NOTICE INVITING EXPRESSION OF INTEREST

Organization Details

Organization Name: RIFLE FACTORY ISHAPORE

Address: P.O. ICHAPUR-NAWABGANJ
DIST. 24 PARGANAS (NORTH)
PIN – 743144, WEST BENGAL, INDIA.

Phone : 2593-7119/20/21/22/23, 2593-8072/73/74
Fax : 033-25937200, 25937142
Email: enggofficerfi.ofb@nic.in
Website address : http://rfi.gov.in

Details

Type: Expression Of Interest

Description: General Manager, Rifle Factory Ishapore, invites Expression of Interest (EOI) for:

(1) CONSULTANCY, DESIGN, EXECUTION OF TURNKEY PROJECT FOR IMPLEMENTATION OF INDUSTRY 4.0 CONCEPT IN CNC SHOP-II PRODUCTION SECTION OF RIFLE FACTORY ISHAPORE.

Interested parties having requisite qualification may send their response.

RIFLE FACTORY ISHAPORE
ORDNANCE FACTORY BOARD,
MINISTRY OF DEFENCE, GOVT. OF INDIA,
P.O. ICHAPUR-NAWABGANJ
DIST. 24 PARGANAS (NORTH)
PIN – 743144, WEST BENGAL, INDIA.

Phone : 2593-7119/20/21/22/23, 2593-8072/73/74 , Fax : 033-25937200, 25937142,
Email: enggofficerfi.ofb@nic.in
Website address : http://rfi.gov.in

INVITATION FOR EXPRESSION OF INTEREST

1. General Manager, Rifle Factory Ishapore, invites Expression of Interest (EOI) for

   "CONSULTANCY, DESIGN, EXECUTION OF TURNKEY PROJECT FOR IMPLEMENTATION OF INDUSTRY 4.0 CONCEPT IN CNC SHOP-II PRODUCTION SECTION OF RIFLE FACTORY ISHAPORE."

2. The parties who have the necessary capabilities for undertaking such projects will be evaluated by purchaser (at the sole discretion of RFI) on the basis of their Technical expertise, processes and capabilities for adequacy to undertake the projects.

3. Comprehensive Expression of Interest should be submitted by reputed potential suppliers having following details.
   a. Technical project proposal,
   b. Compliance to purchaser's Technical Details,
   c. Budgetary Quotation for Essential Item,
   d. Budgetary Quotation for Optional Item (with proven capabilities only).

APPENDIX 1 - DRAFT SPECIFICATION

Sub:- Invitation for Expression of Interest from suppliers for CONSULTANCY, DESIGN, EXECUTION OF TURNKEY PROJECT FOR IMPLEMENTATION OF INDUSTRY 4.0 CONCEPT IN CNC SHOP-II PRODUCTION SECTION OF RIFLE FACTORY ISHAPORE.

1.0 Introduction

RIFLE FACTORY ISHAPORE under Ordnance Factory Board; Ministry of Defence, Govt. of India is continuously working to equip the Armed Forces with Defence and Battle Field Equipments. The factory had started production of weapons (small arms) from 26th September, 1904. Since inception, the factory has manufactured various renowned weapons viz. 303" Bolt Action Rifle, 12 Bore DBBL & SBBL Shot Guns, .315" Sporting Rifle, 7.62mm Ishapore Rifle, Rifle 5.56mm INSAS, 5.56mm Excalibur Rifle, 9mm Auto Pistol, Ghaatak, etc. to name a few.

CNC Shop-II, a production shop in RIFLE FACTORY ISHAPORE is engaged in manufacturing of various critical components of different small arms. To maintain high quality standard and to improve productivity at par with international level, the shop has already been modernized with the 'State-of-the-Art' technology and techniques to economize cost of output. The shop has 65 nos. machines (CNC & conventional) placed in centrally air conditioned enclosure.

2.0 Objective

In order to become more flexible in manufacturing & responsive to current market trend, the Shop is trying to follow the concept of Industry 4.0. The main objectives of implementation of the concepts in CNC-II Shop floor are

(a) To maximise the productivity by optimising available resources,
(b) Part Program management - secure storage, remote editing, and smooth transfer of Programs.
(c) Time-synchronised maintenance notification through SIM based system.
(d) To improve & sustain the quality standard of the components with ease.
(e) Continuous monitoring of machine health & performance.

3.0 Scope

21 nos of CNC machines will be integrated under pilot project. Details of the machines with control system is enclosed in Annexure-A. Moreover a shop layout of the machine is also provided as Annexure-B. Out of 21 no. of machines, 20 nos. are in CNC-II Shop Floor and 1 machine is in adjacent CNC-I production shop. Provision must be there to include forthcoming machines without disturbing existing machines.

3.1 Proposed Modules

Before discussing the modules, the vendor should understand the design planned by the purchaser (enclosed Schematic Layout in Annexure-B). If anything found not in order, the same shall be intimated by the vendor in their offer.

A. Productivity Module:

1. Automatic generation of OEE without machine operator's intervention.
2. Suitable hardware & software (if any) to fetch the required data (availability, performance & quality) automatically from each CNC Machine.
3. Suitable software to calculate the OEE automatically from the data fetched by the hardware connected with each CNC machine.

4. Hourly/daily/weekly/monthly/quarterly/yearly reports of each machine on following parameters. (a) Run time, (b) Breakdown time with alarm/reason/remark, (c) other stoppage time with alarm/reason/remark, (d) total no. & types of parts produced, (e) good count of each type of parts, (f) bad count of each type of parts, (g) cycle time with respect to each type of part.
5. The firm to provide (a) detail specification of the hardware required for fetching the data, (b) detail of the software describing the display of the OEE module,
6. The firm should also describe the method of fetching data automatically by the hardware from the CNC Machine duly mentioning the exact signals required from machine.

B. Part Program Management Module:

1. All the part programs of each and every machine will be centrally stored in server.
2. Provision for scheduled daily backup of the part programs from each and every CNC machine shall be provided.
3. In order to get unique identification and sorting facility, the programs shall be designated by machine no, component's name, set up no & revision no.
4. Facilities to be provided for remote editing of the part-program.
5. Access, edit & transfer of the programs shall be done through different levels of password.
6. Provision shall be made to store data like machine wise, component wise, set up wise tool list, gauge list, process lay-out, drawing file etc. Suitable query facility to be provided to filter data as per requirement.
7. Uploading and downloading of Part-programs, Tool-offsets, Zero-offsets, NC & PLC data through secured Wi-Fi network.
8. 2D, 3D module CAD/CAM software compatible to m/cs to be connected.
9. Storage facility of 2D drawings.
10. Production plan/scheduling in totality.

C. SIM Based Maintenance Module:

1. A SIM based device (e.g. Modem) to be connected with the Local Area Network/Server, which will send time–synchronized notifications.
2. Automatic SMS can be sent to the concerned maintenance team & production team, who are already having SIM of various mobile service providers. The mobile nos. of the concerned persons will be configured with the system in such a way that particular type of SMS can be sent to preconfigure Mobile Nos only. Provision should be made so that mobile nos. may be changed, added & deleted if required.
3. A HMI (Human Machine Interface) shall be connected with each machine. The HMI should have at least 3 push /on-screen buttons for recording (i) breakdown, (ii) restoration and (iii) stoppages due to other reasons (there may be more push buttons if felt necessary by the vendor). The HMI should have an on-screen QWERTY keyboard for operator's input.
4. The reason of the all stoppages (including breakdown & other stoppages) to be entered by the operator of the machine through HMI. All the reasons of stoppages shall be selectable by the operator from drop-down menu. The drop-down menu shall be customizable by the purchaser.
5. The reason of stoppages shall be divided in 02 groups (a) breakdown that need maintenance support, (b) for other reason which do not need maintenance support (operator's message). The reason of each stoppage will be sent & stored in the server.
6. Any access to HMI screen should have authentication through operator's ID & password.

7. Category (a) type reason of stoppage, which need maintenance support, will be automatically sent to the maintenance team & production team with preconfigured mobile numbers via the SIM based device. Category (b) type reason of stoppage, which do not need maintenance support, will be automatically sent to the production team only.
8. Standard SMS should contain (1) Machine's detail, (2) identity of the operator, (3) nature of breakdown, (4) time-stamp.
9. Once machine is restored and upon pressing the restoration button SMS will be automatically sent to the preselected mobile numbers of production person (of various mobile service provider) via the SIM based device and necessary software.
10. Standard restoration SMS will contain (1) Machine's detail, (2) restoration date & time-stamp.
11. Provision for customizable SMS.
12. The SIM based module should have the capacity of sending unlimited SMS per day.

D. Quality Module: A future provision should be made available to integrate a quality inspection device with the offered system. A software module shall be incorporated to store, process and analyse (such as SPC/SQC) the inspection data received from quality inspection device.

E. **Predictive Maintenance Module**: A future provision should be made available to integrate a Predictive Maintenance Module with the offered system. Hence, a necessary software module shall be incorporated for continuous monitoring and analysis of machine health & performance. To demonstrate predictive maintenance module for incorporation in near future

3.2 Hardwares and softwares

A. Server:
B. Switches:
C. Routers
D. Wi-Fi networking
E. 5 Nos. of client PC
F. HMI
G. Antivirus & Security Software

Firm to specify the detail of the hardware & software compatible with user's requirement as stated above.

H. SIM based Device (e.g. Modem): Compatible device for SIM based SMS without internet.

I. Dashboard :

1. The dashboard shall be designed module-wise.
2. The Firm to submit their images of module-wise dashboards (page layout) preferably in JPEG format or any other formats deemed necessary.
3. Provision should be made to customize the dashboards as per purchaser's requirement.
4. The platform should provide a "drag and drop" solution that allows purchaser to create interactive applications, dashboards, and mobile interfaces without the need for much coding.
5. Provision to show historical information –Graphical and Tabular Information.
6. The dashboard should automatically refresh to show current values (manual reloading of the page should not be needed).

7. The platform should provide for full authentication, authorisation and group/role based access control on both reading and writing permissions.

3.3 **Licence :** Necessary license for lifetime validity (at least 10 years)of all software including OS and free software-updation facility for at least next 10 years after commissioning.

3.4 Before submitting the quote, the vendors can visit RFI facilities to understand the requirement.

3.5 **Backup Facility** :

A. Provision should be made for daily backup of the data (all module) with a capacity to store data of at least 10 years.
B. The firm should specify the capacity of storage system

4.0 Acceptance Criteria:

4.1 Pre-Dispatch Inspection :

1. Before giving PDI Call to purchaser, the firm should provide (a) complete Lay-out drawing of the total project and (b) complete list of items for inspection (hardware & software) with nomenclature, qty & specification. The nomenclature, qty & specification should be in-line with S.O terms & condition.
2. The purchaser will depute 05 representatives for 04 working days to vendor's premises for pre-despatch inspection of the items as per S.O terms & condition. The inspector will also tally the items with the complete list of items for inspection (hardware & software) provided by the vendor before giving PDI call.
3. The supplier will provide all types of test and guarantee certificates/documents (purchase order, invoice, specification etc.) of items for all bought out and own manufactured items at the time of inspection of machine at firm's premises.

4.2 Joint Inspection :

After delivery of the items at purchaser’s premises a joint inspection report will be prepared and signed by RFI representatives & firm’s representatives.

4.3 Installation & proofing at purchaser’s premises after installation.

Complete installation including laying of cable (Shop floor layout is enclosed in Annexure-C), placing of hardware items at exact location as per lay out plan, installation of software (if any), running of the entire system, proofing of the system as per S.O terms & condition to be done by the vendor.

4.4 **Endurance Test** : After installation & proofing, the system will be made to run uninterruptedly for 15 working days round the clock to check continuous performance. In case of any fault in entire system persisting beyond 2 hours during this period, the counting of days will start afresh after the fault is rectified.

4.5 Training :

After successful installation & proving, a comprehensive training on operation & maintenance to be provided to at least 10 representatives of RFI for 15 days at purchaser's premises. Necessary training for customization of the software modules should also be given.

4.6 Final Acceptance or commissioning.

After successful trial run & training of the employees, commissioning of the system will be completed.

5.0 12 Months Onsite service.

Beside warranty, a full time support should be provided in regard to service & training for a period of 12 month after commissioning.

6.0 Warranty:

1. The vendor shall provide warranty that the entire system (including hawdware, software, connectivity) will be free from defects in design, material or workmanship. Supplier's obligations under 12 month warranty (calculated from the date of commissioning) shall involve repair, rectification and replacement.
2. The contractor/seller will provide warranty that the system installed at purchaser's site under this contract shall be of the best quality and of genuine brand and new in all respects and shall be strictly in accordance with the specifications and particulars contained/mentioned in the said contract.
3. The contractor/seller further will provide warranty that the entire system would continue to conform to the specified description and quality and would be free from any non-conformity with the requirements of the contract (hereafter referred to as a 'defect') due to faulty design, materials or workmanship, for a period called 'warranty period'.
4. If the commissioning/acceptance of the entire project is delayed due to fault of contractor/seller, the warranty period will automatically get correspondingly extended.
5. Notwithstanding the fact that the purchaser (or his representative) may have inspected and/or approved the system, if any defect is discovered in the entire project during the aforesaid warranty period and the decision of the purchaser in that behalf shall be final and binding on the contractor/seller, the purchaser shall be entitled to call upon the contractor/seller to rectify such defect.
6. Defects shall be notified by the purchaser to the contractor/seller in writing without undue delay after the defects are noticed, and in any event not later than thirty (30) days after the expiry of the warranty period.
7. Upon receipt of notice from the purchaser about any defect that occurs during the warranty period, the contractor/seller shall respond immediately and make good the defect within a reasonable period, or such specific period as may be allowed by the purchaser at the request of the contractor/seller, without any charges and costs to the purchaser.
8. If any defect found that can be assumed to be present also in some other portion of the system, the seller/contractor shall investigate whether such further defect is present, and shall make good any further defects found.
9. In case of failure on the part of the contractor to fulfil any warranty obligations, the contractor/seller shall pay to the purchaser such compensation, as may arise from the breach of the warranty herein contained.

7.0 After Sales Support

The contractor shall provide after sales service for at least ten years after the expiry of warranty period, which will comprise of the following:

(i) To render free technical advice on any matter of the system.
(ii) To quote and supply all spare parts/accessories/software at a reasonable price and delivery schedule.
(iii) To make available the services of suitable specialists on reasonable terms.

8.0 Annual Maintenance Contract :

The vendor, under discreation of purchaser, may have to undertake comprehensive Annual Maintenance of the whole project with spare-parts for 10 years after completion of warranty period. Hence, the vendor should guarantee that even if any hardware or software (whether Bought Out or Vendor's own make) become obsolete within 10 years after completion of warranty period, the vendor will continue to provide support for continuous trouble-free running of the system. Moreover, the firm has to quote Comprehensive Annual Maintenance charge with spare-parts for each year under optional requirement of the purchaser.

9.0 Qualification Requirement

9.1 CAPACITY OF THE VENDOR:

i. Technical Capacity:

(a) The vendor shall satisfy the purchaser that they possess the necessary technical experience and qualification and that they have modern facilities and staff of specialized nature to ensure that their contract work is of best quality and workmanship, according to the latest engineering practice. The vendor shall furnish necessary particulars in this regard with their offer.

(b) In this regard, the vendor shall submit a detailed statement of similar projects built by them at least during the last 5 years and name and full address of the customers with order No., date of execution, scope of work, and performance report thereof.

(c) The bidder should furnish the company brochure (Hard Copy).

ii. Financial Capacity:

(a) The bidder shall produce satisfactory proof that he is financially in a position to fulfil the contractual obligations offered to be undertaken by him, e.g. (1) Showing average annual turnover during last three years, (2) Copies of last three years audited annual report indicating profits and losses, (3) Values of orders executed during the past seven years, etc. (4) Affidavit that the firm has never been banned.

APPENDIX 2

(Information and Instructions for potential suppliers)

1.1 Before bidding by the vendor, a Pre-bid conference may be held, wherein the bidders may come to understand the user's requirement and to get their doubt cleared before bidding.

1.2 The firm may suggest any additional point for better efficacy of the system. However, inclusion/rejection of the point shall be done under complete discretion of the purchaser.

1.3 All information asked should be furnished. If for any reason, information is furnished on a separate sheet, this fact should be mentioned against the relevant column. If no information is provided a 'nil' or 'no such case' entry should be made. If any particulars/ query is not applicable for the potential suppliers, it should be stated as 'not applicable'.

1.4 Vendor should mention quantitative and qualitative remarks in front of each of the parameter mentioned in this document. Only mentioning "Accepted" or such vague remarks would render the tender to be summarily rejected.

1.5 Failure to provide the requisite information may limit a prospective supplier's ability in being a viable candidate for future Request for Proposal (including rejection of proposal).

1.6 The particulars of the project given are indicative only and are subject to change and may be considered only as advance information to assist the potential supplier for preparation of EOI proposal. It is the responsibility of potential supplier to formulate complete technical specification based on inputs/control parameters specified by RFI.

1.7 The potential supplier may furnish any additional information, which is deemed necessary to establish capability to successfully complete the envisaged project.

1.8 No additional information shall be entertained after submission of EOI document unless specifically called for.

1.9 Prospective Company can seek any clarification on requirements from RFI. RFI reserves its right not to respond to any question raised or provide clarification sought in its sole discretion.

1.10 The discretion and decision of RFI in respect of the 'EOI' shall be final and shall not be open for challenge in any Court of Law.

1.11 RFI reserves the right to accept or reject any EOI proposal and/or to annul the selection process and reject all proposals at any time without assigning any reason or incurring any liability to the EOI bidders.

1.12 This document is not intended to form the basis of any decision to purchase/finalize contract. It does not constitute an offer or invitation or solicitation of an offer to purchase.

1.13 Interested Company is advised to carry out their own due diligence and analysis of any information contained or referred to herein or made available at any stage. The EOI does not, and does not purport to contain all the information that interested parties would desire to take decision. The potential supplier should analyse the information given and make their decision on the information available with them.

1.14 At any time during the evaluation process, RFI requires any clarification, it reserves the right to request such information from any or all of the companies and the companies will be obliged to provide the same within time indicated by RFI (failing which RFI will take further decision as per policy including rejection of proposals) and RFI reserves the right to visit your company facilities/manufacturing plant and your customers plant with prior notice to assess the reliability of data /information provided in proposal submitted in response to subject EOI.

1.15 Evaluation: The evaluation will be done based on details furnished as per EOI document. Your response, covering all parameters mentioned, is required to carry out assessment. After Technical Evaluation is completed, RFI will freeze Technical Requirements.

1.16 The bidder should comment on each point of the technical specification clearly mentioning their acceptability or non-acceptability. In case of non-acceptability, the bidder must mention the technical reason behind non-acceptability and should offer counter proposal in direction of purchaser's requirement.

1.17 The purchaser will provide the list of CNC machines, proposed to be integrated under the project is enclosed in ANNEXURE-A. The layout of the machines is enclosed in the ANNEXURE-B. The Schematic layout of the proposed plan is enclosed in the ANNEXURE-C.

1.18 Budgetary Quotation for the items (Hardware/software), whichever is required for executing the total project in line with purchase's requirement, is to be provided by the bidder in following format under **ESSENTIAL ITEM**.

ESSENTIAL ITEM

Sl. No.	Nomenclature	Detail specification of the Hardware/ Software	Purpose /use/function of the item.	Qty. Reqd.	Estimated **Unit price** of the item	Estimated **Total price** of the item

Apart from that estimated price for the following items to be quoted (i) Transportation charge, (ii) Installation & commissioning charge, (iii) Training charges, (iv) Other charges (if any) duly mentioning the details.

1.19 Budgetary Quotation for the items (Hardware/software), whichever the vendor like to provide as additional requirement, may be provided by the bidder in following format under **OPTIONAL ITEM**.

OPTIONAL ITEM

Sl. No.	Nomenclature	Detail specification of the Hardware/ Software	Purpose /use/function of the item.	Qty. Reqd.	Estimated **Unit price** of the item	Estimated **Total price** of the item

1.20 The proposals received in EOI will be evaluated by RFI and a specification for Tender Enquiry will be prepared. The tender specification will be prepared at the sole discretion of RFI.

1.21 RFI reserves the right to accept or reject any proposal without assigning any reasons thereof & decision taken by RFI is final.

Name	Signature
1. Shri Tapan Majumder, CM(T)/ MTC	
2. Shri Prabir Kumar Mandal, JWM/CNC-II	
3. Shri Rajib Bandyopadhyay, JWM/EM	
4. Shri Sujit Kumar Pandit, JWM/ITC	
5. Shri Sudipta Nandi, JWM/CNC-II	
6. Shri Sanjay Kumar Sen, JWM/CNC-II	

WM/CNC
(DO/CNC-II)

JT.GM/P
(GO/CNC-II)

AGM/B
(CO/ USER)