

MARKET SURVEY (EXPRESSION OF INTEREST) – MID BAND 1

Revision 1

Date: 2022-10-13

<i>Role</i>	<i>Name</i>	<i>Designation</i>	<i>Affiliation</i>	<i>Signature</i>	<i>Date</i>
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1 Introduction

This Market Survey Notice (Expression of interest) is to solicit interest from Contractors in tendering for the SKAO MID Band 1 Contract. This procurement is open to companies within Sweden. Interested parties will be expected to register their interest on the Procurement Portal (<https://www.kommersannonns.se/skaobservatory/>). The closing date for this Market Survey is the 10th of November 2022.

2 Description of Project

The SKAO, formally known as the SKA Observatory, is a global collaboration of Member States whose mission is to build and operate cutting-edge radio telescopes to transform our understanding of the Universe, and deliver benefits to society through global collaboration and innovation. Headquartered in the UK, its two telescope arrays will be constructed in Australia and South Africa and be the two most advanced radio telescope networks on Earth. A later expansion is envisioned in both countries and other African partner countries.


Together with other state-of-the-art research facilities, the SKAO's telescopes will explore the unknown frontiers of science and deepen our understanding of key processes, including the formation and evolution of galaxies, fundamental physics in extreme environments and the origins of life. Through the development of innovative technologies and its contribution to addressing societal challenges, the SKAO will play its part to address the United Nations' Sustainable Development Goals and deliver significant benefits across its membership and beyond.

3 Technical Description

The SKAO will procure, in accordance with the SKAO Procurement Policy and Procedures, a MID Band 1 Contract from Sweden, covering the scope of work outlined below:

Outline of contract Scope:

The *Contractor* will finalise the design, demonstrate, manufacture, install, assemble and test 80 Band 1 Single Pixel Feed systems.

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The Band 1 Single Pixel Feed System is a complete ambient temperature feed package covering frequencies from 350 – 1050 MHz. It uses a dual linear polarised QRFH to convert the electromagnetic signals focussed by the SKA dish to electrical signals in coaxial cables.

A low noise amplifier (LNA) integrated directly inside the ridges amplifies the received EM signal by a factor of about 40 dB. The first stage LNA also includes a direction coupler to inject a calibration noise signal before the first amplification stage. The horn is followed by a band 1 Feed Package Controller (FPC) containing a second stage LNA, noise diode circuitry, temperature stabilisation circuitry, and bias and control circuitry.

The aperture of the feed horn is covered with a protective radome, and the entire feed package assembly is covered with a sun shield, to reduce direct solar radiation on the feed package and to provide some protection from direct rain. The feed package is placed on the telescope indexer and is exposed to the external environment.


3.1 Summary of Technical Requirements:

The SPF must amplify the desired astronomical signals, adding minimal additional noise and distortion whilst in the presence of Radio Frequency Interference (RFI). The combination of large fractional bandwidth and the presence of RFI make achieving this in Band 1 particularly challenging.

4 Instructions to Tenderers

This document shall not be construed as a request or authorisation to perform work at SKAO's expense. Any work performed by a tenderer will be at the tenderer's own discretion and expense. This Market Survey does not represent a commitment to purchase or lease. Submission of a response constitutes acknowledgement that the tenderer has read and agrees to be bound by such terms.

SKAO intends to submit a Pre-Qualification Questionnaire (PQQ) for the services described in this document. There is no guarantee that SKAO will submit a PQQ or, if a PQQ is submitted, that it will occur in the time frame described in this Market Survey. If submitted, the PQQ will be sent to tenderers, via the SKAO Procurement Supplier Portal. The information in this Market survey is accurate to the best of the author's knowledge but is not guaranteed to be correct.

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5 Market Survey Responses

All tenderers should create an account (if they have not already) and then register their interest in this Market survey through the SKAO Procurement Supplier Portal (<https://www.kommersannons.se/skaobservatory/Notice/NoticeList.aspx>) by 2022-11-10. Tenderers should also inform the relevant country ILO (Industry Liaison Officer) of their interest via email. The ILO for this Market Survey is: Patrik Carlsson, Chalmers University of Technology – patrik.carlsson@cit.chalmers.se.

6 Industry Briefing Event


On the 10th of November at 12:00 BST, SKAO will hold an Industry Briefing Event with the aim of providing more information about SKAO and the MID Band 1 competitive tender. As long as you have registered your interest in the Market Survey on the SKAO Procurement Portal by the 8th of November using the guidance in "Market Survey Responses", you will be sent a meeting invitation via Zoom.

7 Pre-Qualification Criteria

Once parties have registered their interest, at the end of the Market Survey response period, a Pre-Qualification Document Pack will be issued to interested parties. The Pre-Qualification Document Pack will contain a Pre-Qualification Questionnaire (PQQ) which includes a Quality Assurance Questionnaire and a Health and Safety Questionnaire. Developed in order to accurately determine if the tenderer has the necessary financial, economic, quality, technical and professional capacity and competencies to perform the required scope of work in a manner compliant with SKAO expectations. SKAO will use the PQQ to select companies to Invite to Tender. The period for submission of pre-qualification packs will be 2022-11-11 to 2022-12-02.

8 Tender Evaluation Criteria

- Technical and financial submissions will be assessed separately.
- A minimum quality standard must be achieved.

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- The Most Economically Advantageous Tender Evaluation Method (see SKAO Procurement Manual) will be used and tender submissions will be assessed on a 60:40 weighting of technical:price.

9 Opportunities for Tier 2 & 3 Supply

Efforts are being made to connect capable and relevant Tier 2 & 3 suppliers with potential main contractors. These companies are likely to include:

- Those that have supplied components or services to the SKA precursor telescopes
- Those that have a product/service offer that would complement and support that of a main contractor

Companies interested in potential supply at a Tier 2 or 3 level can express interest by making direct contact with their respective ILO:

Sweden: Patrik Carlsson, Chalmers University of Technology
patrik.carlsson@cit.chalmers.se

India: Prof Yashwant Gupta, National Centre for Radio Astrophysics –
ygupta@ncra.tifr.res.in

Spain: Javier Echavarri Delmas, CDTI – javier.echavarri@cdti.es


The ILO will request specific capability information. The ILO will then provide capability information, and in some cases, direct introductions, to potential main contractors as they are shortlisted.

Please note: This is an informal part of the procurement process and there are no guarantees provided. Ultimately it will be up to the discretion of the winning Contractor as to whom they choose to engage with.

10 Basis of Proposed Contract Terms

The SKAO will develop and enter into an NEC4: Engineering & Construction Contract (ECC) Option A with a Swedish company. It is SKAOs preference that NEC4 subcontracts are used to ensure back-to-back applicability of contract clauses across the supply chain. More information on the NEC4 suite of contracts can be found at <http://www.necontract.com/About-NEC/NEC4-suite-of-contracts>

ECC Tier 1 Contract between SKAO and Sweden:

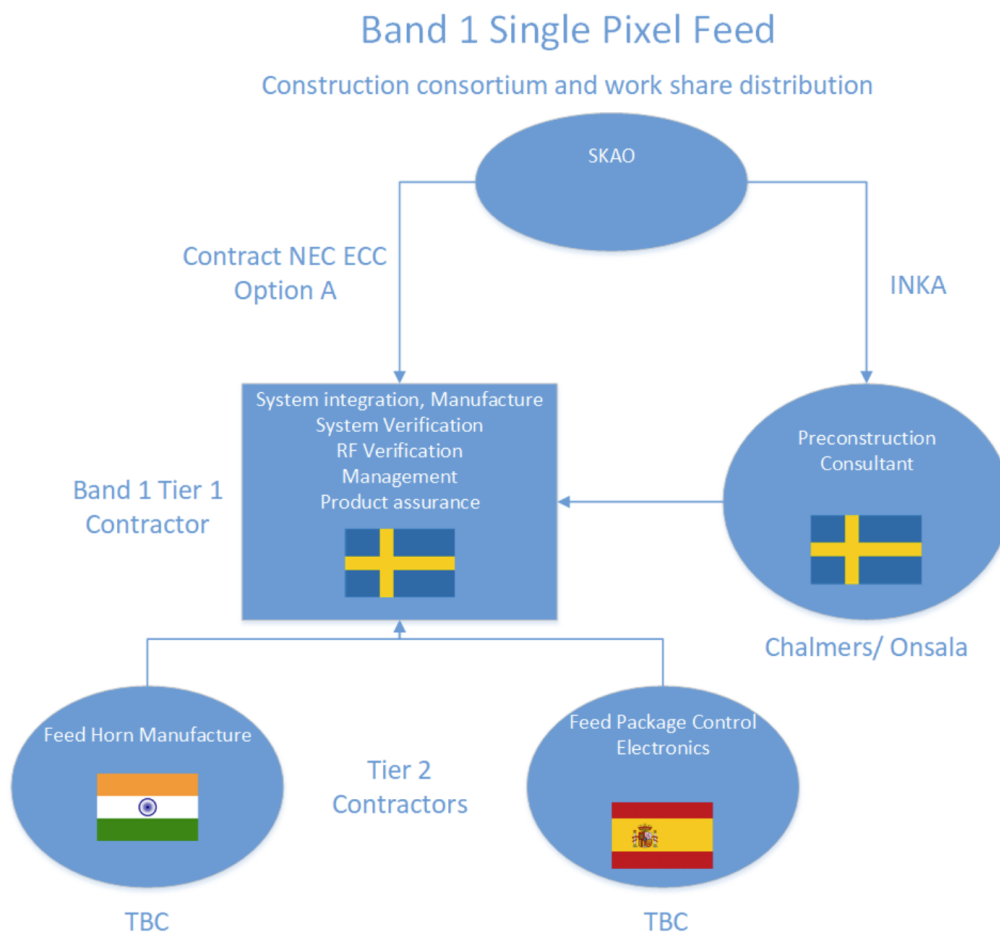
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The Swedish ECC Tier 1 Contractor will enter into separate commercial agreements with Tier 2 subcontractors, in their respective countries.

The Feed contractor and its collaborators/subcontractors will be subjected to a due diligence process before and during the contract, which will include audits and reviews. The Contractor will be an Industrial Contractor with proven heritage for delivering similar technology-based units.

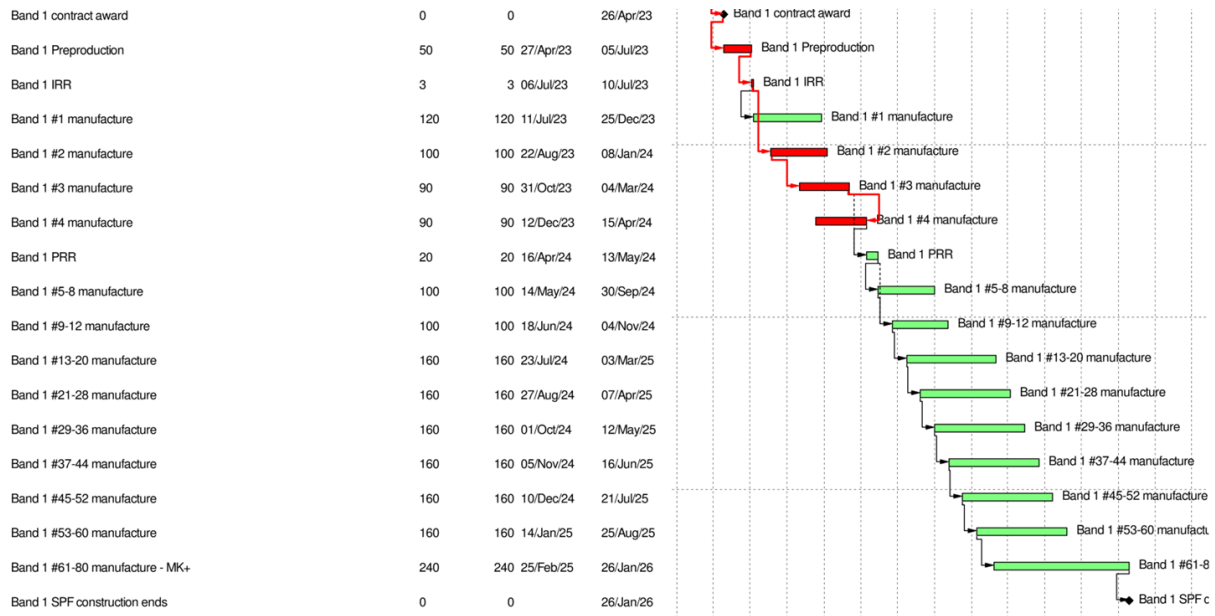
INKA between SKAO and Chalmers University:

To enable successful technology transfer from the prototype developing institute (Chalmers/Onsala), a small proportion of the cost will be allocated to the developing institute staff as an enabler. This will improve the rate of success of the contractor.




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11 Required Delivery Dates or Programme Schedule



12 Indicative Procurement Schedule

Market Survey	2022-10-13 - 2022-11-10
Industry briefing event	2022-11-10
Period for submission of pre-qualification packs	2022-11-11 - 2022-12-02
Tender period for submission of ITT packs	2023-01-09 – 2023-03-06
Contract award	2023-04
Notice of contract award to unsuccessful tenderers and ILOs	2023-04

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13 Contact Details


Procurement related questions should in the first instance be directed to Paul Oosthuizen - Procurement Specialist with the responsible ILOs (Industry Liaison officer) in Cc.

- Paul Oosthuizen - Procurement Specialist Paul.Oosthuizen@skao.int
- Responsible ILO (Industry Liaison officer)
 - Sweden: Patrik Carlsson, Chalmers University of Technology – patrik.carlsson@cit.chalmers.se

If you are having issues with the Kommers Supplier Portal or have any procurement related questions, these should be addressed to Paul Oosthuizen (Procurement Specialist) Paul.Oosthuizen@skao.int with the responsible ILOs (Industry Liaison officers) in Cc.


Additional Information:

- Link to SKAO Procurement Website(www.skatelescope.org/procurement).
- Link to Industry Liaison Officers for each country (<https://www.skatelescope.org/ska-industry/>).

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LIST OF ABBREVIATIONS & ACRONYMS

HSE	Health, Safety & Environment
IGO	Intergovernmental organization
ILO	Industry Liaison Officer
ITT	Invitation to Tender
NEC4	New Engineering Contract – 4th Edition
PQQ	Pre-qualification Questionnaire
QA	Quality Assurance
SKA	Square Kilometre Array
SKAO	SKA Observatory

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DOCUMENT HISTORY


Revision	Date Of Issue	Engineering Change Number	Comments
A	2022-10-10		First draft release for internal review
1	2022-10-13		First release

DOCUMENT SOFTWARE

	Package	Version	Filename
Word processor	MS Word	Office 365	MID Band 1_MARKET SURVEY
Block diagrams			
Other			

ORGANISATION DETAILS

Name	SKA Observatory
Registered Address	Jodrell Bank Lower Withington Macclesfield Cheshire, SK11 9FT, UK
Fax	+44 (0)161 306 9600
Website	www.skao.int

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