

Kashmir Irrigation & Flood Control Department, Srinagar



T E N D E R D O C U M E N T
FOR

SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NON-CONTACT TYPE RADAR WATER LEVEL SENSOR WITH DATA LOGGER AND ALLIED ACCESSORIES INCLUDING FABRICATION/CONSTRUCTION OF THE STEEL TOWER AND ITS FOUNDATION

Implementing Agency

I&FC Division Srinagar

Email:- exenifcdsrinagar@ifckashmir.com

E-NIT No. (13) OF 2017-18.

SUBJECT WORK:- SUPPLY, INSTALLATION, TESTING AND COMMISSIONING OF NON-CONTACT TYPE RADAR WATER LEVEL SENSOR WITH DATA LOGGER AND ALLIED ACCESSORIES INCLUDING FABRICATION/CONSTRUCTION OF THE STEEL TOWER AND ITS FOUNDATION (*Fresh of ENIT No. 04 of 2017-18*)

For and on behalf of Governor of J&K State Executive Engineer, Irrigation and Flood Control Division, Srinagar, invites tenders by e-tendering mode from established and accredited companies/suppliers/firms for supply, installation, testing and commissioning of non-contact type radar water level sensor with data logger and allied accessories including fabrication/construction of the steel tower and its foundation

The bidding process shall be completed online in two covers viz
Cover 1st –Tender fee and Earnest Money details, fulfillment of prequalification criteria, technical specifications and acceptance to terms and conditions of the tender.

Cover 2nd - Financial Bid in the prescribed BOQ.

The bidding documents consisting of qualifying information, eligibility criteria, bill of quantities [B.O.Q.] set of terms and conditions of contract and other details can be seen/downloaded from the website www.jktenders.gov.in as per schedule of dates given hereunder:

Position of Funds:

Demanded

Major head of Accounts:

4711- Establishment of Flood Monitoring System

| | | |
|----|---|--|
| 1. | Bid Document Downloading Start Date | 01-07-2017 16:00 PM |
| 2. | Bid submission start Date | 01-07-2017 16:00 PM |
| 3. | Venue | Executive Engineer Irrigation and FC Division Srinagar |
| 4. | Last Date & Time for Uploading (Submission) of Bids | 20-07-2017 at 16: P.M |
| 5. | Bid Validity Period | 180 days |
| 6. | Deadline for submission of hard copies. | 22-07-2017 at 15 P.M |
| 7. | Date of opening of 1st cover | 24-07-2017 at 11 A.M |
| 8. | Bid Document Fee (Non Refundable) | Rs.5000/- |
| 9. | EMD (INR) | Rs.144000/- |

Executive Engineer

1. Bid documents can be seen at and downloaded from the website <http://jktenders.gov.in> from the date of document download.
2. The Bids shall be uploaded on the website <http://jktenders.gov.in> from the date of bid submission date to bid closing date.
3. The original copy of EMD, DD, and other documents as specified in tender document must reach the office of the Irrigation and FC Division Srinagar through registered / speed post /by hand prior to one day of opening of the 1st cover of the tender up to 1400 Hrs. The Department will not be responsible for any delay in delivery of the documents.
4. The complete bidding process will be online through <http://jktenders.gov.in>.
5. The Cover-I shall be opened online in the office of Irrigation and FC Division Srinagar
6. The Financial bids of the bidders shall be opened online in the office of the Irrigation and FC Division Srinagar date of which shall be communicated separately.
7. Bids must be accompanied by bid security and cost of Tender Document as specified in the NIT, payable at Srinagar. Bid security will have to be in the form of CDR/FDR of any scheduled bank and shall have to be valid for two year or more after last date of receipt of Bid to be pledged in favour of Executive Engineer Irrigation and FC Division Srinagar. The cost of downloaded tender documents should be in form of postal order, Demand draft payable at Srinagar or Cash through G.R. in favour of the Irrigation and FC Division Srinagar
8. The bid for the said work shall remain open for acceptance for a period of 180 days from the date of opening of bids. If any bidder/tenderer withdraws his bid/tender before the said period or makes any modifications in the terms and conditions of the bid, the said earnest money shall stand forfeited.
9. Other details can be seen in the bidding documents from the website <http://jktenders.gov.in>.
10. **Instruction to bidders regarding e-tendering process**
 - a. The interested bidder can download the NIT/bidding document from the website <http://jktenders.gov.in>
To participate in bidding process, bidders have to get (DSC) “Digital Signature Certificate” as per Information Technology Act-2000, to participate in online bidding. This certificate will be required for digitally signing the bid. Bidders can get above mentioned digital certificate from any approved vendor. The Bidders, who already possess valid (DSC) Digital Signature Certificates, need not to procure new Digital Signature Certificate.
 - b. The bidders have to submit their bids online in electronic format with Digital Signature. The bids cannot be uploaded without Digital Signature. No Proposal will be accepted in physical form.
 - c. Bids will be opened online as per time schedule.
 - d. Before submission of online bids, bidders must ensure that scanned copies of all the necessary documents have been attached with bid.
 - e. The department will not be responsible for delay in online submission of bids whatsoever reasons may be

- f. All the required information for bid must be filled and submitted online.
- g. Bidders should get ready with the scanned copies of cost of documents & EMD as specified in the tender documents. The original instruments in respect of cost of documents, EMD and relevant documents be submitted to the Tender Inviting Authority by Speed/Registered post/courier as per time schedule specified.
- h. The details of cost of documents, EMD specified in the tender documents should be the same, as submitted online (scanned copies) otherwise bid will not be accepted.
- i. Bidders are advised to use **“My Documents”** area in their user on jktenders.gov.in, e-tendering portal to store important documents like Experience certificate, Balance sheet, VAT Certificate, sales Tax Clearance Certificate and other related documents etc., and attach these certificates as Non Statutory documents while submitting their bids.
- j. Bidders are advised not to make any change in BOQ (Bill of Quantities) contents or its name. In no case they should attempt to create similar BOQ manually. The BOQ downloaded should be used for filling the net item rate inclusive of all taxes and it should be saved with the same as it contains.
- k. **Bidders are advised to scan their documents at 100 DPI (Dots per Inch) resolutions with Black and White, JPEG Scan properly**, convert scanned images to PDF
- l. The guidelines for submission of bid online can be downloaded from the website [**http://jktenders.gov.in**](http://jktenders.gov.in)

No. I&FCD/SGR/CC/3009-23

Dated:- 30/06/2017

Er. S.Sartaj Singh
Executive Engineer
Irrigation& Flood Control Division
Srinagar

Copy to the:-

1. Chief Engineer Kmr. Irrigation and Flood Control Department, Srinagar for information.
2. Superintending Engineer Hydraulic Circle Srinagar for information.
3. Director Information Department, Srinagar for information. He is requested to get the NIT published in two leading dailies before its due date
4. Assistant Executive Engineer P&D Sub Division, Srinagar for information.
- 7-9. H.D/ H.A /A.A.O/ Divisional office for information.
10. Notice Board.

INSTRUCTIONS FOR BIDDERS

Tenders to be submitted under two cover system

A) COVER 1st (Technical Cover)

1. Self attested Scanned copies of below mentioned documents shall be uploaded and hard copies of the same be submitted through courier/registered/speed post/by hand, in the office Irrigation and FC Division Srinagar, well before the scheduled date and time as mentioned on Page No.1 of this tender document. Hard copies of the bids received after the expiry of scheduled submission date and time will not be entertained.

Contact Person: **Er. Younis Hamid Kirmani (youniskirmani@gmail.com)**

- i. Earnest Money Deposit in the shape of CDR/FDR.
- ii. Demand Draft towards the cost of tender document.
- iii. Documentary evidence that the tenderer is the authorized registered company/firm/supplier of the item in absence of which the tender shall not be entertained.
- iv. Acceptance to Scope of work, technical specifications, general terms and conditions of NIT (The scanned copy of completed tender as per requirement of cover 1st accompanied with scanned copies of technical specification as well as terms and conditions of the tender, duly accepted & signed with seal on each page, must be sent by registered post or delivered personally in the office of the Irrigation and FC Division Srinagar)
- v. Latest "Sales Tax/VAT Clearance Certificate" from the Sales Tax Authority of the State of J & K or any other State as applicable.
- vi. Service facility with details inside the State of J&K and other States to provide technical / operational guidance and other after sales services.
- vii. An undertaking for providing service/maintenance during the warranty period of three years with effect from the date of successful commissioning. Cost offered by the bidder shall be inclusive of the service/ maintenance of equipment's, travel, boarding, lodging etc. charges for the initial warranty period of three years. The bidder shall also undertake to enter into Annual Maintenance Contract (AMC) with the Department (Irrigation & Flood Control Department Kashmir), at the expiry of the initial warranty period of three years, at mutually agreed terms and conditions.

The bidder shall undertake that, within the warranty period, it will depute experts to the gauge station/s within three days of issue of communication from the Executive Engineer, I&FC Srinagar (Engineer-in-charge) about malfunctioning of the equipment. In such case, the bidder shall rectify any defects and/or replace the defective/faulty equipment within a period of not more than 10 days from the date of communication from the Engineer-in-charge, without any financial implication to the Department. In addition, the bidder shall undertake to conduct routine checkup of the equipments after every six months during the warranty period of three years.

viii. Documents in support of Installation of the equipment as quoted by the bidder during last seven years with different Government or public sector undertakings including supply orders along with performance certificates from concerned departments.

ix. Complete Technical information and specifications of the equipment quoted viz sensor, Data logger solar panel etc.

x. Copy of TIN Registration.

Without aforementioned documents tender shall be out rightly rejected and cover 2nd shall not be opened for the firm who fail to upload or give hard copy of the same.

B) COVER 2nd: (Financial Cover) It shall contain the following:

Rates quoted by the bidders in the **BOQ (Bill of Quantities)** should be for complete job viz. supply, installation, testing and commissioning of non-contact type radar water level sensor with data logger, allied accessories fabrication /construction of the steel tower and its foundation including back filling compaction leveling conforming to natural profile.

“The quoted rate shall be for destination mentioned in the tender document inclusive of all taxes, duties, levies, charges, transportation cost and transit insurance cost. Commissioning /demonstration of equipment and training to the nominated staff at consignee’s works. Rates should be firm and final and no escalation of cost shall be permissible in any case. Rates with conditionality or provision of escalation will be rejected”. **The rates should be quoted in Indian currency only**

**Executive Engineer
Irrigation & Flood Control Division
Srinagar**

**Government Of Jammu & Kashmir
Office of the Executive Engineer,
Irrigation and Flood Control Division, Srinagar**

ANNEXURE 'I'

TECHNICAL SPECIFICATIONS FOR

Supply, installation, testing and commissioning of non-contact type radar water level sensor with data logger and allied accessories including fabrication/construction of the steel tower and its foundation

The instrument should be of following specifications.

Radar Water level Sensor.

- 1) It should have non-contact type sensor having flat/horn capped antenna with maximum measurement range of 20 m and measurement accuracy of 3 mm or better having real time data acquisition facility.
- 2) It should have a multi-echo tracking with 8° beam angle and having SDI-12 & 4-20 mA output with baud rate 1200 or higher.
- 3) It should be installed in such an enclosure which doesn't allow dust/rain/snow to effect its working and should be able to work in harsh weather conditions with temperature variation from -15°C to 45° C.
- 4) It should have a measurement time of maximum 20 seconds and sampling rate of 16 samples/second.

Data Logger

- 1) It should have a interfacing/communication facility with sensor on SDI-12 port
- 2) It should have a data storage capacity/memory of 128 MB minimum expandable to 2 GB.
- 3) It should have a download retrieving through direct cable connection and WIFI communication.
- 4) It should have a provision for built in LCD display for monitor and set up.
- 5) It should have a facility for Communication by GSM/GPRS modem with two communication ports.

- 6) It should have a solar panel of 30W, solar charge controller and 12 V battery. The system should work in high altitudes and harsh weather conditions and should have the capacity to work even after 10 non-sunny days.
- 7) It should work in a temperature range of temperature-15° C to 45°C
- 8) It should have a weather proof enclosure which perfectly prevent the equipment from dust, water or snow
- 9) It should have a provision of augmenting other hydrological sensors such as Acoustic Doppler for velocity/discharge, auto rain gauges.
- 10) It should have a provision of augmenting modem for V-sat connectivity and provision for facility of FTP & Modbus.
- 11) It should have a minimum of 4 analog channels and 2 digital Channels having resolution of 16 bit minimum or higher.
- 12) The system should be able to work at 12 V DC.
- 13) It should have a provision for separate monitor for displaying the Recorded gauge up to 100m.
- 14) It should have a facility of simultaneous data transfer by GPRS to Central server and SMS to at least 4 mobile numbers.

Steel tower:-

Steel tower and its foundation is to be fabricated/constructed as per the structural tender drawings (attached herewith) for installation of sensor, solar panel and accessories on it. The successful tenderer has to cater for fitments of assemblies for sensor, data logger, solar panel and other accessories.

Annexure II

TERMS AND CONDITIONS OF NOTICE INVITING TENDER

1. Consignee/Paying Authority:

Executive Engineer, Irrigation and Flood Control Division, Srinagar

2. The offer should be valid for a period of 180 days from the date of opening of price bid. Such of the tenders which will not be valid for 180 days from the date of opening shall be rejected, even if the rates offered are lowest.
3. The tenderer (s) shall have to quote for complete job strictly in conformity with the terms and conditions of the tender notice.
4. Conditional tenders shall be rejected even if the rates offered are found to be lowest. Tenders with the conditions such as 'Subject to Market Fluctuations' will also be rejected.
5. The tender documents are non-transferable.

6. Inter-dependent Tender:

Tender(s) which are dependent upon the quotations of other shall not be entertained.

7. Expenses for Tendering:

The tenderer(s) shall not be entitled to any claim towards expenses incurred on incidental charges at the time of submission of the tenders or subsequent evaluation/ clarifications thereof.

8. Earnest Money:

The tender(s) shall be accompanied with earnest money for the work in the form of CDR/FDR pledged to Executive Engineer I & FC division Srinagar.

Tenderers should carefully note that:-

- i. Tenders not accompanied with requisite amount of earnest money shall not been entertained even if the rates offered are found to be lowest.
 - ii. No exemption or concession towards furnishing of earnest money will be given to the tenderers registered with DGS&D/NSIC Small Scale Units except the Small Scale Units registered with Director, Industries and Commerce Department J&K in which case guidelines framed by Industries Department shall apply.
 - iii. The tenderers should note that the tender should be accompanied with fresh CDR/FDR towards the earnest money, reference or claim of the firm for consideration of CDRs/FDRs already lying in the Department, towards earnest money with this tender, will be out rightly rejected. **However for bidders who have participated in the ENIT 04 of 2017-18 feresh of which is being tendered have no need to submit the new CDR/FDR (Earnest Money) and DD (Document Fee) as their previos one lying in this Division shall be entertained,**
9. Earnest money shall be refundable to unsuccessful tender(s) only after finalization of the tender and shall be retained in case of successful tenderer(s) which shall be treated as security deposit to be refunded after the successful completion of the supply/works or warranty terms the case may be.

The earnest money of the tenderer(s) who back outs or withdraws his tender or fails to abide by its offer after the acceptance is conveyed or posted to the addressee, shall be forfeited to the Government of J&K state besides other remedies available to it under any law being enforce in the State to recover the extra cost, if involved in getting the job executed through some other agency, at defaulters risk and cost.

10. Opening of Tender:

Tenders shall be opened by the Executive Engineer I & FC division Srinagar, in his office chambers on the due date or on any other subsequent date convenient to the Tender Opening Committee in presence of tenderer(s) who may wish to remain present at the time of opening of tenders.

11. The Executive Engineer Irrigation and FC Division Srinagar shall have the discretion to cancel the work at any time during its currency in case of default on the part of tenderer, work as may be warranted by the situation at the risk and cost of the tenderer.

13. The Executive Engineer Irrigation and FC Division Srinagar reserves the rights to accept or reject any or all tender(s) in part or full without assigning any reason thereof.

14. Validity of Rates:-

The rates approved shall remain valid for contract term of 3 years from the date of successful commissioning of the equipment

15. Prices:

The tenderer(s) are required to quote the rates for complete job inclusive of all taxes, levies, charges etc after properly analyzing the specifications (Annexure I) and drawings attached as (Annexure III).

The tenderers should not quote/mention any item as : “as applicable at the time of supply/execution of job” and are as such advised to quote exact rate inclusive of all type of taxes, duties and charges as applicable. It is as such in the interest of the tenderers to consult for the same from the concerned Departments of Govt. of India as well as J&K Sales Tax Department before quoting / tendering the rates.

16. In the event of any increase ordered by Govt. of India/J&K Govt. in any of the taxes/statutory levies during currency of the rate contract, such increase in rates shall have to be borne by the successful tenderer/supplier. However in case of any decrease in such taxes/levies if any ordered during the currency of the rate contract, such benefits shall have to be passed on to the Department.

17. Testing/Inspection:

The installed equipment at site shall be inspected by concerned Assistant Executive Engineer, P&D Sub Division or any other designated inspection authority nominated by The Executive Engineer Irrigation and FC Division, Srinagar after successful completion of job, If any item fails to satisfy requirement of technical specifications mentioned in the tender documents, the defective supply due to latent manufacturing defects / transit damages the item shall not be accepted and the tenderer at its own cost shall replace it at the point of delivery. The firm shall as such keep the department informed about arrival of material at site.

18. Completion period:

The work is to be completed in 30 (Thirty) days after issuance of allotment.

19. The tenderer should provide standard service manual and operational manual with cable connectivity diagram with the instruments.

20. Terms of Payment:

Service tax if any and any other taxes/ charges shall be deducted at source as applicable. In no case advance payment shall be made.

Payments shall be released as under:-

- a) 85% (Eighty Five) of the Contract Value along with complete taxes shall be released after successful installation and commissioning of the equipments as per conditions stipulated in the tender document along with required documents and issue of verification certificate thereof by the concerned AEE.
- b) 6% (Six) of the Contract Value along with complete taxes shall be released one year from the date of successful commissioning and issue of certificate by the concerned AEE to the effect that the bidder has successfully provided services during the year, as per terms & conditions of the NIT.
- c) 6% (Six) of the Contract Value along with complete taxes shall be released two years from the date of successful commissioning and issue of certificate by the concerned AEE to the effect that the bidder has successfully provided services during the year, as per terms & conditions of the NIT.
- d) 3% (Three) of the Contract Value along with complete taxes shall be released three years from the date of successful commissioning and issue of certificate by the concerned AEE to the effect that the bidder has successfully provided services during the year, as per terms & conditions of the NIT.

21. Guarantee:

The EMD of the successful firm shall be retained as guarantee/ security deposit against the following:-

- a) Security for the fulfillment of the contract.
- b) Satisfactory performance equipment installed.

The EMD shall be released 3 years after successful commissioning of the equipment's, as certified by the AEE concerned.

22. Penalty:

In the event of firm's failing, declining, neglecting or delaying the supplies/works or in the event of any damage occurring or being caused by the firm or in the event of any default or failure by the firm in complying with any of the terms and conditions of the contract, the Executive Engineer Irrigation and FC Division, Srinagar shall with or without prejudice to any other remedies available to it under any law for the time being enforce in the State:

- a) Terminate the contract after 30 days notice and/or
- b) Recover the amount of loss caused by damage, failure or default, as may be determined by the department .and/or
- c) Recover the extra cost, if any, involved in allotting contract to other party. and/or) Impose of penalty in the form of liquidated damages on account of

delay beyond the schedule delivery period subject to one fourth value of contract per fortnigh and not exceeding 10% value of the contract.

and/or

d) Impose a penalty not exceeding 10% (ten) on the value of contract as Executive Engineer Irrigation and FC Division Srinagar may deem fit and/or forfeit the earnest money / security deposit.

The Executive Engineer Irrigation and FC Division, Srinagar will reject a proposal for award if it determines that the bidder recommended for award has directly or through an agent, engaged in corrupt, fraudulent collusive, coercive or obstructive practices in competing for the contract in question during the bidding process or in executing the contract.

23. Force Majeure:

Any failure or commission to carry out the provision of the contract shall not give rise to any claim by the department or approved supplier one against the other if such failure of commission arises from the 'ACT OF GOD' which shall include all natural calamities such as fires, floods, earthquake, hurricane, strikes, riots, embargoes or from any political or other reasons beyond the control of the parties including war, or a state of insurgency.

24. Arbitration:

If at any time, any question, dispute or difference whatsoever shall arise between the parties upon or in relation to or in connection with the contract, either of the parties may give the other notice in writing of the existence of such a question, dispute or difference and the same shall be referred for award to two Arbitrators, one to be nominated by the Department and the other by the approved supplier. In case of such arbitrators not agreeing then award of an Umpire to be appointed by the Arbitrators in writing before proceedings with the reference and the decision of the Arbitrators or in the event of their not agreeing of the Umpire appointed by them shall be final and binding on the parties, such a notice of the existence of any question or dispute or difference in connection with the contract shall be served by either party within 45 days (forty five days) of difference failing which all rights and claims under this contract shall be deemed to have been forfeited and absolutely barred upon every or any such reference the cost of incidentals of the reference and award respectively shall be at the discretion of the arbitrator and in the event of their not agreeing of the Umpire appointed by them who may determine the amount thereof or direct the same to be fixed as between party and party shall direct by whom to whom and in what manner the same shall be formed and paid. The revision of the J&K Arbitration Act Samvat 2002 and of the rules there under the statutory modification whereof shall be deemed to apply to the arbitration, disputes, if any regarding reference to Courts shall be subject to the jurisdiction of the J&K Courts only.

25. Specifications of Material/job:

Tenderers must quote for exact specifications and scope as given in Annexure "I" and there shall be no deviation from the approved parameters.

While having submitted the tender by e-tendering method, it is understood that the tenderer is well versed with the conditions under which the equipment is to be used.

26. Indemnity Bond:

The firm shall furnish an indemnity bond on non-judicial stamped paper for the total value of the order valid for 18 calendar months from the date of receipt of last consignment towards the following:-

- a) Satisfactory completion of the order.
- b) Satisfactory working/performance of the supply and

27. Agreement:

As soon as allotment is communicated to the firm, the contract shall be complete and binding upon them, the firm shall also be required to execute an agreement with the department within seven days from the date of issuance of allotment which has to be returned to this office duly filled up, signed and sealed (Page wise) by the prop. or any other authorized officer of the firm witnessed by two persons and attested by the Notary. Three copies of the allotment duly signed by the Prop. Or any other authorized officer of the firm in token of acceptance of allotment should also accompany the agreement. Failure to execute such an agreement in time shall not however, prevent this contract from being enforced against the firm and the date of delivery of the material/completion of works shall be reckoned from the date of issue of the Allotment order in favour of successful firm.

The contract shall be deemed to have been entered into at Srinagar within ordinary civil jurisdiction of J&K Court only.

All other terms and conditions as laid down in form No.25 of P.W.D. shall remain in force and binding on successful tenderer.

28. Warranty:

All equipment's/ accessories installed shall be warranted including service of maintenance for a period of minimum 03 years from the date of as per the prescribed warranty period of Original Equipment Manufacturer whichever is longer.

Special Terms and Conditions

- 1 The successful tenderer has to supply, install, test, commission the radar water level sensor as per the specification (Annexure I) at specific sites viz. Pampore and Asham on River Jhelum, Ningli on Wullar Lake, Ganderbal on Sindh Nallah, Aglar on Romshi Tributary, Seuloo Sopore on Pohru tributary, Arizal on Sukhnag tributary, Barzulla on Doodh Ganga tributary and Drung on Ferozpora tributary
- 2 The successful tenderer shall have to install the equipment's and the allied accessories including GSM/GPRS modem as per the specifications mentioned in (Annexure I) and has to follow the instruction of the site Engineer. Moreover, the GSM/GPRS connectivity test has to be demonstrated by the successful tenderer. For any failure, the tenderers will have to bear the consequences.
- 3 The system should incorporate the latest technology and must consume the very low power and the system should be able to work at 12 volt DC.

- 4 The system should be rugged and scaled to avoid ingress of moisture as the system has to work under stringent weather conditions.
- 5 The complete details of the current setup of the data logger should be provided. The user manual should spell out the settings, separate copy of the setup program should be provided in a CD.
- 6 The working structural drawings and its foundation shall be released at the time of commencement of work.
- 7 The successful tenderer shall have to provide training to field staff for the operation and maintenance of the station. No extra charges shall be paid for the same.
- 8 The successful tender should have a local person/ technician /agency with whom the department can consult for local checkup and minor repairs during the AMC period.
- 9 The successful tenders shall have to provide data retrieving cable for transfer of hydraulic data from data lodger to laptop and min length of cable should be 15 m and it should withstand under stringent weather condition

Annexure III

Two No of Drawings

**Executive Engineer
Irrigation& Flood Control Division
Srinagar**