



"Enabling Excellence: End-to-End Solutions for AI Lab Setup, Maintenance, and Training"

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa on behalf of Office of District Collectorate (North-Goa) and Office of District Collectorate (South Goa).

Tender No: ITG-IT/1025/AI Labs-MPLAD/2023-24/2912

Date of Issue: 19.01.2024

Last Date of Submission of Bids: 08.02.2024



Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa

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Disclaimer

This tender document towards for “Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa” on behalf of Office of District Collectorate (North-Goa) and Office of District Collectorate (South 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.

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

Definitions & Acronyms

#	Titles	Details
1.	GoG	Government of Goa.
2.	ITG	Info Tech Corporation of Goa Ltd.
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.
13.	PAN	Permanent Account Number.
14.	PBG	Performance Bank Guarantee.
15.	Kits	AI Hardware Kits with software
16.	MPLAD	Member of Parliament Local Area Development
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	Micro, Small & Medium Enterprises
26.	AI	Artificial Intelligence
27.	STREAM	Science Technology Reading Art and Mathematics
28.	Bidder/Prime Bidder	Agency/Company part of the consortium (only one consortium partner is allowed) and severely responsible for executing the work as mentioned in the tender and acts
29.	IT/ITES	Information Technology/ IT Enabled Services

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.

Now on behalf of Office of District Collectorate North-Goa and Office of District Collectorate South Goa, ITG is entrusted for work towards Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa under MPLAD funds with 01 year or 03 years (as the case may be) of warranty to target 80 nos. schools in the state of Goa.

Chapter 2 Project Background

Artificial Intelligence Lab is an ecosystem to foster learning, creativity, and innovation in Artificial Intelligence, Machine Learning and Robotics. AI Lab aims at enabling educational institutions towards creating an ecosystem to foster learning, creativity, and innovation in Artificial Intelligence, Machine Learning and Robotics. It helps kids to understand complex industry standard AI and robotics concepts in an easy and playful manner through exciting real world application based DIY projects.

Large number of career opportunities in Tech, Coding, AI, Robotics, and STREAM. Early exposure of coding to students nurtures logical reasoning and problem solving. STREAM stands for Science, Technology Engineering, Art and Mathematics. But it's more than that. STREAM has grown to represent a unique approach to teaching and learning, one that centers around individual students' learning styles and interests. This means STREAM education has something to offer every student.

Artificial Intelligence, refers to the development of computer systems that can perform tasks that typically require human intelligence. These tasks include things like learning, reasoning, problem-solving, perception, and language understanding. AI can be categorized into two types: Narrow AI, which is designed for a specific task, and General AI, which would have the ability to understand, learn, and apply knowledge across various domains—essentially, more human-like intelligence. The field of AI covers a range of techniques, from rule-based systems to machine learning algorithms, and it's constantly evolving. It's an exciting field with the potential to revolutionize how we interact with technology.

Benefits-

- Learners can design and develop multiple projects using AI Lab elements and machine parts to understand STREAM concepts.
- Learners can work on multiple projects by using a variety of AI Lab elements and machine parts to design and understand the concepts.

- Learners will apply lots of theoretical concepts during the course with the help of kits provided to them.

The future of AI and machine learning (ML) in startups is an exciting and rapidly evolving space. As these technologies continue to advance, startups are likely to find new and innovative ways to harness their power to achieve their goals and remain competitive. One of the key trends that we can expect to see in the future is an increased use of AI and ML in automating routine tasks and business processes. This will allow startups to do more with less, and to allocate their resources to higher-value activities. Startups that are able to harness these technologies to create innovative offerings are likely to find success in the marketplace and stand out from the competition.

Chapter 3 Scope of the Work

1. On behalf of Office of District Collectorate North-Goa and Office of District Collectorate South-Goa, ITG is entrusted for work towards Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa after following codal formalities across 80 no. of schools in the State of Goa.
2. The Objectives of this project as follows:
 - AI (multi-disciplinary subject) for school students.
 - Practical understanding of concepts.
 - Critical and Creative thinking.
 - Authentic Problem solving.
 - Team Work and Team Player.
 - Transforming Students to Innovator.
 - Tech-savvy professionals with much more generosity than those struggling with technology.
3. Brief Scope: Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs Kits with comprehensive warranty.
 - a) Site survey & feasibility at identified Schools in Goa.
 - b) Supply, Delivery and Installation of AI Kits with required software in the selected schools.
 - c) Configuration & Set up of AI kits in Labs including hardware and software.
 - d) The Bidder shall ensure the safe delivery of the equipment up to the designated place of delivery/installation. Any transit insurance, labor, road permits etc., if required for the same, shall be arranged by the Bidder at no extra cost to ITG/Client Department.
 - e) Testing of the equipment commissioned and ensuring proper functioning at all levels.
 - f) Training of teachers for the operation of AI Lab kits supplied.
 - g) The bidder needs to submit the successful completion of training along with the attendance sheet and acknowledgment of the teachers.

- h) The proposed solution should have latest technology features and standards.
- i) Overall operation and management of the entire project during Warranty /Maintenance Period.
- j) Deployment of requisite manpower with requisite qualification & experience for the operation support of AI Lab.
- k) The Bidder will be required to maintain the entire AI Kits with its associated software during warranty period. However, the school's premises upkeep, safety and the electrical maintenance will be the responsibility of the school authorities.
- l) The Bidder must ensure that the IT equipment and accessories supplied and delivered by them to each school are in good condition. Each IT equipment and accessories shall be packed in a non- hazardous packing of appropriate size. If any defect is found pursuant to the post-supply test in respect of the supplied quantity of the IT equipment and accessories, the Bidder shall replace the rejected equipment and accessories for the particular School with the new ones as per the instructions of ITG/School.
- m) The bidder is responsible to maintain documentation on the progress of the AI Lab work and will have to update the same on regular basis to ITG.
- n) Bidder has to provide learning content/study material (multi-disciplinary subject) for AI Lab kits along with Learning Management System.
- o) Helpdesk and onsite support for repair and maintenance of AI Labs Kits including Hardware and software.

4. The details of the schools/High Schools/ Higher Secondary's to be covered (indicative list and subject to change/vary) are mentioned below:

Table-A

Sr. No	Taluka	No. of Schools
North Goa		
1	Pernem	22
2	Bardez	18
3	Tiswadi	30
4	Sattari	04
South Goa		

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1	Salcete	01
2	Dharbandora	02
3	Quepem	02
4	Canacona	01
Total:		80

5. The items (including consumables & non-consumables) to be supplied are indicated in table/s below and its technical specifications are summarized in the subsequent sections:

Table-B (Functional Specifications)

SI. No	Item	Specification	Quantity per kit
1	Advance Robotics Kit	<p>The Advance Robotics kit should be made up of Aluminium materials having rust-proof features.</p> <p>Advance robotics kit should have the capability of making 170+ Projects, The Kit should have a minimum of 30 different structural parts that enable different models.</p> <p>The kit should consist of different types of sensors (at least 8 types of sensors), DC motors, and servo motors, WIFI, Bluetooth.</p> <p>The kit should have a programmable CPU with at least 6 Analog input pins and 8 digital I/O pins with AVR architecture, integrating features of Bluetooth and WIFI control, inbuilt drivers, and a power mechanism, The Kit should also have the feature of easy-to-connect plugins for sensors, motors, servos, etc.</p> <p>The kit should have a rechargeable battery and related components.</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness.</p>	1 Kit

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		<p>Dimension of boxes- minimum 331*300*170 mm. Drawer: Minimum One Drawer box Material: Water- Resistance. Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	
2.	AI Bionic Arm	<p>The bionic arm should have an Aluminium-based structural composition that boasts rust-resistant attributes.</p> <p>The system's design must incorporate a minimum of five degrees of freedom, ensuring the finger's flexibility and controllability across a diverse range of angles.</p> <p>The bionic arm should be capable of operating AI-based systems and having machine learning capabilities. The system should have a programmable CPU with at least 6 Analog input pins and 8 digital I/O pins with AVR architecture with servo controls, having a battery and power management system. The Bionic Arm should have a camera feedback system.</p> <p>The kit should consist of an assembled bionic arm with a bionic arm cover and base support for keeping the electronics and battery system within the assembly. The bionic arm should have a camera to perform the functions of hand tracking, position tracking, and stack imaging. The bionic arm should have the feature of human-centric control based on AI. The kit should also consist of necessary accessories incorporated into the working of the bionic arm</p> <p>The bionic arm should be stable and standing and have a height of a minimum of 45 cm and a width of a minimum of 19cm</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness</p> <p>Dimension of boxes- minimum 331*300*170 mm</p>	1 Kit

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		<p>Drawer: Minimum One Drawer box</p> <p>Material: Water- Resistance.</p> <p>Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	
3	Space Exploration Kit	<p>Space exploration kits should have the bogie mechanism-based running rover and should have the capability of communicating with the satellite.</p> <p>The rover should have a minimum height of 45 cm, length of 60cm, and width of 35cm and be made up of high-grade Aluminum.</p> <p>Rover should also include the capabilities of finding and exploring different types of gases like CO₂, Methane, Ammonium, Butane hydrogen Gas, Soil Moisture, and similar capabilities.</p> <p>Space Exploration Rover should have a compatible camera with the controller for image analysis, and visualization of data with human and object-identifying capabilities.</p> <p>Rover should also have a minimum of 6 motors, with 15 rpm 12V servos having a torque of 25kg.cm with human and object-identifying capabilities</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness</p> <p>Dimension of boxes- minimum 331*300*170 mm</p> <p>Drawer: Minimum One Drawer box</p> <p>Material: Water- Resistance</p> <p>Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	1 Kit
4	AI Robotic Arm	<p>A sophisticated robotic arm with AI-driven capabilities, including intelligent object pick and place with a minimum dimension of 180mm*180mm*180mm. It should utilize advanced bus servos for control and should integrate with different sensors for enhanced functionality.</p>	1 Kit

		<p>The system should comprise of 4-degree-of-freedom. The structure should be crafted from a combination of robust aluminum materials.</p> <p>This system should feature a sophisticated linkage mechanism designed to enhance the learning of inverse kinematics.</p> <p>It should seamlessly integrate with at least different sensors, enabling the execution of diverse tasks.</p> <p>Moreover, its adaptability should allow it to replicate industrial scenarios effectively.</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness.</p> <p>Dimension of boxes- minimum 331*300*170 mm</p> <p>Material: Water- Resistance</p> <p>Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	
5	Vision Visual Kit	<p>A Vision Visual kit should have a user-environment-friendly wooden structure with the features of a smart solution for visual analysis.</p> <p>The Vision Visual Kit should have the features of recognizing images, classifying, extracting, and detecting different assigned tasks and should also support barcode and QR code scanning.</p> <p>The kit should have machine learning and real-time processing capabilities, it should seamlessly integrate with similar other devices or kits for more benefits.</p> <p>The kit should consist of an intelligent controller, cameras, connectors, and related wooden environment-friendly parts to make different projects.</p> <p>The kit should offer a user-friendly interface for various applications, making it a powerful tool for AI-driven projects.</p>	1

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		<p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness</p> <p>Dimension of boxes- minimum 331*300*80 mm</p> <p>Material: Water- Resistance</p> <p>Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	
6	Voice Interaction Kit	<p>A voice Interaction kit should have a user-environmentally friendly wooden structure with the features of a smart solution for voice interaction.</p> <p>The Voice Interaction Kit should have the capability with which different projects based on voice recognition, synthesis, and commands could be made. The kit should also have capabilities of integration into various projects.</p> <p>It should have capabilities to support a range of applications, from smart home control to voice-controlled devices.</p> <p>The kit should consist of an intelligent controller, Microphone boards, connectors, speakers, and related wooden environment-friendly parts to make different projects.</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness</p> <p>Dimension of boxes- minimum 331*300*75 mm</p> <p>Material: Water- Resistance</p> <p>Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	1 kit
7	Satellite Communication kit	<p>A Satellite communication Kit should have a device that offers satellite connectivity for remote data transmission. It should enable reliable two-way</p>	1 Kit

		<p>communication, allowing data to be sent and received from virtually anywhere on Earth.</p> <p>Satellite Communication Kit should be ideal for applications such as remote monitoring, tracking, and AI projects. It should provide a versatile and efficient solution for staying connected in remote or challenging environments.</p> <p>The kit should consist of satellite communication devices and different electronic sensors to work with the satellite devices, connectors, compatible controllers, displays, and power supply components.</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness</p> <p>Dimension of boxes- minimum 331*300*75 mm</p> <p>Material: Water- Resistance</p> <p>Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	
8	Weather Station Kit	<p>Weather Station Kit should have the capability of predicting rainfalls, wind speeds, temperature, humidity, pressure, altitude, etc., and also be empowered to monitor and analyze weather conditions.</p> <p>The kit should offer a user-friendly interface for data visualization and analysis. It should be easy to set up and compatible to work with different sensors.</p> <p>The Weather Station Kit must encompass elements that offer a tactile and interactive approach to understanding meteorology and the collection of environmental data.</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging: Environment-friendly 3- ply Box</p> <p>Dimension of Covering Box: 380*148*410mm</p> <p>Inside Packaging: Pulp packing cushioning</p>	1 Kit

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9	Smart Health Kit	<p>The smart health kit should consist of three Programable Smart Watch each of a max size of 50mm*38mm which should combine the functions of tracking fitness metrics like step counting, heart rate monitoring, and creating different health reports.</p> <p>The smartwatch should be capable of connecting with apps for various tasks. The Kit should consist of a programmable controller, watch cases, straps, different sensors and displays, and other relevant components for creating a smartwatch.</p> <p>The programmable watch should have the capability of connecting with different types of sensors to monitor different health parameters.</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness Dimension of boxes- minimum 331*300*75 mm Material: Water- Resistance Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	1 kit
10	Smart Agriculture Kit	<p>Smart Agriculture kits should consist of soil testing tools, irrigation systems, and crop monitoring sensors.</p> <p>The kit should have the resources needed to make decisions, optimize crop yields, and should enable analysis of different aspects of crops</p> <p>The kit should encompass a diverse array of sensors, controllers, displays, batteries, cameras, and more.</p> <p>The kit should be specifically engineered to enable the creation of various AI-based projects within the domain of Smart Agriculture. The kit should have the capability to accurately identify a spectrum of diseases on leaves, growth of crop height, etc., and should have functions that enable efficient resource management, and data-driven decision-making.</p>	1 Kit

		<p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness</p> <p>Dimension of boxes- minimum 331*300*75 mm</p> <p>Material: Water- Resistance</p> <p>Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	
11	Smart City Kit	<p>A Smart City Kit should encompass of diverse array of sensors, displays, controllers, and sophisticated data processing mechanisms.</p> <p>This kit should be meticulously designed to facilitate the execution of various projects and data analysis, aimed at enabling efficient resource management and fostering data-driven decision-making within urban environments.</p> <p>The kit should encompass a diverse array of sensors, controllers, displays, batteries, and related electronic components.</p> <p>The Smart City Kit should encompass an integral tunnel of size minimum 70*30*50 cm component that serves as an educational platform for students to seamlessly integrate a diverse spectrum of AI-driven projects.</p> <p>This inclusive infrastructure should empower students to construct comprehensive systems for data analysis and prediction about traffic patterns, vehicle dynamics, and driver behaviors.</p> <p>The kit should be robust, reusable, and suitable for continuous institutional use.</p> <p>Packaging Box – Environment-Friendly Rigid Box made up of cardboard with a minimum 1.1 mm thickness</p> <p>Dimension of boxes- minimum 331*300*75 mm</p> <p>Material: Water- Resistance</p> <p>Inside Packaging: cushioning/EPF Hard and Soft Foam</p>	1

6. Deliverable Modules for AI Lab: The modules suitable for each grade, enabling optimal learning outcomes through Learning Management System (LMS). The bidder has to enable imparting of minimum 32 learning sessions which includes 07 introductory sessions and 25 practical session. The session should be held at-least 01 per week wherein during the sessions minimum 15 numbers of projects/experiment will be carried out per grade of class. The bidder has to keep record of the sessions/activities conducted through dashboard of LMS.

Table-C (Indicative Modules)

Project for Grades 1-4	
Sl. No	Topics
1	Bluetooth-enabled Aero plane Working Model
2	Motorized Bluetooth-controlled Speedster Working Model
3	Motorized Bluetooth- Enabled Working Bus Model
4	Bluetooth-enabled working model of Cradle
5	Bluetooth-enabled Juicer Mixer Working Model
6	Bluetooth Enabled working Tank Model
7	Bluetooth-enabled Train Working Model
8	Working Bluetooth-enabled model of Elephant
9	Swing Couch Working Bluetooth enabled model
10	Motorized Bluetooth-controlled Amusement Park Working Model
11	Bluetooth Controlled Working Model of Catapult
12	Bluetooth-controlled motorized working model of a Fishing Rod
13	Bluetooth Enabled working model of Level Crossing
14	Working Bluetooth-controlled Giant Wheel concept
15	Bluetooth-controlled Working Model of Traffic Signal Model
16	Bluetooth-controlled Agri cutter Working Model
17	Bluetooth Controlled Apiculture Working Model
18	Bluetooth-enabled Working model of Lever
19	Bluetooth-enabled Working Model of Motion
20	Bluetooth-controlled Working Model of Football Player Shoot

Projects for Class 5- 7	
1	Bluetooth-Controlled Working Model of Turtle Movement
2	Bluetooth Controlled Working Model of Wood Cutting Machine
3	Bluetooth Controlled working model of Pulley
4	Bluetooth-controlled motorized Rocking Chair Working Model
5	Programmable model of Fork Lifter
6	Programmable working advanced robot of Light Intensity Finder
7	Programmable AI – Pedometer to Count Steps
8	AI-Powered Digit Recognition System & Model
9	AI-Powered Communicating Plant
10	Programmable Atmospheric Pressure Identifier
11	Programmable model to find the Distance of Object
12	AI-Powered Fruit Ripe Detection System
13	AI-powered Plant height detection System
14	AI-Powered Programmable Voice User Story Teller System
15	AI-Powered Air Quality Monitoring System
Projects for Grades 8-10	
1	AI-Powered Image Recognition Programmable System
2	Advanced Robotic Parameter Finder System
3	AI-Powered Auto Plant Watering System
4	Programmable advanced working model of Solar Tilting Panel
5	AI-Powered Voice Control LED System
6	Programmable advanced robotic working model to find Areas of Basic Shapes
7	AI-Powered Rain Prediction System
8	AI-powered voice Detection System
9	AI-Powered Smartwatch with Gesture-controlled System
10	AI-Powered Voice Activated Door Opening System

11	Programmable advanced robotic working model of Pythagoras Theorem
12	AI-Powered Object Detection System
13	Sorting of material Through Pick and Place using Image Recognition
14	AI-Smart Crop and Plant Care System
15	AI-Heart Health Monitor System with Sound Alert
Projects for Grades 11-12	
1	AI-Powered Face Detection System
2	AI- Voice Activated Weather Station System
3	Smart Health Monitor with AI-Driven Stress Detection
4	AI-powered wind speed finder and Prediction system
5	AI- Smart Agriculture Monitoring and Prediction System
6	AI Voice Control Home Automation System
7	Smart Parking System
8	Mirroring of Human Arm Movement through Bionic Arm
9	AI-Powered Phenomena Detection System
10	AI-Powered Image Classification System

- a) Integrated Learning Platform: Bidder should have a comprehensive teaching and learning platform, accessible through web application throughout its warranty period.
- b) Real-time Progress Monitoring: The system should enable continuous tracking of student lessons via the app and web portal. LMS should enable reports generation upon course completion.
- c) Engagement and Competition: The LMS should have a leaderboard and gamification elements that encourage healthy competition among students, based on lessons completed within the platform.
- d) Structured Learning Path: LMS should enable course locking initially, unlocking sequentially to guide students through a methodical learning journey. The LMS should include tools for assigning quizzes, assignments, and projects to enhance the learning experience.

- e) Scheduling of Teachers for each class in school roster.

7. Training to the teachers/ CapacityBuilding:

- a) The Bidder should provide comprehensive training (minimum 3 days) to the recommended schools at the site (offline) as an integral component of the project.
- b) The training schedule shall be integrated into the overall project timelines.
- c) The Bidder shall provide the necessary training materials, including documentation, manuals, presentations, and any other resources required for effective training.
- d) Conduct training need assessment and prepare a detailed training strategy. Such strategy shall provide training set-up details, training approach and methodology, training plan etc.
- e) Training Materials, Applications, User Manual for each grade and Completion Reports.
- f) Bear the expenses towards training, quoted as part of the Financial Proposal submitted.
- g) Provide hands-on training on the hardware, software application such that users are conversant with the functionalities, features and processes built in the solution.
- h) Submit Attendance Record of the attendees (in Hard copy) along with the session plan for the day.
- i) Deploy adequate training resources.
- j) Deployed trainers should be fluent in speaking Konkani/Marathi, English & Hindi.
- k) The Bidder shall responsible for training and handholding of the school teachers/headmaster so they can further train the other teachers accordingly.
- l) The Bidder has to develop a training manual for each of the AI LAB activity for the teachers which should act as a ready reference by the teachers at school level.
- m) Bidder has to train minimum three teachers at each school. Training to the teacher shall be conducted in batches at respective site school.
- n) Post-installation Quarterly review with all schools post training delivery.
- o) Alternate month onsite training of each school for 1 year for handholding activities.

8. Helpdesk and Onsite support:

- a) The Bidder shall be required to set up a centralized Helpdesk support for logging issues and complaints from various stakeholders and resolving them in time bound manner.
- b) The helpdesk service will serve as a single point of contact for all the support related activities.

9. Warranty & Support(onsite and comprehensive):

- a) The bidder has to provide Three (03) / One (01) Year(s) Period - as the case may be, Warranty and Support from the date of Final Acceptance Test (FAT) of the Project.
- b) The bidder should ensure the smooth functioning of all the equipment supplied for AI/Robotics Lab during the warranty & support period and to achieve the highest uptime on the offered solution.
- c) The bidder shall ensure that the equipment supplied shall not be declared as End of Support / End of Service for a period of warranty and the software upgrades if any shall be available for warranty period from the date of commissioning of the device.
- d) On-site warranty support from the Bidder.
- e) Warranty shall not be applicable in following cases:
- f) Defects or malfunction caused intentionally or physical damage.
- g) Defects or malfunction caused due to Power or Voltage Fluctuation in schools or equipment.

10. Manpower: The Bidder is required to have technical manpower of following nature for implementation of this project:

Table-D

Manpower	Qualifications	Duration
Project Manager (01 No.)	<ul style="list-style-type: none"> Minimum Qualification: BCA / B.Sc (Computers)/ B.E. / B- Tech /MSc in (IT/ Electronics/ Computer Science) Minimum Experience Required: - 3 to 5 Years of Extensive. 	Deployment + Warranty

	<ul style="list-style-type: none"> High-Level Professional Experience & Skills in the fields of IT Infrastructure Management / Program or Project Management in Govt. /PSU / Private Sector in India. 	
Training and Change Management Expert (03 No.)	<ul style="list-style-type: none"> Minimum Qualification: BCA/ B.Sc (Computers)/ B.E. / B- Tech //MSc in (IT/Electronics/Computer Science) Minimum Experience Required: - 1 to 3 Years of Extensive High-Level Professional Experience & Skills in the fields of imparting training to the users on AI/ Robotics/ Hardware Equipment/ Software Application in Govt. / PSU/ Private in India. 	Training and Project Implementation Phase
HelpdeskSupport Staff (04 No.)	<ul style="list-style-type: none"> Graduate/Diploma in any discipline with proficiency in Konkani/Marathi, English & Hindi have minimum 2 to 3 years and above experience in STREM Support Service Centre. 	Warranty Duration

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 Supply, Delivery, Installation, Training & Maintenance of Artificial Intelligence (AI) kits with hardware and software required for AI labs. Bidders who fulfill the eligibility criteria shall participate in the tender:

Sr No	Item	Particulars
1	Description of the work	Supply, Delivery, Installation, Training & Maintenance of Artificial Intelligence (AI) kits with hardware and software for AI Labs in the State of Goa under MPLAD funds (Goa) on behalf of Office of District Collectorate (North-Goa) and Office of District Collectorate (South Goa)
2	Mode of Tendering	e-Tendering
3	E-Tendering Website	https://eprocure.goa.gov.in
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.24,00,000/- (Rupees Twenty Four Lakhs only)
7	Mode of Tender Document, Tender Processing Fees & EMD	To be paid online through e-payment mode via NEFT/RTGS/Net Banking facility

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa

8	Start of Tender Request	From 19.01.2024 to 08.02.2024
9	Date and Time for Submission of Pre-Bid Queries	23.01.2024 at 05.00 PM
10	Date and Time for Pre-Bid meeting	24.01.2024 at 03.30 PM
11	Date & Time for reply to Prebid clarification	25.01.2024 upto 05.00 PM
12	Last Date and Time for Online submission of bids	08.02.2024 upto 05.00 PM
13	Date and Time for opening / of Eligibility cum Technical bids	09.02.2024 at 03.30 PM
14	Date and Time for the Technical Presentation and Submission of sample set of AI kit	Intimation regarding time slots shall be given subsequently.
15	Date and Time for opening / of Financial bids	Intimation will 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 to the Tender in every respect will be at the Bidder's risk and may result in the rejection of the bid.

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa

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:
 - 7972854213
 - 7822039673
 - 7972871944 or

email us at e-tender.goa@gov.in

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 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.
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.
19. The bidder may enter into **Consortium** for participating in the tender process satisfying following mentioned criteria:
 - a. The number of members in a consortium shall not be more than Two (02) i.e. including one prime bidder and One consortium partner.
 - b. The bid should contain details of all the members of the consortium including their legal status and specify their roles and responsibilities in the project.
 - c. Each bidder can participate in only one bid (either as prime bidder or a member of the consortium)
 - d. The Bid should clearly specify the roles and responsibilities of all the members in the consortium, as envisaged for the project
 - e. The members of the consortium shall enter into a Power of Attorney/Memorandum of Understanding (MoU)/Letter of Agreement (Non-judicial stamp paper) for the purpose of submitting the proposal and the same shall be submitted to ITG with the proposal.
 - f. The Prime bidder shall commit to hold an equity stake/interest of at least fifty one (51%) during the tenure of the project.
 - g. The Prime bidder of the consortium shall be solely responsible for all implementation of the entire scope of the project.

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:** Eligibility of Bidders towards documentary evidence in support of fulfilling eligibility conditions
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.

1. **ELIGIBILITY CRITERIA FOR TENDERER / BIDDER FOR THE PURPOSE OF QUOTING IN THIS TENDER**

Sr.No	Clause	Documents required
1	<p>Legal Entity:</p> <p>The Bidder/Prime 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.</p> <p>The Bidder should have office in Goa or should setup local office in the state of Goa within 15 days of signing of agreement.</p>	<p>Valid documentary proof of:</p> <ul style="list-style-type: none"> - Certificate of incorporation - Registration Certificate <p>Upload as Document A</p>

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

2	<p>Bidder's Turnover:</p> <p>Bidder/Prime Bidder responding to this tender document should have a minimum total turnover of average Rs. 12.00 Crores during the last 03 financial years from the date of publishing of the tender (2020-2021, 2021-2022 & 2022-2023).</p>	<p>Valid documentary proof of:</p> <p>- Copies of the audited accounts for the last three years. OR</p> <p>-In case 2022-23 audited accounts is not available then the bidder has to produce Certificate from CA.</p> <p>Upload as Document B</p>
3	<p>Bidder's Experience:</p> <p>Bidder/Prime Bidder must have successfully executed during the last 07 years (as on the date of bid submission), at least any one of the following.</p> <ul style="list-style-type: none"> • Three works, each comprising of carrying out Supply, Installation and Commissioning of AI /Robotics Activities /Smart Classroom Equipments for Govt. /PSUs /Govt. agencies/Govt. Aided agencies of value not less than Rs. 5 Crores in India. <p>OR</p> <ul style="list-style-type: none"> • Two works, each comprising of carrying out Supply, Installation and Commissioning of AI /Robotics Activities /Smart Classroom Equipments for Govt. /PSUs /Govt. agencies/Govt. Aided agencies of value not less than Rs. 7 Crores in India. <p>OR</p> <ul style="list-style-type: none"> • One work comprising of carrying out Supply, Installation and Commissioning of AI /Robotics 	<p>Valid documentary proof of:</p> <p>Copies of the Work order along with proof of successful completion /Client certification.</p> <p>Upload as Document C</p>

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

	Activities /Smart Classroom Equipments for Govt. /PSUs /Govt. agencies/Govt. Aided agencies of value not less than Rs. 10 Crores in India.	
4	<p>Manufacturer Authorization Form (MAF) from Original Equipment Manufacturer (OEM): If applicable.</p> <p>Bidder/Prime Bidder should submit an authorization from the Manufacture(s) for the items quoted by them.</p>	<p>Valid documentary proof of:</p> <p>The Manufacturer's original authorization certificate (MAF) as per the Annexure III.</p> <p>Upload as Document D</p>
5	<p>Goa Office, Professional Trainers, Service Center & Service Engineers:</p> <p>Bidder/Prime Bidder should have an office and a local service center including local Technical Repair Center with professional trainers in Goa or should furnish an undertaking that the same would be established within 15days of signing the contract.</p> <p>The bidder should have at least 08 Service Engineers/ Technical Personals affiliated with its organization.</p>	<p>Valid documentary proof of:</p> <ul style="list-style-type: none"> - Copy of Municipal / Panchayat / Trade Licence / or related document. - 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. <p>Upload as Document E</p>

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

6	Statutory Registrations Bidder/Prime Bidder should have in its name a valid PAN and GSTRegistration number in India.	Copies of relevant Registrations Upload as Document F
7	Black listing/Termination: A self-certified letter by the authorized signatory of the Bidder/Prime Bidder that the bidder has not been blacklisted by any Central / State Government in India.	As per attached Annexure. Upload as Document G

NOTE

- i. Tenderer / Bidders are requested to upload a scanned copy of the original documents as valid documentary proof.
- ii. 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.
- iii. 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.
- iv. Only one bid is permitted by a single Tenderer/Bidder.
- v. 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 (for units in Goa as manufacturer having Udyam registration with Directorate of Industries, Trade and Commerce (DIC), Goa) 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 of Rs 5000/- (Maximum). And Tender document fee to the tune of Rs. 500/- (max). The bidder should produce (upload verification certificate from DIC Goa to this effect. If the bidder has quoted with consortium partner, it is not eligible for NSIC/MSME exemption.



Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

- vi. 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. If the bidder has quoted with consortium partner, it is not eligible for startup related exemption.

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. **Form of EMD:** Tenderers / Bidders shall submit, an Earnest Money Deposit (E.M.D.) of Rs. 24 Lakhs (Rupees Twenty Four 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.

- iv. 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.
- v. 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-V through email at gawas.akshada-

itg@goa.gov.in, vishwas.kavthankar@nic.in and 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.
- 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/ 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.

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.

III. Alternative Bids: Alternative bids shall not be considered at all.

IV. Bid prices and Discounts:

- a) All the prices should be quoted only in Indian Rupees (INR) currency.
- b) All rates quoted must be shown in the Format for Price Quotation only. ITG will not pay any cartage or transportation charges
- c) The prices and discounts quoted by the Tenderer/Bidder in the Price Schedule/ Financial Bid shall conform to the requirements specified therein.
- d) The price to be quoted in the Bid Submission Sheet shall be the total price of the Bid including any discounts offered.
- e) 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.
- f) 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.

V. Validity of Bids:

- a) 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.
- b) In exceptional circumstances, the Tendering Authority may solicit the Tenderer's/Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (letter/e-mail).

VI. Deadline for submission of Bids:

- a) Bids must be submitted on the website <http://eprocure.goa.gov.in> no later than the date and time indicated in the NIT.
- b) 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.

- c) 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.

VII. Delayed / Late Bids:

- a) 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.
- b) 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.

VIII. 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.

IX. Bid Opening:

- a) The Tendering Authority / designated Tender Evaluation Committee shall conduct the bid opening at the date and time specified in the NIT.
- b) 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>
- c) 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.
- d) 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.
- 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 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 eligibility criteria, Presentation and Financial 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. 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.

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- iii. The tenderer/Bidder will have to provide the technical presentation to the Tendering Authority / designated Tender Evaluation Committee.
- iv. The Tenderer / Bidder has to submit one sample set of AI kit to the Tendering Authority / designated Tender Evaluation Committee which the bidder intends to supply to the schools under this tender during the technical presentation. The sample set of AI kit shall be return to the bidders(successful/unsuccessful) after placing of work order.
- v. Based on the Technical Presentation marks will be provided to the tender /bidders quoted product/kits. The criteria's & marks for the allocation are cited below:

Table – Technical Evaluation

S.N.	Criteria	Basis of Valuation	Maximum Marks	Supporting documents
A	Financial Professional Strength of the Bidder		35	
A1	Turnover of the bidder in last 03 years from AI/Robotics Activities /Smart Classroom Equipments Business.	>=12 Cr to <15 Cr := 10 marks >=15 Cr to <20 Cr := 15 marks >20 Cr to <25 Cr := 20 marks >=25 Cr : := 25 marks	25	CA Turnover Certificate.
A2	Any Certification of the product supplied by Bidder / Bidder's Firm.	2 Certifications: := 5 Marks > 2 Certifications: := 10 Marks	10	Copy of the valid Certificate
B	Experience of the Bidder		25	
B1	Experience (in terms of no of devices) in the Supply, Installation and Commissioning of AI /Robotics Activities	>= 400 to <800 (devices) := 10 Marks >= 800 to <1200 (devices) := 15 Marks ≥ 1200 and <1600 (devices)	25	Copy of Work Orders and Copy of Satisfaction or completion certificate from

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	/Smart Classroom Equipments for Govt. /PSUs /Govt. agencies/Govt. Aided agencies	:= 20 Marks ≥ 1600 (devices) := 25Marks		the Client. In case of project ongoing then partial completion certificate.
C	Technical Presentation		40	
C1	Presentation	<ul style="list-style-type: none"> • Understanding of the project • Detailed work-plan and methodology • Proposed Mechanism of Project Monitoring • Operation & Maintenance Support plan Demonstration of previously executed projects i.e., Monitoring /Ticketing tool, incident tracking system, incident closure mechanism for evaluation of the Bidder's capability on Operations & Management. • Drawings/Design of Product kits • Live demonstration of Learning Management System & experiment running/testing on sample set of AI kit. • Implementation (including training of Personnel) Roadmap 	40	ITG will inform the presentation timeline to qualified bidders
Grand Total			100	

- vi. Proposal Presentations: The Bid Evaluation and Technical Committee will invite each qualified Bidder to make a presentation to ITG as per their discretion.
- vii. 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.
- viii. 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.
- ix. The Bid Evaluation Committee shall indicate to all the Bidders the results of the technical evaluation through a written communication. The technical scores of the Bidders will be announced prior to the opening of the Financial Proposals.
- x. The technically shortlisted Bidders will be informed of the date and venue of the opening of the Financial Proposals through a written communication.
- xi. Technical Score (X): The score secured based on evaluation of the Technical Proposal as above shall be the Technical Score of the Bidder for the project being considered as X.
- xii. Only those Bidders who have secured satisfied all the pre-qualification criteria and who have secured Technical Score of **70 or above out of 100** 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

- a. Financial Score (Y): 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 F1 (Sr. No. A.1): Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs with Three Year Warranty.

- b. Table F1(Sr. No. A.2): Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs with One Year Warranty.
- c. Table F2: Supply of Consumables items during the warranty/maintenance period.
- d. Table F3: Quotes for maintenance for the period of 1st consecutive year and 2nd consecutive year after the end of one year of warranty period
- c. The financial proposal shall comprise of the financial quote of the Bidder, which is calculated by taking into consideration efforts required by the Agency to fulfill the specified scope of work.
- d. The Bidders shall submit their quote as per the financial Bid format provided on portal <https://eprocure.goa.gov.in> .
- e. Financial Proposal should not have any conditionality attached or deviations from the Price Quote format as indicated in the Bid document. Bids with conditions attached may be treated as non-responsive and liable for rejection at the discretion of the Authority.
- f. Evaluation will be done only on the total cost quoted by the Agency.
- g. In this phase, the Financial Bids of the bidder, who are technically qualified in Phase I, shall be opened in the presence of one representative each from the respective bidders who choose to attend. The name of the bidder and the quoted fees shall be read aloud and recorded.
- h. The financial offers of the qualified bidders (who have secured technical score of 70 or above) shall be tabulated for this project and the bidder with lowest financial offer will be given a financial score of 100.

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- i. The financial scores of other bidders for the project shall be computed as follows:

<p>[The 'financial score' of Bidder for the project(Y)]</p>	<p>[Lowest offer quoted by the respective bidder for the project(Rs.) Inc. of taxes]</p>
<p>=100 X</p>	
	<p>[Offer quoted by the respective Bidder for the project (Rs.) Inc. of taxes]</p>

- j. The marks secured as above shall be the Financial Score of the bidder for the project(Y).
- k. In cases of discrepancy between the prices quoted in words and in figures, the value in words shall be considered. For any other calculation/summation error etc. the bid may be rejected.
- l. **Composite score:** The composite of the Bidders for the bid shall be worked out as under:

Bidder	Technical Score(X)	Financial Score(Y)	Weighted Technical Score (70% of X)	Weighted Financial Score (30% of Y)	Composite Score (F=D+E)
A	B	C	D	E	F

- m. **Special Conditions for Evaluation:** The shortlisted bidder shall be the agency securing the highest composite score in column 'F' above. However, in the event of two or more Bidders securing exactly the same composite score, then ITG reserves the right to:

- a. Declare the bidder whose technical score is highest, among the bidders who have secured exactly the same composite score as

successful bidder, or

- b. Adopt any other method as decided by ITG.

Note:

1. The Financial bids shall be evaluated separately for following tables to arrive at for best bid. However the work order shall be placed either for works with three years warranty Table F1(Sr. No. A.1) giving consideration for Total(A.1) or optional works with one year warranty Table F1 (Sr. No. A.2) giving consideration for Total(A.2)
2. Table F1 (Sr. No. A.1): Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs with Three Year Warranty.

OR (Optional)

3. Table F1 (Sr. No. A.2): Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs with one Year Warranty.

Note: The technical Score has 70% weightage and financial score has 30% weightage.

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.
- 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

- a. 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.
- b. 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.

Chapter 10 Performance Guarantee and Security Deposit

1. Successful tenderer/bidder will have to execute an agreement on a Non-Judicial Stamp paper of appropriate value within a period of 07 days of date of issue of work order.
2. The successful Bidder shall deposit 5% of the work order value towards Security Deposit and 5% of the work order value towards Performance Guarantee in form of bank guarantee within 07 days from the date of issue of work order.
3. The Performance Bank Guarantee should be valid beyond three months from the end of warranty period of the project.
4. The Performance Bank Guarantee shall be refunded after the expiry of the contract period provided that there is no breach of contract on the part of the supplier.
5. No interest will be paid by the purchaser on the EMD & Performance Bank Guarantee.
6. 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.
7. 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.
8. **Forfeiture of Performance Guarantee and 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.
- 9. Release of Performance Guarantee and Security Deposit:**
- a. Security Deposit shall be refunded only after the job is completed (as per Chapter 14 Time Schedule) in all respect to the satisfaction of the Collectorate office North Goa/ Collectorate office South Goa and ITG.
 - b. Performance Guarantee shall be refunded only after completion of warranty period in all respect to the satisfaction of the Collectorate office North Goa/ Collectorate office South Goa and ITG.

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% of the work order value 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 work 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.

Chapter 12 General Terms and Conditions

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

1. 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.
2. 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.
3. 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.
4. 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.
5. **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.
- 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.

6. 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.

7. 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.
- c. 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.

- d. 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.
- e. The bidders may visit the sites and obtain additional information at their own cost and responsibility.

8. Delivery & Installation:

- a. The tenderer/bidder whose Bid is accepted shall arrange the Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs as per specifications mentioned in Chapter 15 **“Technical Bid Format(Tentative)”** and Chapter 3 **“scope of work”** and within time period defined in Chapter 14 **“Time Schedule”**. The supplier should keep records of 1. Delivery challans, 2. Inspection reports (if any), 3. Software/ Training/ LMS related Deliverables all three as separate entity in triplicate duly signed by appropriate authority for record purpose of all the hardware and software supplied under the project. The formats for keeping these records shall be provided by ITG to successful bidder/supplier.
- b. Transportation: All goods must be sent freight paid.

- 9. 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, it’s 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.

10. Completeness of the Contract: The contract will be deemed as incomplete if any kits & 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.

11. 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.

12. Warranty Clause:

- a. The Contractor(s) shall give Onsite comprehensive warranty (01 or 03 years or as the case may be) and support for the equipment's (including Equipments/ Non-Consumables if any) 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 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

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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 warranted 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 100/- per day per fault reported may 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@

- 13. Right to vary Quantum of Work:** The quantities stated in the tender are estimates. After the award of the contract, the purchaser reserves the right to vary the quantity to the extent of -20% to + 20% of the specified quantity without any change in unit price (rates) or other terms & conditions.

- 14. 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.
- 15. 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.
- 16. 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.
- 17. 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.
- 18. 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 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.

19. 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.

20. 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.

21. 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.

- b.** 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.
- c.** 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.
- d.** The contractor shall not assign or sub-let his contract or any substantial part thereof to any other agency.
- e.** The tenderer/bidder shall pay the expenses of stamp duty for execution of agreement.

22. 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 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
- e. 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.

Chapter 13 Terms of Payment

The payment towards Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs under this project as follows:

- a.** Bills should be presented by the supplier to ITG immediately upon supplying the AI Kits at the respective schools along-with the Delivery/Installation Challans of the items countersigned by the Schools Authorities.
- b.** ITG shall make the payments upon receiving the same from O/o. Collectorate (North-Goa & South Goa as the case may be) Offices:
 - i** ITG shall effect first installment of payment after completion/execution of 50% of the Purchase Order quantity/works towards work order supply, delivery, training at respective locations after complying with all the terms and conditions and contractual obligations as mentioned in the contract/agreement.
 - ii** Balance installment of payment totaling to 50% of the Purchase Order value after completion/execution of full work Order quantity/works towards supply, delivery, Training at respective locations and after complying with all the terms and conditions and contractual obligations as mentioned in the contract/agreement.
 - iii** The release of payment/s shall be subject to the submission of Security Deposit/ Performance Bank Guarantee of appropriate value.
- c.** TDS may be deducted at source as per rules.
- d.** Payment shall be made in Indian Rupees only.
- e.** For a MSME organization:
 - i** 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.
 - ii** 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.



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- iii** 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.

Chapter 14 Time Schedule

1. Supply of the Kits along with accessories etc shall be commenced from the date of (1st day) of signing of agreement to the vendor and has to be completed as per the schedule given below:

1st 45 days	2nd 30 days
50% of the ordered Qty	50% of the ordered Qty

2. As Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs 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 (Tentative)

Following Table-A includes kit items to be supplied for AI Lab:

Table-A

S.No	AI Kit	Quantity	Compliances YES/No
1	Vision Kit	1 Set	
	<p>Vision camera - 5MP Camera Module</p> <p>Controller -Broadcom 1GHz processor 512MB RAM</p> <p>HAT-compatible 40-pin header</p> <p>Composite video and reset headers</p> <p>CSI camera connector</p> <p>802.11b/g/n Wireless LAN</p> <p>Bluetooth Low Energy (BLE)</p> <p>Connector and accessories - HDMI Connectors</p> <p>DC power supply connector</p> <p>Nuts and Bolts, Fasteners</p> <p>Flexi vision camera cable</p> <p>Assembled Wooden Vision box</p> <p>115MM*115MM*70MM</p> <p>Relevant software - Vision recognition Debian Software</p>		
2	Voice Kit	1 Set	
	<p>Wooden Vision unassembled DIY Box for making voiceinteraction Kit 120MM*120MM*120MM</p> <p>Voice controller -16-Pin QFN marked 'AKK BDQ'.</p> <p>This is the Maxim MAX98357A(PDF), I2S DAC, class D amplifier, Audio Codec: ALC5645, MCU: ATSAMD09D14, LED Driver: KTD2027B,</p> <p>Microphone: SPH1642HT5H</p> <p>Microphone board, 5 pin JST, I2S pins, SPH0645LM4H MEMs digital microphones that talk I2S directly.</p> <p>Speakers -8 Ohm 0.25W Speaker</p> <p>Resistance 8 Ohm</p> <p>Radius 5.5cms</p> <p>Height 1.5cms</p> <p>Arcade light emitting Push button</p> <p>Button interface size: 24mm/0.94inch</p> <p>Working voltage: 5V</p> <p>Harnesses</p> <p>JST Cables</p>		

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	Microphone board Cable Relevant software -Voice recognition Debian Software		
3	Advanced AI Robotics Kit,	1 Set	
	<p>Controller: Programmable CPU with a minimum of 6 analog input pins and 8 digital I/O pins, utilizing AVR architecture, easy-to-connect ports for sensors and motors,</p> <p>Aluminium Unassembled Robotics kit parts</p> <p>Different Fasteners</p> <p>Wireless Module -Specification v2.0+EDR. Frequency: 2.4GHz ISM band. Modulation: GFSK (Gaussian Frequency Shift Keying). Emission power: =4dBm, Class 2. Sensitivity: = -84dBm at 0.1% BER.</p> <p>Photosensitive Light-Dependent Control Sensor - 3.3V to 5V</p> <p>Signal Output: Indicator light Detects ambient brightness Measures light intensity Adjustable Sensitivity: Precise control</p> <p>Dual comparator Effective light capture Low power consumption for efficiency</p> <p>Sensor: Compact and lightweight, 5V DC power supply, wide sonar sensing range, High precision, maximum sensing range of 450 cm, Frequency: 40 kHz, Sonar Sensing Range: 2 to 400 cm</p> <p>Reflection & Transmission Sensor with Detection distance: 2 ~ 30cm Detection angle: 35 ° Adjustable Sensitivity: Precise control</p> <p>Dual comparator, Effective light capture Low power consumption for efficiency</p> <p>DC Motor: Speed 60 RPM Voltage: 6 Volts Horsepower: 60 Watts</p> <p>Child engaging figures Pulley Different types of Gears Writing Instrument Gripper</p>		

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	<p>Wi-Fi Module - 802.11 b/g/n Standards Wi-Fi Direct (P2P), soft-AP 1MB Flash Memory Integrated low power 32-bit CPU could be used as an application processor A-MPDU & A-MSDU aggregation & 0.4ms guard interval Wake up and transmit packets in < 2ms Standby power consumption of < 1.0mW (DTIM3) Servo Motors -Operating voltage: 4.8V~ 7.2V Servo Plug: JR Stall torque @4.8V : 10 kg-cm Stall torque @6.6V : 12 kg-cm</p> <p>LCD Display - Resolution ratio:128 x 64 Interface modes: I2C/IIC Working voltage: 3.3V Control Chip: SSD1306</p> <p>Accelerometer - 16bit AD converter, 16-bit data output Driver Chip: MPU6050 Operating Voltage: 3-5V DC Communication: I2C/IIC Protocol Gyro Range: $\pm 250, 500, 1000, 2000$ °/s Accelerometer Range: $\pm 2 \pm 4 \pm 8 \pm 16$ g</p> <p>Battery - 7.4v 2200mah recharagable battery Relevant software - Block based Programming Software with wireless support</p>	
4	AI Bionic Arm Kit	1 Set
	<p>Bionic Arm with a height of 450mm Controller - 8 bit AVR family microcontroller, equivalent or better Operating Voltage: 5V Digital I/O Pins: 14(of which 6 provide PWM output) PWM Digital I/O pins: 6, easy-to-connect ports for sensors and motors</p> <p>Camera -Sensitivity: 1.3V / (Lux-sec). dynamic range: 52 dB. Sleeping Mode: <20 uA. Lens Size: 1/6". Frame Rate: 30fps VGA. Electronic Exposure: 1 to 510 rows. Operating Power: 60mW/15fpsVGAYUV.</p> <p>Bionic Arm Aluminium Base for Electronics Aluminum bionic arm Cover Battery -9-12 V 2000 to 2500 mAh rechargeable battery</p>	

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	Nuts and Bolts, Fasteners Relevant software - Computer vision Software		
5	AI Smart City Kit, Smart city tunnel of minimum dimensions 700*300*500 mm RP2040 microcontroller, this device is equipped with a dual-core Arm Cortex M0+ processor, boasting 264KB of SRAM and 2MB of onboard Flash memory. It offers 26 multi-function GPIO pins, along with 2 SPI, 2 I2C, and 2 UART interfaces. Additionally, it includes 3 12-bit ADC units and supports 16 controllable PWM channels. Photosensitive Light-Dependent Control Sensor - 3.3V to 5V Signal Output: Indicator light Detects ambient brightness Measures light intensity Adjustable Sensitivity: Precise control Dual comparator, Effective light capture Low power consumption for efficiency Sensor -Compact and lightweight, 5V DC power supply, wide sonar sensing range, High precision, maximum sensing range of 450 cm, Frequency: 40 kHz, Sonar Sensing Range: 2 to 400 cm TEMT6000 Sensor - AEC-Q101 qualified High photosensitivity Near-Human Eye Spectral Response Scalable Output Voltage Adapted to human eye responsivity Lead (Pb)-free reflow soldering Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC RC522 SPI S50 RFID Card Tag 13-26mA Operating Frequency: 13.56MHz Highly integrated analog circuitry with decoder responses, Idle Current:10-13mA Supports ISO/IEC 14443 A/MIFARE Reading/Write mode is up to 50 mm Reflection & Transmission Sensor with Detection distance: 2 ~ 30cm Detection angle: 35 ° Adjustable Sensitivity: Precise control Dual comparator, Effective light capture	1 Set	

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	Low power consumption for efficiency		
	Relevant software - IDE Software		
6	AI Robotic Arm	1 Set	
	<p>Aluminium Robotic Arm parts</p> <p>Photosensitive Light-Dependent Control Sensor - 3.3V to 5V</p> <p>Signal Output: Indicator light</p> <p>Detects ambient brightness</p> <p>Measures light intensity</p> <p>Adjustable Sensitivity: Precise control</p> <p>Dual comparator,</p> <p>Effective light capture</p> <p>Low power consumption for efficiency</p> <p>Sensor: Compact and lightweight, 5V DC power supply, wide sonar sensing range, High precision, maximum sensing range of 450 cm, Frequency: 40 kHz, Sonar Sensing Range: 2 to 400 cm</p> <p>Reflection & Transmission Sensor with Detection distance: 2 ~ 30cm</p> <p>Detection angle: 35 ° Adjustable Sensitivity: Precise control</p> <p>Dual comparator,</p> <p>Effective light capture</p> <p>Low power consumption for efficiency</p> <p>Controller - 8 bit AVR family microcontroller, equivalent or better Operating Voltage: 5V Digital I/O Pins: 14(of which 6 provide PWM output) PWM Digital I/O pins: 6, easy-to-connect ports for sensors and motors</p> <p>Nuts and Bolt, Fasteners</p> <p>Module - Viewing angle: 120 degrees</p> <p>The color of the light was highly consistent</p> <p>Full-color module, Full-color soft lights a lamp strip.</p> <p>Built-in electric reset circuit and power lost reset circuit.</p> <p>Each pixel of the three primary colors can achieve 256 brightness levels, or 16M colors full-color display, and scan frequency not less than 400Hz/s.</p> <p>Relevant software - AI Vision Software</p>		
7	AI Space Exploration Kit	1 Set	
	UnAssembled Mars Rover with 6 wheels with dimensions of height 450 mm, length of 600mm, and width of 350mm		

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Controller -2560P- 8-bit AVR family microcontroller, equivalent or better Operating Voltage: 5V, Digital I/O Pins: 54(of which 6 provide PWM output) Analog Input pins: 16
Sensor with Detection Range: 300-10000 ppm
Detectable Gases: H2, LPG, CH4, CO, Alcohol, Smoke, Propane
Sensitivity Adjustment: Potentiometer for fine-tuning
Gas Sensitive Material: Stannic Oxide (SnO2)
Operating Principle: Changes in conductivity signal gas concentration
Response Time: Fast response for quick measurements, 300-10000 ppm, it excels in detecting a variety of gases including H2, LPG, CH4, CO, Alcohol, Smoke, and Propane
Sensor with Operating Voltage Range: 4V to 30V
Temperature Sensing Range: Full range coverage
Output Voltage: Linearly proportional to the temperature
Accuracy: $\pm 0.5^{\circ}\text{Celsius}$
Photosensitive Light-Dependent Control Sensor - 3.3V to 5V
Signal Output: Indicator light
Detects ambient brightness
Measures light intensity
Adjustable Sensitivity: Precise control
Dual comparator,
Effective light capture
Low power consumption for efficiency
Minimum 6 DC Motor of 12v 15 RPM
Stepper motor of 17 4 Kg-cm 2-Phase 4-Wire Bipolar Stepper Motor 1. 8 Deg with 23MM Shaft
Sensor: Compact and lightweight, 5V DC power supply, wide sonar sensing range, High precision, maximum sensing range of 450 cm, Frequency: 40 kHz, Sonar Sensing Range: 2 to 400 cm
Reflection & Transmission Sensor with Detection distance: 2 ~ 30cm
Detection angle: 35 ° Adjustable Sensitivity: Precise control
Dual comparator,
Effective light capture
Low power consumption for efficiency
Battery -9-12 V 2000 to 2500 mAh rechargeable battery

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	<p>Bearings 626ZZ, high-precision performance Double shielded, Metal Shields for enhanced protection against dust and contamination Dimensions: 6 x 19 x 6 (LxWxH) mm ID (inner diameter): 6mm OD (outer diameter): 19mm Thickness: 6mm</p> <p>Mini Solar Panel Output Voltage: 3V Output Current: 150mA Max Power Output: 0.45W Dimensions: 80 x 60 x 3 mm Material: High Transmittance Tempered Glass</p> <p>Nut Bolts, Fasteners</p> <p>Relevant software - AI Computer Vision Software</p>		
8	AI Smart Farming	1 Set	
	<p>Controller: 8 bit AVR family microcontroller, equivalent or better Operating Voltage: 5V Digital I/O Pins: 14 (of which 6 provide PWM output) Analog Input pins: 8</p> <p>Sensor: Dual Output Mode: Analog output for increased accuracy.</p> <p>Easy Installation: Fixed bolt hole for convenient setup.</p> <p>Indicators: Power Indicator (Red) Digital Switching Output Indicator (Green)</p> <p>Operating Voltage: 3.3V~5V Output Mode: Dual (Analog and Digital)</p> <p>Sensor with Detection Range: 300-10000 ppm Detectable Gases: H2, LPG, CH4, CO, Alcohol, Smoke, Propane</p> <p>Sensitivity Adjustment: Potentiometer for fine-tuning Gas Sensitive Material: Stannic Oxide (SnO2)</p> <p>Operating Principle: Changes in conductivity signal gas concentration</p> <p>Response Time: Fast response for quick measurements, 300-10000 ppm, it excels in detecting a variety of gases including H2, LPG, CH4, CO, Alcohol, Smoke, and Propane</p> <p>Sensor with Operating Voltage Range: 4V to 30V Temperature Sensing Range: Full range coverage</p> <p>Output Voltage: Linearly proportional to the temperature</p> <p>Accuracy: $\pm 0.5^{\circ}\text{Celsius}$</p>		

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	<p>Photosensitive Light-Dependent Control Sensor - 3.3V to 5V Signal Output: Indicator light Detects ambient brightness Measures light intensity Adjustable Sensitivity: Precise control Dual comparator, Effective light capture Low power consumption for efficiency Sensor: Compact and lightweight, 5V DC power supply, wide sonar sensing range, High precision, maximum sensing range of 450 cm, Frequency: 40 kHz, Sonar Sensing Range: 2 to 400 cm Reflection & Transmission Sensor with Detection distance: 2 ~ 30cm Detection angle: 35 ° Adjustable Sensitivity: Precise control Dual comparator, Effective light capture Low power consumption for efficiency Sensor - Area of 5.5 * 4.0 CM, Provide both digital and analog output, TTL Compatible, high-quality FR – 04 double material clean, good waveform, and driving ability are strong, for more than 15 mA; With potentiometer sensitivity adjustment The output format: digital switch output (0 and 1) and analog AO voltage output; Relevant software - Debian Bullseye Software</p>		
9	Weather Station	1 Set	
	<p>Wind vane -Current Type(4 to 20mA),work normally in – 20 °C ~ + 50 °C, humidity 35% ~ 85%, external power (DC 12-24V),current in the range of 4mA to 20mA, Mounting Mast Rain Gauge -0.2794mm of rain cause one momentary contact closure that can be recorded with a digital counter or microcontroller interrupt input Mounting Arm - weathers station munt arms of rain gauge Cup Anemometer - wind Speed Measurement tool. anemometer switch Relevant software - Debian Bullseye Software</p>		
10	Satellite Communication Kit	1 Set	

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	<p>Satellite communication modules -Communication System Type: 2-Way Antenna Connectivity: Optional SMA connector for external antenna</p> <p>Global Operation: Capable of operation worldwide, including pole-to-pole coverage</p> <p>Latency: Low latency achieved by utilizing Low Earth Orbit satellites (<1 second)</p> <p>Data Service: Utilizes the Iridium Short Burst Data (SBD) service</p> <p>Antenna: Integrated antenna with built-in power conditioning</p> <p>Power Source: Can be powered via USB or direct-header connection</p> <p>Data Transmission Options:</p> <p>Data can be sent via e-mail</p> <p>Direct transmission to a web-service</p> <p>Message Size:</p> <p>Transmit: 340 bytes</p> <p>Receive: 270 bytes</p> <p>Transmission Frequency: Approximately once every 40 seconds</p> <p>Connectors - Jumper cables, Connectors</p> <p>Sensor - Area of 5.5 * 4.0 CM, Provide both digital and analog output TTL Compatible, high-quality FR – 04 double material clean, good waveform, and driving ability are strong, for more than 15 mA;</p> <p>With potentiometer sensitivity adjustment, The output format: digital switch output (0 and 1) and analog AO voltage output;</p> <p>Global Positioning System Module - 5Hz position update rate.</p> <p>The cold start time of 38 s and the Hot start time of 1 s.</p> <p>Configurable from 4800 Baud to 115200 Baud rates. (default 9600).</p> <p>Super Sense Indoor GPS: -162 dBm tracking sensitivity.</p> <p>Support SBAS (WAAS, EGNOS, MSAS, GAGAN).</p> <p>Separated 18 x 18mm GPS antenna.</p> <p>Photosensitive Light-Dependent Control Sensor - 3.3V to 5V</p> <p>Signal Output: Indicator light</p> <p>Detects ambient brightness</p> <p>Measures light intensity</p> <p>Adjustable Sensitivity: Precise control</p> <p>Dual comparator,</p> <p>Effective light capture</p> <p>Low power consumption for efficiency</p> <p>Relevant software - Satellite AT Command Software</p>		
11	AI Smart Healthcare Kit	1 Set	

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	<p>Programmable smart Watches - Communication</p> <p>Interface Voltage: 3.3V</p> <p>Working Current: 240mA (MAX)</p> <p>Serial Port Baud Rate: 115200 (default), adjustable through AT commands</p> <p>Serial Communication Format: 8N1</p> <p>Wireless Network Mode: Station / SoftAP / SoftAP + Station</p> <p>Wireless Criteria: 802.11 b/g/n</p> <p>Wi-Fi Frequency: 2.4 GHz</p> <p>Security Mode: Supports WPA/WPA2</p> <p>Integrated Components:</p> <p>TCP/IP Protocol Stack</p> <p>TR Switch, Balun, LNA, Power Amplifier, and Matching Network</p> <p>PLL, Regulators, DCXO, and Power Management Units</p> <p>Output Power: +19.5dBm</p> <p>Power Down Leakage Current: <10uA</p> <p>Integrated CPU: Low power 32-bit CPU usable as an application processor</p> <p>Communication Interfaces: SDIO 1.1/2.0, SPI, UART</p> <p>Wireless Features: STBC, 1×1 MIMO, 2×1 MIMO, A-MPDU & A-MSDU aggregation, 0.4ms guard interval</p> <p>Wake-up Time: Wake up and transmit packets in < 2ms</p> <p>Standby Power Consumption: <1.0mW (DTIM3)</p> <p>Package Options: Available in both SMD and Inline packages, with a 2.0mm pin pitch.</p> <p>Sensor- Working Voltage: 1.8 to 5.5 V</p> <p>Shutdown Current: 0.7 μA</p> <p>Operating Characteristics: 1.8 to 5.5 V.</p> <p>Low Shutdown Current: Consumes minimal power with a shutdown current of 0.7 μA. measuring oxygen saturation levels in the blood.</p> <p>Integrated Sensor</p> <p>Power Management, Low Power Consumption</p> <p>Sensor - Designed to extract, amplify, and filter small biopotential signals, Leads-Off Detection, Shutdown Pin, LED Indicator. Analog Output, 3.5 mm Jack for Biomedical Pad Connection.</p> <p>Accessories - Compatible connectors</p> <p>Relevant software - Serial Communicator IDE Software</p>		
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	Set of consumables	Quantity	Compliances YES/No
12	Arduino Mega or equivalent ATmega 2560P- 8-bit AVR family microcontroller, equivalent or better Operating Voltage: 5V Digital I/O Pins: 54 (of which 6 provide PWM output) Analog Input pins: 16 Accessories: compatible USB cable	4	
13	Breadboard Solderless 400-pin breadboard	5	
14	Solderless 800 pin breadboard	5	
15	Self-Adhesive Proto Shield	5	
16	General Purpose Solder able Board FR2 A Grade Material (140 x 90 mm)	10	
17	FR2 A Grade Material (80 x 55 mm)	10	
18	Berg Strips Female Berg Strip, 2.54mm pitch, 40 pins single row, breakable pin	15	
19	Male Berg Strip, 2.54mm pitch, 40 pins single row, breakable pin	15	
20	Battery 9-12 V 2000 to 2500 mAh rechargeable battery	5	
21	Resistor Kit: one kit contains - 30 carbon film resistors of 20 different resistance values each assorted, packaged together, and labelled Wattage: 0.125W to 1W Values: 0ohms, 1.5ohms, 4.7 ohms, 10ohms, 47ohms, 100ohms, 220ohms, 330ohms, 470ohms, 680ohms, 1kohms, 2.2kohms, 3.3kohms, 4.7kohms, 10kohms, 22kohms, 47kohms, 100kohms, 330kohms, 1Mohms	10	
22	Capacitor Kit -One kit contains - 20 electrolytic capacitors of 10 different capacitance values each. Assorted kit packages together and labelled. Values: 10pF, 22pF, 100pF, 1nF, 10nF, 100nF, 1uF, 100uF, 1000uF	10	
23	Linear Voltage Regulator - 7805	2	
24	Linear Voltage Regulator -7812	2	
25	Linear Voltage Regulator - 7809	2	
26	Piezoelectric Plate -Normal Copper-based 4 cm Diameter approx.	5	
27	8*8 LED Matrix Module -Max7219 Dot LED Matrix Module MCU Control LED Display Module	5	
28	7 Segment Led Display LED 4-Digit Display Module Voltage rating: 2.4V to 5.5V 4-pin interface: Vcc, Gnd, Data, Clock	5	
29	GSM -Sim900 GPRS Transfer Board Micro Sim Gsm Core Ttl Port Module for Arduino	2	
30	Laser Diode Emitter -650nm 5mW Mini Laser Dot Diode Module	5	
31	LDR Module-5mm/12mm, Photosensitive LDR Light Sensor Module	5	

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32	Keypad -16 Key Switch Keypad	4	
33	Joy Stick- 2-axis joystick with push button function	5	
34	Active Buzzer -Small 5 volt	10	
35	Big 5 volt	10	
36	L293D Motor driver	6	
37	Sound Playback Module -ISD1820 Voice Recording Module or equivalent	5	
38	DC Plastic Gear motor with wheel 12V, 150RPM, Side Shaft BO (Battery operation) motor	12	
39	Node MCU -ESP 8266 12C, 1 wire, plug and play	3	
40	WeMos D1 R2 - WeMos D1 D2 with Wi-Fi ESP 8266, Operating Voltage:5v	3	
41	Vibrating Motor -Weight: 10 Grams Operating Voltage: 1.5 to 3V	5	
42	Alligator Connectors -Multi-Colour Alligator Connectors-12 inch	10	
43	Battery clips with DC Jack -9-volt battery clips with DC Jack	5	
44	Hook up Wires -Red & Black set 100 Meters each	2	
45	Jumper Cable -Male-Male	400	
46	Jumper Cable -Male-Female	300	
47	Jumper Cable -Female-Female	300	
48	RGB LEDs -Regular 5mm 3-5 volt Range	100	
49	LEDs (Red) -Regular 5mm 3-5 volt Range	200	
50	LEDs (Green) -Regular 5mm 3-5 volt Range	200	
51	LEDs (Blue)-Regular 5mm 3-5 volt Range	200	
52	LEDs (Yellow) -Regular 5mm 3-5 volt Range	200	
53	LEDs (White) -Regular 5mm 3-5 volt Range	200	
54	Timer IC - LM 555 -LM 555 Timer IC Voltage range - 4.5V to 16V	10	
55	Atmega16u2 8-bit microcontroller Individual IC (DIP) Voltage range: 2.7v to 5.5v Operational Range: -40oC to +80oC	5	
56	Diodes and Transistors Kit One kit contains - 25Assorted Basic Diodes of 4 different types each Type: NPN Transistor-2N3904, BC547 PNP Transistor-2N3906, BC557 Silicon Diode-1N4148, Power Diode-1N4004/4001 Equivalent or better Wattage:1W, Current rating:1A Assorted kit packaged together and labelled.	2	
57	Button Switch Set - One kit contains - 100 buttons of different types. Types: Push, Toggle, rotary, selector, and slide switch Assorted kit packaged together and labelled.	1	

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

58	Capacitive Touch Module -MPR 121 with I2C Voltage Range: 2.5V to 3.6V DC	5	
59	IR Sensors obstacle avoider sensor module -LM393 Detection Distance: 2-30 cm Detection angle: 30-40°	5	
60	Humidity Sensor -Operating range: 20 - 95 % RH Temperature: 0 - 60 Celsius Power supply: 1.5V AC (Max sine) Operating frequency: 500Hz - 2kHz	5	
61	IR (transmitter) receiver	5	
62	Ultrasonic Sensor Module HC-SR-04 or compatible - Working Voltage-DC 5V Working current-15mA Working Frequency-40Hz Range-1 cm to 4 m Effectual Angle-<15° Measuring Angle-30° Resolution- 0.3 cm	5	
63	Triple Axis accelerometer -3-axis sensing Small, low profile package 4 mm × 4 mm × 1.45 mm LFCSP Low Power: 350 µA (typical) Single-supply operation: 1.8 V to 3.6 V Temperature stability	3	
64	PIR Motion Detector Module -High digital pulse when motion detected Low digital pulse when idle /no motion detected Sensitivity range (up to 6 m) Power supply: 5V – 12V	5	
65	Relay Module -5V 10A 2 Channel Relay Module compatible with Arduino	5	
66	Relay Module -5V 10A 1 Channel Relay Module compatible with Arduino	8	
67	Touch Sensor -Capacitive Touch Sensor Module, TTP22X series, Voltage range: 2.4V to 5.5V	5	
68	Metal touch sensor module -KY- 036 or equivalent Metal touch sensor module	5	
69	Flex Sensor -Flex Sensor: Size- 2.2 Inches	5	
70	Temperature Sensor -LM35 Full range temperature sensor Voltage range: 4V to 30V. Error: ±0.5°Celsius	5	
71	Temperature and Humidity Sensor module -DHT11 Voltage range: 3V to 5V	5	
72	Force Pressure Sensor -Force-sensitive resistor with a square, 1.75x1.5", sensing area	2	
73	IR Sensors Array for Line Following -8 IR Sensors Array Module for Line Following Operating voltage: 5V	7	
74	Power Bank -10000 mAh 5 volt Power Bank	2	
75	RF Modules Tx & Rx 315 MHz ASK -Frequency Range: 433.92/315 MHz Supply Voltage: 3 – 6 V Output Power: 4 – 16 Dbm Low power consumption Easy application	5	
76	Stepper motor with Driver board	5	
77	DC motor -12V DC Gear 150 RPM	10	

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

78	Position Servo Angle-based Metal Gear	10	
79	Small Servo Metal Gear	10	
80	Small Servo Plastic Gear	10	
81	150 RPM BO Motor -150 RPM BO Motor	10	
82	L298P Motor Driver -L298P Motor Driver Shield or relative Driver Shield	10	
83	Servo Motor Tester -CCPM 3 channel Servo Tester	4	
84	Robotics DIY Kit -Robotics DIY kit with intelligent programming	3	
85	Design Thinking Components -Foam Core Boards	3	
86	Design Thinking Components Wood Glue- 500ml	1	
87	Hacksaw frame	1	
88	Hacksaw blades	5	
89	External Straight Pliers	1	
90	Nose Circlip Plier	1	
91	Long Nose Plier	1	
92	Combination Mini Plier	1	
93	Wire stripping pliers	1	
94	Cutting Plier	1	
95	Needle nose pliers	1	
96	Tweezers Set -6 Pc Non-Magnetic Tweezers set	1	
97	Steel Shaft Claw Hammer -Claw Hammer Steel Shaft	1	
98	Allen Key Set -10 Piece Ring Imperial Allen Hex key	1	
99	Spanner Set -12-piece combination Spanner Set	1	
100	Precision Screwdriver Set -6 Piece Precision Screw Driver Set Types: PH0, PH1, Flat head- 1.4mm, 2mm, 2.4mm, 3mm	1	
101	Wrench -Adjustable Universal Multi Wrench	1	
102	File set -6 pc file set Working length	1	
103	Flexible Cutting Mat -A3 Size with Marked Pattern And Grids	1	
104	Plastic Storage Drawer/ Organiser -Plastic Storage Boxes with drawers	1	
105	Peg board -Peg board system to mount tools on the wall with attachments.	1	
106	Hot glue gun-Works with standard 0.5-inch glue sticks. Temperature to 280° Celsius.	2	
107	Soldering Kit -Soldering Iron Temperature Range: 280°C to 450°C	2	
108	De-Soldering Pump, Soldering Flux (Paste), De-soldering Copper Braid (Solder wick)	2	
109	Soldering Wire: 20/22 AWG soldering Wire with rosin core flux, Compatible soldering Tip- 5 each per kit	2	
110	Adapters -DC Power Adapter with 5V, 2A	5	

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111	Adapters -DC Power Adapter with 12V, 2A	5	
112	Electric Screw Driver Set -Multipurpose electric screwdriver set. Accessories- Compatible bits Mode- Wireless, Battery- Li-ion 3.6V or equivalent	1	
113	Soldering Helping hand -Specifications: Adjustable crocodile holding clamps/clip. Soldering iron holder. LED Light. Magnifying lens.	1	
114	Return measuring tape -Return measuring tape 5Mx19mm	1	
115	Digital Vanier Calliper -150 mm / 6" Digital Vanier Calliper	1	
116	Digital Pen Electric Tester -Voltage tester	1	
117	Digital Multi Meter -Digital Multi Meter Voltage Current Resistance-7 functions + 19 ranges to cover DC voltage 200mV to 1KV, AC voltage 200 V - 750 V DC current 200 μ A - 10 A, Resistance 200 -2 M Ohm, and Transistor & diode test.	1	
118	Telescope -All glass optical components Altazimuth mount suitable for terrestrial and astronomical use minimum 700 mm focal length	1	
119	Glue Sticks -11 mm x 200mm Hot Melt Glue Stick	50	
120	Cable Tie -Small Cable Tie Pack- Pack of 100	5	
121	Medium Cable Tie Pack- Pack of 100	5	
122	Power Strip Adaptors -Standard Quality Extensions with 5Amp safety fuse. 5 or more sockets in each extension.	2	
123	Bulb Holders -Regular Hanging Bulb holder	5	
124	Electric Wires -Twisted Red black pair (10 Meters)	1	
125	USB TO DC jack cable -USB to DC jack cable for Battery bank	5	
126	Safety Gloves Pairs -Latex Coating Gloves (Medium Size)	10	
127	Safety Mask -Filtering efficiency ranging 80 present when tested against 0.3- micron sodium chloride particle	10	

Chapter 16 Financial Bid Format

Table-F1(A.1): - List of items per Artificial Intelligence Hardware Kit (Indicative Format)

Sr. No.	Item Description	Qty	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	AI Kits (Defined at Scope of works in Table-A and with Specs in Table-B) consisting of Hardware and Software with 03 (three) year Warranty:	❖ Vision Kit	80			
		❖ Voice Kit	80			
		❖ Advanced AI Robotics Kit	80			
		❖ AI Bionic Arm Kit	80			
		❖ AI Smart City Kit	80			
		❖ AI Robotic Arm	80			
		❖ AI Space Exploration Kit	80			
		❖ AI Smart Farming	80			
		❖ Weather Station	80			
		❖ Satellite Communication Kit	80			
		❖ AI Smart Healthcare Kit	80			
		❖ Along with consumable items as per the details at Scope of works (Item from Sr.	Lumpsum towards 80 kit sets			



Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

		No 12 to 127)					
TOTAL(A.1)							

Table-F1(A.2): - List of items per Artificial Intelligence Hardware Kit (Indicative Format)

Sr. No.	Item Description		Qty	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.2	AI Kits (Defined at Scope of works in Table-A and with Specs in Table-B) consisting of Hardware and Software with 01 (one) year Warranty:	❖ Vision Kit	80				
		❖ Voice Kit	80				
		❖ Advanced AI Robotics Kit	80				
		❖ AI Bionic Arm Kit	80				
		❖ AI Smart City Kit	80				
		❖ AI Robotic Arm	80				
		❖ AI Space Exploration Kit	80				
		❖ AI Smart Farming	80				
		❖ Weather Station	80				
		❖ Satellite Communication Kit	80				
		❖ AI Smart Healthcare Kit	80				
		❖ Along with consumable items as per the details at Scope of works (Item from Sr. No 12 to 127)	Lumpsum towards 80 kit sets				
TOTAL(A.2)							

Table-F2: Financial Project of Consumables items of table-F1(Tentative Format)

Sr. No.	Item Description	Qty.	Unit Base Price (INR Exclusive of taxes) per item	@GST (in INR)	Total (in INR + inclusive of taxes)
1	Arduino Mega or equivalent ATmega 2560P- 8-bit AVR family microcontroller, equivalent or better Operating Voltage: 5V Digital I/O Pins: 54 (of which 6 provide PWM output) Analog Input pins: 16 Accessories: compatible USB cable	1			
2	Breadboard Solderless 400-pin breadboard	1			
3	Solderless 800 pin breadboard	1			
4	Self-Adhesive Proto Shield	1			
5	General Purpose Solder able Board FR2 A Grade Material (140 x 90 mm)	1			
6	FR2 A Grade Material (80 x 55 mm)	1			
7	Berg Strips Female Berg Strip, 2.54mm pitch, 40 pins single row, breakable pin	1			
8	Male Berg Strip, 2.54mm pitch, 40 pins single row, breakable pin	1			
9	Battery 9-12 V 2000 to 2500 mAh rechargeable battery	1			
10	Resistor Kit: one kit contains - 30 carbon film resistors of 20 different resistance values each assorted, packaged together, and labelled Wattage: 0.125W to 1W Values: 0ohms, 1.5ohms, 4.7 ohms, 10ohms, 47ohms, 100ohms, 220ohms, 330ohms, 470ohms, 680ohms, 1kohms, 2.2kohms, 3.3kohms, 4.7kohms, 10kohms, 22kohms, 47kohms, 100kohms, 330kohms, 1Mohms	1			
11	Capacitor Kit -One kit contains - 20 electrolytic capacitors of 10 different capacitance values each. Assorted kit packages together and labelled. Values: 10pF, 22pF, 100pF, 1nF, 10nF, 100nF, 1uF, 100uF, 1000uF	1			
12	Linear Voltage Regulator - 7805	1			
13	Linear Voltage Regulator -7812	1			
14	Linear Voltage Regulator - 7809	1			
15	Piezoelectric Plate -Normal Copper-based 4 cm Diameter approx.	1			

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16	8*8 LED Matrix Module -Max7219 Dot LED Matrix Module MCU Control LED Display Module	1			
17	7 Segment Led Display LED 4-Digit Display Module Voltage rating: 2.4V to 5.5V 4-pin interface: Vcc, Gnd, Data, Clock	1			
18	GSM -Sim900 GPRS Transfer Board Micro Sim Gsm Core Ttl Port Module for Arduino	1			
19	Laser Diode Emitter -650nm 5mW Mini Laser Dot Diode Module	1			
20	LDR Module-5mm/12mm, Photosensitive LDR Light Sensor Module	1			
21	Keypad -16 Key Switch Keypad	1			
22	Joy Stick- 2-axis joystick with push button function	1			
23	Active Buzzer -Small 5 volt	1			
24	Big 5 volt	1			
25	L293D Motor driver	1			
26	Sound Playback Module -ISD1820 Voice Recording Module or equivalent	1			
27	DC Plastic Gear motor with wheel 12V, 150RPM, Side Shaft BO (Battery operation) motor	1			
28	Node MCU -ESP 8266 12C, 1 wire, plug and play	1			
29	WeMos D1 R2 - WeMos D1 D2 with Wi-Fi ESP 8266, Operating Voltage:5v	1			
30	Vibrating Motor -Weight: 10 Grams Operating Voltage: 1.5 to 3V	1			
31	Alligator Connectors -Multi-Colour Alligator Connectors-12 inch	1			
32	Battery clips with DC Jack -9-volt battery clips with DC Jack	1			
33	Hook up Wires -Red & Black set 100 Meters each	1			
34	Jumper Cable -Male-Male	1			
35	Jumper Cable -Male-Female	1			
36	Jumper Cable -Female-Female	1			
37	RGB LEDs -Regular 5mm 3-5 volt Range	1			
38	LEDs (Red) -Regular 5mm 3-5 volt Range	1			
39	LEDs (Green) -Regular 5mm 3-5 volt Range	1			
40	LEDs (Blue)-Regular 5mm 3-5 volt Range	1			
41	LEDs (Yellow) -Regular 5mm 3-5 volt Range	1			
42	LEDs (White) -Regular 5mm 3-5 volt Range	1			
43	Timer IC - LM 555 -LM 555 Timer IC Voltage range - 4.5V to 16V	1			
44	Atmega16u2 8-bit microcontroller Individual IC (DIP) Voltage range: 2.7v to 5.5v Operational	1			

	Range: -40oC to +80oC				
45	Diodes and Transistors Kit One kit contains - 25 Assorted Basic Diodes of 4 different types each Type: NPN Transistor-2N3904, BC547 PNP Transistor-2N3906, BC557 Silicon Diode-1N4148, Power Diode-1N4004/4001 Equivalent or better Wattage:1W, Current rating:1A Assorted kit packaged together and labelled.	1			
46	Button Switch Set - One kit contains - 100 buttons of different types. Types: Push, Toggle, rotary, selector, and slide switch Assorted kit packaged together and labelled.	1			
47	Capacitive Touch Module -MPR 121 with I2C Voltage Range: 2.5V to 3.6V DC	1			
48	IR Sensors obstacle avoider sensor module - LM393 Detection Distance: 2-30 cm Detection angle: 30-40°	1			
49	Humidity Sensor -Operating range: 20 - 95 % RH Temperature: 0 - 60 Celsius Power supply: 1.5V AC (Max sine) Operating frequency: 500Hz - 2kHz	1			
50	IR (transmitter) receiver	1			
51	Ultrasonic Sensor Module HC-SR-04 or compatible -Working Voltage-DC 5V Working current-15mA Working Frequency-40Hz Range-1 cm to 4 m Effectual Angle-<15° Measuring Angle-30° Resolution- 0.3 cm	1			
52	Triple Axis accelerometer -3-axis sensing Small, low profile package 4 mm × 4 mm × 1.45 mm LFCSP Low Power: 350 µA (typical) Single-supply operation: 1.8 V to 3.6 V Temperature stability	1			
53	PIR Motion Detector Module -High digital pulse when motion detected Low digital pulse when idle /no motion detected Sensitivity range (up to 6 m) Power supply: 5V – 12V	1			
54	Relay Module -5V 10A 2 Channel Relay Module compatible with Arduino	1			
55	Relay Module -5V 10A 1 Channel Relay Module compatible with Arduino	1			
56	Touch Sensor -Capacitive Touch Sensor Module, TTP22X series, Voltage range: 2.4V to 5.5V	1			
57	Metal touch sensor module -KY- 036 or equivalent Metal touch sensor module	1			
58	Flex Sensor -Flex Sensor: Size- 2.2 Inches	1			

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

59	Temperature Sensor -LM35 Full range temperature sensor Voltage range: 4V to 30V. Error: $\pm 0.5^{\circ}\text{Celsius}$	1			
60	Temperature and Humidity Sensor module - DHT11 Voltage range: 3V to 5V	1			
61	Force Pressure Sensor -Force-sensitive resistor with a square, 1.75x1.5", sensing area	1			
62	IR Sensors Array for Line Following -8 IR Sensors Array Module for Line Following Operating voltage: 5V	1			
63	Power Bank -10000 mAh 5 volt Power Bank	1			
64	RF Modules Tx & Rx 315 MHz ASK -Frequency Range: 433.92/315 MHz Supply Voltage: 3 – 6 V Output Power: 4 – 16 Dbm Low power consumption Easy application	1			
65	Stepper motor with Driver board	1			
66	DC motor -12V DC Gear 150 RPM	1			
67	Position Servo Angle-based Metal Gear	1			
68	Small Servo Metal Gear	1			
69	Small Servo Plastic Gear	1			
70	150 RPM BO Motor -150 RPM BO Motor	1			
71	L298P Motor Driver -L298P Motor Driver Shield or relative Driver Shield	1			
72	Servo Motor Tester -CCPM 3 channel Servo Tester	1			
73	Robotics DIY Kit -Robotics DIY kit with intelligent programming	1			
74	Design Thinking Components -Foam Core Boards	1			
75	Design Thinking Components Wood Glue- 500ml	1			
76	Hacksaw frame	1			
77	Hacksaw blades	1			
78	External Straight Pliers	1			
79	Nose Circlip Plier	1			
80	Long Nose Plier	1			
81	Combination Mini Plier	1			
82	Wire stripping pliers	1			
83	Cutting Plier	1			
84	Needle nose pliers	1			
85	Tweezers Set -6 Pc Non-Magnetic Tweezers set	1			
86	Steel Shaft Claw Hammer -Claw Hammer Steel Shaft	1			
87	Allen Key Set -10 Piece Ring Imperial Allen Hex key	1			
88	Spanner Set -12-piece combination Spanner Set	1			

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

89	Precision Screwdriver Set -6 Piece Precision Screw Driver Set Types: PH0, PH1, Flat head- 1.4mm, 2mm, 2.4mm, 3mm	1			
90	Wrench -Adjustable Universal Multi Wrench	1			
91	File set -6 pc file set Working length	1			
92	Flexible Cutting Mat -A3 Size with Marked Pattern And Grids	1			
93	Plastic Storage Drawer/ Organiser -Plastic Storage Boxes with drawers	1			
94	Peg board -Peg board system to mount tools on the wall with attachments.	1			
95	Hot glue gun-Works with standard 0.5-inch glue sticks. Temperature to 280° Celsius.	1			
96	Soldering Kit -Soldering Iron Temperature Range: 280°C to 450°C	1			
97	De-Soldering Pump, Soldering Flux (Paste), De-soldering Copper Braid (Solder wick)	1			
98	Soldering Wire: 20/22 AWG soldering Wire with rosin core flux, Compatible soldering Tip- 5 each per kit	1			
99	Adapters -DC Power Adapter with 5V, 2A	1			
100	Adapters -DC Power Adapter with 12V, 2A	1			
101	Electric Screw Driver Set -Multipurpose electric screwdriver set. Accessories- Compatible bits Mode- Wireless, Battery- Li-ion 3.6V or equivalent	1			
102	Soldering Helping hand -Specifications: Adjustable crocodile holding clamps/clip. Soldering iron holder. LED Light. Magnifying lens.	1			
103	Return measuring tape -Return measuring tape 5Mx19mm	1			
104	Digital Vanier Calliper -150 mm / 6" Digital Vanier Calliper	1			
105	Digital Pen Electric Tester -Voltage tester	1			
106	Digital Multi Meter -Digital Multi Meter Voltage Current Resistance-7 functions + 19 ranges to cover DC voltage 200mV to 1KV, AC voltage 200 V - 750 V DC current 200 µA - 10 A, Resistance 200 -2 M Ohm, and Transistor & diode test.	1			
107	Telescope -All glass optical components Altazimuth mount suitable for terrestrial and astronomical use minimum 700 mm focal length	1			
108	Glue Sticks -11 mm x 200mm Hot Melt Glue Stick	1			
109	Cable Tie -Small Cable Tie Pack- Pack of 100	1			
110	Medium Cable Tie Pack- Pack of 100	1			

Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

111	Power Strip Adaptors -Standard Quality Extensions with 5Amp safety fuse. 5 or more sockets in each extension.	1			
112	Bulb Holders -Regular Hanging Bulb holder	1			
113	Electric Wires -Twisted Red black pair (10 Meters)	1			
114	USB TO DC jack cable -USB to DC jack cable for Battery bank	1			
115	Safety Gloves Pairs -Latex Coating Gloves (Medium Size)	1			
116	Safety Mask -Filtering efficiency ranging 80 present when tested against 0.3- micron sodium chloride particle	1			

Note:

- i. The work order shall be placed either for works with three years warranty Table F1 (Sr. No. A.1) or optional works with one year warranty Table F1(Sr. No. A.2).
- ii. **Work orders shall be placed for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa for North-Goa District (74 nos. tentative schools) and for South-Goa District (06 nos. tentative schools)**
- iii. The rates in Table Table-F2 (Financial Project of Consumables items) to be quoted for availability and supply (if demanded/required during the warranty/ maintenance period). However the rates will not be considered for arriving at best Bid.
- iv. The rates for consumable items are to be quoted for supply during the warranty/Maintenance period of maximum three years.
- v. The best/successful bidder on whom Work Order for supply of kits shall be placed will have to match the lowest rates of individual consumable item (in Table F2) determined through this tender process.
- vi. Software (Operating Software/Development platform): should be open-source: Python, Arduino IDE, PyCharm, Scratch.

Table-F3: Financial Project of Annual Maintenance of table-F1 (Tentative Format)

Sr. No.	Item Description	AMC in Percentage as per work order value per Robotics Hardware Kit
1	Cost of Annual Maintenance work after end of one year warranty period for 1 st consecutive year in Percentage (for items as per table-F1(A.2))	
2	Cost of Annual Maintenance work after end of one year warranty period for 2 nd consecutive year in Percentage (for items as per table-F1(A.2))	



Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

Chapter 17 Bid Form

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

I. Addressed to:

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

II. NIT Reference No: ITG-IT/1025/AI Labs-MPLAD/2023-24/1912 dated: 19.01.2024

III. 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, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

- IV. We agree to abide by all the conditions mentioned in this Bid Document issued by the Bidding Authority.
- V. 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.
- VI. 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, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs 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, 3rd Floor, Altinho-Panaji-Goa-403001.

NIT Reference No: ITG-IT/1025/AI Labs-MPLAD/2023-24/1912 dated: 19.01.2024

1. *Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa* 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:

1st 45 days	2nd 45 days
50% of the ordered Qty	50% 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/School(s).
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:

**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, 3rd Floor, Altinho-Panaji-Goa-403001.

NIT Reference No: ITG-IT/1025/AI Labs-MPLAD/2023-24/1912 dated: 19.01.2024

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.



Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

Signature of the bidder with seal

Name:

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



Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs 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, 3rd Floor, Altinho-Panaji-Goa-403001.

NIT Reference No: ITG-IT/1025/AI Labs-MPLAD/2023-24/ 1912 dated: 19.01.2024

1. In response to the NIT for *Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa* with Onsite Comprehensive warranty and support and maintenance support for 01 year or 03 years (as the case may be), 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, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs 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, 3rd Floor, Altinho-Panaji-Goa-403001.

NIT Reference No: ITG-IT/1025/AI Labs-MPLAD/2023-24/1912 dated: 19.01.2024

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, Delivery, Installation, Training & Maintenance of Hardware Kits and Software required for Artificial Intelligence (AI) Labs in the State of Goa with Onsite Comprehensive warranty and maintenance support for 01 year or 03 years (as the case may be).

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 01 year or 03 years (as the case may be).
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. 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



Tender Document for Supply, Delivery, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

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 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 Financial 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, Installation, Training & Maintenance of Hardware Kits and Software for Artificial Intelligence (AI) Labs in the State of Goa.

Annexure–V Pre-Bid Queries Format

Name of the Company/Firm:				
NIT/Tender Ref. No:		ITG-IT/1025/AILabs-MPLAD/2023-24/1912 dated: 19.01.2024		
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: gawas.akshada-itg@goa.gov.in, vishwas.kavthankar@nic.in and gaurav.naik@gov.in in doc format (**On or before Date and Time 23.01.2024 upto 05.00 pm**)

meeting) Queries not submitted in the prescribed format will not be considered/ responded at all by the tendering authority.