that a minimum manufacturer's warranty of 12 months is supplied.

Payment Terms

National Oceanography Centre is not permitted to proceed with purchases which are conducted utilising pro forma invoicing.

Terms and Conditions

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

Section 5 – Evaluation model

The evaluation model below shall be used for this ITQ, which will be determined to two decimal places.

Where a question is 'for information only' it will not be scored.

The evaluation team may comprise staff from UK SBS, the Customer and any specific external stakeholders the Contracting Authority deems required. After evaluation the scores will be finalised by performing a calculation to identify (at question level) the mean average of all evaluators (Example – a question is scored by three evaluators and judged as scoring 5, 5 and 6. These scores will be added together and divided by the number of evaluators to produce the final score of 5.33 ($5+5+6=16 \div 3 = 5.33$))

Pass / fail criteria

| Questionnaire | Q No. | Question subject |
|---------------|---------|---|
| Commercial | SEL1.2 | Employment breaches/ Equality |
| Commercial | FOI1.1 | Freedom of Information Exemptions |
| Commercial | AW1.1 | Form of Bid |
| Commercial | AW1.3 | Certificate of Bona Fide Bid |
| Commercial | AW3.1 | Validation check |
| Commercial | AW4.1 | Contract Terms |
| Price | AW5.5 | E Invoicing |
| Price | AW5.6 | Implementation of E-Invoicing |
| Quality | PROJ1.1 | Operation at High Latitude |
| Quality | PROJ1.2 | Communication Interface |
| Quality | PROJ1.3 | Power Supply Voltage Range |
| Quality | PROJ1.4 | Mass Weight |
| - | - | Invitation to Quote – received on time within e-sourcing tool |

Scoring criteria

Evaluation Justification Statement

In consideration of this particular requirement the Contracting Authority has decided to evaluate Potential Providers by adopting the weightings/scoring mechanism detailed within this ITQ. The Contracting Authority considers these weightings to be in line with existing best practice for a requirement of this type.

| Questionnaire | Q No. | Question subject | Maximum Marks |
|---------------|----------|------------------|---------------|
| Price | AW5.2 | Price | 50.00% |
| Quality | PROJ1.11 | Delivery | 25.00% |
| Quality | PROJ1.12 | Warranty | 25.00% |

Evaluation of criteria

Non-Price elements

Each question will be judged on a score from 0 to 100, which shall be subjected to a multiplier to reflect the percentage of the evaluation criteria allocated to that question.

Where an evaluation criterion is worth 20% then the 0-100 score achieved will be multiplied by 20.

Example if a Bidder scores 60 from the available 100 points this will equate to 12% by using the following calculation: Score/Total Points available multiplied by 20 ($60/100 \times 20 = 12$)

Where an evaluation criterion is worth 10% then the 0-100 score achieved will be multiplied by 10.

Example if a Bidder scores 60 from the available 100 points this will equate to 6% by using the following calculation: Score/Total Points available multiplied by 10 ($60/100 \times 10 = 6$)

The same logic will be applied to groups of questions which equate to a single evaluation criterion.

The 0-100 score shall be based on (unless otherwise stated within the question):

| | |
|-----|--|
| 0 | The Question is not answered or the response is completely unacceptable. |
| 10 | Extremely poor response – they have completely missed the point of the question. |
| 20 | Very poor response and not wholly acceptable. Requires major revision to the response to make it acceptable. Only partially answers the requirement, with major deficiencies and little relevant detail proposed. |
| 40 | Poor response only partially satisfying the selection question requirements with deficiencies apparent. Some useful evidence provided but response falls well short of expectations. Low probability of being a capable supplier. |
| 60 | Response is acceptable but remains basic and could have been expanded upon. Response is sufficient but does not inspire. |
| 80 | Good response which describes their capabilities in detail which provides high levels of assurance consistent with a quality provider. The response includes a full description of techniques and measurements currently employed. |
| 100 | Response is exceptional and clearly demonstrates they are capable of meeting the requirement. No significant weaknesses noted. The response is compelling in its description of techniques and measurements currently employed, providing full assurance consistent with a quality provider. |

All questions will be scored based on the above mechanism. Please be aware that the final score returned may be different as there may be multiple evaluators and their individual scores will be averaged (mean) to determine your final score.

Example

Evaluator 1 scored your bid as 60
Evaluator 2 scored your bid as 60
Evaluator 3 scored your bid as 40
Evaluator 4 scored your bid as 40
Your final score will $(60+60+40+40) \div 4 = 50$

Price elements will be judged on the following criteria.

The lowest price for a response which meets the pass criteria shall score 100.
All other bids shall be scored on a pro rata basis in relation to the lowest price. The score is

then subject to a multiplier to reflect the percentage value of the price criterion.

For example - Bid 1 £100,000 scores 100.

Bid 2 £120,000 differential of £20,000 or 20% remove 20% from price scores 80

Bid 3 £150,000 differential £50,000 remove 50% from price scores 50.

Bid 4 £175,000 differential £75,000 remove 75% from price scores 25.

Bid 5 £200,000 differential £100,000 remove 100% from price scores 0.

Bid 6 £300,000 differential £200,000 remove 100% from price scores 0.

Where the scoring criterion is worth 50% then the 0-100 score achieved will be multiplied by 50.

In the example if a supplier scores 80 from the available 100 points this will equate to 40% by using the following calculation: Score/Total Points multiplied by 50 ($80/100 \times 50 = 40$)

The lowest score possible is 0 even if the price submitted is more than 100% greater than the lowest price.

Tied outcome process for this tender:

Once the evaluation process and due diligence is complete, should the result of the process result in a tied place then the supplier who scored the highest total in the total criteria shall be considered the successful supplier and shall be awarded the opportunity .

| Questionnaire | Q No. | Question subject | Maximum Marks |
|---------------|----------|------------------|---------------|
| Quality | PROJ1.11 | Delivery | 25.00% |
| Quality | PROJ1.12 | Warranty | 25.00% |
| TOTAL | | | 50.00% |

Section 6 – Evaluation questionnaire

Bidders should note that the evaluation questionnaire is located within the **e-sourcing questionnaire**.

Guidance on completion of the questionnaire is available at
<http://www.uksbs.co.uk/services/procure/Pages/supplier.aspx>

PLEASE NOTE THE QUESTIONS ARE NOT NUMBERED SEQUENTIALLY

Section 7 – General Information

What makes a good bid – some simple do's 😊

DO:

- 7.1 Do comply with Procurement document instructions. Failure to do so may lead to disqualification.
- 7.2 Do provide the Bid on time, and in the required format. Remember that the date/time given for a response is the last date that it can be accepted; we are legally bound to disqualify late submissions.
- 7.3 Do ensure you have read all the training materials to utilise e-sourcing tool prior to responding to this Bid. If you send your Bid by email or post it will be rejected.
- 7.4 Do use Microsoft Word, PowerPoint Excel 97-03 or compatible formats, or PDF unless agreed in writing by the Buyer. If you use another file format without our written permission we may reject your Bid.
- 7.5 Do ensure you utilise the Emptoris messaging system to raise any clarifications to our ITQ. You should note that typically we will release the answer to the question to all bidders and where we suspect the question contains confidential information we may modify the content of the question to protect the anonymity of the Bidder or their proposed solution
- 7.6 Do answer the question, it is not enough simply to cross-reference to a 'policy', web page or another part of your Bid, the evaluation team have limited time to assess bids and if they can't find the answer, they can't score it.
- 7.7 Do consider who your customer is and what they want – a generic answer does not necessarily meet every customer's needs.
- 7.8 Do reference your documents correctly, specifically where supporting documentation is requested e.g. referencing the question/s they apply to.
- 7.9 Do provide clear and concise contact details; telephone numbers, e-mails and fax details.
- 7.10 Do complete all questions in the questionnaire or we may reject your Bid.
- 7.11 Do check and recheck your Bid before dispatch.

What makes a good bid – some simple do not's 🙄

DO NOT

- 7.12 Do not cut and paste from a previous document and forget to change the previous details such as the previous buyer's name.
- 7.13 Do not attach 'glossy' brochures that have not been requested, they will not be read unless we have asked for them. Only send what has been requested and only send supplementary information if we have offered the opportunity so to do.
- 7.14 Do not share the Procurement documents, they are confidential and should not be shared with anyone without the Buyers written permission.
- 7.15 Do not seek to influence the procurement process by requesting meetings or contacting UK SBS or the Customer to discuss your Bid. If your Bid requires clarification the Buyer will contact you.
- 7.16 Do not contact any UK SBS staff or Customer staff without the Buyers written permission or we may reject your Bid.
- 7.17 Do not collude to fix or adjust the price or withdraw your Bid with another Party as we will reject your Bid.
- 7.18 Do not offer UK SBS or Customer staff any inducement or we will reject your Bid.
- 7.19 Do not seek changes to the Bid after responses have been submitted and the deadline for Bids to be submitted has passed.
- 7.20 Do not cross reference answers to external websites or other parts of your Bid, the cross references and website links will not be considered.
- 7.21 Do not exceed word counts, the additional words will not be considered.
- 7.22 Do not make your Bid conditional on acceptance of your own Terms of Contract, as your Bid will be rejected.

Some additional guidance notes

- 7.23 All enquiries with respect to access to the e-sourcing tool and problems with functionality within the tool may be submitted to Crown Commercial Service (previously Government Procurement Service), Telephone 0345 010 3503.
- 7.24 Bidders will be specifically advised where attachments are permissible to support a question response within the e-sourcing tool. Where they are not permissible any attachments submitted will not be considered.
- 7.25 Question numbering is not sequential and all questions which require submission are included in the Section 6 Evaluation Questionnaire.
- 7.26 Any Contract offered may not guarantee any volume of work or any exclusivity of supply.
- 7.27 We do not guarantee to award any Contract as a result of this procurement
- 7.28 All documents issued or received in relation to this procurement shall be the property of the Contracting Authority.
- 7.29 We can amend any part of the procurement documents at any time prior to the latest date / time Bids shall be submitted through Emptoris.
- 7.30 If you are a Consortium you must provide details of the Consortiums structure.
- 7.31 Bidders will be expected to comply with the Freedom of Information Act 2000 or your Bid will be rejected.
- 7.32 Bidders should note the Government's transparency agenda requires your Bid and any Contract entered into to be published on a designated, publicly searchable web site. By submitting a response to this ITQ Bidders are agreeing that their Bid and Contract may be made public
- 7.33 Your bid will be valid for 60 days or your Bid will be rejected.
- 7.34 Bidders may only amend the Contract terms if you can demonstrate there is a legal or statutory reason why you cannot accept them. If you request changes to the Contract and the Contracting Authority fail to accept your legal or statutory reason is reasonably justified we may reject your Bid.
- 7.35 We will let you know the outcome of your Bid evaluation and where requested will provide a written debrief of the relative strengths and weaknesses of your Bid.
- 7.36 If you fail mandatory pass / fail criteria we will reject your Bid.
- 7.37 Bidders are required to use IE8, IE9, Chrome or Firefox in order to access the functionality of the Emptoris e-sourcing tool.
- 7.38 Bidders should note that if they are successful with their proposal the Contracting Authority reserves the right to ask additional compliancy checks prior to the award of any Contract. In the event of a Bidder failing to meet one of the compliancy checks

the Contracting Authority may decline to proceed with the award of the Contract to the successful Bidder.

- 7.39 All timescales are set using a 24 hour clock and are based on British Summer Time or Greenwich Mean Time, depending on which applies at the point when Date and Time Bids shall be submitted through Emptoris.
- 7.40 All Central Government Departments and their Executive Agencies and Non Departmental Public Bodies are subject to control and reporting within Government. In particular, they report to the Cabinet Office and HM Treasury for all expenditure. Further, the Cabinet Office has a cross-Government role delivering overall Government policy on public procurement - including ensuring value for money and related aspects of good procurement practice.

For these purposes, the Contracting Authority may disclose within Government any of the Bidders documentation/information (including any that the Bidder considers to be confidential and/or commercially sensitive such as specific bid information) submitted by the Bidder to the Contracting Authority during this Procurement. The information will not be disclosed outside Government. Bidders taking part in this ITQ consent to these terms as part of the competition process.

- 7.41 From 2nd April 2014 the Government is introducing its new Government Security Classifications (GSC) classification scheme to replace the current Government Protective Marking System (GPMS). A key aspect of this is the reduction in the number of security classifications used. All Bidders are encouraged to make themselves aware of the changes and identify any potential impacts in their Bid, as the protective marking and applicable protection of any material passed to, or generated by, you during the procurement process or pursuant to any Contract awarded to you as a result of this tender process will be subject to the new GSC from 2nd April 2014. The link below to the Gov.uk website provides information on the new GSC:

<https://www.gov.uk/government/publications/government-security-classifications>

The Contracting Authority reserves the right to amend any security related term or condition of the draft contract accompanying this ITQ to reflect any changes introduced by the GSC. In particular where this ITQ is accompanied by any instructions on safeguarding classified information (e.g. a Security Aspects Letter) as a result of any changes stemming from the new GSC, whether in respect of the applicable protective marking scheme, specific protective markings given, the aspects to which any protective marking applies or otherwise. This may relate to the instructions on safeguarding classified information (e.g. a Security Aspects Letter) as they apply to the procurement as they apply to the procurement process and/or any contracts awarded to you as a result of the procurement process.

USEFUL INFORMATION LINKS

- [Emptoris Training Guide](#)
- [Emptoris e-sourcing tool](#)
- [Contracts Finder](#)
- [Tenders Electronic Daily](#)
- [Equalities Act introduction](#)
- [Bribery Act introduction](#)
- [Freedom of information Act](#)