

न्यूस्पेस इंडिया लिमिटेड (एनसिल)
NewSpace India Ltd. (NSIL)
(अंतरिक्ष विभाग के अधीन भारत सरकार की एक कम्पनी)
(A Central Public Sector Enterprise under Department of Space)

कार्यकारी सारांश / EXECUTIVE SUMMARY

LEO उपग्रहों के लिए बेसबैंड प्रणालियों की आपूर्ति और स्थापना के लिए RFP
RFP for Supply and Installation of Baseband systems for LEO satellites

NewSpace India Limited (NSIL), a Govt. of India company under Department of Space and commercial arm of ISRO, is preparing to realize Ground Station Network for management of satellites operating in Low Earth Orbit. The proposed Ground Station Network is to carry out Telemetry, Tracking and Command (TTC) operations including supporting satellite data download.

The present RFP from NSIL is towards supply and installation of two types of baseband systems which will be used for TTC operations and payload data reception from dual band and tri band full motion antenna systems being realised by NSIL (separate tender). Two types of baseband system proposed under this tender is:

1. Telemetry, Tracking and Command Processor (TTCP) systems
2. High-rate Data Reception Systems (HDRS)

Work packages and Deliverables under the RFP:

- I. These baseband systems are required to receive Telemetry data (S-band) and payload data (X/Ka band) from different LEO satellites through the dual band and tri band antenna systems being realised by NSIL at these locations.
- II. Expected quantity of TTCP and HDRS systems required are around 30-40 nos. each.
- III. Supply and Installation of TTCP systems and HDRS systems at the designated locations across India including Andaman Islands.
- IV. Integration of these systems in standard 19" instrumentation racks made available at centralised baseband room at designated locations.
- V. Total warranty support for 03 years for all baseband systems.

TTCP System major Specifications:

No	Parameter	Specification
1	Overall system functionality	Fully CCSDS compatible for TTC operations.
2	Receive and transmit freq. band	S-band with 70 MHz IF option

3	Telemetry Reception	Can receive two orthogonal (RCP and LCP) polarizations of RF/IF signals with independent acquisition management and combiner.
4	Data Rates supported	1 Kbps upto 10 Mbps (20 Msps with coding)
5	Modulation supported	PM, FM, PM/PSK, BPSK, xQPSK, GMSK, Spread Spectrum (CDMA)
6	Decoding scheme	CCSDS compliant – Convolution and RS Decoder (CCSDS – 223/255 & 239/255), Turbo decoder rate $\frac{1}{2}$, LDPC decoding
7	Telecommand data rates	100 bps to 256 Kbps with PSK sub-carrier 1 Kbps upto 2048 Kbps for direct modulation Spread Spectrum: 100 bps upto 500 Kbps.

HDRS System major Specifications:

No	Parameter	Specification
1	Overall system functionality	Fully CCSDS compatible for high rate EO data reception
2	Receive freq. band	1.2 GHz +/- 300 MHz, 2.4 GHz +/- 700 MHz – two data channels per unit
3	Demodulation supported	BPSK, xQPSK, 8-PSK, 16APSK, 32APSK
4	Data Rates supported / Data Channel	BPSK: Max. 300 Msps, xQPSK: Max. 600 Msps, 8-PSK: Max. 900 Msps, DVB-S2, SCCC / ACM: Max. 1.6 Gbps
5	Decoding scheme	CCSDS compliant decoding (Viterbi, RS 223/255, 239/255, LDPC, 4D-TCM). Viterbi decoder puncturing as per 2/3, 3/4, 5/6, 7/8. DVB-S2 with modcode 1 to 28.
6	Internal storage and R/W speed	Min. 4 TB storage and Up-to 4 Gbps R/W capability.

Delivery schedule:

No	Delivery Milestone	Projected Timeline
1	Delivery, installation and commissioning of first FIVE nos. of TTCP and HDRS systems each.	Contract Signing (T0) + 6 months
2	Delivery, installation and commissioning of next batch of TEN TTCP and HDRS systems each.	T0 + 8 months
3	Delivery of all pending baseband systems	T0 + 12 months

Bidder Eligibility Criteria:

1. The bidder shall be an ISO-9001:2015 certified company with established Quality Management Plan.
2. The bidder shall be OEM or its Authorised Representative capable of taking up works of such nature and magnitude. The bidder – if not OEM, shall produce an undertaking from OEM that the bidder is an authorized entity to quote for this tender and will

provide support and spares directly to purchaser, for the offered system (major items) and that the offered system will be supported by the OEM for the period of minimum 10 years after system installation and commissioning.

3. The Bidder/ OEM shall have at least 5 years of experience in development and supply of TTC processor and high-rate data reception systems catering to all the latest applicable communication standards suggested by CCSDS. The Bidder/ OEM shall have successfully developed and delivered min. five nos. each of TTC processor systems and high-rate data demodulator systems for LEO satellites in last three years. Documentary evidence towards this shall be submitted to NSIL along with techno-commercial offer.
4. Bidder and OEM shall provide details of financial profile of the company, product range, manpower profile, turn-over status and experience in the field of satellite communication and its ground segment solution along with its techno-commercial bid. The Bidder/ OEM must have successfully completed at least one single order of 40.0 Cr. or two orders each of 20.0 Cr. for similar projects delivering Satcom / Terracon related products / baseband units in last three years for any Central / State Govt. Organization / PSU / Public Listed Company. Bidder shall provide documentary evidence towards successful completion of above projects along with execution / completion certificate from the customer. In addition, the primary bidder / company shall have average annual turnover (for last three years) of Rs. 50.0 Cr. or more.

General Terms & Conditions for Tender:

1. This is a **two-part public tender**. Bidder shall submit its offer in two parts viz., Techno-commercial bid and financial bid in two separate sealed covers super-scribing the enquiry reference number, name of the respective bid. If price information is revealed (either in part or full) in the techno-commercial bid, total bid is liable for rejection.
2. All information supplied by the Bidders as part of their bids in response to this RFP, may be treated as contractually binding on the Bidders, on successful award of the assignment by NSIL based on this RFP.
3. Bidder shall submit Non-Disclosure Agreement duly signed by Authorized Signatory as per the format provided by NSIL.
4. Bidder is required to provide EMD of INR 1,00,00,000.0 (One Crore rupees only) shall be made through Bank Guarantee in favor of "NewSpace India Limited", towards bidder participation for the tender.
5. The cost of the RFP document is Rs. 5,000/- (Five Thousand only) + GST (18%). **After making payment for the tender document and signing NDA ONLY the detailed RFP document will be provided to bidder.**

NSIL Purchase Department Contact No:

Tel: (080) 2322 7777 Ext. 137, E-mail: purchase@nsilindia.co.in

BANK DETAILS

Customer's option to receive payments through Credit clearing mechanism

1. Customer's Name : **NewSpace India Ltd,**
with complete address, Tel/Fax no. ISRO HQ Campus,
& email ID New BEL Road,
Bengaluru-560 094
Tel:080 2322 7777 Ext.No.133
Email-finance@nsilindia.co.in
2. Particulars of Bank Account-
 - A. Bank name : State Bank of India
 - B. Branch name : Dollar Colony Branch
 - Address No.61, AG's Office Layout,
New BEL Road, RMV 2nd
Stage, Bengaluru-560054
 - Telephone numbers : 080-23607212
 - C. 9 Digit code number of Bank
and Branch appearing on MICR
Cheque issued by Bank : 560002063
 - D. Account type (S.B Account or
Cash credit (with code 10/11/13) : Current Account
 - E. Ledge no./ Ledger Folio numbers :
 - F. Account number as appearing on
Cheque Book- : **38345843981**
3. Date of Effect : 28th June 2024

INFORMATION FOR PAYMENT THROUGH RTGS OR NEFT

- G. IFSC code : **SBIN0009042**
- H. NEFT CODE : **SBIN0009042**

Signature Not Verified

Digitally signed by sneha j gaikwad
Date: 2025.03.11 16:21:49 IST
Location: eProcurement System for
Central PSUs