

TENDER

For

**Supply, Installation and commissioning of
Robotic Embedded Systems Lab**

at

NSIC TECHNICAL SERVICE CENTRE RAJKOT

**The National Small Industries Corporation Limited
(A Government of India Enterprise)
80 Ft. Road, Near Bhavnagar Road Crossing
Aji Industrial Area, Rajkot-360003. (Gujarat)**



**THE NATIONAL SMALL INDUSTRIES
CORPORATION LTD.**

**(A Government of India Enterprise)
80 Ft. Road, Near Bhavnagar Road Crossing
Aji Industrial Area, Rajkot-360003. (Gujarat)**

Tel No. 0281-2387613/2389070
Email- ntscraj@nsic.co.in

Fax No. 0281-2387729
Website-<http://nsic.co.in>

The National Small Industries Corporation Limited

(A Government of India Enterprise)

80 Ft. Road, Near Bhavnagar Road Crossing
Aji Industrial Area, Rajkot-360003. (Gujarat)

Tel: 0281-2387613/ 2389070/ 2387397/98

Email: ntscraj@nsic.co.in

Ref. : NTSC/RAJ/INCUBATOR/14-15/11

Date: 26-NOV-14

M/s. _____

Subject: Supply, Installation and Commissioning of Robotic Embedded Systems Lab at INCUBATOR CENTER AT NSIC TECHNICAL SERVICE CENTRE RAJKOT 80 Ft. Road, Near Bhavnagar Road Crossing Aji Industrial Area, Rajkot-360003. (Gujarat).

Sir,

Tender document in respect of the above mentioned works containing 38 pages as detailed on pages 5 (Index) are forwarded herewith. Please note that tender is to be delivered in the office of the Deputy General Manager NSIC TECHNICAL SERVICE CENTRE, 80 Ft. Road, Near Bhavnagar Road Crossing, Aji Industrial Area, Rajkot 360003, up to 3.00 P.M. on 15.12.14.

The Tender should be signed on each page, dated and witnessed in all places provided for in the documents; all other paper should be initialed.

The Tender should be accompanied by Earnest Money Deposit in the form of demand draft as mentioned in Appendix. Tenders without Earnest Money Deposit shall be summarily rejected. The tenders will be opened at 4.00 P.M. on 15 Dec. 2014.

The person, signing the tender on behalf of company/firm or on behalf of another person shall attach with tender a certified copy of proper authority/power of attorney on a non-judicial stamp paper of requisite value duly executed in his favour by such person, company/firm and must state specifically that he has authority to sign such tenders for and on behalf of such person or company/firm as the case may be, and in all matters pertaining to the contract including arbitration clause.

The letter shall form part of the "CONTRACT" and must be signed and returned along with the tender documents.

Yours Faithfully

Encl. 38 pages

**Deputy General Manager,
NSIC Technical Services Centre Rajkot**

Signature of the Contractor

Tender Notice

The National Small Industries Corporation Limited

(A Government of India Enterprise)

80 Ft. Road, Near Bhavnagar Road Crossing
Aji Industrial Area, Rajkot-360003. (Gujarat)

Tel: 0281-2387613/ 2389070/ 2387397/98

Email: ntscraj@nsic.co.in

Tender no.: NTSC/RAJ/INCUBATOR/14-15/11

Date: 26-NOV-14

Subject: Supply, Installation and Commissioning Supply of Robotic Embedded Systems Lab.

NSIC is setting up INCUBATOR CENTER AT NSIC TECHNICAL SERVICE CENTRE RAJKOT 80 Ft. Road, Near Bhavnagar Road Crossing Aji Industrial Area, Rajkot-360003. (Gujarat).

We are pleased to invite your offer in two parts viz. (a) Technical And (b) Financial, strictly as per enclosed terms and conditions and Instructions to bidders, in sealed covers for the under mentioned Plant and machinery / equipment required for supply and installation of one set of equipment's consisting of the following:

Sr No.	Name	Technical Specification	Qty.	Compliance (Yes/No)
1	8051 Microcontroller Development Board with Programmer	<ul style="list-style-type: none"> o MCU clocked at 11.0592MHz Expansion connectors for plug in modules and prototyping area. o On board programmer for 89C51/ 52 and 55 Devices Serial/USB interface to PC for programming. o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset Input/output & test points provided on board. 	2	

		<ul style="list-style-type: none"> o On board breadboard Self-contained trainer with On board DC and AC power supply. o CD with sample project code, Programmer software, useful documents & reference material. Technical Specifications o Serial communication : Serial Port o Baud rate : 9600 bps o MCU : 89C51/52 o Crystal frequency : 11.0592 MHz o RTC interfacing, ADC, Temperature sensor support o DC power supply : +12 V, +5 V o Programmer unit : Ready to run programmer will program 89C51/52 & 55 Devices o Interconnection for modules o Power supply : 230 V 10 %, 50 Hz o Accessories: Serial/USB cable, Mains cord, Operating and Experimental Manual, 2 mm Patch cords, software CD. o There should be no components on the top of the board. o The trainer should encased in a molded box with a cover 		
2	Microcontroller Development Platform	<ul style="list-style-type: none"> o PIC16F877A MCU clocked at 4 MHz on platform programmer. o USB/serial interface to PC for programming. o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset Input/output & test points provided on platform. o On platform breadboard for connecting external 	2	

		<p>components.</p> <ul style="list-style-type: none"> o Self-contained development platform with on platform DC Power Supply +12V,-12V, +5V & -5V Keypad support, seven segment Display. o Power supply : 230 V, 50 Hz o Accessories: CD with sample project code, Programmer software & useful documents CD (Theory, procedure, reference , results etc) o There should be no components on the top of the board. o The trainer should encased in a molded box with a cover 		
3	ARM 7 Development platform	<ul style="list-style-type: none"> o LPC2148 (ARM7TDMI 32 Bit) MCU clocked at 12 MHz o Expansion connectors for plug in modules and prototyping area 8 KB to 40 KB of on-chip static RAM and 32 KB to 512 KB of on-chip flash memory. o 128 bit wide interface/accelerator enables high-speed 60 MHz operation. o On platform Flash download utility (programmer) for Philips Microcontrollers USB & RS232 both interface given for programming VGA Support, SD/MMC card support. o USB 2.0 Full-speed compliant device controller with 2 KB of endpoint RAM LPC2146/48 provides 8 KB of on-chip RAM accessible to USB by DMA. o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset. o On platform UART 0 and UART 1 Interface. 	2	

		<ul style="list-style-type: none"> o On platform ADC (10 Bit) Interface On platform 10-bit DAC provides variable analog output. o On platform PWM Interface o RTC: 3.3 Volt CMOS Battery Included accessories:- RS232 serial cable, USB cable, Mains cord, Software. 		
4	AVR Development Platform	<ul style="list-style-type: none"> o Atmega16 and Atmega32 Support o On Board 10bit ADC o On board LCD Display, Motor driver for Different motor like Servo motor, DC motor, Stepper Motor etc. o Self-contained development platform with on platform DC Power Supply +12V,-12V, +5V & -5V Serial Communication support. o DI/DO support for interfacing modules transistor driven Port. o There should be no components on the top of the board. o The trainer should encased in a molded box with a cover 	2	
5	Motor	<p>Technical Specification:</p> <ul style="list-style-type: none"> o Stepper Motor 12V DC Power supply from development board. o Elevator control module 	5	
6	Elevator control module	<p>Technical Specifications:-</p> <ul style="list-style-type: none"> o Elevator interface PC based programming o LED'S: 8 Nos. o Switches: 9 Nos. 	5	

		o Power supply : From Development Board		
		o On board tesing with I2C protocol support, Memory storage support on power failure		
7	Graphical Display module	o Graphical Display module	4	
		Technical Specifications:-		
		o 128 x 64 Graphical LCD display, PC based programming, Input/output & test points plated)provided on board		
		o Power supply : From Development board		
8	Temperature sensor	o Can detect temperature up to 100 Degree Celsius with accuracy 0.1	10	
	Line follower sensor	o Can detect black line on flore without using micro controller	10	
	Line follower sensor	o Can detect black line on flore using micro controller	10	
	Obstacle avoider sensor	o Contactless sensor which can detect from 0-15cm range based on modulated IR light.	10	
	Light sensor	o Calibrated light sensor module which provide output proportional to light intensity	10	
Sound sensor	o sensor which provide output proportional to sound	10		
Gas sensor	o Can detect LPG gas up to 20%	5		
9	GSM Module	o SIM900A based with serial communication and TTL out	3	
		Onboard power supply , Call , SMS, Network indication,GPRS,2meterwire antenna		
	RFID Module	o Serial communication, 30 cm detection range with buzzer and LED indication, TAG ID	3	
	RF Transceiver	o 434MHz frequency band support up to 20meter	3	

	Xbee Transceiver	o Serial and TTL output, USB interfacing available	3	
10	Waveform oscilloscope	o Portable handy size, 2x2 LCD display up to 25MHz	2	
	Digital storage oscilloscope	o USB interfacing, storage memory ,sensitivity vertical 2mV-5V/dc, Horizontal 25nS-50S/div	1	
11	PCB design set	o All material regarding PCB manufacturing	1 set	
		like copper PCB ,drill machine, PCB etching chemical, PCB cutter		
12	Software	o Win AVR, AVR Boot loader, Proteus Simulator, Eagle, Keil, MP lab	License	
13	Motors	o DC Gearless Motor 12V DC	10	
		o DC Gear Motor 60 RPM 12V DC	4	
		o DC Gear Motor 100 RPM 12V DC	10	
		o DC Gear Motor 300 RPM 12V DC	8	
		o DC Gear Motor 500 RPM 12V DC	8	
		o Servo Motor 5V DC	5	
		o Stepper Motor 12VDC ROUND	2	
		o Stepper Motor 12VDC SQUARE	2	
14	Robots	o Line follower robot	5	
		o BI-PAD	2	
		o E-probot Robot	3	
		o Six legged robot	2	
		o Robotic Arm robot	2	
		o Dumpster wired robot	1	
		o Dumpster wireless robot	1	
15	Mechanical Component	o Square gear	10	
		o worm gear	5	
		o gear	5	
		o pulley	5	
		o belt	5	
		o chassis	10	
		o dead axel	10	

16	Electrical component	o single core wire	1	
		o bus wire	2	
		o switches sp	20	
		o two way switch	20	
		o DADT switch	20	
		o 2 pin connector male female	10	
		o 3 pin connector male female	10	
		o 10 pin connector male female	10	
		o Battery 9V connector	20	
17	Battery	o Li-on rechargeable 6VDC	2	
		o Lead-acid rechargeable 6VDC	2	
		o Li-on rechargeable 12VDC	2	
		o Lead-acid rechargeable 12VDC	2	
		o 9V battery	20	
18	Tool kit	o Wire cutter	5	
		o Wire stripper	5	
		o Paper cutter	5	
		o Nose plier	5	
		o scale	5	
		o Fevi quick	5	
		o Multimeter	5	
		o soldering iron	5	
		o Soldering wire	5	
		o De soldering pump	5	
		o Bread board	5	
		o GPBs	10	
19	Electronics component	o Resistor kit		
		o Capacitor		
		o led kit		
		o voltage regulator kit		
		o Transformer 0-12V		
		o Adaptor12V		
20	Wheels	o caster wheel	10	
		o track wheel	10	
		o rubber wheel	10	
		o plastic grip wheel	10	
21	Battery charger	o Li-ion 12V	1	
		o Lead-acid 12V	1	
22	Software	o E-probots		
		o Flash-magic		

		o CDM		
		o Grid SSC		
23	Desktop Computer	Intel original Core i5 4440 , Intel original 87 RL Mother Board, 4 GB DDR 3 RAM 1600 MHz, Segate 500 GB HDD Sata, asus Nvidia graphics card 1 GB EN 210, VIP Cabinet with SMPS 450 Watt and Lock provision, hp Key board and mouse, Dell 18.5 " LED Monitor	5	

Note:

The aspects mentioned below must be noted while submitting bids for the above mentioned plant and machinery / equipment's:

- a) All machines / equipment should be compatible with 220 V Single Phase, 380-440 V Three Phase - 50 cycle per second supply. Electrical wiring for interconnection of the machines up to main supply wherever necessary should be supplied along with machines.
- b) In case foundation of the machine is required for installation, necessary foundation bolts, pads, washers etc. should be supplied along with foundation drawing.
- c) All machines should be supplied with electrical, raw material handling and finished material packing arrangement along with working tools.
- d) List out the technical specification, additional equipment required, if any, for smooth running of the project.
- e) All machines should be complete and ready for production of stated capacity and should be supplied with operation and maintenance manual.

The detailed tender document can be obtained free of cost from Dy General Manager, NTSC Rajkot at the above address. The tender document can also be downloaded from NSIC website www.nsic.co.in. Any clarification on technical specifications can be obtained in writing from NSIC before tender opening. Manufacturers are welcome to have pre-bid meeting with NSIC Technical Services Centre, Rajkot for better understanding our requirements.

Please submit your lowest quotation / offer for the above requirement subject to our terms and conditions. Your offer should be submitted to The Dy. General Manager, NSIC Technical Services Centre, Rajkot latest by 15th December 2014 till 3:00 P.M. Offers received after the last date and scheduled time shall not be considered.

The format for technical bid and financial bid shall be as per Annexure-I and Annexure-II respectively. The offer should be submitted with a covering letter as per format at Annexure-III in a **sealed envelope clearly mentioning the above tender number on top of the envelope.**

The technical bid shall be opened on 15th December, 2014 at 04:00 P.M. In the presence of authorized representatives of the bidders who may like to be present. The authorized representative should bring authority letter from their principals for attending the bid opening.

Note: The vendor should submit their best price while submitting their bids itself and they will not be allowed to revise the price any time thereafter.

NSIC reserves the right to reject one or all of the bids without assigning any reasons.

KINDLY READ ALL TERMS AND CONDITIONS OF "TENDER DOCUMENT" THOROUGHLY. QUOTATION NOT IN ACCORDANCE WITH THE TERMS AND CONDITIONS IS LIABLE TO BE DISQUALIFIED AND IGNORED.

Deputy General Manager

Important Instructions to bidders for submission of tender

1) Preparation of Bids:

The bids should be prepared in the following manner:-

- a. The Bid shall be neatly arranged, plain and intelligible.
- b. Each page of the bid should be signed by the authorised person. Letter regarding the authorisation of such person should be obtained from the Principal / Manufacturer and enclosed with the bid.
- c. Insertions, postscripts, additions and alterations shall not be recognized, unless confirmed by bidder's signature.
- d. Bids should not contain any terms and conditions, printed or otherwise, which are not applicable to the Bid.
- e. Any conditional bid not adhering to the terms & conditions of the tender shall be rejected.
- f. The bidder should be the Principal / Original manufacturers of plant & machinery/ equipment, failing which the quotation shall not be considered.
- g. The bidders should have executed at least three purchase orders / contracts of equivalent value in the last five years. The bidder is required to submit catalogue of the plant & machinery/ equipment, complete reference of the past supply of equipment for the same or similar specification giving details of customer with name of the contact person, Fax no, phone no, E-mail.
- h. The bidders (originals manufacturers) will have to submit ink-signed offer / bid in original to NSIC Technical Services Centre Rajkot. **Bids not complying with this condition shall not be considered.**
- i. In the Financial Bid, prices are to be indicated in both figures and words. In case of any discrepancy of value the prices quoted in words shall be considered for evaluation and establishing L1 status.
- j. No price variation clause will be entertained.

- k. Specifications are the basic essence of the "Product". Mere copying of the tender specifications by the Bidder into their bids shall not make them eligible for consideration. Appropriate and sufficient evidence of conformity by way of data (catalogues etc.) shall be furnished. There should be an item-by-item commentary on the Specifications demonstrating responsiveness of the offered equipment to the specifications.
- l. Bid with any pre-conditions (like conditional discounts) for price are liable to be "Not considered" / "Rejected".

2) Submission of Bids:

- a. Bids must be received by NSIC Technical Services Centre, Rajkot on or before the due date and time at the address specified in the tender document. In the event of the specified date for the submission of bids being declared a holiday for NSIC Technical Services Centre Rajkot, the bid-closing deadline will stand extended to the next working day up to the same time.
- b. Any bid received by NSIC Technical Services Centre, Rajkot after the deadline for submission of bids, will not be accepted and returned unopened to the bidder.
- c. NSIC Technical Services Centre, Rajkot at its discretion may extend the deadline for the submission of bids if the bid document undergoes changes during the bidding period, in order to give prospective bidders time to take into consideration the amendments while preparing their bids.
- d. In case of receipt of inadequate numbers of bids, NSIC Technical Services Centre, Rajkot may extend the deadline for submission of bids giving opportunity to other bidders to participate in the bidding process to make it competitive.
- e. If the Supplier submits only one envelop / cover containing all the bids or combined bids e.g. techno-commercial bid & price bid together, the bid is liable for rejection.

NOTE: The manufacturers should submit their best price at this stage itself and they will not be allowed to revise the

price. Any revision / discount given by manufacturers subsequently will be ignored.

3) Amendment of Bidding Documents:

- a. At any time prior to the deadline for submission of bids, NSIC Technical Services Centre, Rajkot may, for any reason, whether on its own initiative or in response to the clarification request by a prospective bidder, modify the bid document.
- b. All prospective bidders who have requested for the bidding document will be notified of the amendment in writing, and such amendments/ modifications will be binding on them.

4) Bid opening and evaluation of Bids:

- a. The technical bids shall be opened on 15th December 2014 at 04:00 P.M.
- b. Bidder whose technical bid is qualified based on the eligibility criteria as specified in this tender document will be considered for financial bid evaluation. The date and time of opening of the financial bid will be informed to such bidders.
- c. NSIC Technical Services Centre, Rajkot will open financial bids of only the technically qualified, in the presence of the bidders or their authorised representative who choose to attend the bid opening.
- d. The bidder's authorised representative who attends the bid opening shall sign an attendance register as a proof of having attended the bid opening.
- e. The bidder's name, bid prices, discounts and such other details will be announced at the time of opening of the financial bids.

5) Award of Contract

- a. The financial bids of the technically qualified bidders shall be opened by the constituted committee. Thereafter the committee shall prepare the comparative statement (CST) based on FOR price at NSIC Technical Services Centre, Rajkot quoted by the bidders. This will facilitate to shortlist the L-1 bidder quoting the lowest price.

- b. L-1 will be decided on the basis of total value of the bid.
 - c. NSIC Technical Services Centre, Rajkot shall award the contract to the eligible bidder whose financial bid has been accepted and determined as the lowest evaluated financial bid.
 - d. If more than one bidder happens to quote the same lowest price, NSIC Technical Services Centre, Rajkot reserves the right to award the contract to any one bidder.
 - e. The successful bidder, on award of contract/order, must send the contract/order acceptance in writing, within 7 days of award of contract/order, failing which the EMD will be forfeited.
 - f. Supplier/Company should have experience 3 years in Robotics and Embedded System.
 - g. Company should be giving on-site training to trainer for 1 week after commissioning and Installation.
- 6) **Interpretation of the clauses in the Tender Document / Contract Document**

In case of any ambiguity / dispute in the interpretation of any of the clauses in this Tender Document, NSIC's interpretation of the clauses shall be final and binding on all parties.

7) **Earnest Money Deposit:**

- a. The units registered with Central Purchase Organization (DGS&D), The National Small Industries Corporation (NSIC) or the concerned Ministry or Department shall be exempted from the payment of Earnest Money as defined under Rule 157 of General Financial Rules (GFR), 2005.

In such case, copy of the certificate showing registration with the above mentioned institutions to be enclosed along with the Technical Bid.

- b. In case, the unit is not covered under a. above, it should submit the offer along with Earnest Money Deposit (EMD) for Rs. 20,000/- (in words Rupees twenty thousand only) by way of Demand Draft (DD) drawn in favour of "National Small Industries Corporation Limited" payable at Rajkot for one set of goods only (even in case the bidder is quoting for more than one set). No cash / cheque towards EMD shall be

accepted. The DD for EMD should be placed inside the envelope containing technical bid. The offers without EMD shall be rejected.

- c. The EMD of unsuccessful bidder shall be refunded within 30 days from the award of contract.
- d. No interest will be allowed for earnest money deposited with the Company.
- e. The EMD shall be forfeited:
 - 1. If the bidder withdraws the bid during the period of bid validity specified in the tender.
 - 2. If the successful bidder fails to furnish the acceptance in writing, within 7 days of award of contract/order.

8) Security Deposit

- a. The EMD of successful bidder shall be kept as 'Security Deposit' for supply of goods against each supply order and shall be released at the time of final payment after successful completion of work.
- b. In case of bidder exempted from payment of EMD (as mentioned in Para 7 a. above), 'Security Deposit' for Rs. 20,000/- by way of demand draft in favour of "The National Small Industries Corporation Limited" payable at Rajkot should be submitted along with order acceptance against each supply order. However, the successful bidder can furnish a Bank Guarantee of Nationalized Bank of equivalent amount in lieu of 'Security Deposit' valid for one year from the date of supply order.

9) Prices:

All items are to be quoted in INR only in the format as per Annexure-II. The price quoted should be inclusive of proper and strong packing, insurance and freight on FOR NSIC Technical Services Centre, Rajkot basis. The prices should also be inclusive of all taxes and duties as applicable. The price quoted shall be considered firm and no price escalation shall be permitted.

10) Validity of the Quote:

The validity of quote should be at least six months (180 days) from the closing date of tender. A bid valid for a shorter period shall stand rejected.

NSIC Technical Services Centre, Rajkot may ask for the bidder's consent to extend the period of validity. Such request and the response shall be made in writing only. A bidder agreeing to the request for extension will not be permitted to modify his bid.

11) Delivery period:

The goods shall be delivered to NSIC Technical Services Centre, Rajkot (or any other place as specified by NSIC Technical Services Centre, Rajkot) within 60 days from the date of award of contract. Part delivery shall not be permitted. Separate dispatch instruction shall be issued after inspection of goods and acceptance thereof by NSIC Technical Services Centre, Rajkot. No other delivery terms shall be acceptable.

12) Taxes / Duties:

- a. The bidders should be registered with sales tax / income tax department of Govt. of India and should hold a valid VAT registration certificate, as applicable.
- b. Sales tax, excise duty, VAT or any other tax shall be paid on actual as per rule applicable and on production of documentary proof. No tax concession form or proof of shipment of goods shall be issued.

13) Payment terms:

- a. 80% of order value to be released on submission of following documents:
 1. Signed commercial Invoice-two copies certifying that the goods are exactly as per the purchase order and the specification quoted.
 2. One copy of NSIC Technical Services Centre, Rajkot supply order.
 3. Proof of delivery of the consignment to NSIC Technical Services Centre, Rajkot.
 4. Packing list two copies duly signed.

- b. Balance 20% order value shall be released after successful installation and commissioning of equipment at NSIC Technical Services Centre ,Rajkot

14) Packing & Marking:

Consignment must be packed in proper and strong packing cases, taking all precaution against damage during handling and transportation.

Proper marking on the packing cases should be made for smooth handling of consignment. The supplier will be held responsible for the plant and machinery / equipment's not being sufficiently and properly packed and in such eventuality the supplier shall have to transport them by rail, road at their destination, at his expense free from loss or damage.

Every package delivered under our order shall at the expense of the supplier be distinctly marked with description and quantity or contents with the consignee name and address (which shall be notified subsequently) with gross weight and net weight, with the distinctive number and mark which is also to be shown for the purpose of identification on the suppliers packing account.

Each packet shall contain a packing note quoting a number and date of our order and showing its contents in detail.

15) Pre-shipment Inspection:

The plant and machinery / equipment to be supplied and packing thereof shall be subject to inspection by NSIC Technical Services Centre, Rajkot or third party (name shall be conveyed to the successful bidder) at manufacturer's premises prior to dispatch thereof. Machinery & equipment including packing boxes shall be offered by the awarded unit for inspection at least 10 days before the stipulated date of delivery. Deviations, if any pointed out by the visiting inspection team, as mentioned above, shall be corrected and the machinery and equipment as per specification shall be dispatched on or before the contract delivery date.

16) Liquidated damages:

In the event of delay in supply of the goods within the stipulated period, Liquidated Damages (LD) shall be charged by NSIC Technical Services Centre ,Rajkot @ ½% (one-half of one

percent) of the total order value per week of delay or part thereof subject to a maximum of 5 (five percent) of the order value. Supplier shall deduct the applicable LD from the first payment while raising the claim for the same.

17) Insurance:

All goods are to be insured for 110% of the FOR value of the goods by successful bidder from the works to NSIC Technical Services Centre, Rajkot

18) Installation & Commissioning:

- a. The awarded bidders shall have to depute expert(s) for installation & commissioning at site as and when instructed by NSIC Technical Services Centre, Rajkot.
- b. No additional charges shall be payable for installation & commissioning of equipment at NSIC Technical Services Centre, Rajkot.
- c. The supplier will be required to train for at least 7 days the operators as decided by NSIC Technical Services Centre, Rajkot.

19) After Sales Service / Warranties by Suppliers:

The equipment shall be warranted for any manufacturing defect for a period of 18 months from the date of shipment or 12 months from the date of successful completion of installation and commissioning at site, whichever is later. Should any part or parts fail or proved defective within the period specified above, owing to defect in design, material or workmanship, the supplier will have to replace them at the place of installation free of all charges.

During the warranty period, expert(s) shall be deputed at site by the awarded unit whenever found essential and which cannot be undertaken locally or by the NSIC Technical Services Centre ,Rajkot experts including rectifying any defect / malfunctioning of plant & machinery. The cost of deputation of expert(s) and any other associated expenditure shall be borne by the awarded unit.

20) Technical Documents:

The awarded unit shall provide technical documents like operation and maintenance manual etc. in English language in three copies for each items of equipment. Two copies to go with

the consignment, one copy to be forwarded to NSIC Technical Services Centre, Rajkot.

21) Risk Purchase:

In case of delays in supplies / defective supplies or non-fulfillment of any other terms and conditions given in the Supply Order, NSIC Technical Services Centre ,Rajkot may cancel the supply order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier.

In case vendor does not agree to above risk purchase clause, their offer is liable to be rejected. In case any vendor accepts risk purchase clause initially and subsequently declines to honor the term in the eventuality of RISK PURCHASE, they may be banned for business with NSIC Technical Services Centre, Rajkot.

22) Cancellation of Bids

- a. NSIC Technical Services Centre, Rajkot reserves the rights to cancel any bid without assigning any reasons.
- b. NSIC Technical Services Centre, Rajkot reserves the rights to cancel bids and refloat a fresh tender, at any time after opening of the bids, in case it finds the response to its bid are not meeting its requirement. This shall be at the sole discretion of NSIC Technical Services Centre, Rajkot.

23) Blacklisting / Debarring of Firm

- a. Units blacklisted by any Government Departments / PSUs are not eligible to participate in the tender.
- b. If the unit(s) commits breach of contract, it shall be black listed / debarred for further business with NSIC for a declared period.

24) Post Tender Negotiations

- a. NSIC Technical Services Centre, Rajkot reserves the right to conduct negotiations on the 'Price' and 'other commercial terms' with the lowest ranked offered.

- b. If so required by NSIC Technical Services Centre, Rajkot, supplier may have to share their cost data / costing sheet with us.

25) Force Majeure

If at any time during the currency of this contract, the performance in whole or in part, by either party of any obligations under this contract shall be prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events), then provided notice of happening of any such events is given by either party to other within ten days from the date of occurrence thereof, neither party shall reason of such events be entitled to terminate this contract nor shall either party have any such nonperformance and delay is resumed as soon as practicable after such events has come to an end or ceased to exist. If the performance in whole or part of any obligation under this contract is prevented or delayed by reason or any such event claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser of the particulars of the events and supply to the purchaser if required of any supporting evidence. Any waiver of time in respect of partial installment shall not be deemed to be a waiver of time in respect of remaining deliveries.

Annexure-I**Format for Technical Bid**

Sr No.	Name	Technical Specification	Qty.	Compliance (Yes/No)
1	8051 Microcontroller Development Board with Programmer		2	
		o MCU clocked at 11.0592MHz Expansion connectors for plug in modules and prototyping area.		
		o On board programmer for 89C51/ 52 and 55 Devices Serial/USB interface to PC for programming.		
		o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset Input/output & test points provided on board.		
		o On board breadboard Self- contained trainer with On board DC and AC power supply.		
		o CD with sample project code, Programmer software, useful documents & reference material.		
		Technical Specifications		
		o Serial communication : Serial Port		
		o Baud rate : 9600 bps		
		o MCU : 89C51/52		
		o Crystal frequency : 11.0592 MHz		
		o RTC interfacing, ADC, Temperature sensor support		
		o DC power supply : +12 V, +5 V		
		o Programmer unit : Ready to run programmer will program 89C51/52& 55 Devices Interconnection for modules		

		<ul style="list-style-type: none"> o Power supply : 230 V 10 %, 50 Hz o Accessories: Serial/USB cable, Mains cord, Operating and Experimental Manual, 2 mm Patch cords, software CD. o There should be no components on the top of the board. o The trainer should encased in a molded box with a cover 		
2	Microcontroller Development Platform	<ul style="list-style-type: none"> o PIC16F877A MCU clocked at 4 MHz on platform programmer. o USB/serial interface to PC for programming. o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset Input/output & test points provided on platform. o On platform breadboard for connecting external components. o Self-contained development platform with on platform DC Power Supply +12V,-12V, +5V & -5V Keypad support, seven segment Display. o Power supply : 230 V, 50 Hz o Accessories: CD with sample project code, Programmer software & useful documents CD (Theory, procedure, reference , results etc) o There should be no components on the top of the board. o The trainer should encased in a molded box with a cover 	2	
3	ARM 7 Development platform	<ul style="list-style-type: none"> o LPC2148 (ARM7TDMI 32 Bit) MCU clocked at 12 MHz o Expansion connectors for plug in modules and prototyping area 8 KB to 40 KB of on-chip static RAM and 32 KB to 512 KB of on-chip flash memory. 	2	

		<ul style="list-style-type: none"> o 128 bit wide interface/accelerator enables high-speed 60 MHz operation. o On platform Flash download utility (programmer) for Philips Microcontrollers USB & RS232 both interface given for programming VGA Support, SD/MMC card support. o USB 2.0 Full-speed compliant device controller with 2 KB of endpoint RAM LPC2146/48 provides 8 KB of on-chip RAM accessible to USB by DMA. o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset. o On platform UART 0 and UART 1 Interface. o On platform ADC (10 Bit) Interface On platform 10-bit DAC provides variable analog output. o On platform PWM Interface o RTC: 3.3 Volt CMOS Battery Included accessories:- RS232 serial cable, USB cable, Mains cord, Software. 		
4	AVR Development Platform	<ul style="list-style-type: none"> o Atmega16 and Atmega32 Support o On Board 10bit ADC o On board LCD Display, Motor driver for Different motor like Servo motor, DC motor, Stepper Motor etc. o Self-contained development platform with on platform DC Power Supply +12V,-12V, +5V & -5V Serial Communication support. o DI/DO support for interfacing modules transistor driven Port. o There should be no components on the top of the board. 	2	

		o The trainer should encased in a molded box with a cover		
5	Motor	Technical Specification:	5	
		o Stepper Motor 12V DC Power supply from development board.		
		o Elevator control module		
6	Elevator control module		5	
		Technical Specifications:-		
		o Elevator interface PC based programming		
		o LED'S: 8 Nos.		
		o Switches: 9 Nos.		
		o Power supply : From Development Board		
7	Graphical Display module	o Graphical Display module	4	
		Technical Specifications:-		
		o 128 x 64 Graphical LCD display, PC based programming, Input/output & test points plated)provided on board		
		o Power supply : From Development board		
8	Temperature sensor	o Can detect temperature up to 100 Degree Celsius with accuracy 0.1	10	
		o Can detect black line on flore without using micro controller	10	
	Line follower sensor	o Can detect black line on flore using micro controller	10	
		o Contactless sensor which can detect from 0-15cm range based on modulated IR light.	10	
	Obstacle avoider sensor	o Calibrated light sensor module which provide output proportional to light intensity	10	
	Light sensor	o sensor which provide output proportional to sound	10	
Sound sensor				

	Gas sensor	o Can detect LPG gas up to 20%	5	
9	GSM Module	o SIM900A based with serial communication and TTL out	3	
		Onboard power supply , Call , SMS, Network indication, GPRS, 2meter wire antenna		
	RFID Module	o Serial communication, 30 cm detection range with buzzer and LED indication, TAG ID	3	
	RF Transceiver	o 434MHz frequency band support up to 20meter	3	
	Xbee Transceiver	o Serial and TTL output, USB interfacing available	3	
10	Waveform oscilloscope	o Portable handy size, 2x2 LCD display up to 25MHz	2	
	Digital storage oscilloscope	o USB interfacing, storage memory ,sensitivity vertical 2mV-5V/dc, Horizontal 25nS-50S/div	1	
11	PCB design set	o All material regarding PCB manufacturing	1 set	
		like copper PCB ,drill machine, PCB etching chemical, PCB cutter		
12	Software	o Win AVR, AVR Boot loader, Proteus Simulator, Eagle, Keil, MP lab		
13	Motors	o DC Gearless Motor 12V DC	10	
		o DC Gear Motor 60 RPM 12V DC	4	
		o DC Gear Motor 100 RPM 12V DC	10	
		o DC Gear Motor 300 RPM 12V DC	8	
		o DC Gear Motor 500 RPM 12V DC	8	
		o Servo Motor 5V DC	5	
		o Stepper Motor 12VDC ROUND	2	
		o Stepper Motor 12VDC SQUARE	2	
14	Robots	o Line follower robot	5	
		o BI-PAD	2	
		o E-probot Robot	3	
		o Six legged robot	2	
		o Robotic Arm robot	2	
		o Dumpster wired robot	1	
		o Dumpster wireless robot	1	
15	Mechanical	o Square gear	10	

	Component	o worm gear	5	
		o gear	5	
		o pulley	5	
		o belt	5	
		o chassis	10	
		o dead axel	10	
16	Electrical component	o single core wire	1	
		o bus wire	2	
		o switches sp	20	
		o two way switch	20	
		o DADT switch	20	
		o 2 pin connector male female	10	
		o 3 pin connector male female	10	
		o 10 pin connector male female	10	
		o Battery 9V connector	20	
17	Battery	o Li-on rechargeable 6VDC	2	
		o Lead-acid rechargeable 6VDC	2	
		o Li-on rechargeable 12VDC	2	
		o Lead-acid rechargeable 12VDC	2	
		o 9V battery	20	
18	Tool kit	o Wire cutter	5	
		o Wire stripper	5	
		o Paper cutter	5	
		o Nose plier	5	
		o scale	5	
		o Fevi quick	5	
		o Multimeter	5	
		o soldering iron	5	
		o Soldering wire	5	
		o De soldering pump	5	
		o Bread board	5	
o GPBs	10			
19	Electronics component	o Resistor kit		
		o Capacitor		
		o led kit		
		o voltage regulator kit		
		o Transformer 0-12V		
		o Adaptor12V		
20	Wheels	o caster wheel	10	

		o track wheel	10	
		o rubber wheel	10	
		o plastic grip wheel	10	
21	Battery charger	o Li-ion 12V	1	
		o Lead-acid 12V	1	
22	Software	o E-probots		
		o Flash-magic		
		o CDM		
		o Grid SSC		
23	Desktop Computer	Intel original Core i5 4440 , Intel original 87 RL Mother Board, 4 GB DDR 3 RAM 1600 MHz, Segate 500 GB HDD Sata, asus Nvidia graphis card 1 GB EN 210, VIP Cabinet with SMPS 450 Watt and Lock provision, hp Key board and mouse, Dell 18.5 " LED Monitor	5	

Enclosures:

1. Company profile with catalogues.
2. Detailed specification of all items mentioned above.
3. Copy of purchase orders/ contracts of similar nature and size in the last five years.
4. Copy of Pan Card / Sales tax / VAT registration certificate.
5. Copy of SSI / MSME Memorandum part – II / NSIC registration certificate, if applicable.
6. Demand draft/Cheque for Rs. 20,000/- as EMD.
7. Authorization letter in favour of authorized signatory from the bidder.

Annexure-II**Financial price schedule**

Sr. no.	Description	Specifications	Quantity	Price (INR)	Tax & Duties (As applicable) (INR)	Total price (For NTSC Rajkot)
1	8051 Microcontroller Development Board with Programmer	o MCU clocked at 11.0592MHz Expansion connectors for plug in modules and prototyping area.	2			
		o On board programmer for 89C51/ 52 and 55 Devices Serial/USB interface to PC for programming.				
		o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset Input/output & test points provided on board.				
		o On board breadboard Self-contained trainer with On board DC and AC power supply.				
		o CD with sample project code, Programmer software, useful documents & reference material.				
		Technical Specifications				
		o Serial communication : Serial Port				
		o Baud rate : 9600 bps				
		o MCU : 89C51/52				
		o Crystal frequency : 11.0592 MHz				

		<ul style="list-style-type: none"> o RTC interfacing, ADC, Temperature sensor support o DC power supply : +12 V, +5 V o Programmer unit : Ready to run programmer will program 89C51/52 & 55 Devices Interconnection for modules o Power supply : 230 V 10 %, 50 Hz o Accessories: Serial/USB cable, Mains cord, Operating and Experimental Manual, 2 mm Patch cords, software CD. o There should be no components on the top of the board. o The trainer should encased in a molded box with a cover 				
<p style="text-align: center;">2</p>	<p style="text-align: center;">Microcontroller Development Platform</p>	<ul style="list-style-type: none"> o PIC16F877A MCU clocked at 4 MHz on platform programmer. o USB/serial interface to PC for programming. o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset Input/output & test points provided on platform. o On platform breadboard for connecting external components. o Self-contained development platform with on platform DC Power Supply +12V,-12V, +5V & -5V Keypad support, seven segment Display. o Power supply : 230 V, 50 Hz 	<p style="text-align: center;">2</p>			

		<ul style="list-style-type: none"> o Accessories: CD with sample project code, Programmer software & useful documents CD (Theory, procedure, reference , results etc) 				
		<ul style="list-style-type: none"> o There should be no components on the top of the board. 				
		<ul style="list-style-type: none"> o The trainer should encased in a molded box with a cover 				
<p>3</p>	<p>ARM 7 Development platform</p>	<ul style="list-style-type: none"> o LPC2148 (ARM7TDMI 32 Bit) MCU clocked at 12 MHz 	<p>2</p>			
		<ul style="list-style-type: none"> o Expansion connectors for plug in modules and prototyping area 8 KB to 40 KB of on-chip static RAM and 32 KB to 512 KB of on-chip flash memory. 				
		<ul style="list-style-type: none"> o 128 bit wide interface/accelerator enables high-speed 60 MHz operation. 				
		<ul style="list-style-type: none"> o On platform Flash download utility (programmer) for Philips Microcontrollers USB & RS232 both interface given for programming VGA Support, SD/MMC card support. 				
		<ul style="list-style-type: none"> o USB 2.0 Full-speed compliant device controller with 2 KB of endpoint RAM LPC2146/48 provides 8 KB of on-chip RAM accessible to USB by DMA. 				
		<ul style="list-style-type: none"> o Every pin is marked in order to make work easier Master Reset/Restart Key for hardware reset. 				
		<ul style="list-style-type: none"> o On platform UART 0 and UART 1 Interface. 				
		<ul style="list-style-type: none"> o On platform ADC (10 Bit) Interface On platform 10-bit DAC provides variable analog 				

		output.			
		o On platform PWM Interface			
		o RTC: 3.3 Volt CMOS Battery Included accessories:- RS232 serial cable, USB cable, Mains cord, Software.			
4	AVR Development Platform	o Atmega16 and Atmega32 Support	2		
		o On Board 10bit ADC			
		o On board LCD Display, Motor driver for Different motor like Servo motor, DC motor, Stepper Motor etc.			
		o Self-contained development platform with on platform DC Power Supply +12V,-12V, +5V & -5V Serial Communication support.			
		o DI/DO support for interfacing modules transistor driven Port.			
		o There should be no components on the top of the board.			
		o The trainer should encased in a molded box with a cover			
5	Motor	Technical Specification:	5		
		o Stepper Motor 12V DC Power supply from development board.			
		o Elevator control module			
6	Elevator control module	Technical Specifications:-	5		
		o Elevator interface PC based programming			
		o LED'S: 8 Nos.			
		o Switches: 9 Nos.			
		o Power supply : From Development Board			
		o On board tesing with I2C protocol support, Memory storage support on power			

		failure				
7	Graphical Display module	o Graphical Display module	4			
		Technical Specifications:-				
		o 128 x 64 Graphical LCD display, PC based programming, Input/output & test points plated)provided on board				
		o Power supply : From Development board				
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		using micro controller				
	Line follower sensor	o Can detect black line on flore	10			
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	Obstacle avoider sensor	o Contactless sensor which can detect from 0-15cm range based on modulated IR light.	10			
	Light sensor	o Calibrated light sensor module which provide output proportional to light intensity	10			
Sound sensor	o sensor which provide output proportional to sound	10				
Gas sensor	o Can detect LPG gas up to 20%	5				
9	GSM Module	o SIM900A based with serial communication and TTL out	3			
		Onboard power supply , Call , SMS, Network indication,GPRS,2meterwire antenna				
	RFID Module	o Serial communication, 30 cm detection range with buzzer and LED indication, TAG ID	3			
	RF Transceiver	o 434MHz frequency band support up to 20meter	3			

	Xbee Transceiver	o Serial and TTL output, USB interfacing available	3			
10	Waveform oscilloscope	o Portable handy size, 2x2 LCD display up to 25MHz	2			
	Digital storage oscilloscope	o USB interfacing, storage memory ,sensitivity vertical 2mV-5V/dc, Horizontal 25nS-50S/div	1			
11	PCB design set	o All material regarding PCB manufacturing	1 set			
		like copper PCB ,drill machine, PCB etching chemical, PCB cutter				
12	Software	o Win AVR, AVR Boot loader, Proteus Simulator, Eagle, Keil, MP lab				
13	Motors	o DC Gearless Motor 12V DC	10			
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		o DC Gear Motor 100 RPM 12V DC	10			
		o DC Gear Motor 300 RPM 12V DC	8			
		o DC Gear Motor 500 RPM 12V DC	8			
		o Servo Motor 5V DC	5			
		o Stepper Motor 12VDC ROUND	2			
		o Stepper Motor 12VDC SQUARE	2			
14	Robots	o Line follower robot	5			
		o BI-PAD	2			
		o E-probot Robot	3			
		o Six legged robot	2			
		o Robotic Arm robot	2			
		o Dumpster wired robot	1			
		o Dumpster wireless robot	1			
15	Mechanical Component	o Square gear	10			
		o worm gear	5			
		o gear	5			
		o pulley	5			
		o belt	5			

		o chassis	10			
		o dead axel	10			
16	Electrical component	o single core wire	1			
		o bus wire	2			
		o switches sp	20			
		o two way switch	20			
		o DADT switch	20			
		o 2 pin connector male female	10			
		o 3 pin connector male female	10			
		o 10 pin connector male female	10			
		o Battery 9V connector	20			
		17	Battery	o Li-on rechargeable 6VDC	2	
o Lead-acid rechargeable 6VDC	2					
o Li-on rechargeable 12VDC	2					
o Lead-acid rechargeable 12VDC	2					
o 9V battery	20					
18	Tool kit	o Wire cutter	5			
		o Wire stripper	5			
		o Paper cutter	5			
		o Nose plier	5			
		o scale	5			
		o Fevi quick	5			
		o Multimeter	5			
		o soldering iron	5			
		o Soldering wire	5			
		o De soldering pump	5			
		o Bread board	5			
		o GPBs	10			
19	Electronics component	o Resistor kit				
		o Capacitor				
		o led kit				
		o voltage regulator kit				
		o Transformer 0-12V				
		o Adaptor12V				
20	Wheels	o caster wheel	10			

		o track wheel	10			
		o rubber wheel	10			
		o plastic grip wheel	10			
21	Battery charger	o Li-ion 12V	1			
		o Lead-acid 12V	1			
22	Software	o E-probots				
		o Flash-magic				
		o CDM				
		o Grid SSC				
23	Desktop Computer	Intel original Core i5 4440 , Intel original 87 RL Mother Board, 4 GB DDR 3 RAM 1600 MHz, Segate 500 GB HDD Sata, asus Nvidia graphics card 1 GB EN 210, VIP Cabinet with SMPS 450 Watt and Lock provision, hp Key board and mouse, Dell 18.5 " LED Monitor	5			

Lump sum price for one set of machinery & equipment (FOR NTSC RAJKOT):
Rs. _____
(in words Rupees: _____)

Spares:

Sl. No	Description and Technical specification	Qty.	Price (INR)	Tax & Duties (INR)	Total Price (FOR, Rajkot) (INR)
	Spares to maintain the normal operations of Material/machine for two years. Ensure the spares list shall include all the items/ parts those are required to be replaced during the course of normal running of machine, due to their wear & tear. (please specify price of each item with detailed specifications-use separate sheet)	One set			

Note: The above price should be inclusive of sea-worthy packing, transportation and insurance and Taxes & Duties etc.

Annexure-III

Format of covering letter

Ref. No.:.....

Date:.....

The Dy. General Manager
NSIC-Technical Services Centre
Aji Industrial Area, Bhavnagar Road
Rajkot-360003

Ref.: NTSC/RAJ/INCUBATOR/14-15/08 dated 26-Nov-2014 for Supply and installation of Supply, Installation and Commissioning of **Robotic Embedded Systems Lab at NTSC Rajkot.**

Dear Sir,

With reference to above tender notice, we are submitting herewith our offer for above as per following documents:

1. Technical bid in prescribed format as Annexure-I in sealed envelope no.1 along with enclosures (No financial figures should be mentioned directly or indirectly in technical bid).
2. EMD for Rs. 20,000/- in the form of Demand Draft/Cheque in favour of "National Small Industries Corporation Limited" payable at Rajkot along with technical bid in an envelope marked "EMD" placed inside sealed envelope no.1.
3. Financial bid in prescribed format in sealed envelope no.2.

We hereby agree to fully abide by all the terms & condition of this tender.

Thanking you,

Yours faithfully,

Name.....
Designation.....