



KARNATAKA STATE NATURAL DISASTER MONITORING CENTRE
(Autonomous organization of Revenue Department, Govt. of Karnataka)



**TENDER DOCUMENT
FOR**

**Supply, Installation, Commissioning and Maintenance of
RADAR Stream Gauges and Reservoir level Sensors in the
Krishna Basin, Karnataka**

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

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1. Time schedule for bidding

Tender reference No:	KSNDMC/Tech/06/2021/
EMD	Rs.4,70,000 /- (Rupees Four Lakhs Seventy Thousand)
Last Date for Receiving Queries	19.03.2021 till 5:00 p.m.at KSNDMC office
Pre-bid meeting & venue	24.03.2021 at 11:00 a.m. at KSNDMC office
Last Date and Time for submission of Bids	07.04.2021 till 03:00 p.m.
Venue, Date & Time of Opening Of Technical Bids	On 08.04.2021 at 04:00 p.m. at KSNDMC office.
Presentation by technically pre-qualified bidder	On 16.04.2021 at 11:00am at KSNDMC office
Contact Person, Phone No. and e-mail	R.K. Abhinand, Senior Scientific Asst. Phone: 9964237382, 08067355139 e-mail: IT@KSNDMC.ORG
Address for Communication:	Karnataka State Natural Disaster Monitoring Centre (KSNDMC) Major Sandeep Unnikrishnan road, Near Yelahanka-Attur Layout, Bengaluru-560064

Note: It will be in the interest of the bidders to familiarize themselves with e-procurement portal to ensure smooth submission of the tender documents. It is also advised not to wait for the submission of the bid on the portal till the last date so as to avoid problem that may occur in uploading the bid to the portal due to any glitches or for any other reason at the last moment.

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2. Terms and Definition

1. "GoKö" shall stand for the Government of Karnataka.
2. "KSNDMC" refers to Karnataka State Natural Disaster Monitoring Centre.
3. "Bidder/Tenderer" means, person / firm / company / Organization participating in this tender.
4. "Supplier" means the successful Bidder with whom KSNDMC signs the agreement for Supply, Installation, Commissioning and maintenance of the Hydrological Equipment.
5. "PBG" refers to Performance Bank Guarantee.
6. Unit Price: Unit price is the price for a single component / equipment.
7. Project refers to the work of Supply, Installation, Commissioning and Maintenance of Hydrological Equipment in Krishna Basin, Karnataka
8. DAS: Digital Data Acquisition System
9. MCF: Master Control Facility located at KSNDMC, Yelahanka, Bengaluru
10. Contract period: From the date of issue of purchase order till the date of completion of warranty period in all respects; that is the end of 10 years.
11. Purchaser: Means KSNDMC
12. Authorised Representative: Means the authorised Indian Company with which the OEM partners for taking up sales and marketing of OEM's products in Indian along with maintenance.

3. Introduction

Karnataka State has the distinction of being first in the Country to establish Drought Monitoring Cell (DMC) in 1988 as an institutional mechanism to monitor the Drought. The activities were later broadened to include other natural disasters as also the activity of monitoring and was accordingly renamed as Karnataka State Natural Disaster Monitoring Centre (KSNDMC) in 2007. Management of Natural Disasters heavily depends on inputs from Science and Technology.

KSNDMC has been serving as a common platform to various response players in the field of natural disaster by providing timely pro-active science & technology inputs. The Master Control Facility will strengthen the activities of the centre in providing information, reports & advisories to the community, research organizations and the Government. The Centre provides inputs to the farming community, agriculture and horticulture sector, fisherman, transport, power and

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electricity, State and District level Disaster Management Authorities in Karnataka through the state-of-the-art sensors monitoring natural hazards and communication system.

4. Scope of Tender

4.1 Supply: Supply, installation, commissioning and maintenance of RADAR Stream Gauges and Reservoir level Sensor to be installed in the Krishna Basin River system and Reservoirs as per the specifications detailed in **Annexure -1**.

The equipment shall be supplied to the locations identified by the purchaser (KSNDMC), as given in **Annexure 2**. All the power connectors should plug into the Indian-type electric sockets. The bidder shall take all necessary actions related to the supply, transportation of equipment to the sites, installation, configuration and complete integration of Hardware and Software modules to meet the requirements as per the Tender on turn-key basis.

4.2 Installation and Commissioning: Installation and commissioning of RADAR Stream Gauges and Reservoir Level Sensors shall be completed by the successful bidder within 120 days from the date of acceptance of the purchase order. Delay in installation of equipment / components attract, penalty at the rate of 1% of the contract value per week of delay or part thereof, subject to a maximum of 10% of the contract value. In case where the penalty reaches the maximum percentage, the performance security of the successful bidder will be liable for forfeiture and can be blacklisted.

4.3 Warranty: The Bidder warrants in writing that the Goods supplied under the Contract are new and unused. The Supplier shall provide one-year warranty to all the equipment and related accessories supplied. The warranty of the equipments shall commence from the date of completion declared by KSNDMC of satisfactory supply, installation, testing and commissioning of the all the RADAR Stream Gauges and Reservoir Level Sensors.

4.4 Comprehensive Maintenance: The Supplier shall provide onsite comprehensive maintenance (CAMC) for all the equipment / accessories supplied, for a period of four years from the date of completion of warranty. During the period of warranty and Comprehensive Maintenance (CAMC), the successful bidder shall maintain all the equipments / accessories

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supplied to ensure that they are kept in full working condition and functional by replacing necessary spares and accessories wherever necessary at no extra cost to the purchaser.

4.5 Delivery and Installation: Safe delivery of the instruments to the respective field stations along with required software at Master Control Facility (MCF) will be the responsibility of the bidder. All the power connectors should plug into the Indian-type electric sockets. The installation shall be such that the system design is modular and upgradable to meet the future requirements, if any in terms of equipment & software. Flow of data to MCF should be through GPRS only. The supplier should provide perpetual license of all the application software provided. The supplier should also provide latest versions of upgraded firmware of DAS, software application, data retrieval software, communication software etc., at no extra cost until completion of the contract period.

4.6 Acceptance Test on installation and Training: On installation and commissioning; the equipment / components will be tested for their performance. If the results of the tests are not within the margins specified by the OEM or in the codes/manuals of the professional bodies, the tests shall, if required, be repeated and necessary corrective action taken by the supplier to ensure that the components /equipment supplied meets the performance specification prescribed. If the equipment / accessories supplied and installed do not conform to the specification in the Tender Document and tests are not within the margins specified by the OEM or in the codes/manuals of the professional bodies, the Purchaser reserves the right to reject all equipment/accessories or part thereof. The Purchaser on giving 30 days notice in writing to the Supplier; the defects/problems in the equipments/ components supplied shall be rectified or the units replaced by the Supplier. Successful bidder should provide operational and maintenance training of equipment/sensors installed in the Krishna Basin area to the KSNDMC officials. During the training period, installation of all application and operating software should be demonstrated. A detailed training shall be submitted by the successful bidder, sufficiently in advance before commencement of training programme, for KSNDMC's information and approval.

4.6 Maintenance: The successful bidder should offer warranty of one year for all the equipment and related accessories supplied along with onsite comprehensive maintenance for a period of four years from the date of completion of warranty period. During the period of warranty, and comprehensive maintenance, in the event, the equipment develops snags or

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malfunctions or if it stops functioning, the purchaser will inform the bidder, and the bidder's should attend to the complaint immediately and replace the defective equipment.

During the period of warranty and comprehensive maintenance, the downtime of the whole Network should not exceed the following limits:

- i. 5 days of down time for MCF located at KSNDMC, where the application & configuration software is installed.
- ii. No field station should be down for more than 10 days from the time the complaint is logged.

Delays exceeding the limits mentioned above attracts penalty as indicated below.

All costs towards re-export / re-import of defective unit / units including custom duties, transportation charges etc., shall be borne by the bidder. The Bidder need to undertake quarterly visits as mutually agreed to between the Purchaser and successful bidder.

5. Pre-Qualification Criteria for Technical bid

Bidders who are desirous of bidding for the said tender shall meet the following Technical criteria to qualify for the technical bid.

Sl. No.	Pre-Qualification Criteria	Documents/ proof
1	The OEM/Authorized representative of the OEM/ Bidder should be in business related to Supply, Installation, Commissioning and Maintenance of Hydrological Telemetry Networks for at least 5 years as on 31.01.2021.	Registration Certificate issued under the Companies Act 1956/2003 of the OEM/ Authorised representative of the OEM/ Bidder (Certificate of Incorporation).
2	The OEM/Authorized representative of the OEM/ Bidder's average annual turnover shall be more than Rs. 3,00,00,000 (Three Crores) during the period from 2017-18, 2018-19 & 2019-20.	Annexure 4: The Bidder shall submit copies of the profit and loss accounts and balance sheets as well as IT returns for these three Financial Years duly self-attested. Notwithstanding anything stated above, the Purchaser reserves the right to assess Bidder's capability and capacity to perform the contract, should circumstances warrant such an assessment in the overall interest of the purchaser.

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3	The Bidder should produce the self-attested photocopies of the company's PAN Number, GST certification.	Copy of Company PAN Number, GST to be furnished.
4	The Bidder should not have been blacklisted by Government of Karnataka or its agencies & Central / any other State/UT Government or its agencies for corrupt or fraudulent practices or for indulging in unfair trade practices or for any reasons whatsoever.	Annexure 5: The bidder to give an undertaking in Annexure 5 that the OEM/Bidders organisation has not been blacklisted
5	Technical Support and Service Centers: The Bidder should have a technical support centre in India with service engineers / technical staff for providing service as and when required.	Annexure 6: The bidder to give an undertaking in Annexure 6 confirming that service centre is located in India and have adequate technical engineers and technical staff to provide technical support.

6. Technical Qualification Criteria

Sl. No.	Technical Qualification Criteria	Documents/ proof
1.	The OEM/authorized representative of the OEM/ bidder should have experience in Supply, Installation and Maintenance of at least THREE Hydrological Telemetric Network.	Submit documentary evidence from the organisation to whom supplies were made. Also attach performance certificate issued by the institution/s who procured the equipment.
2.	Proof of Concept / Presentation	Bidder shall submit documentation / technical brochures about the working principle of the hydrological equipment proposed and details of the protocols of data transmission capability to auto retransmit / store the hydrological data in case of failure of telecom signal at the site. The document should also consist of calculation of the battery sizing based on the equipment and all other electronic components used in the system. The Bidder need to provide presentation after being pre-qualified detailing the salient features and performance output of the equipment.
3.	Product Brochure	Technical brochure is to be submitted and the same should be available on the bidder's website too.

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4.	Compliance statement of specifications	Compliance statement of the specifications to be provided along with proof of documentation in terms of Technical Brochures.
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7. Procedure for Submission of Bids

Bidder can download the tender document for free of cost from the portal (<http://eproc.karnataka.gov.in>) till the due date and time for bid submission. Any interested bidder shall pay EMD of Rs 4,70,000/- and tender processing fee as specified to the e-Procurement portal through any of the four e-payment options in the portal and submit their Technical and Commercial bids electronically on the same portal:

- Credit Card
- Direct Debit
- National Electronic Funds Transfer (NEFT)
- Over the Counter (OTC) ó designated ICICI bank branches located across the country.

Note: e-Procurement portal will deny submission of the bid without submitting the EMD Deposit and it will take minimum 2-3 days for confirmation from the bank regarding the EMD realization. Also, please note that payments submitted through cheque or demand draft shall not be accepted. For further details regarding e-Payment, please refer to e-Procurement portal at the above-mentioned website.

7.1 Modes of Submission: All interested bidders shall pay EMD and Tender Processing fee and submit their Technical and Commercial bids electronically using the unified e-Procurement platform. The e-Procurement portal is available at: <http://eproc.karnataka.gov.in>

Intending tenderers can submit the tenders only through e-Procurement portal. It will be in the interest of the bidders to familiarize themselves with the e-Procurement system to ensure smooth preparation and submission of the tender documents on or before the scheduled date and time prescribed for bid submission to avoid problems / glitches that may arise on the last day of submission of the bid. KSNDMC will not be responsible for any delays due to unavailability of the portal or internet link.

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7.2 Authentication of Bid: Bid response documents shall be signed by the Bidder or a person or person who has been authorized by their company or firm. A letter of authorization / power-of-attorney issued by the competent authority of the company / firm to the person signing the tender document should accompany the bid. All pages of the bid, except for printed literature, shall be initialed and stamped by the person or persons signing the bid document.

7.3 Validation of interlineations in Bid: The bid documents uploaded to the e- procurement portal should be legible and shall not contain interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

8. Clarification on Tender Document

Prospective Bidders requiring any clarification on the tender document may submit queries, in writing, in the following format with in the last date prescribed:

Queries received after the last date and time prescribed shall not be entertained.

KSNDMC will post the Queries received and Clarifications on the portal (<http://eproc.karnataka.gov.in>) and KSNDMC website www.ksndmc.org

Sl. No	Section No./ Clause No./ General queries.	Page No.	Reference/ Subject	Clarification required on

9. Bid Prices

The Bidder shall prepare the bid based on details provided in the tender documents. It must be clearly understood that the scope of work indicated in the tender is intended to give the bidder an idea about the nature of the work involved and may not be exhaustive. The Bidder shall carry out due diligence. The tenderer shall quote prices in **Annexure 7** - Commercial bid. Tender will be rejected in the event of failure of the tenderer to quote for all items in the **Annexure 7**.

Prices quoted in the Commercial bid for each item, shall be all inclusive price including basic cost, duties, all taxes, packaging charges, transportation charges, insurance, handling and all other charges if any, until the items are delivered and installed at the Purchaser's site. Price

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quoted shall also include, cost of electrical cords, adaptors, etc., complete installation, testing, commissioning and training for KSNDMC staff.

The tender shall indicate the percentage of taxes, statutory duties, levy, included in the quoted price and other charges such as transport, insurance, handling etc.,

Variation of taxes, duties and levy: Rate quoted by the tenderers shall be firm during the tenure of the contract, except for variation in the rate of duty or taxes levied by the Union or State or Local Government. Any variation in taxes, duties and levy shall be to the account of the Purchaser.

10. Authorized Signatory

The "Bidder" as used in the tender documents shall mean the one who has signed the Tender Form. The Bidder may be either the Principal Officer or his duly Authorized Representative. In either case he / she shall submit a certificate of authority for signing the tender document and to correspond with KSNDMC. All certificates and documents (including any clarifications sought and any subsequent correspondences) received hereby, shall, as far as possible, be furnished and signed by the authorized representative and or the principal.

It is further clarified that the individual signing the tender or other documents in connection with the tender must certify whether he/she constitutes and act as attorney of the firm or the company on whose behalf he/she is signing.

11. Bid Security (EMD)

The EMD of the unsuccessful Bidder will be returned within 30 days after the Selected Tenderer has signed the Contract and no interest will be payable by KSNDMC on the amount of the Bid Security.

The bid security may be forfeited:

- 1) If a Bidder withdraws his/her bid or increases the quoted prices during the period of bid validity, or its extended period, without the explicit consent of the department, if any; or
- 2) In the case the successful Bidder, after issuing Purchase/Work order if he / she fails to sign the Agreement with in the time specified or furnish the required Performance Bank Guarantee.

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12. Bid Validity Period

12.1 Period of Validity of Bids: Bids shall remain valid for a period of 90 days from the date of opening of Technical Bids, unless declared to the contrary. Any bid valid for a shorter period may be treated as non-responsive and rejected.

12.2 Extension of Period of Validity: In exceptional circumstances, KSNDMC may request the Bidder(s) for an extension of the period of validity of bid offered. The request and the responses thereto shall be made in writing (or by fax or by mail). In such case, the validity of EMD shall also be suitably extended.

13. Contacting KSNDMC

13.1 Contact by Writing: No bidder shall contact KSNDMC officers on any matter relating to its bid, from the time of bid opening till the time the Contract is awarded. If the Bidder wishes to provide any additional information to KSNDMC, it should be done through writing a letter or through an email.

13.2 Rejection of Bid: Any effort by a Bidder to influence KSNDMC in its decisions with respect to the tender entails rejection of the bid submitted by the tenderer.

13.3 Purchase's Right to Vary Scope of Contract at the time of Award: Purchaser may at any time, by a written order given to the Bidder, make changes to the scope of the contract as specified. If any such change causes an increase or decrease in the cost of Contract, whether changed or not changed by the order, an equitable adjustment shall be made in the Contract Value or time schedule, or both, and the Contract shall accordingly be amended. Any claims by the Bidder for adjustment under this Clause must be asserted within thirty (30) days from the date of the Bidder's receipt of KSNDMC's changed order.

13.4 Purchaser's Right to Accept Any Bid and to reject any or All Bids: The Purchaser reserves the right to accept or reject any bid or all bids and to annul the Tender process without assigning any reasons therefor and without any liability to KSNDMC. Purchaser, also reserves the right in the interest of the work, to allocate the order to one or more tenderers at the prices and terms and conditions of the lowest tenderer.

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14. Assignment / Sub-contracts

On award of the Supply/Work order, the Contractor shall not assign the performance of contractual obligations, in whole or in part to any third party, except with the Purchaser's prior written consent.

Sub-contract is strictly prohibited.

15. Notification of Award

15.1 Signing of Contract

On issue of Letter of Intent (LOI)/Purchase order (PO), the successful bidder, shall acknowledge the receipt in writing and shall send acceptance to LOI/PO and shall enter into an agreement within seven (7) days from the date of receipt of LOI/PO.

15.2 Failure to abide by the Agreement

The conditions stipulated in the agreement shall be strictly adhered to and violation of any of the conditions will entail termination of the contract without prejudice to the rights of the Purchaser with such penalties as specified in the tender document and the Agreement.

16. Performance Bank Guarantee

The successful tenderer, within 7 days of the Signing of Contract, furnish an unconditional and irrevocable Bank Guarantee from a Scheduled commercial bank of Reserve Bank of India, in the format acceptable to the Purchaser, for an amount equivalent to 10% of the total value of the Purchase & Work order. The Bank Guarantee shall be kept valid for a period of 63 Months from the date of issue of bank guarantee and thereafter, another bank guarantee (for AMC) for 10% of contract valid for a period of 63 months extendable till the expiry of the contract. Failure of the successful Bidder to comply with the requirement shall constitute sufficient grounds for the annulment of the award of the order and forfeiture of the EMD. Rejection Criteria: Besides other terms and conditions of the tender document, bids may be rejected under following circumstances.

17. Technical Rejection Criteria

- Bids which do not conform to required validity of the bid as prescribed in the Tender.
- If the information provided by the Bidder is found to be incorrect / misleading at any stage / time during the tendering process.

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- Any effort on the part of a Bidder to influence the bid evaluation, bid comparison or contract award decisions.
- Bids without signature of person(s) duly authorized on required pages of the bid.
- Bids without power of authorization to the signatory technical bid containing commercial details.
- Bid not substantially responsive to the tender document.
- Failure to furnish proofs for information provided.
- Bidders not quoting for the complete scope of Work as indicated in the Tender documents.
- Bidders not complying with the Technical and General Terms and conditions as stated in the Tender document.
- Any false declaration by the bidder during the bidding process, following action may be taken.
- Liable for Legal Action
- Forfeiture of entire PBG/EMD.
- Forfeiture of any Released payments
- Blacklisting of the Successful bidder

18. Commercial Rejection Criteria

- Incomplete Price Bid
- Price Bids that do not conform to the price bid format prescribed in the Tender document.
- Total price quoted by the Bidder does not include all statutory taxes and levies applicable.

19. Liquidated Damages

Subject to clause for Force Majeure, if the successful bidder fails to complete the assignment in compliance to the time schedule prescribed in the Purchase/ Work order or the extended date or if the successful bidder repudiates the Contract before completion of the Work, the Purchaser at its discretion may without prejudice to any other right or remedy available, forfeit the entire performance bank guarantee submitted by the successful bidder apart from blacklisting of the selected successful bidder for further participation in any of the tenders of the KSNDMC.

Any such recovery or liquidated damages shall not in any way relieve the successful bidder from any of its obligations to complete the Works or from any other obligations and liabilities under the Contract.

20. Termination of Contract

Any violations / non-compliance of any of the conditions will entail termination of the contract without prejudice to the rights of the Purchaser with such penalties as specified in the contract. Upon such termination, the Purchaser will have the right to forfeit the entire performance bank

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guarantee submitted by the successful bidder, apart from blacklisting of the Supplier for further participation in any of the tenders of Purchaser.

Where a change of management of the Supplier has occurred whereby the Supplier's company has merged, amalgamated or been taken over, due to which the majority shareholding of the Supplier has been transferred to another entity, and in case requirements for the Supplier set out in the tender document are not complied with, the purchaser can by a 15 (Fifteen) days written notice, terminate the contract and such notice shall become effective at the end of the notice period.

21. Force Majeure

In the event if the Force Majeure conditions substantially, prevents, hinders or delays the Supplier's performance for project's implementation or the operation of Project's critical business functions for a period in excess of 3 days, the Purchaser may upon request by the Supplier, declare at its discretion, certain specified period as Force Majeure. However, when the situation arising out of force Majeure comes to an end in the assessment of the Purchaser, the Supplier shall resume normal activities under this agreement immediately thereafter. If the Purchaser considers it necessary, may grant an extension of time to the Supplier for resuming normal activities under this agreement. If the Supplier does not resume normal activities immediately or within the extended period, if any, granted, the purchaser will have the option to invoke the Performance Guarantee, levy liquidated damages, obtain substitute performance from an alternate successful bidder at the cost of Supplier and/or terminate the Agreement.

22. Resolution of disputes

Resolution of disputes

Any dispute arising out of or in connection with this Agreement or the tender document shall in the first instance be dealt with in accordance with the escalation procedure set forth herein.

Scope of Dispute Resolution

Except where otherwise provided in the agreement, all questions and disputes relating to the meaning of the specifications, design, drawings and instructions here-in before mentioned and as to the quality of workmanship or materials used on the work or as to any other question, claim, right, matter or thing whatsoever in any way arising out of or relating to the agreement, designs, drawings, specifications, estimates, instructions, orders or these conditions or otherwise concerning the services and deliverables or the execution or failure to execute the same whether

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arising during the progress of the Project (define) or after the cancellation, termination, completion or abandonment thereof shall be dealt with as mentioned hereinafter:

If any dispute arises between the Purchaser and the Supplier in connection with, or arising out of, the agreement or tender conditions or execution of the Supply/work, whether before or after the repudiation or other termination of the agreement, including any disagreement by either party with any action, inaction, opinion, instruction, determination, certificate or valuation, the matter in dispute shall, in the first place, be referred to the Director, KSNDMC. Either party may refer a dispute to the Principal Secretary, Revenue Department, GoK or the Commissioner, KSDMA, who shall give decision in writing within 30 days of reference of dispute.

- a) In case either party is not satisfied with the decision of the Principal Secretary they can institute arbitration proceedings as per Indian Arbitration and reconciliation Act, 1996, after a 30-day notice period.
- b) Any dispute or difference or claim arising out of, or in connection with, or relating to the Agreement or breach, termination or invalidity thereof, shall be referred to and settled under the Arbitration Center, Karnataka (domestic and international) rules 2012, by one or more Arbitrators appointed in accordance with its rules.
- c) Arbitration proceedings shall be held in Bangalore and the language of the arbitration proceedings and that of all documents and communications between the parties shall be English.
- d) Any litigation in courts shall be in Bengaluru Jurisdiction only.

23. Interpretation of Clauses

In case of any ambiguity in the interpretation of any clauses in the bid document, Director, KSNDMC interpretation of the clauses shall be final and binding on all parties.

24. Third Party Claims

The Supplier shall indemnify the Purchaser against all third-party claims of infringement of patent, trademark or industrial design rights arising from use of the Goods or any part thereof in reference to this Supply/work order in India or claims under labour laws etc.

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25. Performance Related

25.1 Service during Warranty period: The Supplies and Support and Maintenance services shall be provided on all days which include Sundays and general holidays also. The Supplier shall repair / replace / maintain the equipment in good working condition.

1. Penalty for Delay / Repair / Maintenance / Replacement:

Sl. No	Item	Penalty
1.	Delay in supply of all the supplied RADAR Stream Gauges and Reservoir Level Sensor	A penalty of 1% of the contract value for every week of delay or part thereof subject to a ceiling of 10% of the contract value.
2.	RADAR Stream Gauges and Reservoir Level Sensor (10 days downtime).	A penalty of 1% from the contract value per day per station subject to a maximum of 10% of the contract value for each Station.

The supplier shall diligently attend the service calls and rectify nonfunctioning of the software application within a maximum period of five days for MCF located at KSNDMC; 1 week for delay in supply and 10 days for the RADAR Stream Gauges and Reservoir Level Sensors from the date & time the complaint is logged.

Penalty for Sl. No. 2 shall be applicable as specified after 10 days. If the consecutive non-operational days of each station are beyond 30 days, the contract shall be terminated and the bank guarantee shall be forfeited and the contractor shall be blacklisted. Replacement of product/sensor shall be of same specifications as mentioned in this tender document.

26. Evaluation Process

The bids are evaluated in 2 phases

- First Phase - Evaluation based on Technical Qualification Criteria
- Second Phase - Evaluation based on Commercial Criteria

27. Technical Evaluation Conformance

The Bidders shall be evaluated based on the technical criteria. Bidders failing to meet the Technical criteria shall not be considered for opening their Commercial Bid.

- a. Purchaser reserves the right to seek clarifications and additional documentary evidence from the bidders to ascertain any other information required but not available in the tender document.

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b. Decision of the Purchaser in the evaluation of the Technical bids shall be final.

28. Commercial Bid Evaluation

The commercial quotes submitted by technically qualified bidders will be opened in e-Procurement Portal. The total value of all items put together would be the basis for evaluating the lowest tender.

29. Payment terms

Payment shall be made subject to recoveries, if any, by way of delay in supply as per service terms, liquidated damages / penalty clause / TDS or any other charges as per the payment terms of the Supply Order if not specified elsewhere in the document. No advance payment will be made towards supply of the required goods. **No payment shall be made for partial delivery.**

Payment towards Supply, Installation, Commissioning of RADAR Stream Gauge and Reservoir Level Sensors equipment will be made to the successful bidder on satisfactory Supply, Installation, Commissioning and Testing of all the RADAR Stream Gauge and Reservoir Level Sensors on submission of 10% of the total contract value in the form of Performance Bank Guarantee. The price which quoted by the bidder under the Comprehensive Maintenance (CAMC) for four Years shall be divided equally and will be paid on quarterly basis after completion of each quarter.

The following Documents need to be submitted along with the Invoice for payment:

- a. supplier's commercial invoice showing contract number, goods description, quantity, unit price and total amount
- b. Copies of packing list identifying contents of each package
- c. Manufacturer's/Supplier's warranty certificate
- d. Inspection certificate issued by the nominated inspection agency, if applicable as per the contract
- e. Manufacturer's own factory inspection report
- f. Certificate of origin
- g. Insurance certificate
- h. Port of Loading & Discharge
- i. Expected date of arrival to India

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

ANNEXURE - 1

(Technical Specifications)

Specification for the Supply, Installation, Commissioning, & 5-year onsite maintenance (including standard warranty of one year) of RADAR Stream Gauges and Reservoir level Sensor to be installed in the Krishna Basin River system and Reservoirs.

Sl. No.	Item Description	Sensors	Qty.
1	Supply, Installation, Commissioning of RADAR water level Sensors In the Reservoir in Krishna Basin of Karnataka	RADAR Water Level Sensor	Six
2	Supply, Installation, Commissioning of RADAR Stream Gauges in the upstream and downstream of the River system in Krishna Basin of Karnataka.	RADAR Water Level Sensor	Seven
		Velocity meter	Seven

Specifications of the above mentioned equipments are as below:

1. RADAR Stream Gauges:

Purpose: RADAR Stream Gauge is an integration of 2 sensors, RADAR Water Level Sensor and RADAR Velocity Meter. The radar water level sensor is to record readings of water level versus time in rivers, lakes, reservoirs. Velocity meter will record the velocity of flow in the stream and help calculate the discharge. The level and velocity data are stored on a data logger with LCD display, and transmitted to a base station via a GSM/GPRS modem, also the actual level reading to be shown on a LCD display.

The RADAR Stream Gauge may be easily mounted to a bridge, frame, pipeline or extension arm. RADAR water level to the reservoir is also mounted to measure the water level in the reservoir.

1.1	Sensor type	Impulse radar water level sensor. Surface Velocity Radar - This is the velocity meter that measures the streamflow velocity.
1.2	Measuring range	0.8m to 18m (i.e. minimum 0.8m or less to maximum 25m or more)
1.3	Blanking zone	0.8m
1.4	Accuracy	±0.003m
1.5	Beam angle	10-16°

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1.6	Antenna	flat transmit and receive antenna
1.7	Power supply	solar powered; power supply voltage range at least 10-15 VDC.
1.8	Solar Panel	rated capacity 30W, Open circuit voltage:21V,Short circuit current 2.4 A
1.9	Power consumption	standby/sleep mode 0.10 mA at 12V, measurement/active mode 15 mA at 12V
1.10	Dimensions	The sensor should be small and unobtrusive; the width, depth and height dimensions of the sensor shall all be less than 300mm.
1.11	Weight	0.8 kg

2. Data logger

2.1	Measurement resolution	12 bit A/D converter or better.
2.2	Measuring interval	Pre-set at 1 hour, adjustable from 10 minutes to 24 hours. The measuring interval shall be user adjustable, water level readings shall be executed at integer times. Example, if the measuring interval is 1 hour, then readings should take place at: 00h00, 01h00, 02h00, etc. The first reading after initiation of the instrument should be made at the first instant of 00 minutes in the hour.
2.3	Measuring time	×20 seconds The instrument should at least be capable to take the arithmetic average of readings collected over a period of 20 seconds or more. Only the average value is recorded.
2.4	Date	day, month, and year in the following format: DD/MM/YYYY with leading zeros (01/03/2001 for 1 st of March 2001)
2.5	Time	hh:mm:ss (0 to 23 hours, 0 to 59 minutes, 0 to 59 seconds) with leading zeros (08:05:07)
2.6	Recording capacity	Minimum of 10,000 water level readings. The recorded data shall also contain an instrument serial number and/or station identification code and information on date and time of recorded water levels readings. The serial number shall be uniquely attached to the data logger. The station identification code shall be uniquely attached to the data logger at installation and shall not be added after data retrieval by user interference. The memory shall have a ring organisation (endless loop). The memory shall be protected against accidental erasure by a password or equivalent.

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2.7	Error marking	error code, i.e. 699.999 Out of range data and errors shall be clearly and unambiguously marked and be distinguishable from valid data. The error mark is an impossible value, which cannot be generated under normal operating conditions
2.8	Recording resolution	0.001 m or better
2.9	Memory type	Minimum 4MB, nonvolatile memory is preferable. Volatile memory (RAM) shall be protected from data loss by a rechargeable (from the solar panel) battery. The solar panel and rechargeable battery shall be sufficient to retain memory contents more than one year during normal Indian weather conditions assuming: <ul style="list-style-type: none"> • A recording interval of 1 hour • The value recorded will be an arithmetic average from readings over 20 seconds • Monthly access to the loggers for data retrieval and monitoring purposes
2.10	Communication interfaces	<ul style="list-style-type: none"> • Dedicated cable from radar sensor to data logger communication between logger and DRS shall use IrDA, Bluetooth, USB 2.0 or better, SDI 12, RS232 serial port, and/or RS485 serial port • The communication hardware between logger and DRS shall be suitable for the cable lengths involved. • It should support GSM/GPRS interface for online monitoring
2.11	Over-voltage protection	On all i/o lines, regardless mode of connection during deployment. Built-in over-voltage protection is required on the electronics unit, in particular on all external connections, e.g. sensor supply and signal, external power supply and data communication interface.
2.12	Water level indicator	LCD display with 0.001 m resolution

3. Mounting and enclosure for radar sensor and data logger

The instrument shall be fitted easily and quickly on a bridge, measuring frame, pipeline or extension arm. Radar sensor mounting supports shall be provided as required for each specified site.

The sensor electronics, data logger, electronics, batteries and all other electrical components shall be contained in one or more weatherproof protective enclosures. The sensor housing will be UV-stabilised. All materials and combinations thereof shall be lightweight and durable (corrosion proof). Lightning, overvoltage and surge protection shall be provided on all sensors and power supply lines.

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

- a) **Operating temperature:** -35°C to 60°C
The operating temperature range specification applies to all components of the instrument, like: sensor, cable, data logger, batteries, etc.
- b) **Humidity:** $\lt; 90\%$
- c) **Ingress protection:** the sensor, its enclosure and cables shall comply with IP65 or better protection

4. Software for data retrieval and analysis (DRA)

The software should support functions for conversion of the collected data into ASCII (text) tables, and for efficient visualisation of the time series in tabular and graphical form.

- É Graphical axes shall be generated automatically and be manually adjustable. Units along the axes shall not be awkward but intuitive and easily understandable.
- É All axes shall have sufficient graduation.
- É The labels along the time axis shall be in sensible time intervals, i.e. hh:mm for relatively short periods and dates, e.g. DD/MM/YYYY, for long periods. The same applies for the level axis.
- É The unit-labels shall not cover each other.
- É To enhance readability, adequate gridlines, both along time and level axes, shall be generated automatically by the graphics functions, approximately 5 gridlines per axis.
- É The user interface shall support efficient functions to select and visualise subsets of the time series, e.g. a single day or several days somewhere out of many weeks of data.
- É Efficient window functions shall be available to visualise the data in the required resolution.
- É Software that can only display sample counts or total duration or does not support axis and grid adjustment is not permitted.
- É The software shall support error free transfer of the retrieved data to a PC/Laptop.

5. PC Software

- É PC software shall be part of the delivery and will be used in the office, e.g. on a desktop PC.
- É The PC software shall efficiently and reliably transfer the collected data from the DRA software to a PC environment.
- É The tabular data will be imported by other software packages, e.g. for analysis and presentation in a spreadsheet and for storage in a database.
- É The export file format is specified in Section 6.
- É The PC software shall support the same and more tabular and graphical presentation functions as specified under DRA software.
- É The PC software shall be mouse-driven and fully compatible with MS-Windows 10.

6. Standard data text file format

The text file is the intermediate data representation that is used for loading of the data into the hydrological data base system.

- É The PC based software shall have a facility to generate a text file with water level data in the standardised format.
- É The text file formatting function may be part of the standard proprietary PC software. Alternatively, the function may be implemented in a separate, MS-Windows XP/Vista based program.

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- É The text file facility shall be easy to use.
- É Only SI-units shall be presented, i.e. m for levels.
- É Non-SI units like feet, inches are not permitted.
- É The text file shall have a section with header lines.
- É The header lines shall precede the data lines.
- É The header lines shall contain instrument serial number, any reference level (e.g. installation altitude) that was used to convert from instrument reading in to water level.
- É The header may contain other optional data such as measuring range, station ID, station co-ordinates and similar.
- É For each specific instrument make and model, the number of the header lines must be fixed, i.e. all instruments of that make and model shall always generate the same number of header lines, in the same format.
- É The contents of the header lines is for use by the operator but will not be automatically assessed by the Data Entry Software
- É All header lines shall be terminated by a <CR><LF> sequence.
- É The data shall be organised in columns
- É Column 1: date in dd/mm/yyyy
Leading zeros shall be included, i.e. 06 February 2001 will be expressed as 06/02/2001. The </> character may be omitted, then the format becomes ddmmyyyy.
- É Column 2: time in hh:mm:ss
Time shall be expressed in 24 hours. The AM/PM representation is not permitted. Leading zeros shall be included, i.e. 6 o'clock in the morning shall be represented by 06:00:00. The <:> character may be omitted, then the format becomes hhmms.
- É Column 3: water level in metres with millimetre resolution, e.g. 49.640 m.
- É Alternative data sequences are not permitted.
- É If a parameter can be negative, then a character position for the minus sign shall be reserved.
- É The column separator shall be one of the following: <space>, <tab>, <comma>, or <semicolon>.
- É Only one type of separator may be applied.
- É End-of-line is indicated by <CR><LF> sequence.
- É All data lines shall comply with this column format, empty lines or intermediate partly filled lines, e.g. with date and/or time only, are not permitted.
- É All columns shall be complete, i.e. each field in a column shall always contain data.
- É Erroneous or missing water level data shall be indicated by -99.999.

Examples of data lines:

30/05/1998	11:00:00	9.875
30/05/1998	12:00:00	-99.999
30/05/1998	13:00:00	9.989
30/05/1998	14:00:00	10.380
30/05/1998	15:00:00	10.800

The three columns contain date, time and water level data respectively.

7. Telemetry system (Communication)

- The remote station (sensor and data logger) should support a GSM/GPRS based data transmission system with at least one month power backup.
- The transmission system (GSM/GPRS modem and antenna) should be integrated with the sensor and data logger.

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- The system and any external connectors should be watertight (IP65 or better) and impact resistant.
- The system must be power-supplied by standard lithium batteries for operation time of minimum one year by one set of batteries and/or solar-powered (one transmission per day, up to 24 measurements per day). The system should minimise power consumption.
- The remote station shall send the data with the help of GSM/GPRS modem interfaced to the data logger in a format compatible for decoding at the GSM/GPRS server.
- In addition, as and when the remote station is queried by the GSM/GPRS Server at any time to take samples of water level readings, the same shall also be done and information be provided to the server for onward availability to the users.
- An alarm notification must be sent by the system via SMS to registered mobile phone numbers through suitable means of communication in case of a preset event condition occurring e.g. maximum water level exceeded, minimum battery voltage reached, etc.
- Data download / retrieval from remote PC via GSM/GPRS network should be compatible to 900MHz and 1800MHz under software control.

Note: SIM card will be provided by KSNDMC with a suitable data plan.

Calibration policy

Each RADAR Stream gauge sensor is to be calibrated once in every 3 months on site by the Supplier and the calibration certificates are to be submitted to KSNDMC.

General Features

Material: Corrosion resistance metal

Enclosure/Protection: Lockable (key) box provided by the supplier to be mounted in a stilling well or gauge hut, with IP65 or NEMA 4 protection

Tools: Complete tool kit for operation and routine maintenance.

Accessories: Sensor mounting support, floats, graduated tapes (metric), wheel, counterweight, and cabling

Graduated tape: The tape should be of high quality to withstand a harsh and humid environment, should not get twisted or wrinkled during operation.

Manuals: Full documentation and maintenance manual in English.

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

ANNEXURE – 2

(List of RADAR Stream Gauge and Reservoir Level Sensors Stations in Krishna Basin, Karnataka)

Location	Name of the Hydrological Instrument	Qty.
Upstream and downstream of river system in Krishna Basin	RADAR Stream Gauge	07
Ghataprabha Reservoir	RADAR Water level sensors	01
Malprabha Reservoir	RADAR Water level sensors	01
Bhadra Reservoir	RADAR Water level sensors	01
Tunga-Bhadra Reservoir	RADAR Water level sensors	01
Alamatti Reservoir	RADAR Water level sensors	01
Narayanapura Reservoir	RADAR Water level sensors	01
Total Stations		13

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

ANNEXURE 3: UNDERTAKING

To,
The Director
Karnataka State Natural Disaster Monitoring Centre (KSNDMC)
Government of Karnataka
Major Sandeep Unnikrishnan Road, near Attur Layout, Yelahanka,
Bangalore ó 560 064

Sir,

We M/s í í í í í í . (Name of the bidder) here in after Called õthe Bidderö do hereby affirm and

Undertake to abide by all the terms, conditions and specifications given in the bidding document Noí í í , dated í í í .. while performing the contractual obligations relating to Supply, Installation, Commissioning and Maintenance of the RADAR Stream Gauges and Reservoir level Sensors in the Krishna basin, Karnataka. We also adhere to guarantee clause as specified in terms and conditions of the contract.

Yours faithfully,

Signature of the bidder and with office seal

Place:

Date

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

ANNEXURE 4: TURNOVER

Annual turnover of the company for the years 2017-18, 2018-19 & 2019-20 is furnished hereunder:

Financial year	Turnover of the Company (in Rs. Crores)
2017-2018	
2018-2019	
2019-2020	
Average Turn over	

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

ANNEXURE 5: Declaration on not being black listed

DD/MM/YYYY

To

KSNDMC

Dear Sir,

Sub.: Declaration on not being blacklisted

We M/s _____ hereby confirm that our firm / organization / company has not been blacklisted by the Government of Karnataka or any of its agencies or by Government of India / any other State / UT Government or its agencies for indulging in corrupt or fraudulent practices or for indulging in unfair trade practices or for any reason whatsoever.

Sincerely yours

Authorized Signatory
Name and Designation
<< Bidder Name >>

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

ANNEXURE 6: Technical Staff Details

Details of Technical Staff working in Karnataka							
Sl. No.	Name of the place	Name of the Employee	Qualification	Total experience	Experience in the present company	Area of expertise	Contact Details with address

Place:

Date:

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

ANNEXURE – 7
(COMMERCIAL BID)

Supply, Installation, commissioning and comprehensive maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna basin river and reservoirs, Karnataka

Intending Bidders shall quote prices for all items listed hereunder failing which the bid shall be treated as invalid.

Sl. No.	Description of Goods	Quantity	Price per Unit in Rs.
01	Supply, installation, commissioning and maintenance of Reservoir level Sensors (RADAR Water Level Sensor)	06	
02	Supply, installation and commissioning of RADAR Stream Gauges (RADAR Water Level Sensor)	06	
03	Supply, installation and commissioning of Velocity meter in streams.	06	
04	Charges for Comprehensive Maintenance of Reservoir level & Velocity meter Sensor for a period of 4 years.	2 nd year	
		3 rd year	
		4 th year	
		5 th year	
05	Charges for Comprehensive Maintenance of RADAR Stream Gauges for a period of 4 years.	2 nd year	
		3 rd year	
		4 th year	
		5 th year	
06	Training on the working principle of the sensors to be installed with a demonstration.	Lumpsum	
Total			

The following rate of taxes is included in the price quoted above:

- 1) GST--Percentage
- 2)
- 3)

(Signature of the Authorised Signatory)

(Official Seal)

Supply, Installation, Commissioning and Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna Basin, Karnataka

ANNEXURE – 8

(Format for authorisation letter of OEM to be submitted by non-manufacturer bidder)

Letter Head of OEM

To
The Director
Karnataka State Natural Disaster Monitoring Centre (KSNDMC)
Major Sandeep Unnikrishnan road,
Near Attur Layout, Yelahanka, Bengaluru - 560 064.

Sub: Authorisation Letter to í í ...(Bidder Name) for participation in the bid for Supply, Installation, Commissioning and Comprehensive Annual Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna basin, Karnataka.

REF: Tender No.: í í í í í í í í í í í í published on í í í í .

Dear Sir,

We are given to understand that M/s í í í (Bidder Name) having a address at í í .. (Address) is intending to bid to above referred tender for Supply, Installation, Commissioning and Comprehensive Annual Maintenance of RADAR Stream Gauges and Reservoir level Sensors in the Krishna basin, Karnataka.

We, the OEM forí í í . (Item names) hereby clarify that:

1. M/s í í í í í í í í í .. is the authorised Sales/ marketing Agent to sell our products in India.
2. The above mentioned product/s which includes technology and software is in strict compliance with the import/export control laws and regulations of India.
3. It is assured to KSNDMC that on awarding the contract, we will supply the products, services and after-sale support to M/s í í í í í í í í .. for successful execution of the work.

M/s shall be solely responsible to comply with the End User terms and conditions including the provision of first level support to you in respect of all hardware or software related issues pertaining to the OEM products.

Signature and Seal of authorised signatory

Date: