

***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

**Tender No: ITG-IT/1007/CARES-PROJECT/2023-24/2737**

**Date of Issue: 20/12/2023**

**Last Date of Submission of Bids: 19/01/2024**



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## ***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

### **Disclaimer**

*This tender document towards for “Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) scheme in the State of Goa” on behalf of Directorate of Technical Education (DTE), Porvorim-Goa is issued by Info Tech Corporation of Goa Ltd. (ITG). This tender is neither an agreement, nor an offer or invitation to perform work of any kind to any Party. The purpose of this tender is to provide interested parties with information to assist them in the preparation of their Bid.*

*Whilst the information in this tender has been prepared in good faith, it is not and does not purport to be comprehensive or to have been independently verified. Neither the ITG, nor any of its Officers or Employees accept any liability or responsibility for the accuracy, reasonableness or completeness of, or for any errors, omissions or misstatements, negligent or otherwise, relating to the proposed Project, or makes any representation or warranty, express or implied, with respect to the information contained in this tender or on which this tender is based or with respect to any written or oral information made or to be made available to any of the Recipients or their Professional Advisers and, so far as permitted by law and except in the case of fraudulent misrepresentation by the Party concerned, and liability therefore is hereby expressly disclaimed.*

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*This tender includes certain statements, estimates, projections, targets and forecasts with respect to the*



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*Project. Such statements, estimates, projections, targets and forecasts reflect various assumptions made by the Management, Officers and Employees of the ITG, which assumptions (and the base information on which they are made) may or may not prove to be correct. No representation or warranty is given as to the reasonableness of forecasts or the assumptions on which they may be based and nothing in this tender is, or shall be relied on as, a promise, representation or warranty.*

*DRAFT*

### Definitions & Acronyms

#	Titles	Details
1.	GoG	Government of Goa.
2.	ITG	Info Tech Corporation of Goa Ltd.
3.	DTE	Directorate of Technical Education.
4.	OEM	Original Equipment Manufacturer.
5.	MAF	Manufacturer's Authorization Form.
6.	Bidder/Tenderer	Person/Company who bids against this tender.
7.	Purchaser	Info Tech Corporation of Goa Ltd.
8.	Contractor/Supplier	The successful Bidder to whom tender is awarded.
9.	Contract	An agreement signed by the contractor against the Tender.
10.	Non-responsive	Failure to furnish complete information in a given format and manner required as per the tender documents or non- submission of tender bid in given Forms/Pro-forma or notfollowing procedure mentioned in this tender or any of required details or documents is missing or not clear or not submitted in the prescribed format or non submission of tender fee or EMD.
11.	EMD	Earnest Money Deposit.
12.	CARES	Coding and Robotics Education in Schools
13.	PAN	Permanent Account Number.
14.	PBG	Performance Bank Guarantee.
15.	Kits	Robotics Hardware Kits
16.	DT/CT	Direct Trainee/Campus Trainee
17.	SLA	Service Level Agreement
18.	ISO	International Organization for Standardization
19.	IEC	International Electro Technical Commission
20.	FCC	Federal Communications Commission
21.	UL	Underwriter Laboratories
22.	BIS	Bureau of Indian Standards
23.	RoHS	Restriction of Hazardous Substances
24.	NSIC	National Small Industries Corporation
25.	MSME	Ministry of Micro, Small & Medium Enterprises
26.	GPIO	General Purpose Input/ Output
27.	SBC	Single Board Computing Device
28.	PMU	Project Management Unit under Directorate of Technical Education
29.	DT/CT	Individual Based Training/ Campus Based Training



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**Chapter 1 About Info Tech Corporation of Goa Limited**

INFO TECH CORPORATION OF GOA LTD (ITG), an ISO 9001:2015 & ISO 27001:2013 Certified Organization, has been set up by the Government of Goa to promote overall growth of the State's economy through the use of Information Technology. ITG under Department of Information Technology, Electronics and Communication has been providing various IT services to Government Departments/Institutions/Organizations in the State of Goa to realize goals of the Digital India Mission by assisting them to setup and maintain the IT infrastructure.

On behalf of Directorate of Technical Education, Government of Goa, ITG was entrusted for work towards Supply, Installation, and Commissioning of single Board Computing devices and Wi-Fi based Router for 03 years of warranty under implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa for target of 4,000+ Schools in Goa.

Now, on behalf of Directorate of Technical Education, Government of Goa, ITG is entrusted for work towards Supply, Delivery and Maintenance of Robotics Hardware kits under phase-II which shall be compatible with existing single Board Computing devices and Gomantak Vishwa Network (GOVIN) IDE for implementation of CARES Scheme in the State of Goa after following codal formalities.



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### **Chapter 2 Project Background**

Government of Goa (GoG) in the year 2021 notified and introduced Coding and Robotics Education in Schools (CARES) scheme with a vision to develop computational and design thinking skills along with programming integrated into the school level education for the State of Goa. There are 60000+ students, 530+ teachers through 440+ Government and Government Aided schools are the direct beneficiaries of the scheme in each academic year.

Project Management Unit (PMU) set up under Directorate of Technical Education, Goa (DTE) is mandated with the implementation of the CARES scheme across the State of the Goa and is currently into third year of its implementation

Government of Goa has notified a new scheme Coding and Robotics Education in Schools Scheme in Government and Government-aided high schools. (Official Gazette Series I No. 6 dated 06-05-2021 notification DTE/BUD 21-CM-CARES/2021/264)

Computational thinking (CT) is recognized as one of the key 21<sup>st</sup> century skills that involves understanding a problem, designing a solution and expressing it in a form that a human or a machine can execute. The National Education Policy, 2020 by the Ministry of Education, GoI; recommended that mathematical and computational thinking will be given increased emphasis through a variety of innovative methods, including the regular use of puzzles and games that make mathematical thinking more enjoyable and engaging. It thus becomes paramount that the students of State of Goa are trained in these essential skills to mitigate the demands of the digital age.

A principal goal of school education is to prepare the child for participation in the world outside, interrogate it, and contribute to changing and shaping the world. Language, Mathematics, Science and Social studies form the core of school curricula world over, as they provide the basic means for studying the world, and in changing it.

COMPUTING is ubiquitous and people from every walk of life will need to be familiar with computing in some form or the other. This will give rise to a huge demand for computing skills leading to a talent shortage unless computational thinking is introduced in schools immediately.





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Children need to be taught not only to be socially responsible citizens but also train them to be creators, inventors and adopters of technology. It is therefore imperative to teach computing, which promotes problem solving, computational thinking and critical reasoning skills, at par with Mathematics and Sciences.

Computational thinking is wider in scope and involves understanding a problem, designing a solution and expressing it in a form that a human or a machine can execute. Computational Thinking involves problem decomposition, finding pattern in the problem and creating a systematic and sequential logical step to solve the problem using computers. Many countries such as the USA, UK, Singapore have adopted a national computing curriculum. Our state should not lag behind, and should take all the steps to implement Computational/Design thinking in its school education system.

### **1. Vision**

To develop computational and design thinking skills along with programming integrated into the school level education for the State of Goa to prepare students for the demands of the 21<sup>st</sup> century digital world.

### **2. Mission**

In order to realize the above stated vision, the Directorate of Technical Education along with Directorate of Education, Government of Goa has identified the following mission areas which would act as vision catalysts:

- a.** To facilitate the student population at the school levels to develop needed skills towards Design and Computational thinking by working on appropriate curriculum and syllabus.
- b.** Incrementally develop required resources (hardware/software/technical) in Government/Government-Aided schools by first focusing at the mid-level schools (Std. VI, VII & VIII) and then expanding to other standards as the need be.
- c.** Acquiring an acceptable level of comfort by students with technology (like mobile phones and ATM machines) and tools (like word processing, numeric, internet and other software) in general by augmenting the current syllabus.
- d.** The use of computers for other subjects (like art, mathematics, sciences and geography).
- e.** The ability to program a computer to solve a complex task that involves computational thinking skills.



- f. Developing appropriate curriculum for DT/CT for use in School education.
- g. Engage student-teacher in hands on design challenges that focus on promoting a bias towards action, encouraging ideation, developing met cognitive awareness an fostering active problem solving. This Design Thinking would be achieved by augmenting or supplementing NITI Aayog's initiative of Atal Tinkering Laboratories. The technical manpower resources provisioned in this proposed scheme would boost the same, by helping students to prototype their ideas.

### 3. Objectives

- a. To make needed coding skills ubiquitous across the school-level student population in Goa.
- b. Setting up of coding/development labs, design studios, and towards having a penchant towards entrepreneurship.
- c. To provide financial/teaching support for developing project ideas, part-take in competitions, hackathons, conferences, symposiums and organize visits of select students to knowledge parks, IT clusters at National/International level to have a true immersive experience.
- d. To infuse problem-solving and technical skills into the education system through technical human power, curriculum focusing on Design/Computational Thinking and Programming.
- e. Develop an acumen and interest for skilling towards an on-coming way of life based on digital technology.
- f. Provide a level playing field to students from rural areas to acquire skills which have been accessible mainly to urban students.
- g. In order to meet the above-mentioned objectives, the scheme initiatives are classified into the following three key areas, for which the state will provide support, to Government and Government-Aided schools for:
  - i. Infrastructure & Software Development.
  - ii. Technical Manpower
  - iii. Facilitation and promotion

The details of Single Board Computing Devices (Technical specification at Annexure-V) supplied to existing schools covered in each taluka are mentioned below:

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<b>Sr. No.</b>	<b>Talukas in Goa</b>	<b>No. of Schools</b>	<b>No of Single Board Computing Devices supplied</b>
1.	Pernem	39	375
2.	Bardez	64	641
3.	Bicholim	35	344
4.	Sattari	29	267
5.	Tiswadi	44	440
6.	Ponda	50	500
7.	Salcete	105	1025
8.	Mormugao	12	120
9.	Quepem	21	205
10.	Sanguem	11	110
11.	Canacona	21	202
12.	Dharbandora	12	120
13.	PMU (Porvorim)	-	20
<b>Total</b>		<b>443</b>	<b>4369</b>

### Chapter 3 Scope of the Work

1. On behalf of Directorate of Technical Education (DTE), Government of Goa, ITG is entrusted for work towards Supply, Delivery and Maintenance of Robotics Hardware kits which shall be compatible with existing single Board Computing devices and Gomantak Vishwa Network (GOVIN) IDE for implementation of CARES Scheme in the State of Goa after following codal formalities across 443 no. of schools (Lead Schools & Cluster Schools) in the State of Goa.
2. The details of the schools to be covered (indicative) are mentioned below:

Sr. No.	Talukas in Goa	No. of Lead Schools	No. of Cluster Schools	No of Accessories Kits to be supplied
1.	Pernem	16	29	279
2.	Bardez	26	35	417
3.	Bicholim	19	18	282
4.	Sattari	10	16	168
5.	Tiswadi	19	27	309
6.	Ponda	22	24	336
7.	Salcete	37	38	558
8.	Mormugao	19	21	291
9.	Quepem	10	11	153
10.	Sanguem	7	5	99
11.	Canacona	10	12	156
12	Dharbandora	5	7	81
13	PMU (Porvorim)			10
Total				<b>3136</b>

3. The items (including consumables & non-consumables) to be supplied are indicated in table below and its technical specifications are summarily mentioned in the subsequent sections:

<b>I</b>	<b>Microcontroller &amp; Microcontroller Board</b>	<b>02</b>
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<b>II</b>	<b>Microcontroller Expansion Board</b>	<b>02</b>
<b>III</b>	<b>Input Components</b>	
1	IR Sensor Module	04
2	Ultrasonic Sensor Module	04
3	Sound Sensor Module	02
4	Light (Photoresistor Sensor)	02
5	Magnetic Sensor Module	02
6	Color Sensor Module	02
7	Potentiometer (10K Ohm Linear Potentiometer) Module	04
8	Push Button Switch Module	04
9	Push To Lock Switch Module	04
10	Limit Switch Module	04
11	Power Module (Inbuild-Battery)	02
12	Power Adapter	02
13	Temperature Sensor Module	01
14	Moisture Sensor Module	01
15	Solar Panel Module with Solar Panel	02
16	Vibration Sensor Module	01
17	Water Level Sensor Module	01
18	Radar (Motion Sensor) Module	01
<b>IV</b>	<b>Output Components</b>	
1	LED	02
2	LED Matrix Module with Driver chip	01
3	Seven Segment Display	01
4	OLED Display	01
5	Buzzer	02
6	Fan Module with Driver	01
7	Servo Motor	04
8	DC Motor	04

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9	Stepper Motor	02
<b>V</b>	<b>Interfacing Modules</b>	
1	Nrf WiFi	02
2	AND.NOT.OR	01
3	Sensor Base/Threshold	01
<b>VI</b>	<b>Accessories</b>	
1	Chassis	02
2	3220 points Solderless Breadboard	02
3	Wheels with rubber	06
4	Pulleys	02
5	Propellor	02
6	Jumper Connectors	50 each
7	Small size box with and without lid	03
8	Box/Ball Holder for the Chassis	02
9	USB Cable compatible for Programming the microcontroller board and charging the battery	02
10	Single strand wire suitable for breadboard connections provided	01
11	Plastic Material parts for Construction of robotic arm	01 Set
12	Insulation tapes, color- red, black-16mmX7mX0.125mm	02 each
13	Interconnecting cables	20
<b>VII</b>	<b>Tools</b>	
1	Multi-meter	01
2	Two in one Plus '+', minus '-', screwdriver	02
3	Crimping tool	01
4	Dupont 1x1 Pin Header with Female Crimp Pins for crimping	50
5	Dupont 1x1 Pin Header with male Crimp Pins for crimping	50
6	Wire stripper cum cutter	01

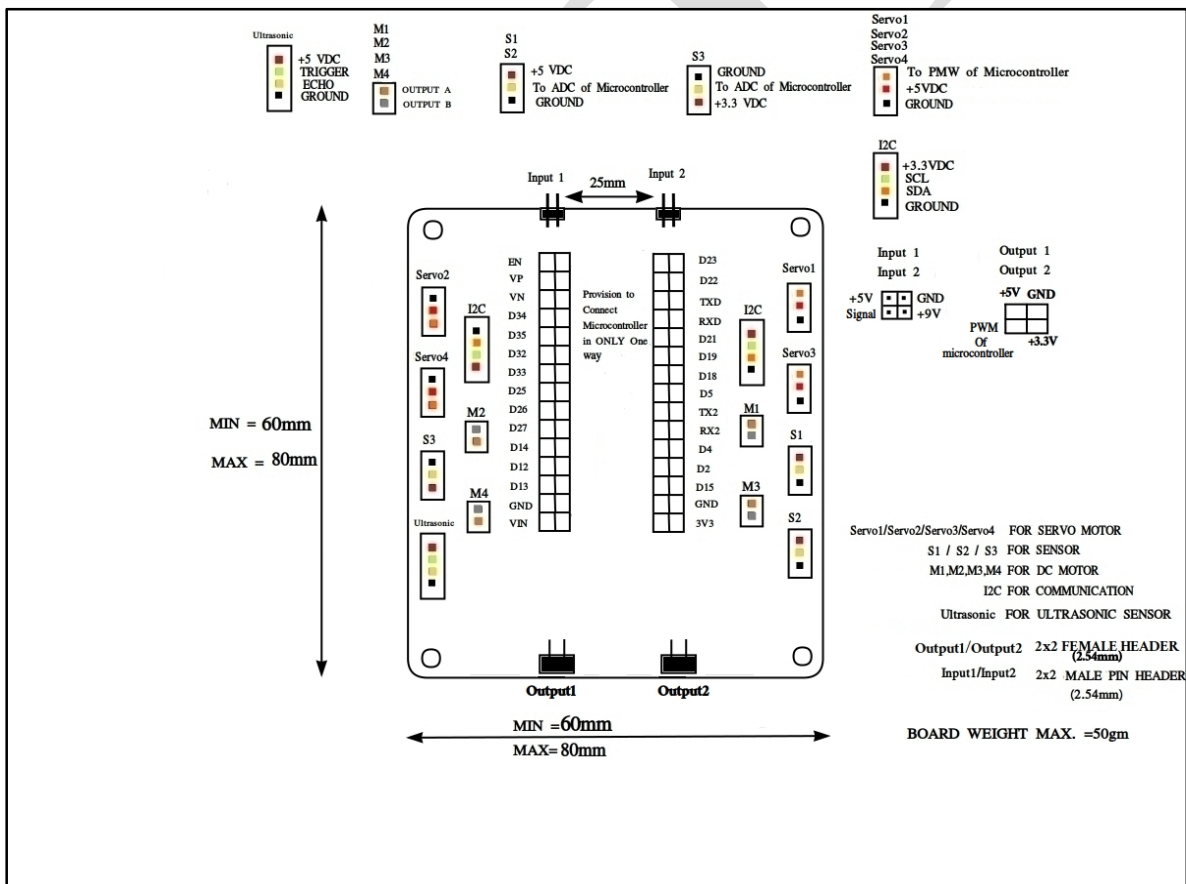
<b>VII</b>	<b>Kit Covering durable Box of plastic material for placing packaging all above items with form based partitioned within box.</b>	<b>Per kit</b>
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**Note:** Logo of “Directorate of Technical Education, Government of Goa” should be printed on Covering Box cover and should not removable with usage.

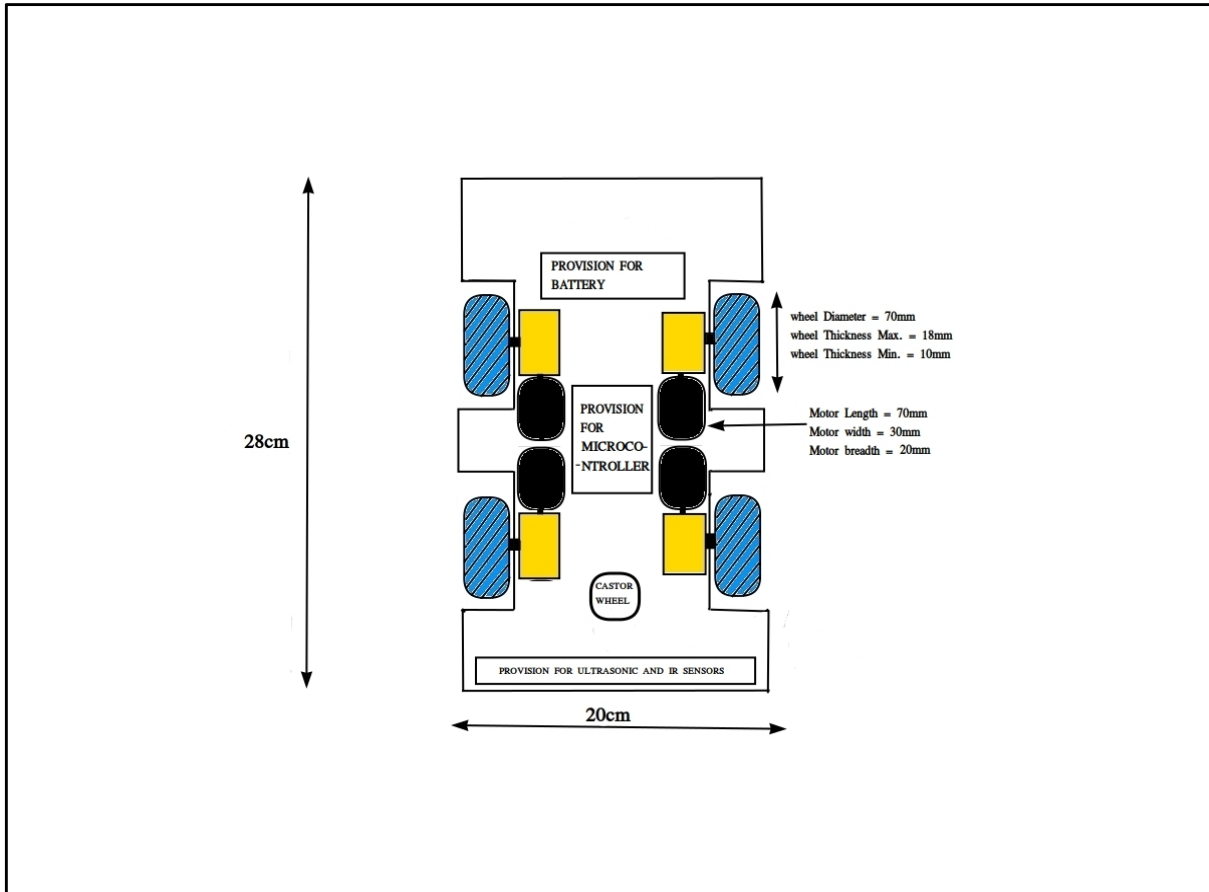
**Reference Microcontroller Board Module:** The Connectors shown should be JST connectors or equivalent which should then connect to various other modules. The board should also have other input and output ports which can be directly connected to power module or any other module (not shown in diagram)

*Note: The below diagram is for reference purpose only.*

### Chassis Layout-(1):



**Dimensional Layout-(2):**



4. The Robotics Hardware kits should be programmed using Block based and Text based programming tool. IDE as provided by PMU(CARES) at Directorate of Technical Education.
5. Hardware kit should support below mentioned tentative list of activities.
  - a. Relay Race
  - b. Angles
  - c. Marking the playground
  - d. Hurdle race
  - e. Push an Object
  - f. Speed control
  - g. Maze runner
  - h. Attendance Monitoring
  - i. Automatic lights using LDR
  - j. Silence Monitoring



- k. Smart Dustbin- contactless
  - l. Automatic opening/closing of door
  - m. Sound based lights and fans
  - n. Balcony bird detector plus feeder
6. Robotics Hardware kits components should be plug and play and modular.
  7. All the components/modules supplied under the Robotics Hardware kits should be white-labeled with “***Directorate of Technical Education, Government of Goa***”. The labels should be permanent and not removable with usage.
  8. Robotics Hardware kits must be able to demonstrate concepts of Science, Technology, Reading, Engineering, Arts & Math (STREAM).
  9. Robotics Hardware kits must avoid wrong connectivity of kit components thereby avoiding functional damages.
  10. There must not any need of soldering to make the projects using the Robotics Hardware kits.
  11. Supplier should provide User Manuals/ Brochures/ Guide-Book for ease in usage of Robotics Hardware kits.
  12. The selected agency should provide training to the stakeholders/ Master Trainers identified by DTE/ITG. The detailed plan for conduct of training will be decided based on mutually decided plan between selected agency and DTE/ITG. Maximum of two sessions of training should be imparted to the designated trainees.
  13. In case damage or malfunctioning of Robotics Hardware kits components, individual components must be replaceable and easily procurable and should be available and supplied as per requirement by the selected agency during the warranty period.
  14. Robotics Hardware kits components must be compatible/perfectly mountable on modular construction kit components that allows making of structures required for the projects.
  15. Robotics Hardware kits must contain wireless component to be able to carry our remote execution projects. Kit must be able to use any combination of six or more sensors simultaneously.
  16. All the sensor and push button modules (Input and output modules) should have max dimensions of 5 cm\*4cm.
  17. All the output modules should support plug and play setup (directly connectable to input and output ports of microcontroller expansion board and sensor/servo/motor pins whichever is applicable)

18. The Microcontroller specifications and functionalities along with several input and output components specified above are intended to execute basic tasks as well as complex tasks such as drone applications with a small form factor of the microcontroller.
19. The Microcontroller expansion / layout board is designed symmetrically to allow learners to easily plugin the provided modules and understand pin connections of each module.
20. The Microcontroller provided by the vendor should be programmable via Arduino IDE with required packages and libraries.
21. The microcontroller board architecture should necessarily be Open Source and proper Schematic should be available.
22. The solder used on the boards should be lead free.
23. The supplied kits have to be maintained in proper working condition throughout the warranty period. The supplier has to integrate its maintenance/support Module with existing online platform (<https://cares.goa.gov.in/prerna/>) which has been provided (preceding phase of the CARES Project) with logins to all schools to lodge their grievances related to service delivery. ITG and DTE shall have role-based access to this system. The portal should be able to track the status of the grievances filed in the online system with the unique ticket registration ID provided at the time of registration of the complaint. After closure of grievance if the complainant is not satisfied with the resolution, he/she can provide feedback. Further, the system should be able to monitor all the SLA of ITG for the complaints/grievances received. Using this monitoring system will be able to provide the desired report to ITG as and when asked to do so. The hosting server of the software should be within India.



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**Chapter 4 Tender Data Sheet**

(Electronic mode only)

Bids are invited by Info Tech Corporation of Goa Ltd (ITG) in two bids – Eligibility cum Technical bids and Financial bids from well-established and reputed organizations / agencies / suppliers bidders who fulfill the eligibility criteria and having sufficient infrastructure & Manpower and proven track record in the field of Testing, Supply, Delivery and Maintenance (including Training of Personnel) of the Robotics Hardware kits/ accessories compatible with existing single board computing devices available in schools and additionally also Gomantak Vishwa Network (GOVIN) IDE. Bidders who fulfill the eligibility criteria shall participate in the tender:

Sr No	Item	Particulars
1	Description of the work	Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.
2	Mode of Tendering	e-Tendering
3	E-Tendering Website	<a href="https://eprocure.goa.gov.in">https://eprocure.goa.gov.in</a>
4	Tender Document Fee	Rs. 8,000/- (Rupees Eight Thousand only)
5	Tender Processing Fee	Rs. 6,000/- (Rupees Six Thousand only)
6	Earnest Money Deposit(E.M.D.)	Rs.18,00,000/- (Rupees Eighteen Lakhs only)
7	Mode of Tender Document, Processing Fees & EMD	To be paid online through e-payment mode via NEFT/RTGS/Net Banking facility
8	Date and Time for Submission of Pre-Bid Queries	26/12/2023 upto 15:00 hrs



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9	Date and Time for Pre-Bid Meeting	29/12/2023 at 15:30 hrs
10	Date & Time for reply to Pre-bid clarification	03/01/2024 at 17:00 hrs
11	Last Date and Time for Online submission of bids	19/01/2024 upto 17:00 hrs
12	Date and Time for opening / of Eligibility cum Technical bids	22/01/2024 at 15:30 hrs
13	Date and Time for Testing towards showing Compatibility with existing single board computing and additionally also Gomantak Vishwa Network (GOVIN) IDE	Time Slots will be given to participating Bidders and allocated based on the response to the bid. <i>Note: The Bidder must mandatorily/ successfully complete this compatibility test.</i>
14	Date and Time for the Technical Presentation and submission of sample devices	Time Slots will be given to participating Bidders.
15	Date and Time for opening / of financial bids	Intimation shall be given subsequently.
16	Bid Validity	180 days

Bids not conforming to the requirements mentioned above and as laid down in the terms and conditions or non-submission of EMD online at the time of opening of the technical bid are liable to be summarily rejected. The decision of the Managing Director, Info Tech Corporation of Goa Ltd, for purpose of Eligibility & Technical Qualification / Financial Bid shall be final and binding to all the tenderers/bidders.

1. The Bidder is expected to carefully examine the specifications and terms & conditions of the Tender. Failure to furnish all information required in the Tender or submission of a bid not substantially responsive



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to the Tender in every respect will be at the Bidder's risk and may result in the rejection of the bid.

2. The Bidder should use the electronic mode of tendering using the website <https://eprocure.goa.gov.in> to submit his best possible bid /quote for the item given therein.
3. Late submission of bids will not be permitted by the e-Tendering System.
4. Last minute submission of bids should be avoided. As such, ITG will not be responsible for any failures in submission of bids.
5. Incomplete or Conditional bids will be summarily rejected.
6. For any assistance regarding participation in the e-Tender contact Support Help-Desk:
  - a. 7972854213
  - b. 7822039673
  - c.7972871944 oremail us at [e-tender.goa@gov.in](mailto:e-tender.goa@gov.in)
7. For any assistance regarding contents of tender document:

Mr. Sagar Naik Technical Assistant (IT), ITG	Mob: 7507050142
Mr. Vishwas Kavthankar Programmer Gr-I, ITG	Mob: 9881741519
Mr. Gaurav Naik Assistant Manager (Software), ITG	Mob: 9922959570

For and on behalf of Info Tech Corporation of Goa Ltd

S/d-

**Managing Director**

## **Chapter 5 Invitation for the Bids**

1. Tenderer /Bidder should submit the proposal on e-Tendering portal <https://eprocure.goa.gov.in> consists of Eligibility cum Technical Proposal and the second part will consist of Financial Proposal.
2. Bidders should go through the website <https://eprocure.goa.gov.in> for understanding the e-Tendering process and to know the process for submitting the electronic bids at the website.
3. Bidders need to have a Class-III(Signing & Encryption) category Digital signature issued by a licensed Certifying Authority (CA) for e-Tendering Portal.
4. Complete bid document terms and conditions and tender form containing all the details has been published on the website <https://eprocure.goa.gov.in>.
5. The Bids can be submitted up to date and time given in Tender Data Sheet.
6. An Earnest Money Deposit (E.M.D.) should be provided by the tenderer / bidder. The EMD has to be paid online before the last date and time for online submission of bids as given in the Tender Data Sheet. EMD in any other form will not be accepted.
7. Bids would be considered only in the prescribed form/ document. Bids not submitted in prescribed format will be summarily rejected.
8. The eligibility cum Technical Bid will be opened as per schedule in Tender Data Sheet and in the presence of bidder / designated representatives of the bidder, if present. The qualifying bids of the eligibility evaluation process shall only be considered for further evaluation of the Technical & Financial Bid. The Financial bid will be opened in the presence of the qualified bidders/ designated representatives of the bidder, if present on a separate date and time as mentioned in the Tender Data Sheet. In case there is a change in this scheduled date and/or time, then the qualified bidders (eligibility cum technical bid) will be intimated about the date and time via letter/email/phone.
9. No contractual obligation whatsoever shall arise from the Tender Document/ bidding process unless and until a formal contract is signed and executed between the tendering authority and the successful bidder.
10. ITG in consultation with Directorate of Technical Education may, at its discretion, extend the date for Submission of Bids. In such cases all rights and obligations of ITG and bidders previously subject to the deadline will thereafter be subject to the deadline as extended. Any such extensions shall be informed to bidders through corrigendum issued on e-Tendering portal.



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- 11.** The Bidder shall be deemed to have satisfied himself fully before Bidding as to the correctness and sufficiency of its Bids for the contract and price quoted in the Bid to cover all obligations under this Tender.
- 12.** It must be clearly understood that the Terms and Conditions and specifications are intended to be strictly enforced. No escalation of cost in the Tender by the Bidder will be permitted throughout the period of completion of contract.
- 13.** Bidders shall not make attempts to establish unsolicited and unauthorized contact with the Tender Inviting Authority, Tender Scrutiny Committee, Tender Accepting Authority, after the opening of the Tender and prior to the notification of the Award and any attempt by any Bidder to bring in extraneous pressures on the Tender Accepting Authority shall be sufficient reasons to disqualify the Bidder.
- 14.** Notwithstanding anything mentioned above, the Tender Inviting Authority or the Tender Accepting Authority may seek clarifications from the Bidders relating to the tenders submitted by them during the evaluation of tenders.
- 15.** Info Tech Corporation of Goa Ltd. disclaims any factual/ or any other errors in this document (the onus is purely on the individual bidders to verify such information) and the information provided herein is intended only to help the bidder to prepare a logical bid-proposal.
- 16.** The bidder is advised to visit and examine the installation sites and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid. The costs of visiting the site shall be borne by the bidder.
- 17.** The bidder representative shall be allowed entry upon consignee for such visits, only upon the express conditions that the bidder will release and indemnify the buyer and consignee against all liabilities arising out of such visit including death or injury, loss or damage to property, and any other loss, damage, costs and expenses incurred as a result of such visit.
- 18.** The bidder shall not be entitled to hold any claim against buyer for noncompliance due to lack of any kind of pre-requisite information as it is the sole responsibility of the bidder to obtain all the necessary information with regard to site, surrounding, working conditions, weather etc. on its own before submission of the bid.



## Chapter 6 Eligibility Criteria

The tenderer/ bidder must fulfill the following eligibility conditions and must also submit documentary evidence in support of fulfilling these conditions while submitting the Eligibility cum Technical Bid. The scanned copy/copies of these documents should be uploaded on the e-Tendering portal during submission of bids before its last due date/time. Failure to comply with these requirements may result in the bid being rejected.

The tender process will be evaluated in phase manner of evaluation, namely:

### 1. **Eligibility cum Technical Bid:**

- A. **Pre-Qualification Eligibility** of Bidders towards documentary evidence in support of fulfilling eligibility conditions
- B. **Compatibility & Testing** with Single Board Computing devices and additionally also Gomantak Vishwa Network (GOVIN) IDE. The testing facility/arrangement shall be facilitated by DTE/ITG. Presentation opportunity shall be given in different time-slots for those bidders who successfully pass the Compatibility & Testing criteria.

### 2. **Financial Bid Evaluation:** For Bidders qualified in Eligibility cum Technical Bid Process.

**Note: Tenderers / Bidders** should read these conditions carefully and comply strictly while submitting their Bids.

## **1A PRE-QUALIFICATION CRITERIA FOR TENDERER / BIDDER FOR THE PURPOSE OF QUOTING IN THIS TENDER**

Sr. No	Clause	Documents required
1	<b>Legal Entity:</b> The Tenderer / Bidder should be a proprietorship firm / partnership firm / registered company under Company Registration Act of India with registered offices in India and should have been in existence for minimum of 07 years.	Valid documentary proof of: - Certificate of incorporation - Registration Certificate  <b>Upload as Document A</b>



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2	<p><b>Bidder's Turnover:</b> Bidder responding to this tender document should have a minimum total turnover of average Rs. 3.00 Crores during the last 03 financial years from the date of publishing of the tender (2020-2021, 2021-2022 &amp; 2022-2023).</p>	<p>CA certificate showing the financial details. <b>Upload as Document B</b></p>
3	<p><b>Bidder's Experience:</b> The bidder must have successfully executed during the last 03 years (as on the date of bid submission), at least any one of the following.</p> <ul style="list-style-type: none"> <li>• One work comprising of carrying out supply, installation and commissioning of ICT/Computing Devices/ Coding and AI Activities for Labs / Robotics Labs for Govt. /PSUs /Govt. agencies/Govt. Aided agencies/ Educational Institutes of value not less than Rs. 7 Crores in India. <b>OR</b></li> <li>• Two works, each comprising of carrying out supply, installation and commissioning of ICT/Computing Devices/ Coding and AI Activities for Labs / Robotics Labs for Govt. /PSUs /Govt. agencies/Govt. Aided agencies/ Educational Institutes of value not less than Rs. 6 Crores in India. <b>OR</b></li> <li>• Three works, each comprising of carrying out supply, installation and commissioning of ICT/Computing Devices/ Coding and AI Activities for Labs / Robotics Labs for Govt. /PSUs /Govt. agencies/Govt. Aided agencies/ Educational Institutes of value not less than Rs.4 Crores in India.</li> </ul>	<p>Copies of the Work order along with proof of successful completion /Client certification. <b>Upload as Document C</b></p>
4	<p><b>Manufacturer Authorization Form (MAF) from Original Equipment Manufacturer (OEM): If applicable.</b> The bidder should submit an authorization from the</p>	<p><b>Valid documentary proof of:</b> The Manufacturer's original authorization certificate</p>



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	Manufacture(s) for the items quoted by them.	(MAF) as per the Annexure III.  <b>Upload as Document D</b>
5	<p><b>Goa Office, Service Center &amp; Service Engineers:</b></p> <p>The Bidder should have an office and a local service center including local Technical Repair Center in Goa or should furnish an undertaking that the same would be established within four weeks of signing the contract.</p> <p>The bidder should have at least 15 Service Engineers/ Technical Personals on its pay roll.</p>	<p><b>Valid documentary proof of:</b></p> <ul style="list-style-type: none"> <li>- Copy of Municipal / Panchayat / Trade Licence / or related document.</li> <li>- Certificate from bidder for Ownership evidence / Rent Agreement for service center and number of qualified Engineers professionals employed by the bidder with details like Name, Designation, Qualification, Mobile number, etc.</li> </ul> <p><b>Upload as Document E</b></p>
6	<p><b>Statutory Registrations</b></p> <p>-The Bidder should have in its name a valid PAN and GST Registration number in India</p>	<p>Copies of relevant Registrations</p> <p><b>Upload as Document F</b></p>
7	<p><b>Black listing/Termination:</b></p> <p>A self-certified letter by the authorized signatory of the bidder that the bidder has not been blacklisted by any Central / State Government</p>	<p>As per attached Annexure.</p> <p><b>Upload as Document G</b></p>



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**i.B COMPATIBILITY CUM TESTING & PRESENTATION FOR TENDERER / BIDDER FOR THE PURPOSE OF QUALIFYING FOR FINANCIAL BID OPENING:**

Sr. No	Clause	Compliance
8	<p><b>Compatibility/ Testing with Single Board computing devices (SBC) and GOVIN IDE:</b></p> <p>The bidder has to assess their hardware kit's compatibility/testing with existing SBC and program it using block-based and text-based GOVIN IDE. The testing facility/arrangement shall be facilitated by DTE/ITG.</p>	<ul style="list-style-type: none"> <li>• A predetermined period of time slot will be given to operate and test the hardware kit towards showing compatibility.</li> <li>• Bidders must mandatorily/complete this compatibility test before the designated Authority (PMU-CARES &amp; ITG) and shall obtain the Certification of compatibility and testing.</li> </ul>
9	<p><b>Project Execution Strategy cum Demonstration with on ground implementation</b></p> <ul style="list-style-type: none"> <li>• Bidder should submit proposed solution such as Conceptual Design &amp; Product Standards, Hardware &amp; Software solution architecture, Integration architecture and mechanism of Product, implementation (including training of Personnel) Roadmap, Delivery Schedule, software-based SLA Management and Tracking/ Maintenance &amp; Support, Service Issues, etc. Project Risks, Risk Mitigation.</li> </ul>	<ul style="list-style-type: none"> <li>• Test Reports on compatibility of Computing Hardware Devices/ Components with GOVIN IDE.</li> <li>• Valid documentation of presentation should be submitted by Bidders.</li> <li>• A predetermined period of time slot will be given for presentation to bidders.</li> </ul>



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**NOTE**

- Tenderer / Bidders are requested to upload a scanned copy of the original documents as valid documentary proof.
- Bidders must provide adequate documentary evidence in support of their claims. The final decision on the assessment of pre-qualification criteria would solely lie with the ITG.
- Any promoter/partner/director of a firm who is brought into the firm after the publication of tender notice shall not be considered for fulfilling this eligibility criterion.
- Only one bid is permitted by a single Tenderer/Bidder.
- Tenders not confirming to the requirements mentioned above and as laid down in the terms and conditions or not accompanied by EMD or without valid NSIC/MSME certificate (only manufacturer) of exemption for the tendered items in the form prescribed at the time of opening of the eligibility cum technical bid are liable to be summarily rejected.
- Payment of EMD to the tune Rs 500/- (Maximum), Tender Document Fee to the tune of Rs. 200/- (Maximum) is allowed for startups registered in Goa under Department of Information Technology, Electronics and Communication, Govt. of Goa.



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### **Chapter 7 Bidding Submission Instructions**

The paras below specify the procedures that would regulate the overall bidding process.

#### **1. Selection of vendor:**

It is a two-stage bidding process where in eligible bidders shall submit their eligibility cum technical bids and financial bids separately.

#### **2. Preparation of Bidding Document**

- a. The download of bidding document shall commence as specified in NIT and shall be stopped as specified in NIT. The prospective tenderers / bidders are permitted to download the tender document from <https://eprocure.goa.gov.in> but must pay the Tender Document Fees and Tender Processing Fee while submitting the bids to ITG.

Tenderers /Bidders are advised to study all instructions, forms, terms, requirements and other information in the tender document carefully. Submission of bid shall be deemed to have been done after careful study and examination of the tender document with full understanding of its implications. All the tenders are to be submitted in electronic mode only. The e-Tendering Portal will not accept any tender submitted after the deadline for submission of Tenders prescribed by the Purchaser.

#### **b. Earnest Money Deposit (EMD)**

- i. Every tenderer / bidder, participating in the bid must furnish the Earnest Money Deposit as specified in the Notice Inviting Tender (NIT).
- ii. The EMD shall be denominated in Indian Rupees only. No interest will be payable to the bidder on the amount of the EMD.
- iii. The tenders submitted without EMD will not be accepted. MSME/NSIC Exemptions are applicable.
- iv. **Form of EMD:** Tenderers / Bidders shall submit, an Earnest Money Deposit (E.M.D.) of Rs. 18 Lakhs (Rupees Eighteen Lakhs Only). The EMD has to be paid online before the last date and time for online submission of bids as given in the NIT. EMD in any other form will not be accepted.
- v. **Refund of EMD:** The earnest money deposit of unsuccessful tenderers/bidders shall be refunded soon after final acceptance of bid and award of contract. In case of successful tenderers/bidders, the EMD shall be returned on execution of the agreement and submission of the Performance Bank Guarantee.



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vi. **Forfeiture of EMD:** The EMD taken from the tenderer/bidder shall be forfeited in the following cases: -

- If the tenderer/bidder withdraws or modifies his bid proposal after opening of bids or during the period of bid validity or its extended period, if any; or
- In the case of a successful tenderer/bidder fails to sign the contract for any reason not attributable to the Info Tech Corporation of Goa Ltd (ITG), Goa.
- During the bid process, if a tenderer/bidder indulges in any such deliberate act which would jeopardize or unnecessarily delay the process of bid evaluation and finalization.
- During the bid process, if any information submitted by the bidder is found wrong / manipulated / hidden in the bid.
- EMD submitted in a different name other than the tenderer/bidder who is applying in the tender.
- Tenders without valid E.M.D. at the time of opening of the technical bid will be rejected.

### **3. Clarification and Amendment of Bidding Document**

#### **a. Pre-bid queries:**

- i. Interested tenderer/bidder may submit their pre-bid queries in specified format available at Annexure-VI through email at [naik-sagar-itg@goa.gov.in](mailto:naik-sagar-itg@goa.gov.in) / [vishwas.kavthankar@nic.in](mailto:vishwas.kavthankar@nic.in) / [gaurav.naik@gov.in](mailto:gaurav.naik@gov.in) as per the time schedule prescribed in the NIT.
- ii. As a result of pre-bid queries, if modifications in the bidding document, specifications of goods and/ or services are considered necessary, they may be done by issuing a addendum/ corrigendum and the corrigendum/ addendum will be placed on all the websites as specified in the NIT.
- iii. The tendering authority reserves the right not to respond to any/all queries raised or clarifications sought if, in their opinion and at their sole discretion, they consider that it would be inappropriate or do not find any merit in it.

#### **b. Amendment of Bidding Document**

- i. At any time prior to the deadline for submission of the Bids, the tendering authority may amend the Bidding document by issuing Corrigendum/ Addendum.





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- ii. Any Corrigendum/ Addendum issued shall be a part of the Bidding document.
- iii. To give prospective Tenderers / Bidders reasonable time in which to take a Corrigendum/ Addendum into account in preparing their Bids, the tendering authority may, at its discretion, extend the deadline for the submission of the Bids.
- iv. Any change in date of submission and opening of bids would be published/communicated in appropriate manner including the websites mentioned in the NIT.

**4. Submission and Opening of Bids:**

- a. The tenderer / bidder is responsible for all costs incurred in connection with participation in this process, including, but not limited to, costs incurred in conduct of informative and other diligence activities, participation in meetings/discussions/presentations, preparation of proposal, in providing any additional information required by ITG to facilitate the evaluation process, and in negotiating a definitive contract or all such activities related to the bid process. Info Tech Corporation of Goa Ltd will be in no case responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
- b. **Language of Bids:** The Bid prepared & submitted by the Tenderer / Bidder and all subsequent correspondence and documents related to the bid and as submitted by the tenderer/bidder, shall be written only in English language. Also, any printed literature furnished by the Tenderer/Bidder written in other language (other than English/ Hindi) must be accompanied by an English/ Hindi translation in which case, for purposes of interpretation of the bid, the appropriate translation by the Purchaser shall govern.
- c. **Documents comprising the Bid**
  - i. The tenderer/bidder should ensure that all the required documents, as mentioned in the bidding document are uploaded.
  - ii. Wherever applicable, the bidding form must be completed without any alterations to its format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.
  - iii. The Tenderer/Bidder shall submit the Price Schedules/ Commercial/ Financial bid for Goods and Related Services, according to their origin as appropriate, using the forms furnished in the bid.
  - iv. The contents of bid are listed below.



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**I. Eligibility cum Technical Bid:**

- a) The Eligibility cum Technical Proposal should contain documents as listed in various Chapters & Annexure of this bid document.
- b) Prices must not be indicated in the Technical Bid and must be quoted only in the Financial Bid only.

**II. Financial Bid:**

- a) The Tenderer/Bidder shall indicate price it proposes to provide under the contract only in the prescribed format. Prices should be shown separately showing the taxes as detailed in Tender Document. The price components furnished by the Tenderer/Bidder in accordance with format provided in this bid document will be solely for the purpose of facilitating the comparison of bids by Purchaser and will not in any way limit the Purchaser's right to contract on any of the terms offered.
- b) Prices quoted in the bid must be firm and final and shall not be subject to any upward modifications, on any account whatsoever. However, Purchaser reserves the right to negotiate the prices quoted in the bid to effect downward modification, if required.
- c) The Contract price would be inclusive of all applicable taxes, duties, charges and levies, unless specified otherwise. If there would be any increase in the taxes, levies, duties, fee and other charges during tenure of the contract, the financial burden of the same shall be borne by the tenderer/ bidder.
- d. **Alternative Bids:** Alternative bids shall not be considered at all.
- e. **Bid prices and Discounts:**
  - i. All the prices should be quoted only in Indian Rupees (INR) currency.
  - ii. All rates quoted must be shown in the Format for Price Quotation only. ITG will not pay any cartage or transportation charges
  - iii. The prices and discounts quoted by the Tenderer/Bidder in the Price Schedule/ Commercial/Financial Bid shall conform to the requirements specified therein.
  - iv. The price to be quoted in the Bid Submission Sheet shall be the total price of the Bid including any discounts offered.



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v. The disaggregation of price components is required solely for the purpose of facilitating the comparison of Bids by the competent authority. This shall not in any way limit the competent authority's right to contract on any of the terms offered: -

- For Goods offered from within/ outside the country.
- For Related Services whenever such Related Services are specified in the bidding document.

vi. Unless otherwise indicated in the bid document, prices quoted shall correspond to 100% of the quantities specified. The decision of the Managing Director, InfoTech Corporation of Goa Ltd, will be final in this regard.

**f. Validity of Bids:**

- i. Bids shall remain valid for 180 days from the date of bid opening as prescribed by Tendering Authority unless explicitly specified. A Bid valid for a shorter period shall be rejected and treated as nonresponsive.
- ii. In exceptional circumstances, the Tendering Authority may solicit the Tenderer's/Bidder's consent to an extension of the period of validity with mutual agreement. The request and the responses thereto shall be made in writing (letter/e-mail).

**g. Deadline for submission of Bids:**

- i. Bids must be submitted on the website <http://eprocure.goa.gov.in> no later than the date and time indicated in the NIT.
- ii. Normally, the date of submission and opening of bids would not be extended. However, in exceptional circumstances or when the bidding document is required to be substantially modified as a result of pre-bid queries and the time with the prospective tenderers/bidders for preparation of bids appears insufficient, the date may be extended by the tendering authority and due publicity to such change in date of opening of bids would be given. In such cases, it would be ensured that after issue of corrigendum, reasonable time is available to the tenderers/bidders to prepare and submit their bids. Any change in date of submission and opening of bids would also be placed on the respective websites immediately. However, if the modifications in bidding document, specifications of goods and service are substantial, fresh publication of original bid inquiry may also be issued.



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iii. The tendering authority may, at its discretion, extend the deadline for the submission of bids by amending the bidding document, in which case all rights and obligations of the tendering authority and tenderers/bidders previously subject to the deadline shall thereafter wouldbe subject to the deadline as extended.

**h. Delayed / Late Bids:**

- i. Bids must be submitted in electronic mode only. The e-Tendering portal will not accept any bid submitted after the deadline as indicated in the NIT.
- ii. Towards the end of the deadline time, the e-Tendering portal server is likely to get jammed due to the heavy flow of traffic on the server. Hence, all the Tenderers/Bidders participating in the tender are requested to submit the bids well in advance before the deadline time period as indicated in the NIT.

i. **Withdrawal, Substitution, and Modification of Bids:** A Tenderer/Bidder may withdraw, substitute, or modify its bid after it has been submitted before the deadline prescribed for submission of bids as per the e-tendering process.

**j. Bid Opening:**

- i. The Tendering Authority / designated Tender Evaluation Committee shall conduct the bid opening at the date and time specified in the NIT.
- ii. All the bids received up to the specified time and date shall be opened by the Tendering Authority /designated Tender Evaluation Committee after entering their corresponding credentials (login id and digital signatures) in the website <https://eprocure.goa.gov.in>
- iv. The tendering authority shall download all the documents submitted by the tenderer / bidder and place the same in the presence of bidder or his/her authorized representative who choose to attend at the date and time specified in the NIT. The representatives of the tenderers/bidders are advised to carry the identity card or a letter of authority from the tendering firms to identify their bonafides for attending the opening of the proposal. The bidders representatives who are present shall sign the attendance register present.
- v. The eligibility cum technical bids shall be opened and all the tenderers/bidders who are in the race (participated) of tender shall be notified to the bidders present. All the bids shall be downloaded one at a time, and the following read out and recorded: the name of the bidder, the submission or non submission of the Fees/EMD.

## **Chapter 8 Bid Evaluation**

### **1. Guiding Principle for Evaluation of Bids**

- i. The tendering authority shall determine to its satisfaction whether the tenderers/bidders that is selected as having submitted the best and responsive bid is qualified to perform the Contract satisfactorily.
- ii. The determination shall be based upon an examination of the documentary evidence of the tenderer's/bidder's qualifications submitted by the tenderer/bidder.
- iii. An affirmative determination shall be a prerequisite for award of the Contract to the tenderer/bidder. A negative determination shall result in disqualification of the bid, in which event the tendering authority shall proceed to the next bid to make a similar determination of that tenderer's/bidder's capabilities to perform satisfactorily.
- iv. The tendering authority / designated Tender Evaluation Committee, in observance of best practices, shall maintain the bid evaluation process strictly confidential as per the details below.
  - Reject any attempts or pressures to distort the outcome of the evaluation, including fraud and corruption.
  - Strictly apply only and all of the evaluation and qualification criteria specified in the bidding document.

### **2. Confidentiality**

- i. Information relating to the examination, evaluation, comparison, and post qualification of bids, and recommendation of contract award, shall not be disclosed to tenderers/bidders or any other persons not officially concerned with such process until publication of the Contract award.
- ii. All materials submitted by the tenderer/bidder becomes the property of Info Tech Corporation of Goa Ltd and may be returned at its sole discretion, provided, any materials which are identified as "Proprietary and Confidential Material of Tenderer/Bidder" shall remain the property of such tenderer/bidder and the ITG will maintain confidentiality of such materials.
- iii. Any attempt by a tenderer/bidder to influence the tendering authority or other officials in the examination, evaluation, comparison, and post qualification of the bids or Contract award decisions may result in the rejection of his/her bid.



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- iv. From the time of bid opening to the time of Contract award, if any tenderer/bidder wishes to contact the tendering authority on any matter related to the bidding process, he is allowed to do so only in writing.

### **3. Clarification of Bids**

- i. To assist in the examination, evaluation, comparison and post qualification of the bids, the tendering authority may, at its discretion, ask any tenderer/bidder for a clarification of his/her bid. The tendering authority's request for clarification and the response shall be in writing or email.
- ii. Any clarification submitted by a tenderer/bidder with regard to his/her bid that is not in response to a request by the tendering authority shall not be considered.
- iii. No change in the prices or substance of the bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the tendering authority in the evaluation of the Commercial/ Financial Bids if any.

### **4. Determination of Responsiveness**

- i. The tendering authority's determination of the responsiveness of a bid would be based on the contents of the bid itself.
- ii. A responsive bid would be the one that meets the requirements of the bidding document without material deviation, reservation, or omission where: -
  - "Deviation" is a departure from the requirements specified in the bidding document;
  - "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the bidding document; and
  - "Omission" is the failure to submit part or all of the information or documentation required in the bidding document.
- iii. A material deviation, reservation, or omission is one that, if accepted, would: -
  - affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the bidding document; or
  - limits in any substantial way, inconsistent with the bidding document, the tendering authority's rights or the bidder's obligations under the proposed Contract; or

- if rectified, would unfairly affect the competitive position of other tenderers/bidders presenting substantially responsive bids.
- iv. The tendering authority shall examine the technical aspects of the bid in particular, to confirm that all requirements of bidding document have been met without any material deviation or reservation.
- v. The tendering authority shall compare all responsive bids to determine the best bids, in accordance with the provisions of this bidding document.

#### **5. Non-material non-conformities**

- i. Provided that a bid is responsive, the tendering authority may waive any non-conformity in the bid that does not constitute a material deviation, reservation or omission.
- ii. Provided that a bid is responsive, the tendering authority may request that the tenderer/bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the bid. Failure of the tenderer/bidder to comply with the request may result in the rejection of its bid.

#### **6. Evaluation of Bids**

- i. The Bid Evaluation Committee constituted by the ITG shall evaluate the bids.
- ii. The Bid Evaluation Committee shall evaluate the Tender Document Fee, Tender Processing Fee, EMD and pre-qualification criteria, Compatibility-cum-Testing, Presentation and Commercial Proposal.
- iii. The tendering authority shall evaluate each bid that has been determined, up to the stage of the evaluation, to be responsive.
- iv. To evaluate a bid, the tendering authority shall use all the criteria and methodologies defined in this bidding document.
- v. To evaluate a bid, the tendering authority shall consider the following if any:
  - The bid price as quoted in accordance with bidding document.
  - Price adjustment for correction of arithmetic errors in accordance with bidding document.



## 7. Evaluation of Technical Bids

- i. The initial eligibility cum technical evaluation shall be completed by the Tendering Authority / designated Tender Evaluation Committee as early as possible after opening of technical bids.
- ii. The Tendering Authority / designated Tender Evaluation Committee will evaluate the Eligibility cum Technical bids of the tenderers/Bidders as per the criteria & requirements specified in this document. A detailed evaluation of the bids shall be carried out in order to determine whether the tenderers/bidders are competent enough and whether the technical aspects are substantially responsive to the requirements set forth in the Tender Document. Also Bidder has to undergo Compatibility & Testing with Single Board Computing devices and additionally also Gomantak Vishwa Network (GOVIN) IDE. The testing facility/arrangement shall be facilitated by DTE/ITG. Presentation opportunity will be given in different time-slots for those bidders who successfully pass the Compatibility & Testing criteria. Bidder has to score minimum 70 marks out of 100 marks (criteria specified in following sections) for qualifying for the financial bid opening.
- iii. The tenderer/Bidder who have qualified the Eligibility criteria's and matching the technical specifications set in the tender will have to provide the technical presentation to the Tendering Authority / designated Tender Evaluation Committee.
- iv. The Tenderer / Bidder has to submit two sample devices to the Tendering Authority / designated Tender Evaluation Committee which the bidder intends to supply to the schools under this tender during the technical presentation. These devices shall remain in custody of ITG and not be returned.
- v. Based on the Technical Presentation marks will be provided to the tender /bidders quoted product. The criteria's & marks for the allocation are cited below:

**Table – Technical Evaluation**

S.N.	Criteria	Basis of Valuation	Maximum Marks	Supporting documents
<b>A*</b>	<b>Commercial Professional Strength of the Bidder</b>		<b>35</b>	
<b>A1</b>	Turnover of the bidder in last 03 years from IT/ITES Business.	>=3.00 Cr to <4.00 Cr <b>:= 10 marks</b> >=4.00 Cr to <5.00 Cr <b>:= 15 marks</b> >=5.00 Cr to <7.00 Cr <b>:= 20 marks</b>	25	CA Turnover Certificate.



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		>=7.00 Cr: := <b>25 marks</b>		
<b>A2</b>	Any Certification of the product supplied by Bidder.	2 Certifications: := <b>5 Marks</b>  > 2 Certifications: := <b>10 Marks</b>	10	Copy of the valid Certificate
<b>B*</b>	<b>Experience of the Bidder</b>		<b>25</b>	
<b>B1</b>	Experience in the supply, installation and commissioning of ICT/Computing Devices/ Coding and AI Activities for Labs / Robotics Labs for Govt. /PSUs /Govt. Aided agencies/ Educational Institutes	≥ 500 to <1000 := <b>10 Marks</b> ≥1000 to <1500 := <b>15 Marks</b> ≥ 1500 to <2000 := <b>20 Marks</b> ≥2000 := <b>25 Marks</b>	25	Copy of Work Orders and Copy of Satisfaction or completion certificate from the Client. In case of project ongoing then partial completion certificate.
<b>C</b>	<b>Technical Presentation</b>		<b>40</b>	
<b>C1</b>	Presentation	<ul style="list-style-type: none"> <li>• Conceptual Design &amp; Product Standards</li> <li>• Hardware &amp; Software solution architecture</li> <li>• Integration architecture and mechanism of Product</li> <li>• Implementation (including training of Personnel) Roadmap</li> <li>• Delivery Schedule</li> <li>• Software-based SLA Management and Tracking/ Maintenance &amp; Support</li> <li>• Service Issues, etc. Project Risks, Risk Mitigation.</li> </ul>	40	ITG will inform the presentation timeline to qualified bidders



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		<ul style="list-style-type: none"><li>• Test Reports on compatibility of Computing Hardware Devices/ Components with GOVIN IDE.</li></ul>		
<b>Grand Total</b>			<b>100</b>	
<b>* Supporting documents for evaluation of above scoring required to be scanned and uploaded as part of Technical Bid by the Bidder.</b>				

**Note:**

- Proposal Presentations: The Bid Evaluation and Technical Committee will invite each qualified Bidder to make a presentation to ITG as per their discretion.
- At any time during the Bid evaluation process, the Committee may seek oral / written clarifications from the Bidders. The Committee may seek inputs from their professional and technical experts in the evaluation process.
- The Committee reserves the right to do a reference check of the past experience stated by the Bidder. Any feedback received during the reference check shall be taken into account during the technical evaluation process.
- The qualified Bidders in Eligibility cum Technical bid process will be informed of the date and venue of the opening of the Financial Proposals through e-Tendering portal.
- Only those Bidders who have secured/satisfied all the pre-qualification criteria (Eligibility cum Technical Bid) and have secured Score of **70 marks or above out of 100** marks in the Technical cum Eligibility bid process shall be declared as qualified for evaluation of their 'Financial Bid'. Bidders who have secured less than 70 for Technical Score shall be rejected.

**8. Evaluation Financial Bid**

- a. The bidders shall submit their quote as per the format provided in the tender document.
- b. Financial Quotes: The Bid consist of following items
  - a. Table F2 (Sr. No. A.1): Supply, Delivery and Maintenance of Robotics Hardware Kits with Three Year Warranty and the same will be considered for the arrival of Lowest (L1) value.



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- b. Table F4: Quotes for maintenance for the period of 1<sup>st</sup> consecutive year and 2<sup>nd</sup> consecutive year after the end of three years of warranty period.
- c. Table F3: Supply of Consumables items during the warranty/maintenance period.
- c. The Financial proposals shall be evaluated on the basis of Consolidated Cost Summary (Inclusive of all Taxes) offered by the bidder against “Supply, Delivery and Maintenance of Equipment’s for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa”. Any monetary figure in decimal shall be rounded off to the nearest INR.
- d. The financial bids of all qualified bidders in Eligibility cum Technical evaluation shall be opened. Financial bids, not substantially responsive or incomplete in any manner, are liable to be disqualified. The bidder with lowest bid value may be declared as Lowest Bidder (L1) and the next consecutive lowest bidder will be marked as Second Lowest (L2) Bidder. The work order will be placed on the lowest (L1) bidder. In case the financial bid value of Bidders Matches then bidder with highest score in Technical cum Eligibility Criteria will be considered.
- e. If the L1 bidder withdraws its bid during the validity period of bid or is unable to execute the work order after work order has been accepted, the EMD along with PBG will be forfeited as the case may be. And the bidder may be liable for Blacklisting at the prerogative of ITG/DTE.
- f. If the L1 bidder withdraws its bids or is unable to execute its work order, the Second Lowest(L2) bidder will be placed with work order provided the L2 bidder willingly matches its bid with the lowest bidder (L1) for all/individual items including negotiated price(s)/gross total price of the financial bid (L1) in order to be the successful bidder.
- g. Subsequently, if the L2 bidder withdraws its bid during the validity period or is unable to execute the work order after work order has been accepted, the EMD along with PBG will be forfeited as the case may be. And the bidder may be liable for Blacklisting at the prerogative of ITG/DTE. The tender process may be treated as Cancelled.

### **9. Correction of Errors Evaluation of Financial Bids**

- a. Conditional bids are liable to be rejected. However, financial implication of conditions may be worked out and added to the quoted price.
- b. The evaluation shall include all costs and all taxes and duties applicable to the bidder as per law of the Central / State Government/ Local Authorities.



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- c. Price Bids determined to be substantially responsive will be checked by the Tender Evaluation Committee for any errors. Arithmetic errors will be rectified on the following basis. If there is a discrepancy between the unit rate and the total cost that is obtained by multiplying the unit rate and quantity, the unit rate multiplied by quantity shall prevail and the total cost will be corrected. If there is a discrepancy between the total bid amount and the sum of various costs, the sum of the various costs shall prevail and the total bid amount will be corrected.
- d. The amount stated in the Form of Financial Bid will be adjusted by the Tendering Authority / designated Tender Evaluation Committee in accordance with the above-mentioned point for the correction of errors and, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, the bid will be rejected, and the EMD shall be forfeited.

**10. Tendering authority's Right to Accept/ Reject any or all of the Bids**

- b. The tendering authority reserves the right to accept or reject any bid, and to annul (cancel) the bidding process and reject all Bids at any time prior to Contract award, without thereby incurring any liability to the tenderer(s)/bidder(s) or any obligation to inform the affected tenderer(s)/bidder(s) of the grounds for the Purchasers action.
- c. The Purchaser/ Biding Authority reserves the right to accept any Bid not necessarily the lowest, reject any Bid without assigning any reason.

## **Chapter 9 Disqualification of Bids**

1. Tendering Authority may in its sole discretion and at any time during the processing of Bid, disqualify any tenderer/bidder from the Bidding process if the tenderer/bidder: -
  - a. Has submitted the required Bid documents after the prescribed date and time of submission of Bid.
  - b. Submits Bid document, which is not accompanied by required documentation and Earnest Money Deposit (EMD) or is non-responsive.
  - c. Has not submitted the bid in accordance with the bid document.
  - d. Does not meet the minimum Eligibility Criteria as mentioned in the bid document.
  - e. Mislead or made false representations in the forms, statements and attachments submitted in proof of the eligibility requirements.
  - f. Is found to have a record of poor performance such as abandoning works, not properly completing the contract, inordinately delaying completion, being involved in litigation or financial failures, etc.
  - g. Failed to provide clarifications related thereto, when sought.
  - h. Has submitted more than one bid. This will cause disqualification of all bids submitted by such bidder except the last Bid received.
  - i. Has imposed conditions in his bid.
  - j. During validity of the bid or its extended period, if any, increases his quoted prices.
2. Applicants who are found to canvass, influence or attempt to influence in any manner the qualification or selection process, including without limitation, by offering bribes or other illegal gratification, shall be disqualified from the process at any stage.
3. A Bid not valid for at least 180 days shall be considered as non-responsive and would be disqualified.



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### **Chapter 10 Performance Security**

1. Successful tenderer/bidder will have to execute an agreement on a Non-Judicial Stamp paper of appropriate value within a period of 20 days of date of issue of purchase order.
2. The successful Bidder whose Robotics Hardware Kits is being supplied shall deposit an amount equivalent to **5%** of the total value of their accepted tender as Performance Security Deposit within **07** days from the date of purchase order, which will be valid beyond three months from the end of warranty period of the project.
3. The Performance Security Deposit shall be refunded after the expiry of the contract period provided that there is no breach of contract on the part of the supplier.
4. No interest will be paid by the purchaser on the EMD & Performance Security Deposit.
5. In the event of the bidder being unable to service the contract for whatever reason, ITG would revoke the Performance Security amount. Notwithstanding and without prejudice to any rights whatsoever ITG under the contract in the matter, the proceeds of the Performance security amount shall be payable to ITG as compensation for any loss resulting from the tenderers/bidder's failure to complete its obligations under the Contract. ITG shall notify the bidder in writing of the exercise of its right to receive such compensation within 30 days, indicating the contractual obligation(s) for which the bidder is in default.
6. Failure of the bidder to comply with the requirements shall constitute sufficient grounds for the annulment of the award and forfeiture of the Performance Security.
7. **Forfeiture of Security Deposit:**
  - a. Security amount in full or part may be forfeited in the following cases: -
    - When the terms and conditions of contract is breached.
    - When the tenderer/bidder fails to make complete supply or maintenance service satisfactorily.
    - Notice of reasonable time will be given in case of forfeiture of security deposit. The decision of the Purchaser in this regard shall be final.
    - The expenses of completing and stamping the agreement shall be paid by the Tenderer/Bidder.
  - b. Failure of the successful tenderers/bidders to comply with the requirement of the contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Performance Security, in this case the purchaser may award the contract to the other evaluated bidders or fresh bids may be invited.



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- 8. Release of Performance Security:** The performance security would be released only after completion & warranty of project period.

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## **Chapter 11 Liquidated Damages**

1. If the Successful contractor fails to complete the supply of the items within the scheduled period, then ITG shall impose a penalty on the Successful bidder at 0.1% per day maximum up to 5% from the Performance Security Deposit. The penalty will be levied on the cost of the material for which there is a delay in supply in accordance with the delivery schedule slot that remained to be supplied for each day of delay after the due date and the same shall be deducted (if required) from the Successful contractor's bill after delivery.
2. The Successful contractor cannot refuse to pay the penalty to ITG. Refusal shall be violation of the Terms & Conditions of this tender, and may lead to blacklisting of the bidder. However decision of Managing Director (ITG) will be final in this regard.
3. If the Successful contractor requires an extension of time in completion of work on account of occurrence of any hindrance, he/she shall apply in writing to the authority, which has placed the purchase order, for the same immediately on occurrence of the hindrance but not after the stipulated date of completion of work order.
4. Date of supply & installation period may be extended with or without liquidated damages if the delay is on account of hindrances beyond the control of the bidder. The decision of the Managing Director, InfoTech Corporation of Goa Ltd, will be final in this regard.
5. The payment or deduction of such damages shall not relieve the Contractor from his obligation to complete the Works or from any other of his duties obligations or responsibilities under the contract.



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**Chapter 12 General Terms and Conditions**

**Note:** Bidders must read these conditions carefully and comply strictly while sending/ submitting their Bids.

- a.** Any Change in the constitution of the company, etc. shall be notified forth with by the contractor in writing to the purchaser and such change shall not relieve any former member of the company, etc., from any liability under the contract.
- b.** The approved supplier shall be deemed to have carefully examined the conditions, specifications and make etc., of the goods to be supplied. If he has any doubts as to the meaning of any portion of these conditions or of the specification, drawing, etc., the bidder shall, before signing the contract, refer the same to the Purchaser and get clarifications.
- c.** The Contractor(s) shall deliver the equipment's at the respective notified Schools and necessary delivery receipt duly certified by the school authorities should be obtained by the contractor and in turn should be submitted to the ITG.
- d.** The Contractor(s) shall give Onsite comprehensive warranty and support for the equipment's covering the period of warranty commencing from the date of delivery of the equipment's by the contractor, against failure of the equipment's or part thereof.
- e. Specifications, Eligible goods and services:**
  - a.** All articles supplied shall strictly conform to the specifications, trademark laid down in the Bid form and wherever articles have been required according to ISI/ ISO/ other specifications/ certifications, those articles should conform strictly to those specifications/ certifications.
  - b.** In case one or some articles are discontinued, the same shall be replaced with equivalent or higher specification at the same price as quoted. The decision of the Purchaser whether the Goods are equivalent or of higher specifications shall be final and binding on the Tenderer/Bidder.
  - c.** The supply shall be of very best quality and description. The decision of the purchaser whether the articles supplied conforms to the specifications shall be final and binding.
  - d.** The Goods must conform to the highest quality and standard. The Tenderer/Bidder as well as the Manufacturer shall guarantee that the Goods delivered to the Purchaser/Indenter are brand new. All Goods must be supplied with their original and complete printed documentation wherever necessary.



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- e. Consistency must be maintained for the entire lot of the Goods ordered. All the required quantity of items in schedule of requirement must be of the same brand model number for the entire lot.
- f. The Tenderer/Bidder must have spares depot in India having adequate inventory of the equipment being quoted for providing the necessary spares within next business day in order to rectify any kind of fault reported.

**f. Inspection:**

- a. The Purchaser or his duly authorized representatives shall at all reasonable time have access to the suppliers premises and shall have the power at all reasonable time to inspect and examine the materials to confirm their conformity to the Contract specifications at no extra cost to the purchaser.
- b. The inspections and tests may be conducted at the premises of the Bidder and/or at point of delivery and/or at the final destination. During this inspection, all reasonable facilities and assistance, including access to manuals, production data, etc shall be furnished to the inspection authorities at no charge to the Purchaser.
- c. Should any inspected or tested goods fail to conform to the specifications, the Purchaser/Indenter or the Purchaser may reject the goods and the Bidder shall either replace the rejected goods or make alterations necessary to meet specification requirements free of cost to the Purchaser/Indenter.
- d. The Purchaser/Indenters right to inspect test and, where necessary, reject the Goods shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser/Indenter /Purchaser or its representative prior to the shipment.
- e. The bidder shall furnish complete address of the premises of his office, go-down and workshop where inspection can be made together with name and address of the person who is to be contacted for the purpose.
- f. For the testing & inspection purpose the contractor should handover to the office of ITG a minimum of atleast one equipment from the supply lot of the approved brand/model.
- g. Additionally, the post-delivery test & inspection of the equipments on random basis shall/may be carried out by the officials of ITG at the delivery/distribution centers or in any other manner as specified by Managing Director.
- h. Cost of any such inspection if any should be borne by Contractor.



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**g. Rejection:**

- a. Articles not approved during inspection or testing shall be rejected and will have to be replaced by the bidder at his own cost within the time fixed by the Purchaser.
- b. If, however, if such replacement either in whole or in part, is not considered feasible, the Purchaser after giving an opportunity to the bidder of being heard shall for reasons to be recorded, deduct a suitable amount from the approved rates. The deduction so made shall be final. The rejected articles shall be removed by the bidder within 3 days of intimation of rejection, after which the Purchaser shall not be responsible for any loss, shortage or damage and shall have the right to dispose of such articles as deemed fit, at the bidders risk and on his account.
- h. The manufacturer /bidder shall be responsible for the proper packing so as to avoid damage under normal conditions of transport by sea, rail and road or air and delivery of the material in the good condition to the consignee at destination. In the event of any loss, damage, breakage or leakage or any shortage the bidder shall be liable to make good such loss and shortage found at the checking/ inspection of the material by the consignee. No extra cost on such account shall be admissible.
- i. The Contract for the supply can be repudiated at any time by the Purchaser, if the supplies are not made to his satisfaction after giving an opportunity to the tenderer/bidder of being heard and recording the reasons for repudiation.
- j. The bidders may visit the sites and obtain additional information at their own cost and responsibility.

**k. Delivery & Installation:**

- a) The tenderer/bidder whose Bid is accepted shall arrange the supply all ordered Robotics Hardware Kits as per specifications mentioned in chapter “**Technical Specifications**” and within time period defined in chapter “**Time Schedule**”. The supplier should keep records of 1. Delivery challans and 2. Inspection reports (if any) all three as separate entity in triplicate duly signed by appropriate authority for record purpose of all the hardware supplied under the project. The formats for keeping these records shall be provided by ITG/DTE to successful bidder/supplier.



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- b) The successful bidder/contractor shall assist in keeping the dead-stock records in co-ordination with Schools/DTE/ITG.
- c) Transportation: All goods must be sent freight paid.

- l. Delay in the contractor's performance:** Delivery of the goods and performance of the services shall be made by the Tenderer/Bidder in accordance with the time schedule specified in this Scope of Work. If any time during performance of the contract, the contractor should encounter conditions impeding timely delivery of the goods and performance of services, the contractor shall promptly notify the Purchaser/Indenter and the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the contractor's notice, the Purchaser/Indenter in consultation with the Purchaser shall evaluate the situation and may, at its discretion, extend the contractor's time for performance with or without a penalty. The decision of the purchaser in this matter shall be final.
- m. Completeness of the Contract:** The contract will be deemed as incomplete if any computing device & its accessories or any documentation / media relating thereto is not delivered, or is delivered but not operational or not acceptable to the Purchaser/Indenter after acceptance testing / examination. In such an event, the supply and installation will be termed as incomplete and it will not be accepted and the warranty period will not commence. The Warranty period will commence only after the accessories are handed over and the same is duly acknowledged by the school authorities.
- n. Insurance:** The goods will be delivered at the FOR destination in perfect condition. The supplier, if he so desires may insure the valuable goods against loss by theft, destruction or damage, by fire, flood, under exposure to whether or otherwise viz., (war, rebellion, riot, etc.) The insurance charges will be borne by the supplier and Biding Authority will not pay such charges if incurred.
- o. Warranty/ Guarantee Clause:**
  - a. The Contractor(s) shall give Onsite comprehensive warranty (03 years) and support for the equipment's(Including All parts / Consumables/ Non-Consumables/Battery/CMOS Battery if any) covering the period of warranty commencing from the date of Delivery of the equipment's by the



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contractor, against failure of the equipment's or part there of covering the period of warranty (based on item selected) commencing from the date of delivery of the equipment's by the contractor and that notwithstanding the fact that the purchaser may have inspected and/or approved the said goods/stores/article, if during the aforesaid period of warranty on Hardware. The said goods/ stores/articles be discovered not to conform to the description and quality aforesaid, the purchaser will be entitled to reject the said goods/ stores/ articles thereof as may be discovered, on such rejection the goods/articles/stores will be at the seller's risk and all the provisions relating to rejection of goods etc., shall apply. The tenderer/bidder shall if so called upon to do, replace the goods etc., thereof as is rejection by ITG, the bidder shall pay such damage as may arise by the reason of the breach of the condition herein contained. Nothing herein contained shall prejudice any other right of the Purchaser in that behalf under this contract or otherwise.

- b. Further, guarantee as mention in clause (a) above the tenderer/bidder shall during the guarantee period replace the parts if any and remove any manufacturing defect if found during the above said period so as to make Equipment operative. The bidder shall also replace the Equipment in case it is found defective which cannot be put to operation due to manufacturing defect, etc.
- c. All the equipment's supplied by the Contractor shall be guaranteed irrespective of the fact whether they have been manufactured by the Contractor(s) or not.
- d. The Successful contractor has to provide onsite comprehensive warranty and support. The support will be for hardware as well as software support. The response time to resolve the issues will be within 48 hours. If the same is not resolved within the stipulated time a penalty of Rs 500/- per device shall be imposed.
- e. Also, Tenderer/Bidders shall provide escalation matrix details to be followed. The bidder in consultation with OEM shall provide timely and accurate support, which will include details of contact and service escalation matrix to which the buyer department will contact for support.

Sr. no.	Support level	Name	Address	Phone No.	Email
1.	Level 1	Service call coordinator	XXX	XXX	XXXX@
2.	Level 2	Senior Service Call Coordinator	XXX	XXX	XXXX@
3.	Level 3	Senior Service Call manager	XXX	XXX	XXXX@
4.	Level 4	Name of owner of the firm	XXX	XXX	XXXX@



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- p. Right to vary Quantum of Work:** The quantities stated in the tender are estimates. The purchaser reserves the right to vary the quantity to the extent of -30% to + 30% of the specified quantity without any change in unit price (rates) or other terms & conditions. In addition to the deviation above, there may be extra quantities that vary according to DTE requirements, for which the vendor's willingness may be requested for the supply based on the discovered rates under the same tender.
- q. Change in quantity:** If the Purchaser changes the quantities (increase or decrease) of any of the Bided articles the value of the order will vary accordingly. In case Purchaser purchases less than the quantity indicated in the Bid form, the tenderer/bidder shall not be entitled to claim any compensation.
- r. Recoveries:** Recoveries of liquidated damages, short supply, breakage, rejected articles shall ordinarily be made from bills. Amount may also be withheld to the extent of short supply, breakage, rejected articles and in case of failure in satisfactory replacement by the supplier along with amount of liquidated damages shall be recovered from his dues and security deposit available with the department. In case recovery is not possible recourse action will be taken under any law in force.
- s. Loss of Revenue to the Purchaser:** The tenderer/bidder shall be vicariously liable to indemnify the Purchaser in case of any misuse of data/information by the tenderer/bidder, deliberate or otherwise, which comes into the knowledge of the purchaser during the performance or currency of the contract.
- t. Contract Amendments:** No variation in or modification of the terms of the Contract shall be made except by written amendment signed by both the parties i.e. the Tenderer/Bidder and the Purchaser.
- u. Force Majeure:**
- a.** Notwithstanding the provisions of contract, the bidder shall not be liable for forfeiture of its performance security, or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the contract is the result of an event of Force Majeure.
  - b.** For Purposes of this clause, "Force Majeure" means an event beyond the control of the tenderer/bidder and not involving the tenderer's/bidder's fault or negligence and not foreseeable. Such events may





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include but are not restricted to acts of the purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.

- c. If a Force Majeure situation arises, the tenderer/bidder shall promptly notify the purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the purchaser in writing the tenderer/bidder shall continue to perform its obligations under the contract as far as is reasonably practical and shall seek all prevented by the force majeure event.
- d. The purchaser may terminate this contract, by giving a written notice of minimum 30 days to the tenderer/bidder being unable to perform a material portion of the services for a period of more than 60 days.
- v. **Termination for insolvency:** The purchaser may at any time terminate the contract by giving written notice to the tenderer/bidder, without compensation to the tenderer(s) / bidder(s), if the tenderer/bidder becomes bankrupt or otherwise insolvent provided that such termination will not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the purchaser.
- w. **Termination for Convenience:** The purchaser, may, by written notice sent to the tenderer/bidder, terminate the contract, in whole or in part at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of work under the Contract is terminated and the date upon which such termination becomes effective.
- x. **Use of Contract Documents and information**
  - a. The tenderer/bidder shall not, without the purchaser's prior written consent, disclose the contract, or any provision thereof, or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the purchaser in connection therewith, to any person other than a person employed by the tenderer/bidder performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.
    - i. The tenderer/bidder shall not, without the purchaser's prior written consent, make use of any document or information enumerated in this document except for purposes of performing the contract.





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- y. If a tenderer/bidder imposes conditions, which is in addition to or in conflict with the conditions mentioned herein, his/her Bid is liable to summary rejection. In any case none of such conditions will be deemed to have been accepted unless specifically mentioned in the Purchase Order issued by Purchaser or Agreement executed.
- z. The contractor shall not assign or sub-let his contract or any substantial part thereof to any other agency.
- aa. The tenderer/bidder shall pay the expenses of stamp duty for execution of agreement.
- bb. Dispute Resolution Mechanism:** The Tenderer/Bidder and ITG shall endeavour their best to amicably settle all disputes arising out of or in connection with the Contract in the following manner
- a. The Party raising a dispute shall address to the other Party a notice requesting an amicable settlement of the dispute within seven (7) days of receipt of the notice. Matter will be referred for negotiation between Officer nominated by ITG and the Authorized Official of the Contractor. The matter shall then be resolved between them and the agreed course of action documented within a further period of 15 days.
- b. If any dispute arises out of the contract with regard to the interpretation, meaning and breach of the terms of the contract, the matter shall be referred to by the Parties to the Chairman, Info Tech Corporation Of Goa Ltd, Goa who will be the Sole Arbitrator and whose decision shall be final.
- c. In case any dispute between the Parties, does not settle by negotiation in the manner as mentioned above, the same may be resolved exclusively by arbitration and such dispute may be submitted by either party for arbitration within 20 days of the failure of negotiations. Arbitration shall be held in Goa and conducted in accordance with the provisions of Arbitration and Conciliation Act, 1996 or any statutory modification or re-enactment thereof. Each Party to the dispute shall appoint one arbitrator each and the two arbitrators shall jointly appoint the third or the presiding arbitrator. The “Arbitration Notice” should accurately set out the disputes between the parties, the intention of the aggrieved party to refer such disputes to arbitration as provided herein, the name of the person it seeks to appoint as an arbitrator with a request to the other party to appoint its arbitrator within 45 days from receipt of the notice. All notices by one party to the other in connection with the arbitration shall be in writing and be made as provided in this tender document. Each Party shall bear the cost of preparing and presenting its



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case, and the cost of arbitration, including fees and expenses of the arbitrators, shall be shared equally by the Parties unless the award otherwise provides. The contractor shall not be entitled to suspend the Service/s or the completion of the job, pending resolution of any dispute between the Parties and shall continue to render the Service/s in accordance with the provisions of the Contract/Agreement notwithstanding the existence of any dispute between the Parties or the subsistence of any arbitration or other proceedings.

- d.** All legal proceedings, if necessary, arises to institute may by any of the parties (ITG or Contractor) shall have to be lodged in courts situated in Goa and not elsewhere
- cc.** If the terms and conditions mentioned in the tender are contradicting the terms and conditions appearing elsewhere, then it shall be at the discretion of the Managing Director, InfoTech Corporation of Goa Ltd to choose the over-riding terms and conditions. In any case, the decision of the Managing Director, InfoTech Corporation of Goa Ltd shall be final and binding on all parties concerned.



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### **Chapter 13 Terms of Payment**

The payment towards Supply, Delivery and Maintenance of Robotics Hardware Kits under this project as follows:

1. Bills should be presented by the supplier to ITG immediately upon supplying the Robotics Hardware Kits at the respective schools along-with the Delivery Challans of the items countersigned by the Schools Authorities/ DTE.
2. ITG shall make the payments upon receiving the same from O/o. Directorate of Technical Education, Government of Goa:
  - a. ITG shall effect first installment of payment after completion/execution of 70% of the Purchase Order quantity/works towards work order for supply, delivery, training (if any) at respective locations.
  - b. The next installment of payment totaling to 30% of the Purchase Order value after completion/execution of full work Order quantity/works towards supply, delivery, Training (if any) at respective locations **and** after complying with all the terms and conditions and contractual obligations as mentioned in the contract/agreement.
  - c. The release of payment/s shall be subject to the submission of Security Deposit/ Performance Bank Guarantee of appropriate value.
3. TDS may be deducted at source as per rules.
4. Payment shall be made in Indian Rupees only.
5. For a MSME organization:
  - a. ITG at no stage shall become the beneficiary buyer for the goods being supplied by MSME to the PSU and other Government Departments through ITG's facilitation. ITG is not classified as 'buyer' in terms of section 15 & 16 of the MSMED Act, 2006 for the purpose of interest on delayed payment.
  - b. PSU and other Government Departments being beneficiary 'buyer' of the goods are responsible for making the payment of the goods supplied and also for the interest on delayed payment in terms of Section 15 & 16 of MSMED Act, 2006.
  - c. No claims/ liability for the said supplies to be made by ITG for and on behalf of MSME shall be against ITG under MSMED Act, 2006 and its revisions as ITG is acting as agent of MSME.



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**Chapter 14 Time Schedule**

1. Supply of the Robotics Hardware Kits shall be commenced from the date of (1<sup>st</sup> day) of signing of agreement to the vendor and has to be completed as per the schedule given below:

1 <sup>st</sup> 45 days	2 <sup>nd</sup> 45 days
70% of the ordered Qty	30% of the ordered Qty

2. As Supply of the Robotics Hardware Kits is essence of the tender no deviation in supply schedule will be permitted. However, ITG reserves the right to amend the same.
3. If the Tenderer / Bidder / Contractor needs extension of time period for execution of the project, he may apply for the same in writing to ITG with reasonable grounds at least 1 week before the deadline date. The extension of time limit shall be granted by ITG in writing if the reasons in such applications are found satisfactory. If the contractor fails to give any such written intimation, it will be presumed that the contractor has agreed to complete the project within the stipulated scheduled time. The decision of the Managing Director, Info Tech Corporation of Goa Ltd, will be final in this regard.

### Chapter 15 Technical Bid Format

Following Table-A constitutes a single unit of a “Robotics Hardware Kit”:

**Table-A**

Sr. No.	Description	Quantity	Compliance (Yes/ No)
1	<b>Microcontroller &amp; Microcontroller Board</b>		
1	<p><b>ESP 32 (32 bit) equivalent or better with following features:</b></p> <p><b><u>Specifications</u></b>            Processor: Dual core 32-bit processor with built-in 2.4 GHz Wi-Fi and Bluetooth            Operating Voltage: 2.2 – 3.6V            Output Power pins: 5V and 3.3V            GPIO Pins: 25 or above            Flash memory: 4MByte or above            RAM: 520KByte            Breakout Type: In breadboard friendly ( Details and Specifications mentioned under serial No.5.2 )            Connectivity : USB microB for power and Serial communication, use to load program and serial debugging too            PWM Pins: 12 or above            PWM controller: up to 8 channels            ADC: Should be Used to measure analog voltage in the range of 0-3.3V.            ADC Accuracy: 12-bit 18 Channel ADC or better            DC Current per I/O Pin: 40 mA            DC Current for 3.3V Pin: 50 mA            Peripheral Interface: Two I2C ports            Flash Memory: 256 KB or Above            ROM: 448 KB or Above            Clock Speed: 240 MHz or Above            Indicator: Inbuilt LED</p>	02	
2	<b>Microcontroller Expansion Board</b>		
	<p>Dimensions:            (Length x Breadth) Minimum: (60mm x 60 mm) ; Maximum: (80mm x 80 mm)            Following Devices should be present on the expansion Board</p> <p>i) <b>Connectors</b></p> <p>a. <b><u>2 x Sensor Connectors:-</u></b> The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.            Naming Convention ‘S1’ &amp; ‘S2’ ( Placement as shown in</p>	02	

	<p>reference diagram 1) VCC = +5VDC Signal = Connected to the ADC of the Microcontroller Ground = Should be connected to the Common Ground Pin</p> <p>b. <b><u>1 x Sensor Connector:-</u></b> The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground. Naming Convention 'S3' ( Placement as shown in reference diagram 1) VCC = +3.3VDC Signal = Connected to the ADC of the Microcontroller Ground = Should be connected to the Common Ground Pin</p> <p>c. <b><u>1 x Ultrasonic Sensor Connector:-</u></b> The Connector should be of 4 pins and should only connect in one direction. The 4 pins should be with arrangements such as VCC, Trigger, Echo, Ground. Naming Convention 'Ultrasonic Sensor' ( Placement as shown in reference diagram 1) VCC = +5VDC Trigger = The trigger pin of the ultrasonic sensor Echo = The Echo pin of the ultrasonic sensor Ground = Should be connected to the Common Ground Pin</p> <p>d. <b><u>4 x Motor Connectors:-</u></b> The Connector should be of 2 pins and should only connect in one direction. The 2 pins should be arranged as OUT-A and OUT-B which should be output pins of the motor driver IC present on the Expansion board. Naming Convention 'M1' , 'M2' , 'M3' &amp; 'M4' ( Placement as shown in reference diagram 1)</p> <p>e. <b><u>4 x Servo Connectors:-</u></b> The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be arranged as Signal, VCC, Ground. Naming Convention 'Servo1' , ' Servo2' , 'Servo3' &amp; 'Servo4' ( Placement as shown in reference diagram 1) Signal = Connected to the PWM pin of the Microcontroller VCC = +5VDC Ground = Should be connected to the Common Ground</p>		
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	<p>Pin</p> <p>f. <b>02 x I2C Connectors:-</b> The Connector should be of 4 pins and should only connect in one direction. The 4 pins should be with arrangements such as VCC, SCL, SDA, Ground. Naming Convention 'I2C_1' &amp; 'I2C_2' ( Placement as shown in reference diagram 1)</p> <p>g. <b>02 x Input connectors.</b> The Connector should be of 4 pins and should be of plug type with an architecture of 02x02 male pin headers or better. The 4 pins should be with arrangements such as VCC, Power, Signal, Ground. Naming Convention 'Input 1' &amp; 'Input 2' ( Placement as shown in reference diagram 1) VCC = +5VDC Power = +9VDC, which will be used to power the motors Signal = Input Pin of the Microcontroller (ADC Pin) Ground = Should be connected to the Common Ground Pin. These pins should be mounted horizontally on to the board. Sufficient spacing should be kept between two input connectors so as both the input connectors can be used at a time by the modules.</p> <p>h. <b>02 x Output connectors.</b> The Connector should be 4 pins and should be of plug type with an architecture of 02x02 female pin headers or better. The 4 pins should be with arrangements such as VCC1, VCC2, Signal &amp; Ground. Naming Convention Output 1 &amp; Output 2( Placement as shown in reference diagram 1) VCC1 = +5VDC Ground = Should be connected to the Common Ground Pin. Signal = PWM output pin of the microcontroller VCC2 = +3.3VDC</p> <p>i. <b>01 x Microcontroller connector.</b> The Connector will be used to connect the microcontroller provided with the kit to the expansion board. Necessary arrangement should be made so that the microcontroller goes onto the board in only one direction. The Connector should be of plug type with an architecture of female pin headers. The connector should be such that along with the provision of the microcontroller placement it should also have a</p>		
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	<p>provision to connect any male connector pin to any pin of the microcontroller. For eg. if the microcontroller is of 30 pins, 15 pins on either side the connector architecture on both the sides should be 02x15 (columns x rows) and for either side, each pin in the row should be connected to each other. (refer the reference diagram 1 for better understanding)</p> <p>Naming Convention 'Microcontroller' ( Placement as shown in reference diagram 1)</p> <p><b>ii) Components:</b></p> <p>a.) Motor Driver IC arrangement such that at a time it should handle 04 motors connected to the expansion board. (Note: Motor Driver ICs present on the board can be more than one)</p> <p>b.) Any necessary Active Components, Passive components, accessories like ICs, Resistors, Capacitors etc can be included as per the requirements of the specifications of the Expansion board.</p> <p><b>**Note:-</b> On every connector placed onto the expansion board (excluding the microcontroller connector) there should be the pin number printed besides it so as to understand which pin of the microcontroller is connected to the pins of the connector, incase of DC motor connectors such as M1,M2,M3 &amp; M4 the pins going from the microcontroller to the motor driver controlling that dedicated motor should be printed.</p>		
<b>2</b>	<b>Input Components</b>		
1	<p><b><u>IR Sensor Module</u></b></p> <p><b><u>Specifications</u></b></p> <p>Input Voltage: +3VDC to +5VDC  Detection Distance: 2cms to 10cm  Detection angle: 30 ° to 40 °  Maximum Current drawn by the module should not exceed 20mA</p> <p><b><u>Connector Architecture</u></b></p> <p><b><u>Connector1:</u></b>  This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><b><u>Connector2:</u></b>  This connector will be mounted horizontally onto the board and will slide into any of the Input pins of the expansion board.</p>	4	





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	<p>VCC = +5VDC          Power = Open Connection          Signal = Input Pin of the Microcontroller (ADC Pin)          Ground = Should be connected to the Common Ground Pin.</p> <p>** The IR Sensors will be mounted horizontally onto the board.</p>		
2	<p><b><u>Ultrasonic Sensor Module</u></b>  <b><u>Specifications</u></b>          Input Voltage : +5VDC          Quiescent Current : &lt;2mA          Working Current: 15mA          Effectual Angle: &lt;15°          Ranging Distance : 2 cm – 400 cm</p> <p><b><u>Connector Architecture</u></b>          This connector will be mounted vertically onto the board. The Connector should be of 4 pins and should only connect in one direction. The 4 pins should be with arrangements such as VCC, Trigger, Echo &amp; Ground.</p>	4	
3	<p><b><u>Sound Sensor Module</u></b>  <b><u>Specifications</u></b>          Input Voltage Range: DC 3.3V to 5V          Detection range: 25Cm or more          Sound Sensor Mounting: Horizontal          Maximum Current drawn by the module should not exceed 20mA</p> <p><b><u>Connector Architecture</u></b>  <u>Connector1:</u>          This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><u>Connector2:</u>          This connector will be mounted horizontally onto the board and will slide into to anyone of the Input pins of the expansion board.</p> <p>VCC = +5VDC          Power = Open Connection          Signal = Input Pin of the Microcontroller (ADC Pin)          Ground = Should be connected to the Common Ground Pin.</p>	2	



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4	<p><b><u>Light (Photoresistor Sensor) Module</u></b></p> <p><b><u>Specifications</u></b>          Input Voltage Range: DC 3V to 6V          Dark resistance: 500KΩ          Sensitivity Adjustment: Yes          Maximum Current drawn by the module should not exceed 20mA</p> <p><b><u>Connector Architecture</u></b>          This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p>	2	
5	<p><b><u>Magnetic Sensor Module</u></b></p> <p><b><u>Specifications</u></b>          Supply voltage: 3V to 6.5V          Operating Supply Current: 3.5 mA          Maximum Output Current: 10 mA          Maximum Current drawn by the module should not exceed 20mA</p> <p><b><u>Connector Architecture</u></b>  <u>Connector1:</u>          This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><u>Connector2:</u>          This connector will be mounted horizontally onto the board and will slide into any of the Input pins of the expansion board.          VCC = +5VDC          Power = Open Connection          Signal = Input Pin of the Microcontroller (ADC Pin)          Ground = Should be connected to the Common Ground Pin.</p>	2	
6	<p><b><u>Colour Sensor Module</u></b></p> <p><b><u>Specifications</u></b>          Single-Supply Operation: 2.7 V to 5.5 V</p> <p><b><u>Connector Architecture</u></b>          The Connector should be of male pin header type with proper naming convention of each pin.</p> <p>** The Colour Sensor Module Should have four or more White LEDs present so as to illuminate the subject present in front of it.</p>	2	



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7	<p><b><u>Potentiometer (10K Ohm Linear Potentiometer) Module</u></b></p> <p><b><u>Specifications</u></b>  Resistance Value: 10K ohm  Tolerance: 10% or less  Rated Power: 0.5Watt</p> <p><b><u>Connector Architecture</u></b>  <b><u>Connector1:</u></b>  This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><b><u>Connector2:</u></b>  This connector will be mounted horizontally onto the board and will slide into any of the Input pins of the expansion board.</p> <p>VCC = +5VDC  Power = Open Connection  Signal = Input Pin of the Microcontroller (ADC Pin)  Ground = Should be connected to the Common Ground Pin.</p>	4	
8	<p><b><u>Push Button Switch Module</u></b></p> <p><b><u>Specifications</u></b>  Button Style: Round  Insulation Resistance: <math>\geq 100M\Omega</math>  Life Expectancy: 50,000,000 cycles</p> <p><b><u>Connector Architecture</u></b>  <b><u>Connector (Input):</u></b>  This connector will be mounted horizontally onto the board and will slide into any of the Modules</p> <p><b><u>Connector2 (Output):</u></b>  This connector will be mounted horizontally onto the board and will slide into any of the Input pins of the expansion board.</p> <p>** The Switch should have necessary arrangement to avoid debouncing effect</p>	4	
9	<p><b><u>Push To Lock Switch Module</u></b></p> <p><b><u>Specifications</u></b>  Button Style: Round  Insulation Resistance: <math>\geq 100M\Omega</math>  Life Expectancy: 50,000,000 cycles</p>	4	



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	<p><b><u>Connector Architecture</u></b>  <b>Connector (Input):</b>  This connector will be mounted horizontally onto the board and will slide into any of the Modules</p> <p><b>Connector2 (Output):</b>  This connector will be mounted horizontally onto the board and will slide into any of the Input pins of the expansion board.</p> <p>** The switch when ON should make a contact between VCC and Signal.</p>		
10	<p><b><u>Limit Switch Module</u></b>  <b><u>Specifications</u></b>  Contact Rating: 5 Amps @ 125/250 VAC  Life Expectancy: 50,000 cycles minimum  Mechanical Life: 1,000,000 cycles typical</p> <p><b><u>Connector Architecture</u></b>  This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC=+3.3VDC, Signal, Ground.</p> <p>** The switch when ON should make a contact between VCC and Signal.</p>	4	
11	<p><b><u>Power Module</u></b>  <b><u>Specifications</u></b>  Input type1: USB Charging  Input Voltage1: +5VDC @ 500mA</p> <p>Input type 2: Barrel pin Connector  Input Voltage2: +9VDC @ 1A</p> <p>Output Voltage: +5VDC and +9VDC  Battery: Rechargeable  Type: Li-Ion or Li-Po  Battery Voltage: 6V to 12V  Battery Capacity: 4000mAh or more</p> <p><b><u>Connector Architecture</u></b>  This connector will be mounted horizontally onto the board and will slide into any of the Input pins of the expansion board. The Connector should be of 4 pins and should be of plug type with an architecture of 02x02 male pin headers or better. The 4 pins should be with arrangements such as +5VDC, Ground, Ground,</p>	2	



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	<p>+9VDC.</p> <p>When plugged the Contact of the Power Module to the expansion board will be as follows.</p> <p>+5VDC of the Power module → +5VDC of the Input connector</p> <p>Ground of the Power module → Ground of the Input connector</p> <p>No Connection (open) → Signal of the Input connector</p> <p>+9VDC of the Power module → +9VDC of the Input connector</p> <p>** when plugged should charge the battery and also provide necessary output on the output pins.</p> <p>** Should have an efficient battery management system with all the necessary protection circuit.</p> <p>** Output current should be capable of driving both the motors with full Load capacity.</p> <p>** Including the batteries used in the power modules one more extra set of batteries to be included</p>		
12	<p><b><u>Power Adapter</u></b></p> <p>Power Adapter1: Adapter 250VAC@10A supply, output 5V, 500mA</p> <p>Power Adapter2: Adapter 250VAC@10A supply, output 9V, 1A</p> <p>** Both Adapters plug which goes to mains should properly fit into the round female sockets used in our country.</p> <p>** Both Adapters should have one LED indicator to indicate it is providing output and working fine.</p>	2 each	
13	<p><b><u>Temperature Sensor Module</u></b></p> <p><b><u>Specifications</u></b></p> <p>Input Voltage Range:DC 4V to 30V</p> <p>Accuracy: 1 Degree Celsius</p> <p>Detection Range:20 to 80 Degrees Celsius</p> <p>Sensitivity Adjustment : Yes</p> <p>Maximum Current drawn by the module should not exceed 20mA</p> <p><b><u>Connector Architecture</u></b></p> <p>The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p>	1	



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14	<p><b><u>Moisture Sensor Module</u></b>  <b><u>Specifications</u></b>          Operating Voltage: 3.3V to 5V DC.          Operating Current: 15mA          Output Type: Analog/Digital          Connectivity: Depends on the connectivity used in controller          Indicator: Two LEDs, one for Power and one for Output</p> <p><b><u>Connector Architecture</u></b>          The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p>	1	
15	<p><b><u>Solar Panel Module with Solar Panel</u></b>  <b><u>Solar Panel: Specifications</u></b>          Material: Polycrystalline          Voltage - 12v          Current - 200 mA          Wattage - 2.4W          Dimensions - not more than 160mm x 160mm x 5mm</p> <p><b><u>Connector Architecture</u></b>          The Connector should be of 2 pins and should only connect in one direction and should be able to connect to Solar Panel module input connector</p> <p><b><u>Solar Panel Module: Specifications</u></b>          Solar panel input voltage : (SOLAR IN): 12V or equal to Solar panel output voltage.          Several LED indicators, for monitoring the status of solar panel and battery.          Should consists of a battery arrangement same as provided with the power module.          Onboard high capacity electrolytic capacitor and SMD ceramic capacitor, reducing the ripple.</p> <p><b><u>Connector Architecture</u></b>          The Connector should be able to connect the batteries provided with the power module so as to charge them.</p>	2 Each	
16	<p><b><u>Vibration Sensor Module</u></b>  <b><u>Specifications</u></b>          Voltage: 3.3V- 5V          Current: 15mA-20mA          Conductive time: 2ms          Closed resistance: &lt;30 ohm          Open resistance: &gt;10M ohm</p> <p><b><u>Connector Architecture</u></b></p>	01	



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	<p><b>Connector1:</b> This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><b>Connector2:</b> This connector will be mounted horizontally onto the board and will slide into any of the Input pins of the expansion board. VCC = +5VDC Power = Open Connection Signal = Input Pin of the Microcontroller (ADC Pin) Ground = Should be connected to the Common Ground Pin.</p>		
17	<p><b><u>Water Level Sensor Module</u></b> <b><u>Specifications</u></b> Input Voltage: 3 to 5V Working Current: Less than 20mA</p> <p><b><u>Connector Architecture</u></b> This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p>	01	
18	<p><b><u>Radar (Motion Sensor) Module</u></b> <b><u>Specifications</u></b> Operating Voltage : 4-28V (typically 5V) Operating Current : 2.8mA (typical); 3mA (max) Detecting Range : 5-9m</p> <p><b><u>Connector Architecture</u></b> This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p>	01	
<b>3</b>	<b>Output Components</b>		
1	<p><b><u>LED Module</u></b> <b><u>Specifications</u></b> Input voltage: 5V Colour: White Lifespan: 50,000 or more turn ON hours</p> <p><b><u>Connector Architecture</u></b> <b>Connector1:</b></p>	2	



	<p>This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><u>Connector2:</u> a.)<u>Input Connector</u> This connector will be mounted horizontally onto the board on the left side of the module and will slide into any of the output pins of the expansion board or any other module.</p> <p>b.)<u>Output Connector</u> This connector will be mounted horizontally onto the board on the right side of the module and will slide into any of the input pins of the other module.</p>		
2	<p><b><u>LED Matrix Module with Driver chip</u></b> <b><u>Specifications</u></b> Input Voltage : 5V Max. Operating Current (mA): 320mA LED Colour: RGB</p> <p><b><u>Connector Architecture</u></b> Should have a proper output connector that can connect any pins of the expansion board.</p>	1	
3	<p><b><u>Seven Segment Display Module</u></b> <b><u>Specifications</u></b> Input voltage: 5V Display units: 4 digits or more Display colour: Red</p> <p><b><u>Connector Architecture</u></b> Should have a proper output connector that can connect any pins of the expansion board. ** should have display driver inside</p>	1	
4	<p><b><u>OLED Display Module</u></b> <b><u>Specifications</u></b> Input Voltage: 3.3V ~ 6V Visual Angle: &gt;160° or more Resolution: 128x64 Pixels or more</p> <p><b><u>Connector Architecture</u></b> This connector will be mounted vertically onto the board. The Connector should be of 4 pins and should only connect in one direction. The 4 pins should be with arrangements such as VCC, SCL, SDA, Ground.</p>	1	





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5	<p><b><u>Buzzer Module</u></b>  <b><u>Specifications</u></b>          Operating Voltage : 1.5 ~ 15V DC          Working Current: Less than 25mA          Tone Generation range: 30dB-50dB</p> <p><b><u>Connector Architecture</u></b>  <u>Connector1:</u>          This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><u>Connector2:</u>          a.)<u>Input Connector</u>          This connector will be mounted horizontally onto the board on the left side of the module and will slide into any of the output pins of the expansion board or ant other module.</p> <p>b.)<u>Output Connector</u>          This connector will be mounted horizontally onto the board on the right side of the module and will slide into any of the input pins of the other module.</p>	2	
6	<p><b><u>Fan Module with Driver</u></b>  <b><u>Specifications</u></b>          Input Voltage: 5V</p> <p><b><u>Connector Architecture</u></b>  <u>Connector1:</u>          This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><u>Connector2:</u>          This connector will be mounted horizontally onto the board and will slide into any of the output pins of the expansion board.</p>	1	
7	<p><b><u>Servo Motor Module</u></b>  <b><u>Specifications</u></b>          Input Voltage: DC 4.8V to 6.5V          Torque: 2.5kg/cm</p> <p><b><u>Connector Architecture</u></b></p>	4	



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		<p>This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as PWM, VCC, Ground.</p> <p>** The Servo motor should be detachable from the module whenever required.</p>		
8	<p><b><u>DC Motor Module</u></b>  <b><u>Specifications</u></b>            Operating Voltage: 3~12 V            Shaft Length (mm): Suitable for wheels            Shaft Diameter (mm): ~5.5 (According to wheels provided)            No Load Current: between: 40-180mA.            Rated Torque: 0.35 Kgcm            RPM: 100 RPM or more</p> <p><b><u>Connector Architecture</u></b>            This connector will be mounted vertically onto the board. The Connector should be of 2 pins and should only connect in one direction. The 2 pins should be with arrangements such as OUT_A, OUT_B.</p> <p>** The DC motor should be detachable from the module whenever required.</p>	4		
9	<p><b><u>Stepper Motor Module</u></b>  <b><u>Specifications</u></b>            - Rated voltage: 5V DC            - Reduction Ratio: 64:1            Step Angle: 5.625° /64            Frequency: 100Hz            Self-positioning Torque: &gt;34.3mN.m            Friction torque: 600-1200 gf.cm            Pull in torque: 300 gf.cm</p> <p>** Should consist of a stepper motor driver module.            ** The stepper motor should be detachable from the module whenever required.</p>	2		
4	<b><u>Interfacing Modules</u></b>			
1	<p><b><u>Nrf WiFi Module</u></b>  <b><u>Specifications</u></b>            Input Supply voltage (V): 3.3VDC            Operating Range: 1Km            Open ISM band, with licence free</p>	2		



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

	<p><b><u>Connector Architecture</u></b> Should have a proper output connector with naming that can connect any pins of the expansion board. ** SMA Antenna should be included in the module</p>		
2	<p><b><u>AND,NOT,OR Modules</u></b> <b><u>Specifications</u></b> Input Supply voltage: 5 V No. of Inputs: 2 inputs for AND &amp; OR, single input for NOT</p> <p><b><u>Connector Architecture</u></b> <b><u>Connector1:</u></b> This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><b><u>Connector2:</u></b> a.)<b><u>Input Connector</u></b> This connector will be mounted horizontally onto the board on the left side of the module and will slide into any of the output pins of the expansion board or any other module.</p> <p>b.)<b><u>Output Connector</u></b> This connector will be mounted horizontally onto the board on the right side of the module and will slide into any of the input pins of the other module.</p> <p>**For AND gate &amp; OR gate modules there should be two input connectors and one output connector per module</p>	1 Each	
3	<p><b><u>Sensor Base/Threshold Module</u></b> <b><u>Specifications</u></b> Supply voltage: 5 V Input Signal : Analog from the sensor Potentiometer for Sensor Threshold adjustment</p> <p><b><u>Connector Architecture</u></b> <b><u>Connector1:</u></b> This connector will be mounted vertically onto the board. The Connector should be of 3 pins and should only connect in one direction. The 3 pins should be with arrangements such as VCC, Signal, Ground.</p> <p><b><u>Connector2:</u></b> a.)<b><u>Input Connector</u></b> This connector will be mounted horizontally onto the board on the left side of the module and will slide into any of the output pins of</p>	1	



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

	the expansion board or any other module.		
	<p>b.)<u>Output Connector</u> This connector will be mounted horizontally onto the board on the right side of the module and will slide into any of the input pins of the other module.</p>		
<b>5</b>	<b><u>Accessories</u></b> Note: This are the minimum accessories required		
1	Chassis	2	
2	3220 points Solderless Breadboard that could easily fit the microcontroller provided and should have sufficient space on the breadboard for jumper wires to connect	2	
3	Wheels with rubber for good traction (As per reference diagram 2)	6	
4	Pulleys (The size should be in proportion with the chassis provided in reference diagram 2)	2	
5	Propellor (Max diameter including blades should be 5 cm and should be attachable-plug and play to fan module provided)	2	
6	Jumper connectors (Male to Male, Female to Female, Male to Female)	50 each	
7	Small size box with and without lid. (5cmx5cmx5cm)	3	
8	Box/Ball Holder for the Chassis (Max diameter of ball should be 4 cm)	2	
9	USB Cable compatible for Programming the microcontroller board and charging the battery	2	
10	Single strand wire suitable for breadboard connections provided (5 metres)	1	
11	<p>Appropriate plastic material parts for construction of robotic arm</p> <ul style="list-style-type: none"> <li>- Base</li> <li>- Shoulder</li> <li>- Elbow</li> <li>- gripper</li> </ul> <p>** compatible with the specifications of the servo motors provided above ** should be provided with proper nuts, bolts and corresponding tools ** Size should be in accordance to the size of the chassis as illustrated below such that it can be mounted on the chassis ** Proper manual should be provided for the construction of the robotic arm.</p>	1 set	
12	Insulation tapes, colour- red,black-16mmX7mX0.125mm	2 each	



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13	Proper interconnecting cables should be provided that will fit into the connectors provided on the boards and modules  ** referring to the connectors that will only go in one direction on the board	20	
<b>6</b>	<b><u>Tools</u></b>		
1	<b>Multi-meter</b> <b><u>Minimum Specifications</u></b> 1.) Clear LCD Display Equipped with Comfortable Protective Cover 2.) Test Probe Holder 2 Metres Drop Test 3.) Two Pair of probes one red and other black 3.) Precision Protection 4.) Auto Power Off & Auto Backlight Off 5.) 80DB Buzzer Sound 6.) Knobs Shift Smoothly  <b><u>Minimum Functions</u></b> 1.) DC Current, AC/DC Voltage 2.) Continuity Test, Diode PN junction Test 3.) Display Count:1999 Min 4.) DC Max Voltage: 250V Voltage Measure 5.) AC Max Voltage: 250V Current Measure 6.) Max Current: 10A Current Measure 7.) Resistance Measure Max: 0.2Gohm	1	
2	Two in one Plus '+', minus '-', screwdriver minimum 100 mm length Standard Piece stainless steel with a good grip.	2	
3	Crimping tool suitable for crimping dupont pins and more	1	
4	Dupont 1x1 Pin Header with Female Crimp Pins for crimping	50	
5	Dupont 1x1 Pin Header with male Crimp Pins for crimping	50	
6	Wire stripper cum cutter with suitable for the AWG standard wire provided with the kit	1	
<b>8</b>	<b>Kit Covering Box (durable) of plastic material for placing packaging all above items with form based partitioned within box</b>	<b>Per kit</b>	

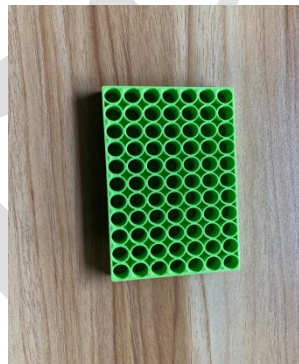
**Note:**

- All the sensor and push button modules (Input and output modules) should have max dimensions of 5cm\*4cm.
- All the output modules should support plug and play setup (directly connectable to input and output ports)

of microcontroller expansion board and sensor/servo/motor pins whichever is applicable)

- The Microcontroller specifications and functionalities along with several input and output components specified above are intended to execute basic tasks as well as complex tasks such as drone applications with a small form factor of the microcontroller.
- The Microcontroller expansion / layout board is designed symmetrically to allow learners to easily plugin the provided modules and understand pin connections of each module.
- The Microcontroller provided by the vendor should be programmable via Arduino IDE with required packages and libraries.
- The microcontroller board architecture should necessarily be Open Source and proper Schematic should be available.
- The solder used on the boards should be lead free.

**Rectangular Board wherein provision for sensor attachment is required to perform automatic opening and closing of the gate experiment:**



Following Table-B indicates bifurcation of Non-Consumables & Consumables items within a single unit of a “Robotics Hardware Kit”:

**Table-B**

Sr. No	List of Non-Consumables items
--------	-------------------------------



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

1	ESP 32 (32 bit)
2	Microcontroller Expansion Board
3	IR Sensor Module
4	Ultrasonic Sensor Module
5	Sound Sensor Module
6	Light(Photoresistor) Sensor Module
7	Magnetic Sensor Module
8	Color Sensor Module
9	Potentiometer(10KOhm) Module
10	Push Button Switch Module
11	Push To Lock Switch Module
12	Limit Switch Module
13	Power Module
14	Power Adapter
15	Temperature Sensor Module
16	Moisture Sensor Module
17	Solar Panel Module
18	Vibration Sensor Module
19	Water Level Sensor Module
20	Radar(Motion Sensor) Module
21	LED Module
22	LED Matrix Module with Driver Chip
23	Seven Segment Display Module
24	OLED Display Module
25	Buzzer Module
26	Fan Module with Driver
27	Servo Motor Module
28	DC Motor Module
29	Stepper Motor Module
30	Nrf WiFi Module
31	AND, NOT, OR Modules
32	Sensor Base/Threshold Module
33	Chassis
34	MultiMeter
35	Two in one Plus, minus Screwdriver
36	Crimping tool for crimping dupont pins
37	Wire Sripster cum cutter
<b>Sr. No</b>	<b>List of Consumables items</b>





***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

<b>1</b>	Power Module(Battery in Power Module is consumable)
<b>2</b>	3220 points Solderless Breadboard
<b>3</b>	Wheels
<b>4</b>	Pulleys
<b>5</b>	Propellor
<b>6</b>	Jumper connectors
<b>7</b>	Small size box with & without lid
<b>8</b>	Box/Ball Holder for the Chassis
<b>9</b>	USB Cable Compatible for Programming the microcontroller
<b>10</b>	Single Strand wire for breadboard connections
<b>11</b>	Small size plastic box 5cmX5cmX5cm made of plastic cut outs, for holding servo motors
<b>12</b>	Insulation tapes
<b>13</b>	Interconnecting Cables
<b>14</b>	Dupont 1x1 Pin Header with Female Crimp Pins
<b>15</b>	Dupont 1x1 Pin Header with Male Crimp Pins
<b>16</b>	Kit Covering Box

**Table-F1: - List of items per Robotics Hardware Kit (Indicative Format)**

<b>Sr. No.</b>	<b>Item Description</b>	<b>Consumables/ Non-Consumables</b>	<b>Qty per Robotics Hardware Kit</b>
<b>I</b>	<b>Microcontroller &amp; Microcontroller Board</b>	Non-Consumables	02
<b>II</b>	<b>Microcontroller Expansion Board</b>	Non-Consumables	02
<b>III</b>	<b>Input Components</b>		
1	IR Sensor Module	Non-Consumables	04
2	Ultrasonic Sensor Module	Non-Consumables	04
3	Sound Sensor Module	Non-Consumables	02
4	Light (Photoresistor Sensor)	Non-Consumables	02
5	Magnetic Sensor Module	Non-Consumables	02
6	Color Sensor Module	Non-Consumables	02
7	Potentiometer (10K Ohm Linear Potentiometer) Module	Non-Consumables	04
8	Push Button Switch Module	Non-Consumables	04
9	Push To Lock Switch Module	Non-Consumables	04
10	Limit Switch Module	Non-Consumables	04
11	Power Module (Inbuild-Battery)	Consumables	02
12	Power Adapter	Non-Consumables	02
13	Temperature Sensor Module	Non-Consumables	01
14	Moisture Sensor Module	Non-Consumables	01
15	Solar Panel Module with Solar Panel	Non-Consumables	02
16	Vibration Sensor Module	Non-Consumables	01
17	Water Level Sensor Module	Non-Consumables	01
18	Radar (Motion Sensor) Module	Non-Consumables	01
<b>IV</b>	<b>Output Components</b>	Non-Consumables	
1	LED	Non-Consumables	02
2	LED Matrix Module with Driver chip	Non-Consumables	01
3	Seven Segment Display	Non-Consumables	01
4	OLED Display	Non-Consumables	01
5	Buzzer	Non-Consumables	02
6	Fan Module with Driver	Non-Consumables	01
7	Servo Motor	Non-Consumables	04
8	DC Motor	Non-Consumables	04
9	Stepper Motor	Non-Consumables	02
<b>V</b>	<b>Interfacing Modules</b>	Non-Consumables	



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

1	Nrf Wi-Fi	Non-Consumables	02
2	AND.NOT.OR	Non-Consumables	01
3	Sensor Base/Threshold	Non-Consumables	01
<b>VI</b>	<b>Accessories</b>		
1	Chassis	Non-Consumables	02
2	3220 points Solderless Breadboard	Consumables	02
3	Wheels with rubber	Consumables	06
4	Pulleys	Consumables	02
5	Propellor	Consumables	02
6	Jumper Connectors	Consumables	50 each
7	Small size box with and without lid	Consumables	03
8	Box/Ball Holder for the Chassis	Consumables	02
9	USB Cable compatible for Programming the microcontroller board and charging the battery	Consumables	02
10	Single strand wire suitable for breadboard connections provided	Consumables	01
11	Small boxes/body of the robotic arm	Consumables	01
12	Insulation tapes, color- red, black- 16mmX7mX0.125mm	Consumables	02
<b>VII</b>	<b>Tools</b>		
1	Multi-meter	Non-Consumables	01
2	Two in one Plus '+', minus '-', screwdriver	Non-Consumables	02
3	Crimping tool	Non-Consumables	01
4	Dupont 1x1 Pin Header with Female Crimp Pins for crimping	Consumables	50
5	Dupont 1x1 Pin Header with male Crimp Pins for crimping	Consumables	50
6	Wire stripper cum cutter	Non-Consumables	01
<b>VIII</b>	<b>Kit Covering Box (durable) of plastic material for placing packaging all above items with form based partitioned within box</b>	<b>Non-Consumables</b>	<b>Per kit</b>



**Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.**

**Table-F2: Financials Project (Tentative Format)**

Sr. No.	Item Description	Qty of Kits	Unit Base Price per Kit (INR Exclusive of taxes)	Total price of Kit (Exclusive of taxes)	@ GST (in INR)	Total (in INR + inclusive of taxes)
A	B	C	D	E=C*D	F	G=E+F
A.1	<b>01(Single) Robotics Hardware Kit with 03(three) year Warranty:</b> ❖ Microcontroller & Microcontroller Board ❖ Microcontroller Expansion Board ❖ Input Components ❖ Output Components ❖ Interfacing Modules ❖ Accessories ❖ Tools Details of items as per <b>table-F1</b>	3136				

**Note:**

- The Lowest (L1) values will be considered for Total (Table F2: Column G) at Serial No: A.1.

**Table-F3: Financial Project of Consumables items of table-F1(Tentative Format)**



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

Sr. No.	Item Description	Qty.	Unit Base Price (INR Exclusive of taxes) per item	@GST (in INR)	Total (in INR + inclusive of taxes)
A	B	C	D	E	F=C*D+E
1	Power Module(Battery in Power Module is consumable)	1			
2	3220 points Solderless Breadboard	1			
3	Wheels	1			
4	Pulleys	1			
5	Propellor	1			
6	Jumper connectors	1			
7	Small size box with & without lid	1			
9	Box/Ball Holder for the Chassis	1			
10	USB Cable Compatible for Programming the microcontroller	1			
11	Single Strand wire for breadboard connections	1			
12	Small size plastic box 5cmX5cmX5cm made of plastic cut outs, for holding servo motors	1			
13	Insulation tapes	1			
14	Interconnecting Cables	1			
15	Dupont 1x1 Pin Header with Female Crimp Pins	1			
16	Dupont 1x1 Pin Header with Male Crimp Pins	1			
16	Kit Covering Box	1			
18	Power Module(Battery in Power Module is consumable)	1			

**Note:**

- The rates in Table Table-F3 (Financial Project of Consumables items) to be quoted for availability and supply (if demanded).
- The rates for consumable items are to be quoted for supply during the warranty/Maintenance period of maximum three years.

- The Lowest bidder on whom Purchase Order for supply of kits shall be placed will have to match the lowest rates of individual consumable item (in Table F3) determined through this tender process.

**Table-F4: Financial Project of Annual Maintenance of table-F1 (Tentative Format)**

<b>Sr. No.</b>	<b>Item Description</b>	<b>AMC in Percentage as per work order value per Robotics Hardware Kit</b>
1	Cost of Annual Maintenance work after end of three years warranty period for 1 <sup>st</sup> consecutive year in Percentage (for items as per table-F2)	
2	Cost of Annual Maintenance work after end of three years warranty period for 2 <sup>nd</sup> consecutive year in Percentage (for items as per table-F2)	



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

**Chapter 16 Bid Form**

**(The form should be signed with seal and then scanned and uploaded on the e-Tendering portal)**

I. Addressed to:

<b>a.</b>	Name of the Bidding authority	<b>Managing Director</b>
<b>b.</b>	Address	<b>Info Tech Corporation of Goa Ltd (A Govt. Of Goa undertaking) IT HUB, 3<sup>rd</sup>Floor, Altinho-Panaji-Goa-403001</b>
<b>c.</b>	Telephone	<b>(0832) 2226024 / 2225192</b>

II. NIT Reference: No: ITG-IT/1007/CARES-PROJECT/2023-24/2737 dated 20/12/2023

II. Other related details:

1.	Name of Bidder with Office Address				
2.	Name & Designation of Authorized Signatory				
3.	Year of Establishment				
4.	Type of Firm	Public Ltd.	Private Ltd.	Partnership	Proprietary
	Put Tick (☑) mark				
5.	Telephone Number(s)/ Mobile				
6.	Website URL				
7.	Fax No.				
8.	Email Address				
9.	Registered Office Address in Goa	Address			
		Phone		Fax:	
		Contact Person			
10.	Service Center (s) in Goa	Address			
		Phone		Fax:	
		Contact Person			
(Enclose list of Service Center consisting name of contact person, telephone no., e-mail address, office address.)					





***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

- III. We agree to abide by all the conditions mentioned in this Bid Document issued by the Bidding Authority.
- IV. The rates quoted are applicable up to 180 days from the date of opening of bid. The validity period can be extended with mutual agreement.
- V. This Bid form and Terms & Conditions in token of acceptance of the terms mentioned in the tender document along with duly filled letter of undertaking / declaration.

**Signature of the bidder with seal**

Name:

Designation:

Place:

Date:

:



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

**Annexure- I Acceptance of Implementation Schedule**

*(The form should be signed with seal and then scanned and uploaded on the e-Tendering portal)*

To,

The Managing Director,

Info Tech Corporation of Goa Ltd,

IT HUB, 3<sup>rd</sup> Floor, Altinho-Panaji-Goa-403001.

NIT Reference No: ITG-IT/1007/CARES-PROJECT/2023-24/2737 dated 20/12/2023

1. Supply, Delivery and Maintenance of Robotics Hardware Kits shall be commenced from the date of (1st day) of signing of agreement with our \_\_\_\_\_ *<Name of the firm>* \_\_\_\_\_, and has to be completed as per the schedule given below:

1 <sup>st</sup> 45 days	2 <sup>nd</sup> 45 days
70% of the ordered Qty	30% of the ordered Qty

2. Purchase Order can be cancelled unilaterally by the Purchaser in case of items are not received within the contracted delivery period. Extension of contracted delivery period will be at the sole discretion of the Purchaser, with applicability of liquidated damages clause. The delivery process will be treated completed on production of Supply and Delivery challan duly acknowledged by concerned authorities at desired location as instructed by ITG/DTE/Schools.
3. As completion of the project is essence of the tender no deviation in the schedule will be permitted unless approved by the Managing Director as provided for above.

The above Schedule of implementation is acceptable to us.

**Signature of the bidder with seal**

Name:

Designation:

Place:

Date:



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

**Annexure–II Manufacturer’s Authorization Certificate  
(If applicable)  
(OEM)**

(Indicative Format)

*(The form should be signed with seal and then scanned and uploaded on the e-Tendering portal)*

*(Certificate to be issued by OEM/ manufacturer of the product(s) on the company letter head)*

To,  
The Managing Director,  
Info Tech Corporation of Goa Ltd,  
IT HUB, 3<sup>rd</sup> Floor, Altinho-Panaji-Goa-403001.

NIT Reference: No: ITG-IT/1007/CARES-PROJECT/2023-24/2737 dated 20/12/2023

1. This is to certify that M/s ..... (Name, complete address, city) are our authorized partner/Manufacturer to quote for our/the products in respect to the Tender No: \_\_\_\_\_ dated. \_\_\_\_\_
2. We also undertake that we would provide the support for the above product including warranty/ guarantee, spares of the supplied product/ products, for the project period (One Year/ Three Years).
3. The item/items being quoted is/have not been declared end of life.
4. We hereby undertake that all the components/parts/assembly/software used in the equipment shall be original new Components /parts/assembly/software of the products and that no refurbished/duplicate/ second hand components/parts/ assembly / software are being used or shall be used. In respect of licensed softwares, we undertake that the same shall be supplied along with the authorized license certificate. Also, that it shall be sourced from the authorized source for use in India. In case we are found not complying with above at the time of delivery or during installation, for the equipment already billed, we agree to take back the equipment already supplied at our cost and return any amount paid to us by you in this regard and that you will have the right to black list or take suitable action against us.
5. Our technical support/assistance centers (Name, address & communication details) shall provide tech support on all working days during the warranty period.

**Signature of the bidder with seal**

Name:



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

Designation:

Place:

Date:

**Please Note:** Authorization certificate should be provided for Manufacturer's commitment of back-to-back support to the tenderer/bidder for the equipment's and for the warranty duration as mentioned in this tender document

*DRAFT*



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

**Annexure–III Bidder Non-Blacklisting Undertaking**

(Indicative Format)

*(The form should be signed with seal and then scanned and uploaded on the e-Tendering portal)*

*(Certificate to be issued by OEM/ manufacturer of the product(s) on the company letter head)*

**UNDERTAKING**

To,  
The Managing Director,  
Info Tech Corporation of Goa Ltd,  
IT HUB, 3<sup>rd</sup> Floor, Altinho-Panaji-Goa-403001.

NIT Reference No: ITG-IT/1007/CARES-PROJECT/2023-24/2737 dated 20/12/2023

1. In response to the NIT For Supply of Robotics Hardware Kits with Onsite Comprehensive warranty and support and maintenance support for 03 years, I/We hereby declare that currently our <Name of the firm>, is not blacklisted by any State/ Central Government/ PSU on the date of Notice Inviting Tender / Bid Submission.
2. If this declaration is found to be incorrect then without prejudice to any other action that may be taken and the tender if any to the extent accepted may be cancelled.
3. We hereby also declare that all the particulars furnished by us in this Tender are true to the best of my/our knowledge and we understand and accept that if at any stage, the information furnished is found to be incorrect or false, we are liable for disqualification from this tender and also are liable for any penal action that may arise due to the above.

**(Signature with seal / stamp of the company)**

Name:

Designation:

Place:

Date:



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

**Annexure–IV Bidders Undertaking**

(Indicative Format)

*(The form should be signed with seal and then scanned and uploaded on the e-Tendering portal)*

**UNDERTAKING**

To,  
The Managing Director,  
InfoTech Corporation of Goa Ltd,  
IT HUB, 3<sup>rd</sup> Floor, Altinho-Panaji-Goa-403001.

NIT Reference No: ITG-IT/1007/CARES-PROJECT/2023-24/2737 dated 20/12/2023

We, <Name of the firm>, having a registered office at <Office address>, bearing registration no. <Registration no.>, state the following against the tender for Supply of Robotics Hardware Kits with Onsite Comprehensive warranty and maintenance support for 03 years for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.

1. We hereby agree to strictly abide by the Terms & Conditions of the tender, and also to undertake full responsibility for the successful execution of the Contract with Onsite Comprehensive warranty and support and maintenance support for 03years
2. We hereby confirm and declare that currently our Company/ firm ..... is not blacklisted by any State/ Central Government/ PSU on the date of Notice Inviting Tender / Bid Submission.
3. We hereby undertake that all the components/parts/ assembly/ software used in the equipment shall be original new Components /parts/assembly/software from respective Manufacturers/OEMs of the products and that no refurbished/duplicate/ second hand components/parts/ assembly / software are being used or shall be used. In respect of licensed software's, we undertake that the same shall be supplied along with the authorized license certificate with white-labeled of Government of Goa/logo. Also, that it shall be sourced from the authorized source for use in India. In case we are found not complying with above at the time of delivery or during installation, for the equipment already billed, we agree to take back the equipment already supplied at our cost and return any amount paid to us by you



***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

in this regard and that you will have the right to forfeit our EMD for this bid or black list or take suitable action against us.

4. We hereby also declare that all the particulars furnished by us in this Tender are true to the best of my/our knowledge and we understand and accept that if at any stage, the information furnished is found to be incorrect or false, we are liable for disqualification from this tender and also are liable for any penal action that may arise due to the above.
5. We declare that the Eligibility cum Technical and/or Commercial bids has been submitted without any conditions and strictly as per the conditions of the tender document and We are aware that the bid is liable to be rejected if it contains any other conditions.

**Signature of the bidder with seal**

Name:

Designation:

Place:

Date:





***Tender Document for Supply, Delivery and Maintenance of Robotics Hardware Kits for implementation of Coding and Robotics Education in Schools (CARES) Scheme in the State of Goa.***

**Annexure–V Technical Specification of Single Computing Device**

**Existing Single Board Computing Hardware Specifications of ICT Equipment supplied to All Schools in Goa**

1. **CPU:** Intel J4105 Quad Core CPU (up to 2.5 Ghz), 4MB Cache, x86-x64 SSE4.2
2. **GPU:** (embedded Intel Graphics expanded GPU vRAM to support D3D intensive bench applications supports up to 4K Resolution)
3. **Memory:** 8GB DDR4 (L) 2666 Mhz Ram (Upgradeable up to 16GB).
4. **Storage:** 64GB M.2 SSD. Currently 20 GB SSD storage is free.
5. **Connectivity:** Wireless (Card): Mini PCI Express Realtek AC 1200 with Bluetooth 5 Card
6. **I/O:** 4 X USB 2.0, 2 X USB 3.0, 1 X HDMI Port (up to 4K), 1 X 3.5MM Combo Audio Jack, VGA (up to Full HD 1080p), 2 X Intel GPIO linked R232 Ports.
7. **Operating System:** Linux Mint (22) with all required software's and libraries. (Supports all x86 and x64 Intel support operating systems).

**Gomantak Vishwa Network (GOVIN) IDE**

1. Govin IDE is based on Ardublockly IDE which is open source and distributed under Apache Licence 2.0.
2. The microcontroller should receive the compiled code from Govin IDE, via serial communication port which the microcontroller should operate on a standalone basis with separate power source.
3. A simple blinking LED program on their microcontroller should be implemented using Govin IDE.
4. Working of a few components has to be demonstrated by the Bidder on Govin IDE. For e.g., Ultrasonic Sensor, IR sensor, Sound Sensor, LDR Sensor, BO Motor, Servo Motors, LED Display during Compatibility Testing after opening of tender technical bids
5. The Bidder have to carry out experiments as provided by DTE on the day of testing.



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**Annexure–VI Pre-Bid Queries Format**

Name of the Company/Firm:				
Name of Contact Person	Designation	Address for Correspondence	Email-ID(s)	Tel. Nos. & Fax Nos.
Query/Clarification Sought:				
S.No.	Tender Document Page No.	Tender Document Clause No	Clause Details	Query/ Suggestion/ Clarification

**Note:** Queries must be strictly mailed at e-mail ID: [naik-sagar-itg@goa.gov.in](mailto:naik-sagar-itg@goa.gov.in) / [vishwas.kavthankar@nic.in](mailto:vishwas.kavthankar@nic.in) / [gaurav.naik@gov.in](mailto:gaurav.naik@gov.in) in doc format. Queries not submitted in the prescribed format will not be considered/ responded at all by the tendering authority.