Selection of DIPP Registered Startup(s)
Design, Development, Implementation and Operations & Maintenance of Agriculture-Related Solutions using Emerging Technology

For

Agriculture Department, Govt. of Telangana

February-2021

Issued By:
Telangana State Technology Services Ltd.,
2nd floor, HACA Bhavan, Near Assembly, Hyderabad
Website: http://www.tsts.telangana.gov.in

The information provided by the bidders in response to this tender document will become the property of Agriculture Department, Govt. of Telangana and will not be returned. Agriculture Department, Govt. of Telangana, reserves the right to amend, rescind or reissue this tender document and all amendments will be advised to the bidders and such amendments will be binding on them.

Table of Contents

1. Invitation for Competitive Bidding

1.1. RFP Notice

Telangana State Technology Services Ltd. (TSTS) on behalf of ITE&C Department & Agriculture Department seeks proposals from the Startups registered with The Department of Industrial Policy & Promotion(DIPP) to participate in the Competitive Bidding for **Selection of Startups to Design, Develop, Implementation and Operations &Maintenance using Emerging Technology-Based and Agriculture-Related Solutions** for Agriculture Department. Interested competent bidders must submit their bids indicating that they are qualified to perform the services using Emerging Technologies to develop and implement the following modules:

1. Nutrient and Irrigation Management
    a. Smart Irrigation Management System
    b. Nutrition Management System
2. Farm Automation
3. Produce Grading and Quality Assaying
4. Seed Traceability using Blockchain Technology

Note: *The bidder is requested to study the document carefully and opt to bid for one of the four solutions among Part A, Part B, Part C, Part D or can even opt to bid for multiple solutions based on their competency. The bidder would need to provide separate documents for all the intended Parts in case bidder chooses to bid for more than one Part.*

1.2. Time Schedule of various tender related events

Bid calling date	19.02.2021
Pre-bid conference (Date, Time & Place)	In view of the COVID-19 pandemic all around, the bidders are requested to submit their queries through mail to the below mentioned mail ids
Last date/time for receipt of queries from bidders by mail	23.02.2021@ 05:00 PM & issue of clarification/corrigendum on 24.02.2021
Bid Closing date and time	06.03.2021@ 03:00 PM on eProcurement portal
Bid Document Fee	Startups, registered with DIPP, are exempted from payment of Bid Document Fees provided certificate of empanelment is submitted with the bid response.
Contact Email	mngdirector-tsts@telangana.gov.in, osd_itc@telangana.gov.in rpushpa-tsts@telangana.gov.in, krishnaveni.m@gov.in
Reference No.	TSTS/CS/Agri-NeGPA/2021

The bidders who are interested in participating in the bids may please ask the contact person for details or visit http://www.tsts.telangana.gov.in, https://tender.telangana.gov.in

A complete set of bidding document prepared by TSTS may be obtained by interested bidders on the submission of a written application addressed to "The Managing Director, Telangana State Technology Services Ltd, 2nd Floor, HACA Bhavan, Hyderabad"

1.3. Other Important Information related to Bid

This section provides important deadlines and associated activities, such as Bid Security information, Contract Period etc.,

S.No	*Item*	Description
1.	Bid Validity Period	90 days from the date of submission
2.	Method of Selection	Quality and Cost Based System (QCBS) for all the four solutions and procedures described in this RFP
3.	Period for signing contract	Within 15 days from the date of receipt of letter of notification of award.
4.	Contract Period	As mentioned in RFP
5.	Implementation Period	As per the RFP
6.	Penalty for delay in implementation	Please refer penalty clause.
8.	Payment Terms & Conditions	Payments for the development phase and the maintenance phase (post Go-Live) will be done as per the payment schedule mentioned in the respective section.

2. Pre-Qualification Criteria

TSTS invites DIPP registered competent Startups desirous of bidding for the project and meeting the following Pre-qualification criteria (PQ):

#	Pre-Qualification Criteria	Description	Supporting Documents	Forms
1.	Legal Entity	The Bidder must be a Startup registered with DIPP in India under guidelines, for at least one year before of March 2020 and such registration should be valid as on bidding date	i. Certificate of Registration from DIPP as Startup ii. RoC certificate to be enclosed. iii. Copies of GST & Service Tax Registration certification & iv. Copy of PAN Card	Form PQ-1
2.	Sales Turnover	Annual Sales Turnover generated from IT Services, should be at least Rs.25 Lakhs; for at least one financial year from the date of registration	i) Audited Balance sheet for each financial year. Or ii) Certificate from the Statutory Auditor. iii) Income Tax Return's	Form PQ-2
3.	Past Relevant Experience	The bidder should have product /solution relevant to the proposed emerging technologies	Self Certification to be submitted	Form PQ-3
4.	Technical Manpower Availability	The bidder should have at least 10 Software Developers on its rolls with relevant experience.	Bidder should submit Self-Certification by the authorized signatory. The Bidder should furnish proof to support their claim.	Form PQ-4

Important Note:

1. Consortium bidding is not permitted.
2. All the relevant PQ bid forms are to be submitted.
3. Representations received from the bidders within 3 days from the date of opening of bids on the issues related to Pre-qualification bid evaluation and within a day from the date of opening of commercial bids on the issues related to the commercial bid evaluation will only be accepted. Representations received beyond this period will not be considered and strictly rejected.
4. The bidder should upload all the required documents with clear visibility, avoid missing documents and avoid bidding mistakes. In such cases, TSTS reserves its right

in seeking clarification from the bidder and may disqualify the bidder for the bidding mistakes, missing documents and for the documents that are not clear.

5. Relevant supporting documents (ink signed) should be submitted on eProcurement portal and as & when requested by tendering authority without fail otherwise the bid is liable to be treated as "non responsive".
6. An undertaking from bidder is required stating that they would facilitate the Tenderer on regular basis with the technology/product updates and extend support.
7. The Bidder shall have sufficient technical expertise, relevant experience and requisite infrastructure to execute the project.
8. Bidder shall include among other things, objectives of the Bidder, the proposed management structure, contribution of each constituent, role and responsibility of each constituents covering all aspects of the planning and successful execution of the work, the commitment of the constituents to the joint and several liability for due performance.
9. Deviation from this shall be treated as termination of contract and shall attract the liability as specified in the Tender.
10. Local Presence: Preference will be given to the Bidder having a Local Office & Development Team in Hyderabad. Self-certified Address on Letter head to be submitted.

3. Introduction

3.1. Introduction

The Department of Agriculture has been created mainly to provide Agricultural Extension services to farmers and to transfer the latest technical knowledge to the farming community, introduction of high yielding varieties, laying demonstrations, imparting training to farmers to improve skills & knowledge to boost up the agricultural production and productivity.

The other objectives of the Department are to assess requirements of agriculture inputs well in advance and to regulate their production and monitor timely supply of seeds, fertilizers, pesticides, implements and credit, etc to farmers.

The Department also performs the statutory functions under various Acts and regulations (i.e., quality control) to ensure supply of quality inputs i.e., Seeds, fertilizers and pesticides to farmers and implementation of Dangerous Machines Regulation Act.

The Department also carries out certain other facilitating functions such as

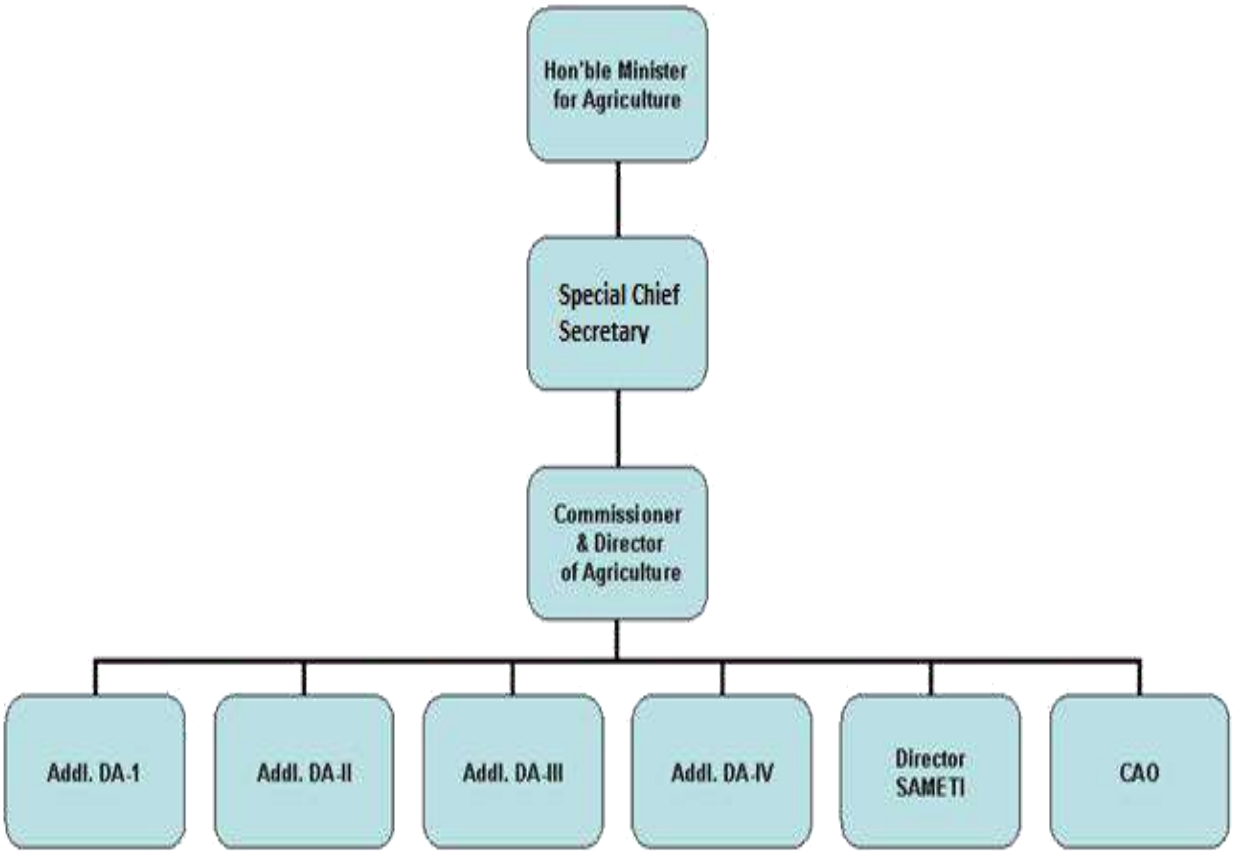
1. Soil testing
2. Soil and Water Conservation
3. Soil Survey
4. Credit assessment/ arrangements
5. Media Production
6. Trainings to farmers
7. Arranging P.P. Campaigns /Diagnostic team visits whenever necessary
8. Monitoring and Evolution
9. Disaster Management
10. Crop Insurance
11. Agricultural Mechanization
12. Extending technical assistance to various agencies.

The following are the different levels of the organizations structure of the Core Agriculture department of the State of Telangana.

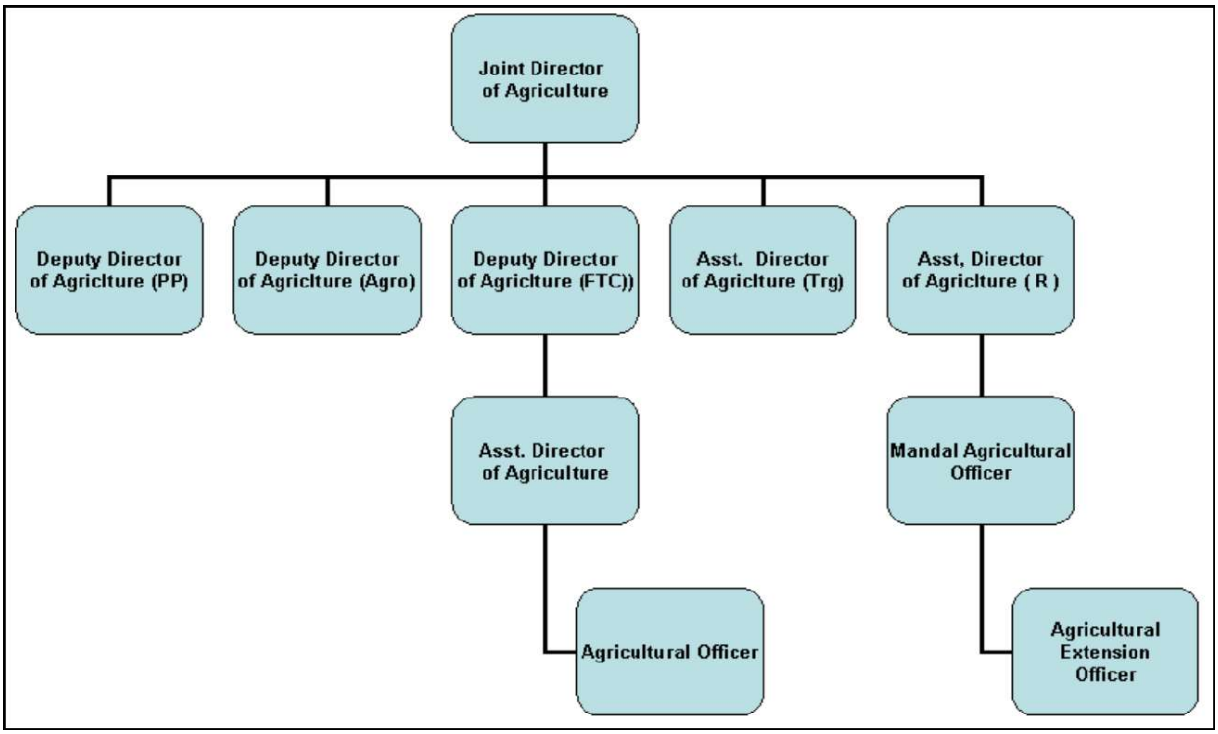
1. **Secretariat:** Core Agriculture Department is headed by Hon'ble Minister for Agriculture, assisted by an officer of the cadre of Principal Secretary/ Secretary. The Secretary Agriculture and Co-operation is the administrative head in the Secretariat on behalf of the State Government assisted by Commissioners, Joint Secretaries, Deputy Secretaries, Asst. Secretaries, Section Officers and Sub staff.
2. **Commissionerate of Agriculture:** The Head of the Department is Commissioner of Agriculture. He is assisted by Additional Directors of Agriculture, each additional director is allocated with various subjects to handle with officials and monitor timely implementation of department related programs.
3. **District level:** At the District level the Department is headed by Joint Directors of

Agriculture (JDAs) and assisted by DDAs, ADAs and AOs at District, Division and Mandal levels.

4. **Agriculture Division level:** The Divisional ADA is the head of the Agriculture division and assisted by the Agricultural Officers at the Mandal level.
5. **Mandal Level:** In all the 585 Rural and Urban Mandal's of the State, at least one Agriculture Officer is working in each Mandal. These AOs are assisted by few Agricultural Extension Officers in the field work.
6. **Laboratories:** The Department has setup five pesticide testing laboratories, five FCO Laboratories, two seed Testing Laboratories around 60 Soil Testing Laboratories (including AMC level) and 11 Biological Control Laboratories in the State.
7. **Department of Agriculture, Organizational structure – State level**



8. **Departmentof Agriculture, Organizational structure – District level**



3.2. Telangana's Agritech Vision:

Agriculture is a priority sector for the State of Telangana. Government of Telangana envisions Telangana as a prototype State to bring a digital revolution in India's Agri-sector. Expected outcomes of all our agritech projects are

1. Increased farm **productivity**,
2. Resource **sustainability**,
3. Farmer tech and financial **inclusivity**, and
4. Increased **efficiency** of government subsidies &schemes.

3.3. NeGPA: Government of India's scheme:

MeiTY, GoI came with the proposal under NeGPA to promote implementation of Emerging Technologies in the area of Agriculture and allied sectors, Telangana State conducted a landscape review to identify the emerging technologies with high impact potential and relatively higher feasibility. Four of them were shortlisted and presented to Ministry of Agriculture, Government of India. The four projects were approved and Government of India agreed to be the funding agency for the projects under the NeGPA scheme.

1. Part A: Nutrient and Irrigation Management
    a. Smart Irrigation Management System
    b. Nutrition Management System
2. Part B: Farm Automation
3. Part C: Produce Grading and Quality Assaying
4. Part D: Seed Traceability using Block Chain Technology

3.4. Project partners:

1. Department of Agriculture, Govt. of Telangana
2. Department of ITE&C, Govt. of Telangana
3. Research and Innovation Circle of Hyderabad (RICH)
4. Telangana State Technology Services Ltd. (TSTS)

3.5. Telangana's Agritech Ecosystem

The vibrant ecosystem of institutions, industry, start-ups and government enablers has been a major contributor to our agritech momentum and success.

a. **Emerging Technologies Wing:** The Emerging Technologies Wing, a unique vertical within ITE&C Department is building a conducive ecosystem of emerging technologies in the State, as well as driving the adoption of these solutions in departments.
b. **Department of Agriculture:** Provides agricultural extension services to farmers and assists in transferring the latest technical knowledge to the farming community. The department assesses requirements of agriculture inputs well in advance, regulates their production and monitors timely supply of seeds, fertilizers and pesticides, implements, credit etc., to farmers.
c. **Professor Jayashankar Telangana State Agricultural University (PJTSAU):** is a state agriculture university that provides domain expertise, mentorship from agronomists, relevant datasets required by bidders, and policy advisory to the State Government.
d. **Research and Innovation Circle of Hyderabad (RICH)**: Hand holds innovators with an aim to take research to market.

3.6. Proposed Scope of work:

The selected bidder(s) are required to develop the following modules as per the detailed scope of work defined at chapter-4 :

1. Part A: Nutrient and Irrigation Management
    a. Smart Irrigation Management System
    b. Nutrition Management System
2. Part B: Farm Automation
3. Part C : Produce Grading and Quality Assaying
4. Part D: Seed Traceability using Block Chain Technology

The bidder is requested to study the document carefully and opt to bid for one of the four solutions among Part A, Part B, Part C, Part D or can even opt to bid for multiple solutions based on their competency. The bidder would need to provide separate documents for all the intended Parts in case bidder chooses to bid for more than one Part.

3.7. Goals of Pilot Implementation:

1. Enabling adoption of these solutions by the end users – farmers.
2. Understanding the challenges faced by agritech innovators and adequately informs and recommends interventions to policymakers at the State and National level.
3. To assess the viability, scalability and impact of emerging technology-based solutions for increasing productivity, sustainability, inclusivity and efficiency across the agricultural value chain. Showcasing positive results to Government of India would result in greater fund allocation to agritech interventions henceforth, impacting the lives of millions dependent on agriculture for their livelihood.

4. Detailed Scope of Work

Telangana State Technology Services Ltd. (TSTS) is appointed by ITE&C Department, Government of Telangana as the nodal agency for selection of Solution Providers for Design, Development, Implementation and Operations & Maintenance of Emerging Technology-Based and Agriculture-Related Solution for Agriculture Department, Govt. of Telangana for each identified project defined at Part A, Part B, Part C & Part D. The Scope of the Work for each identified project is as defined below:

4.1. Part A: Nutrient and Irrigation Management

In Part A, the following two pilot use cases with the similar objective of implementation is identified by Department of Agriculture. The locations will be in the State of Telangana only.

- **Section A:** Smart Irrigation Management System
- **Section B:** Nutrition Management System

4.1.1. Section A: Smart Irrigation Management System: Scope of Work

The department envisions building an AI driven system which recommends the variable irrigation rate based on the external parameters/conditions such as weather, soil moisture, evapotranspiration and other plant growth parameters. The AI driven system will take inputs from various sensors deployed to capture the weather and soil conditions to give precise irrigation recommendations and improve water usage efficiency.

The successful bidder has to provide a comprehensive solution by capturing the following requirements; has to facilitate the source for capturing the requirements such as IoT based sensors, Mobile application for providing the information to the stakeholders (Farmers, Department officials,).

- To set up an intelligent variable rate irrigation system with soil and weather sensors to understand conditions in real time.
- A 10 hectare plot with 3 types of crops along with control plots with requisite pumps, piping, drip lines and all other infrastructure required for irrigation and fertigation will be provided by the Agriculture department.
- Successful bidder has to install sensors, use cloud-based processing, automatic irrigation controllers to demonstrate the viability of their solution. The solution should be based on input of information from the sensors and provide the output of irrigation via the web / mobile application.
- The irrigation management system has to be installed and demonstrated within in 65 days
- Standards matrix shall be provided to regulate the smart irrigation as per need.

4.1.1.1. Technical Specifications

General guidelines for all the sensors used in the project:

- All the equipment/infrastructure should be developed in way that they can with stand adverse climatic conditions.
- All communications with the IoT Sensors or any other sensors deployed shall conform to open protocols and not proprietary.
- Applicable IoT standards shall be adopted for the sensors.
- Expected Life of the equipment (sensors and other equipment) is 5 years.

4.1.1.2. Weather parameters

The successful bidder is responsible to install the sensors/ other input devices that automatically send the data to central application, the central application needs to analyse the data and provide the necessary recommendations /alerts to the stakeholder and the same need to be shown in dashboard. A prototype needs to be developed for each and every kind of sensor to check and pilot if it can be integrated with the application and existing set of infrastructure.

The proposed sensors shall capture the following parameter and the sensor will be setup with solar panel for generation of power along with connectivity to the cloud

- Ambient temperature
- Relative Humidity (RH)
- Wind speed and direction
- Dew point
- Precipitation
- Other weather parameters if any

4.1.1.3. Soil Parameters

Proposed sensor shall capture Soil parameters which shall be recorded are:

- Soil temperature
- Soil moisture

4.1.1.4. Crop Growth

Periodical plant growth stages monitoring (Crop Vegetation Index) will be preferred if integrated.

4.1.1.5. Irrigation

The device shall enable the user

- To irrigate based on crop water stress index
- to irrigate based on volume
- to irrigation based on a fixed schedule i.e rotation
- To irrigate on time basis
- To irrigate based on climate/soil trigger

1. When temperature is very high
2. When soil moisture is less

4.1.1.6. Water use efficiency

The device should calculate the Water use efficiency on real time

4.1.1.7. Soil sensor Specifications and functionality

- Soil sensor shall capable of measuring soil and root zone water stress index
- Soil sensor shall be highly accurate and proven model
- 2 to 3 soil sensors should be sensitive enough to represent one-hectare plot
- Sensor with sampling depth of 1meter will have added weightage
- Sensor shall be suitable for all crops (cereals, pulses, vegetables, fruits, commercial crops etc)
- Sensor shall report actual soil moisture stress in real time and shall represent the entire root volume
- Sensor shall be uniformly sensitive in heterogeneous and homogenous soils and all soil types
- Accuracy of the sensor should be more than 97% when compared to the laboratory method of soil moisture estimation
- Sensor shall be maintenance free
- Soil moisture measurement shall not be affected by soil salinity and other biotic and abiotic stress
- Standards matrix (tables) should be obtained (or should be developed where required) to benchmark the ideal soil moisture conditions for various crops and various soil types in the different stages of crop lifecycle. This standard matrix shall be one of the component that will be used to regulate the smart irrigation as per need.
- The Proposed application shall provide real time water usage efficiency data

4.1.1.8. Sensor Transmitter / Modem

- Shall work on RF/GSM/LORA network
- Shall be Compatible with the controller
- Should work on battery with minimum 1-year life
- IP 67 enclosure with ABS/FRP/PP MOC
- Communication frequency at least 4 times a day

4.1.1.9. Controller specification

The controller should be capable for the following minimum functionalities:

- Communication:
  - Manage communications over low bandwidth networks efficiently.
  - Communicate as a slave device to the Server / Application and optionally as a master to local subsystems like Micro Weather Stations and Soil Sensors.

- Covers all the scenarios by supporting Message queue protocols over secured hypertext transfer protocol (HTTPS).
- Use GPRS networks for its communication needs and optionally can be configured to work with RF, LORA using country specific ISM band frequencies.
- Serial communication should be available for real time debugging and configuration at field, using secure interface application.

➢ Power functionality:
- Controller should work on the rechargeable battery (preferably LiFePo4)
- Battery should recharged by a solar panel and built in charge controller
- Controller should regularly monitor the health of the battery, charge capacity and any performance related issues of the battery
- Battery should be suitably sized and it should be capable to work for minimum 2 days in case of no solar power.
- Solar panel of suitable size to fully recharge the battery in a single solar day.
- Suitable solar panel mounting structure
- Suitable charge controller (MPPT technology) to connect to solar and battery.
- Protections in the power system.
    1. Over voltage
    2. Over current
    3. Reverse polarity
    4. Short circuit
    5. Lightning strike on Panel
    6. Output voltage: Configurable to match with battery

➢ General
- Controller and battery should be kept in an IP 67 rated enclosure.
- Enclosure should be rust free and made with ABS/PP/FRP etc…
- Operating voltage 12V DC, maximum input voltage of 20V DC
- Built in RTC
- USB port for interface and diagnostics
- Over the Air firmware upgrade (OTA)
- On board diagnostics
- Data gets stored locally (in the SD card) when disruption in communication occurs till communication is restored.
- Mounting: Wall mounting
- Operating Temperature: -40 to 85°C
- Humidity: 5% to 95% RH (non-condensing)

➢ On-board diagnostics capabilities
- Power-on Self-Test
- RAM health

- EEPROM health
- SD Card Random access
- Battery health
- Solar health
- Sleep function should disable non-critical functions when battery voltage is less than the threshold level based on the type of battery used.

4.1.1.10. Functionality of the application

The device shall enable the user to

- Switch on / off individual valves.
- Switch on / off all valves.
- Operation of the valves with following minimum features
- Switch on / off Immediately
- Switch on / off by time
- Switch on / off based on exceptions

4.1.1.11. Field Deployment - Configuring the equipment at field

The application should be capable to configure controllers with all required data including,

1. User data
   - ID & password
   - Contact details
2. Field data
3. Geo marking Area
4. Crop data
5. Type of crop
   - Sowing date
   - Crop Growth Degree Days vs Water requirement (Kc value)
6. Water source & Hydraulic particulars
   - Maximum pressures in the system
   - Maximum flow in pipeline
   - Type and size of valves
   - Flow meters size, range, calibration points and its installed GPS location
   - Pressure transmitter's size, range, calibration points and its installed GPS location

4.1.1.12. Monitoring and analyzing

- Application should monitor, analyse and provide the following parameters
  - System should provide information of Valve on time, off time, duration
  - System should able to support for required flow or recommended flow vs delivered quantity and balance quantity
  - System provide details of Rate of Flow
  - Provide details of Cumulative flow

- Support for provide information of Pressure condition
- Provide information of Status of the valves for on / off

➢ Alarms & Notifications:

Whenever an exception occurs in the system, the controller should communicate with the Server and an alarm to be raised by the application. When Alarm is triggered, an auto generated email / SMS is to respective users. Alarms maybe triggered under

- Flow Failure
- Flow meter variation & malfunction
- Valve not opened
- Pressure sensors variation & malfunction

➢ Communication Failure

- No Communication
- Down Time

➢ Other exceptions

- Any internal errors in the controller
- On-board Diagnostics information of the controller

➢ Weather Risk: When there is any unexpected change in weather forecast, alerts shall send to all the stakeholders, through SMS/email

4.1.1.13. Mobile Application:

A mobile app proposes to develop to monitor the progress of techniques applying in farm and operators can able to control the operations with the installed devices.

The following features need to incorporate in proposed application:

- Application should be device specific.
- Application should be role based access, provide features for operator/farmer/department officials separately
- Data should integrate with Central application and fetch the details accordingly
- Integrate with other applications to provide any advisory reports.
- Application should support to upload the information to any other platforms and get the data accordingly.
- Operator can able to control the operations of installed sensors remotely using mobile application.
- Farmer can able to view the information of operations and monitor the progress of operations, No.of acres covered under Irrigation source, Crop health Information , weather information.
- Department officials can able to view the operations of crop health.
- Application should work on Offline and Online.
- Application should generate alerts

4.1.1.14. MIS Reports

Bidder has to study the systems and need to provide the required reports, the following tentative reports have been identified to be developed as part of scope of this work. Application shall generate the following reports on real time.

- Weather Reports
  - Daily weather Information
  - Daily irrigation recommendation
- Irrigation reports
  - Crop Water Requirement based on crop growth stages
  - Quantity of water irrigated in each plot
  - Quantity of water irrigated to each crop
  - Water Use Efficiency
  - Control plot information
- Fertigation reports
  - Fertigation recommendation
  - Fertiliser consumed for the season
- Controller Reports
  - Valve based report
  - Controller based report
  - Summary Reports
  - Periodic Reports
  - Monthly reports
  - Volume of water used for season to understand energy usage and cost
- Bidder has to provide trend reports comparing the periodical information generated through proposed application.
- Application should support for decision support system.

4.1.1.15. License and Warranty and Standards

- Defect Liability of products will be for 12 months from date of commissioning, damages due vandalism, flooding, fire and force majeure are not covered.
- Software license shall be for 2 years
- After expiry of License agreement, department have to authority to renewal/maintain with the same.

4.1.2. Section B: Nutrition Management: Scope of Work

Nutrient management involves providing advisories to use crop nutrients as efficiently as possible to improve productivity while protecting the environment. The key principle

behind nutrient management is providing information on balancing soil nutrient inputs with crop requirements. When applied in proper quantities and at the right times, added nutrients help achieve optimum crop yields. Nutrients that are not effectively utilized by crops can potentially leach into groundwater or enter nearby surface waters.

The successful bidder may use spectrophotometry coupled with IoT sensors or any other emerging technologies for testing the soil properties (physical and chemical). The testing methodology shall be rapid with highly sensitive. Soil test results shall be comparable to the test results of laboratory tests.

Area and sampling

The selected bidder shall test soil samples in each mandal from selected villages of one selected district of Telangana. Standard procedures shall be followed in selection of soil collection sites and number of soil samples and physical and chemical parameters to be studied in consultation with the technical experts of the Dept of Agriculture, Government of Telangana or the Soil science experts from the Professor Jayshankar Telangana State Agricultural University (PJTSAU), Rajendra nagar, Hyderabad. The list of villages will be provided by client and the calendar plan will be provided during the implementation of project

4.1.2.1. Soil parameters to be tested

Each soil samples collected from the selected district of Telangana shall be tested for the following parameters or more

1. pH
2. EC
3. Soil Moisture
4. Soil Organic Carbon
5. Nitrogen
6. Phosphorus
7. Potassium
8. Sulphur
9. Zinc
10. Copper
11. Iron
12. Boron
13. Rapid estimation of any other micro and macro nutrient will be preferred

4.1.2.2. Field Data

Following data shall be recorded for each soil collection site and made available on cloud

1. Farmers name
2. Contact details
3. Address

4. Survey number
5. Latitude and Longitude position of the farm or other soil collection site
6. Crops grown over five years

4.1.2.3. Testing equipment

Technicians from the selected bidder company shall operate the soil testing equipment during the project. However, the bidder shall also train the selected beneficiaries from the farmers groups/FPOs and officials of the Dept of Agriculture, Government of Telangana in the project district on the operational procedures. If the cost of the equipment is included in the quote submitted by the selected bidder, the equipment shall be officially handed over to the officials of the Department of Agriculture, Government of Telangana after official closure of the project.

4.1.2.4. Technical Specification

The provided device should have the following specifications:

- Power supply: Equipment shall be power and batter enabled for minimum 8 hrs
- Display: Touch screen which could be comfortable for the user to operate
- Dedicated Cloud space
- GPRS enabled
- API shall be shared and integrated to any analytical platform as requested by the Department of Agriculture, Government of Telangana.

4.1.2.5. Results

1. The bidder shall involve the Farmers Groups/Farmer Producer Organisations in the selected district of Telangana in conducting the soil fertility study, without compromising the standard study methodology. Soil test results of each farmer shall be made available on cloud and given with unique login Id and password to view on a mobile interface.
2. Soil test results shall also be hosted on the cloud and unique login Id and password shall be provided to selected officials to monitor the progress of the testing and developed of soil nutrient maps. Soil test results shall also be printed and issued to the farmers. Results and recommendation shall be made available to farmers in English, Telugu and Hindi
3. Soil test data will be owned by the Department of Agriculture, Government of Telangana and cannot be used by the bidder in any form without obtaining written permission from the department.
4. Fertilizer recommendation shall be made based on the soil nutrient status of the soil as per the guidelines defined by the experts of PJTSAU. The mobile interface provided by the bidder shall be used to send SMS to each farmer on the fertiliser recommendations.

5. Soil nutrient maps (for each nutrient tested) depicting the soil nutrient status shall be developed for each mandal in the selected district. Soil fertility map for the district shall also be developed and made available on the cloud.

4.1.2.6. Certification

The equipment must be certified and recommended by any Agricultural University or any Agricultural Research Institutes or Krishi Vigyan Kendra (KVKs) for its sensitivity compared to laboratory methods of estimation.

4.2. Part B: Farm Automation

4.2.1. Overview

Acute labour shortage, hi-tech (precision) farming practices, increased awareness on clean food production has created a big need for farm automation. Unmanned Ground Vehicles or robots are being developed and tested for specific farming operations. Robotically controlled devices are used to eliminate weeds in the seed line between the crop plants (intra-row) while weeds between the seed lines (inter-row) are controlled with conventional cultivation techniques. Provide information to predict of crop health and growth patterns.

As part of Implementation of Emerging Technologies in Agriculture Sector, ITE&C department and State Agriculture Department has decided the implementation of Farm Automation using Robots. a With the outcomes of pilot implementation Agriculture department will take decision to extend the solution based on the bandwidth and necessity for implementation requirements.

Applying the Farm Automation Techniques to the highly effective and safe agricultural production has a significant impact on ensuring the efficient use of Pesticide Management and Weed removal Process will ensuring the efficiency and stability of the agricultural production.

The successful bidder has to provide the comprehensive solution addressing all the requirements specified in the scope of work. Solution provider has to facilitate the source for capturing the requirements such as Robots Information, Mobile application for providing the information to the stakeholders (Farmers, Department officials,).

Successful bidder has to deploy the Robots, use cloud based processing, Mobile application to demonstrate the viability of their solution. The solution should be based on input of information from the sensors and provide the output of Farm automation details via the web / mobile application. The system has to be installed and demonstrated within in 65 days.

The proposed UAVs/Robots should be approved and accepted by department and the bidder shall provide the working manual. The Solution Provider(s) also need to provide training to department officials and farmers about the operation as requested by the client. SoPs can be prepared for further implementation of techniques.

4.2.2. Weeding:

Weeding has been a time and labor-intensive farm operation. Farmers indiscriminately spray pre-emergence and post emergence weedicides. Use of these chemical weedicides is high in commercial crops like cotton and sugarcane. Indiscriminate use of weedicides not only increases the cost of cultivation, but also affects the soil biome. Chemical residues left in the soil are harmful for humans and animals. Robots could be deployed in detection of weeds and do localised spraying in the right concentration and volumes. Robots can be used computer vision technology to detect weeds and then spray a targeted drop of herbicide onto them

Technical specifications of theRobots

- Should maintain more than 98% accuracy in relative positioning.
- Shall be suitable for short and tall statured crops, especially for crops like sugarcane, cottons, ground nut and maize.
- Should be able to move easily in wet and dry soils, leveled and undulated lands
- Shall detect the major dicot and monocot weeds between the rows and between the plants. It shall be easier for the easier to train the robots in identifying the weeds present in the farm in a short time.
- precise spraying of the defined quantity of weedicide as per the recommendations of the Dept of Agriculture
- The devices should be interconnected with similar robots(up to 2 robots) and able to fetch and store the data for the local/central server
- Should be able to identify the crop specific details
- Shall spray 1 or more acres per hour
    - shall have pay load of 75 to 90 kgs on the top
    - weight - 75 kgs and above
    - Minimum drive speed- 1 m/sec with 4 individually driven wheels
    - Battery- SLA or Lithium ion – 24 volts
    - Manual and auto mode of operations enabled
- connectivity- WiFi and Bluetooth
- Shall provide analytics on areas infested with weeds, major weeds present, quantity of weedicide/spray liquid used
- has to be deployed for spraying 500 to 1000 acres during the project period
- Robots should be able to adopt different weather conditions, soils and slopes
- Should be GPS enabled and provide location specific details
- Should maintain classification techniques that can predict the density and species of different weeds using computer vision
- With the integration of accurate location data helps to maintain rangefinder scans using simultaneous localization and mapping (SLAM) techniques
- The product/solution shall use techniques of Image processing, Machine Learning and Robotics.

4.2.3. Fertilizer placement

Farmers broadcast fertilizers during the vegetative and flowering stages of the crop. More than 30 % of the fertilizers go waste as they don't fall near the root zone. In the recent time, fertilizer placement is being advocated among the farmers. Hand placement of fertilizers at the defined location and soil depth is highly laborious. It is currently being practiced in vegetables. In dry land crops like red gram, farmers spend more money for fertilizer application. Studies says that the placement of fertilizers have not only increases crop yield due to better uptake but also reduce the cost of cultivation. Under the project, it is planned to demonstrate and deploy robots for fertilizers placement in crops like **red gram and ground nut.**

Technical specificationsof the Robots

- shall be suitable for short and tall statured crops, especially for crops like red gram and ground nut.
- should be able to move easily in wet and dry soils, leveled and undulated lands
- shall inject the definite quantities of fertilizers at a predefined distance from the plant and predefined depth.
- shall cover 2 or more acres per hour
    - shall have pay load of 75 to 90 kgs on the top
    - weight - 75 kgs and above
    - Minimum drive speed- 1 m/sec with 4 individually driven wheels
    - Battery- SLA or Lithium ion – 24 volts
    - Manual and auto mode of operations enabled
- Connectivity- WiFi and Bluetooth
- shall provide analytics on total fertiliser used, area covered etc.
- has to be deployed for spraying 500 to 1000 acres during the project period

4.2.4. MIS Reports

- Reports on weed infestation for deciding the quantity of weedicide to be sprayed
- Provide information on actual quantity of weedicide sprayed, No. of acres covered, quantity of fertiliser applied.
- Provide information on growth of plants and crop health monitoring information
- Provide information prediction of yield and loss .
- Provide information related to prediction of harvest window
- Provide the log of operations i.e Time stamps details, no. of hours, no. of acres, Geo coordinates of Farm etc.

4.2.5. Mobile App

A mobile app proposes to develop to monitor the progress of techniques applying in farm and operators can able to control the operations performing by drones/robots.

The following features need to incorporate in proposed application:

- Application should be device specific.
- Application should be role based access, provide features for operator/farmer/department officials separately
- Data should integrate with Central application and fetch the details accordingly
- Integrate with other applications to provide any advisory reports.
- Application should support to upload the information to any other platforms and get the data accordingly.
- Operator can able to control the operations of Robots remotely using mobile application with the features of start the robot, stop and hold the operation
- Farmer can able to view the information of Robot operations and monitor the progress of operations, Fertilizer spray information, No. of acres covered, Crop health Information , weather information, Irrigation details
- Department officials can able to view the operations of Robots operations.
- Application should work on Offline and Online.
- Application should generate alerts

4.2.6. Certification

The equipment must be tested and certified by any Agricultural University or any agricultural research institute of ICAR or KVKs for its efficiency.

4.3. Part C: Produce Grading and Quality Assaying

4.3.1. Overview

State Government has designated various Government bodies to procure the Produce from the Farmers. Among the various agencies Agri Marketing and Civil Supplies Corporations are major procurement agencies of Paddy in the state. Paddy is identified as one of the major Produce crop in Telangana State. Agriculture Marketing department is doing the operations of Paddy procurement through Physical Markets i.e. AMCs in Telangana State. Marketing department has very wide network of physical markets for procurement and its related operations.

Conventional methods of quality testing lead to disputes. Determination of paddy grain quality at the procurement centres instantly using image processing, spectrophotometry or any other emerging technology could improve the efficiency of paddy grain procurement.

The selection of locations for implementation of these pilot use cases will be identified by the Department of Agriculture during the implementation the bidder must provide the comprehensive solution by capturing the following requirements:

- AI/ML based Quality Assaying models
- Mobile application for providing the information to the stakeholders (Farmers, Department officials, Traders).
- Quality testing after milling and during storage is also essential to reduce losses. The Telangana State Civil Supplies Corporation analyses the quality of rice and other

food grains at different points of supply to PDS. Technology based quality testing could help in quick quality assaying and monitoring.

4.3.2. Quality Testing Specifications

The product shall analyse and record the following quality parameters

A. For paddy procurement

1. Grain moisture
2. Percentage of diseased and discoloured grains
3. Percentage of brokens
4. Chalkiness
5. Percentage of immature grains
6. Percentage of stones and sand
7. Percentage of chaff and other plant material
8. QR code for each lot containing information on farm location, name of the farmer, variety

B. For rice analysis

- **Physical parameters**
  1. Grain color
  2. Grain length
  3. Grain moisture
  4. Percentage of unpolished grains
  5. Percentage of broken
  6. Percentage of shriveled grains
  7. Percentage of colored grains due to storage diseases
  8. Percentage of chalkiness
  9. Detection of storage pests like rice moths
  10. Percentage of dusts, chaff and other admixtures
- **Chemical parameters**
  1. Carbohydrates
  2. Proteins
  3. Fat
  4. Fiber
  5. Energy
  6. Estimation of Glycemic Index will be preferred

4.3.3. Technical Specifications

The quality assaying system shall

1. Be non-destructive
2. Capable of testing paddy grain and rice

3. Be portable and easy to operate
4. Accuracy up to 99%
5. Generate instant results
6. Provide analytics on the quality of each batch
7. Generate reports which could be saved electronically and printed
8. Easy to maintain
9. Work with both power and battery
10. Be cover with 1 to 3 years replaceable warranty
11. AI enabled paddy procurement insights for each procurement and distribution centre
12. Central database which could be accessed online
13. Complete integration with the department ERP system
14. Touch screen user interface
    - ❖ Should capture the Quality check parameters enabled by department officials
    - ❖ Every sample will be recorded as separate entry
    - ❖ Each test should have quantity, parameters defined by dept., time, and Geo reference of location.
    - ❖ Each sample should be encoded with different unifier.
    - ❖ Application should access on 24X7 Environment
    - ❖ Samples can be stored in offline also. Device should able to offline records and it will post the data to server whenever data connectivity available.

Application should integrate with required applications/systems to provide data for fixation of price and estimate the quality of produce. Turn Around Time or the testing time or effectiveness of time precision level of equipment will be used need to be propose by bidder. Quality parameters and check list for Quality assaying will be provided by department during implementation of project.

4.3.4. Mobile Application:

Mobile application is proposed to develop for test the quality of grains in Procurement operations and monitor the levels of grains quality.

The following requirements should develop by Implementation Agency:

- ❖ The Application should device independent
- ❖ The application should be role-based access to department officials
- ❖ The platform should work on offline and Online
- ❖ The application should support to integrate with any other applications
- ❖ The application should capture the data provided by users
- ❖ Through Mobile application department officials will perform the operations such as scan the produce, enter the lot details, Farmer details etc.
- ❖ Should capture the geo coordinates of using the application
- ❖ Should fetch/post the data centralised application
- ❖ Application should generate alerts

4.3.5. MIS Reports:

Application should support for develop all kinds of reports. The following reports have identified initially, reports may changes during the development of mobile application:

- No. of samples collected, tested and grade
- Quality wise no. of records
- AMC wise sample records
- Should able to download
- Should be available in all formats such as PDF/Excel/Word etc.,
- Should support for decision supportive system

3 units of quality analyser have to be deployed by the bidder at selected Rice Mill, Civil supplies department and one FP shop.

4.4. Part D: Seed Traceability using Block Chain Technology

4.4.1. Overview

Even though seed certification procedures are available for seeds produced by government agencies, or those produced and sold by private companies, India is rife with instances of spurious seeds finding their way to farmers through unscrupulous dealers. Cases of low quality and spurious seeds having caused extensive damage to crops, especially chilli and cotton have been reported in the past. In fiscal 2018-2019, the Directorate ordered private firms to remove 1,355 tons of unregistered seed from sale in an attempt to prevent the sale of spurious seed in the marketplace The low point was when more than 300,000 farmers in India ended their lives in the last two decades due to the monopolization of the cotton seed sector by the genetically modified BT cotton. To avoid spurious certified seeds implementation of digital technologies will Block Chain ensures that there is not tampering of data and due to the distributed ledger, any adulteration can be spotted at which node the incident has happened. There are about 130 seed testing and certification centres in the country. Eventually all these labs should be linked.

Agriculture Department is coordinating with PJTSAU, Hyderabad to implement various research oriented results in farming sector to provide latest technologies and maximize the yield and increase the income to the farmers on their produce.

4.4.2. Requirement Blueprint

Demographical Coverage:

The bidder has to deploy and maintain the traceability solution at one of the government agency and a reputed private seed company as identified by the department of agriculture, Telangana State.

4.4.3. Traceability – Solution Details

In the State, Agriculture department has identified Telangana State Seed Supplies Corporation as the nodal agency to monitor for the supply of seeds in the State to ensure the supply of quality of seed by following the standards defined by government and deliver the seed to the right place. With emphasis on the production of seeds through individual farmers for importing their livelihood, as per the initiative of the Government of Telangana State the corporation is distributing seeds on subsidy for seed production besides seed distribution. The Seed Corporations and private companies produce various classes of seeds and makes it available to the farmers. Maintaining seed purity throughout the seed value chain is a big challenge for the Government and private companies. Well tagged seed bags are tampered and mixed with low quality seeds, which lead to heavy loss to farmers. Traceability is the best technology solution to understand the production, movement, sale and sowing of quality seeds. This project envisages the development of Lab to land seed traceability for the National/State Seed Corporations and private companies.

Implementation of effective traceability systems improves the ability to implement verifiable safety and quality compliance programs. The resulting visibility of relevant information enables agri-food businesses to manage risks in a better way and allows for quick reaction to emergencies, recalls, and withdrawals. Effective traceability systems significantly reduce response times when any outbreak occurs, by providing more rapid access to relevant and reliable information that helps determine the source and location of implicated products. Traceability allows targeted withdrawals and the provision of accurate information to the public, thereby minimising disruption to trade.

Traceability systems applied correctly, with supporting information and communications technologies (ICTs), enables businesses to monitor and defend against risk in real time. It also enables businesses to make more informed management decisions, leading to increased market penetration, and reduced operating costs.

Visibility of information provided by traceability systems enables businesses to utilize their resources and processes more effectively and efficiently and increase their long-term profitability. Correctly implemented, traceability can reduce out-of date product losses, lower inventory levels, quicken the identification of process and supplier difficulties, and raise the effectiveness of logistics and distribution operations.

Telangana State has decided to develop a comprehensive solution for traceability of seeds using block chain technology to provide more transparent and more secure process to trace the quality of seeds. The bidder has to define the technologies to develop the following scope to capture the requirements of traceability system. The proposed block chain technology must be accepted by project monitoring committee.

The successful bidder is expected to engage with Telangana State Seed and Organic Certification Agency to understand the complete supply chain of the seed/paddy grain movement which is summarized below. The overall objective is to digitize, monitor and

record all the transactions between any two parties on a block chain. The solutions provider should note that the proposed solution may be implemented for paddy grains or any other seeds as decided by the department. The process might vary a bit based on the end item with which the solution is being implemented with.

- Application & Registration:

The module will facilitate applications for Seed certification, Tagging the seeds, Transfer of single or multiple lots, reception of the lots and Scrutiny of the applications. On the receipt of application, the details such as time limit, variety, eligibility and its source, the class mentioned, remittance of fee etc. can be captured. The application and registration process has to be on block chain as it ensures authenticity and transparency.

- Verification of Seed Source:

The module needs to capture the details during first inspection of seed farm. This also needs to facilitate the verifications of the different applications submitted by Seed Producers/Company. The seed certification officer or the seed processing unit should have an option to verify whether the seed used to raise the crop is from an approved source and of designated class such as Breeder Seed, Foundation Seed, Registered Seed and Certified Seed. The details along with GPS parameters, photographs and timestamp will have to be stored in an immutable Block chain ledger.

- Crop Area Mapping (Location Survey):

The module needs to map and determine the actual area of the crop sown and the total area of the field. The plotting of area can be achieved by walking around the field, collecting multiple geo coordinates and uploading the GPS coordinates of the crop/plot to the server. The bidder can choose other options such as satellite-based mapping or drone survey to achieve the same.

- Field Inspection:

The module is intended to help the Certification Inspector to capture field-level information of all the critical events of crop growth and keep the management informed of the events in real time. Once the seed producer enrols the seeds for any certification, the related inspection and schedules of the inspection will be shared to the company. Seed calendar will be sent to the staffs to ensure whether the activity have been taken place properly or not. Relevant details are captured and stored in Block chain so that no one can tamper the captured data. Field-level information including pictures, audio and manual observations can be used by experts to advise team about farm management in various operations of seed production. Digital materials can be made available to the field staff on the Android device (mobile application). Various stages at which the field inspection may be carried out is as follows:

  - Pre-Pollination Stage
  - Pollination Stage
  - Fruit Development Stage

- Pre-Harvesting Stage

It is expected that the successful bidder will assist the concerned officials in carrying out these inspections during the pilot phase and up skill them as required. The Seed Certification authority will provide the list of details that need to be captured at each stage.

- Supervision at Post Harvest:

The post-harvest inspection details of a seed crop such as the operations carried out at the threshing floor, transport of the raw seed produce to the processing plant, pre-cleaning, grading, seed treatment, bagging and post processing storage of the seed lot shall be captured using this module. All the above details along with photographs, GPS parameters are stored in an immutable Block chain distributed register. Smart contracts ensure there is consistency of data across all stages and in line with other rules and parameters else it will raise an alert.

- Analysis of Seed Samples:

The details laboratory tests of the representative seed samples are captured such as germination test, vigour tests, viability test and other purity tests for confirming varietal purity. Data of the bulk inspection by checking the homogeneity of the bulk seed produced can be compared with the standard sample is carried out, using this module.

- Grow-out Test:

The module should capture the details of the samples drawn from the source and the standard checks are grown side by side to compare the varietal purity and health of the produced seed results based on field inspection to ensure the genetic purity of the seed to be certified.

- Certification, Labeling & Sealing:

The module should capture the details of issuance or rejection of the seed lot for certification. The samples which are assayed and meet the standard parameters of certification are issued for labelling and sealing. The seed samples which do not meet the standard parameters are rejected with a reason for rejection. Details of date of validation can be captured and calculates the expiry date, which is approximately 9 months for most of the crops. On certification of the seed, a QR code has to be generated that can be pasted on the certified seed through which all the production parameters can be easily traced. The certificates have to be stored in a secure file system using block chain ensuring tamper proof certificates. All details about the issuer, timestamp, inspection details of all stages and certificate details become immutable and the provenance is maintained for any future reference.

- Traceability

Bidder need to propose anti-fraud measures to check the packaged materials. Dynamic QR code is preferred to use. The traceability platform of the bidder shall capture the details of the movement and distribution of different classes of seeds by the State/National Seed

Corporation. For instance, the Foundation Seeds from the Seed Depot could be issued to farmers, FPOs, NGOs, Private Seed Farms etc. This platform shall track the purity of seeds supplied to the customers. Further, the traceability platform shall also capture the movement of seeds from the seed processing plant of the private companies to its distributors, retailers.

- System should able to capture the details of Seed lot details such as quantity, grade, manufacturing date, producer details, Unique Reference number
- Able to provide details of customer details(Farmer/Research inst/FPO etc), quantity allotted and type and grade details
- Able to capture details of transportation date and movement details
- Able to capture the inventory details of seed w.r.t grade and category for all types of seeds.
- Review the data that is recorded and already in place for production management, customer relations, marketing, and accounting. Compare with the specifications of the external requirements.
- Seed sales:

The traceability platform shall record the sales of each seed packet sold by the retailer and the germination percentage at the farm. System is able to capture to all requirements of seed sales, the following operations need to be captured:

- Agency/Seller details such as: Name of agency, License details, year of license obtained, Category of seed sales, Manufacturing details, quantity of inventory, cost of each packet, packet details.
- Bar /QR code based tracking system is printed on all packets
- System is able to track the details through a mobile app.
- Mobile app is able to scan the Bar/QR code printed on each packet.
- QR/Bar code will provide record of particular seed packet
- Seller and Product should be identified with a globally unique identifier.

4.4.4. Mobile application:

To capture the details and provide details to customers a mobile application is proposed to develop with the following requirements:

- The application should be device and platform independent
- Access to all the device-specific features, including GPS, camera, gestures, and notifications.
- Should work on offline also based on the specific requirements
- Able to integrate with other applications
- Application should available in 24X7 environment

4.4.5. Dashboard/MIS Reports:

Bidder has to provide all kinds of MIS reports based on the department requirements, whenever required bidder has to provide reports to other agencies/departments through secured API based on the instructions of department.

The following are the basic requirements need to provide in the application:

- Seed production details such no. of breeders registered, agencies, quantity, area, types
- Inventory details, seed availability with the suppliers, manufacturers and available at breeders.
- Seed sale analysis reports, such as quantity available, quantity sold at retailers and required quantity of seeds.
- Should able to provide inspection details no. of inspections, remarks and actions initiated.
- Should able to provide reports in all types such as graphs, charts, excel and PDF etc.

Requirements will be varies at the time development of application.

5. Solution Design and Architecture for all the modules

5.1.Project Planning and Project Management

The success of proposed system lies on its proper planning and management. The Successful Bidder needs to plan all the important tasks to ensure that all pre-requisite are met and the Successful Bidder team is able to deliver the project as per the requirements, timelines and service levels. During the course of project the Successful Bidder would be required to prepare project initiation report, project schedule, project takeover plan along with data migration plan, progress reports, risk register, issue register and other project management related documents. The indicative list of project management documents would include the following:

5.2.Requirement Gathering

The Successful Bidder shall carry out a detailed assessment to refine the System Requirements mentioned in Section 3 and formulate the System Requirements Specifications (SRS) document incorporating the requirements provided by the stakeholders.

5.3.Solution Design and Solution Architecture

During this phase the Successful Bidder shall develop a detailed design document that shall meet the system requirement captured in the project planning & management phase. Successful Bidder needs to ensure that the Infrastructure architecture designed for application needs to be in line with the SDC setup and follow the SDC guidelines. Successful Bidder shall consider various Components of IT Infrastructure support provided by ITE&C Department while preparing solution design, including: Application-Database Servers, Network, Security Operation Center, Disaster Recovery, Infrastructure Maintenance, Performance Tuning, Security Audit etc.;

Successful Bidder shall also design of an appropriate System Administration policy with precise definition of duties and adequate segregation of responsibilities and obtaining the approval for the same from Project Committee. Administration Policy shall consider ITE&C Department Support on IT Infrastructure, Security Operation Center& Disaster Recovery Site, Networking etc.

5.4.Testing Preparation

The Successful Bidder shall prepare the test cases and get them validated by Project Committee representative. The test cases shall be comprehensive covering all scenarios according to specifications, requirements, and design.

The Successful Bidder shall also prepare the required test data and get it validated by Project Committee's representative. The test data shall be comprehensive and address all scenarios identified in the test cases. The Successful Bidder should also prepare the test data for all required integrations.

5.5.Software Development / Customization, and Testing

The Successful Bidder shall develop the software in accordance with the approved requirement specifications, design specifications, and according to the project plan and carry out the unit testing of the software in accordance with the approved test plans. The overall Project setup shall be implemented in three environments i.e. Development environment, Pre-Production environment and Production environment.

The illustrative deliverables for this activity are mentioned below.

- Development of Application Software including as per the finalized requirements and design.
- Delivery of Software along with Licenses, Operational / Technical manuals, Library Files, Setup Programs etc.
- Database Migration Build & Execution.
- Unit and Integration testing of the software along with test summary report and bug report
- Necessary modifications to meet the requirements and Bug Closure report
- Any other Manuals/Reports asked by the Govt.

5.6.Testing

User Acceptance Testing

Test Plans for UAT would be prepared by the Successful Bidder in consultation with the department's Representative. The Successful Bidder will plan all aspects of UAT (including the preparation of test data and test environment) and obtain required assistance to ensure its success. Department will nominate representatives from different user groups based on inputs from the Successful Bidder and would facilitate UAT. The Successful Bidder would make the necessary changes to the solution to ensure that it successfully passes through UAT.

Department will issue certification of acceptance for which it shall verify availability of all the defined services as per the contract signed between the Successful Bidder and Agriculture department. The System Integrator shall be required to demonstrate all the services / features / functionalities as mentioned in the agreement. Prerequisite for carrying out UAT activity shall be:

a. Detailed test plan shall be approved by department. This shall be submitted by Successful Bidder before this activity to be carried out.
b. All documentation related to solution and relevant acceptance test document should be completed & submitted to department before the final acceptance test.
c. The training requirements as mentioned should be completed before the final acceptance test.
d. Licenses / manuals / brochures / Data Sheets / CD / DVD / media for all the supplied components shall be provided to department.

The illustrative deliverables for this activity are mentioned below.

- Testing Reports
- Necessary modification in software for passing the UAT

5.7.Installation, Deployment& System "Go- Live"

The Successful Bidder shall validate the infrastructure requirement (Database & Application Server Configuration, Database Sizing etc.) to meet the service level agreements mentioned in this Bidding Document.

Proposed System is proposed to be deployed at Cloud data center; all required infrastructure support shall be arranged by Successful Bidder only. Successful Bidder needs to ensure that the Infrastructure architecture designed for application needs to be in line with the SDC setup and follow the SDC guidelines. The proposed Infrastructure plan must be approved by Project Committee .Proposed Cloud Setup details need to be provided to project committee

System Installation: Successful Bidder has to prepare action plan for Installation with the approval of Project Committee at proposed Cloud Data Centre. Successful Bidder shall coordinate and perform following activities:

- Configuration of infrastructure at Cloud Data Center; including servers, security components, database, storage etc.
- Installation of the Software System
- Monitor server performance & optimize the performance.
- Configuration & Automation of Data Storage management activities: backup, DR backup, restore and archival etc.

5.8.Cloud Operations & Maintenance

Successful Bidder has to prepare for hosting plan also, proposed System is proposed to be deployed at Cloud data center; all required infrastructure support shall be arranged by Successful Bidder only. Successful Bidder needs to ensure that the Infrastructure architecture designed for application needs to be in line with the SDC setup and follow the SDC guidelines. The proposed Infrastructure plan must be approved by Project Committee. Proposed Cloud Setup details need to be provided to project committee. Successful Bidder is also responsible for maintenance of application in cloud data centre during the application maintenance period also.

5.9.Training of all stakeholders

The Successful Bidder as part of the proposed project shall provide training to all stakeholders. The illustrative deliverables for this activity are mentioned below.

- Training Calendar and Curriculum
- Training Material, Training Manuals, Troubleshooting Manuals, etc.
- Training Sessions, Questionnaire and Evaluation Result

5.10. Third Party Audit (Security and Performance Audit)

Department shall appoint a third party auditor who shall be responsible for performing the Performance and Security Audit of the Proposed system. The Successful Bidder needs to ensure that the proposed solution is in compliance with the Security Policy and Guidelines released by ITE&C Dept. and Agriculture Dept. The cost of audit would be borne by the department; however, the cost of rectification of non-compliances by the Successful Bidder shall be borne by the Successful Bidder and necessary changes need be applied by Successful Bidder only without any additional cost. The audit shall be performed at least on the below mentioned aspects.

5.11. Project Deliverables

The Proposed Project is an ambitious & critical project of Agriculture department. Department envisions establishing the proposed system in a time-bound manner such that, department can start utilizing it at the earliest. In consideration of this, the Successful Bidder shall be responsible for the timely delivery of products and services as described in the Bidding Document. The project shall be developed and maintained as mentioned:

- **Development Phase**:

Successful Bidder is responsible for development of application for the scope mentioned in section 3.2.2 and need to perform all the necessary actions during development i.e of SRS submission, development of application, UAT and Go-Live, these actions need to be performed by bidder with the duration of 65 days after signing the agreement.

5.12. Project Timelines

- **Timelines:**

The project shall be implemented by following the timelines w.r.t deliverables, the following table indicates timelines and deliverables of project.

SNo	Action Item	Timelines
1	Preparation and Submission of SRS	T+2 weeks
2	Application development and customization	T+7 weeks
3	UAT	T+8 Weeks
4	Go-Live	T+9 Weeks
5	Maintenance of application	➢ **For Part A, Part B & Part D** T+24 Weeks ➢ **For Part C** T+72 Weeks

* **Here T is date of agreement**

5.13. Deliverable acceptance Criteria

Department will identify a small project Management Team for timely monitor the development of application and review the deliverables done by Bidder, if any deviations

found by department have an authority to initiate an action. With mutually agreed of deliverable, department will signoff for Go-Live of application.

5.14. Maintenance

After Go-Live of application, the maintenance phase will start for operations of application, during the maintenance phase the Successful Bidder has to monitor the complete requirements of application needs and need to modify if necessary changes in the application, if any major changes need to be done in application with the mutual understanding of department and Successful Bidder will be considered as Change Request. Maintenance will be as specified at RFP Clause– Project Deliverables and Timelines after Go-Live of application.

6. Contract Terms & Conditions

6.1 Signing of Contract

- The contract agreement shall be signed by the Agriculture Dept, Govt. of Telangana.

6.2 Contract Period – Module wise Engagement Timelines

The successful bidder(s) shall enter into contract agreement for a period as defined below

For Part A- 9 Months

For Part B- 9 Months

For Part C- 1 Year 9 Months

For Part D- 9 Months

6.3 Roles and Responsibilities of the Partners

6.3.1 Department of Agriculture, Govt. of Telangana

1. Financial Management: Sanctioning State's share of grant for the project, and planning the financials such as payment milestones and invoice processing.
2. Identifying project locations (districts/mandals/villages)
3. Identifying individual farms (selecting farmers)
4. Identifying a senior nodal officer to facilitate data requests, approvals, and other administrative activities for timely completion of project goals.
5. Identifying nodal officers for each sub-project for on-ground support at all project locations.
6. Introduction of identified officials and farmers at all project location to the vendors and other partners
7. Official submission of reports to the funding agency
8. Review the project progress
9. Approval of the reports /artifacts submitted by vendors.
10. Submission of the reports UCs, required documentation to the Ministry.

6.3.2 Department of ITE&C, Govt. of Telangana

1. Review project plan and budgets for all sub-projects
2. Finalize and Publish of RFPs and selection of the vendors and issue of work orders
3. Assist department in Evaluation of RFPs and selection of suitable vendors for specific sub-projects (in consultation with other partners)
4. Screening the protocols for each sub-project (in consultation with other partners)
5. Field coordination for deployment (at project sites)
6. Review the progress
7. Review of reports submitted by the vendors, measuring success against pre-defined metrics and provide inputs
8. Organize consultative sessions with critical stakeholders to collect feedback on usefulness and extent of adoption of the solutions.
9. A detailed impact study will be conducted to assess impact of tech intervention for

each stakeholder.

10. Coordinating final demonstrations of all sub-projects to funding agency
11. Reviewing vendor's final project report, and finalising project closure reports

6.3.3 Research and Innovation Circle of Hyderabad (RICH)

1. Preparation of project planning and budget preparation for all sub projects
2. Drafting of RFPs
3. Assist department in Evaluation of RFPs and selection of suitable vendors for specific sub-projects (in consultation with other partners)
4. Coordinating and screening protocol development with selected vendors
5. Visiting vendor locations and testing the devices
6. Periodical visits to project sites to review the progress
7. Field coordination for deployment (at project sites)
8. Periodical field visits as decided by other partners
9. Technical support to vendors on preparation of reports
10. Field support to vendors on final demonstration
11. A detailed impact study will be conducted to assess impact of tech intervention for each stakeholder.
12. Reviewing vendor's final project report, and finalising project closure reports

6.3.4 Selected Bidder(s)

1. Kick-off requirement gathering and agreement on the to-be-developed software features and the expected Outcomes & Deliverables.
2. Submit Project Plan, Design solution architecture, user interface and hardware protocols (devices and deployment procedures) and submitting to Dept of ITE&C and RICH for approval.
3. Design, Develop, Test and Deploy the application on Cloud.
4. Procurement of all the required devices and spares for each project
5. Development of each software module, and deployment of corresponding devices (if any)
6. To ensure Quality Assurance of developed system
7. Testing the platform under various test cases and bug fixing. (User Acceptance Test)
8. Training and on-boarding users with provision of user manuals.
9. Data Analysis
10. Preparation of periodical reports/presentations to project partners (monthly)
11. Revising reports and submitting to the Dept of ITE&C and Dept of Agriculture
12. Carrying out corrections as suggested by the lead partners after the interim reviews
13. Final demonstration to funding agency
14. Preparation of final project report and submitting to the Dept of ITE&C for review
15. Furnish all deliverables as per the RFP

16. Go-live and continued O&M support (remote and on-ground) upto 6 months to a year post go-live.
17. The bidder shall rectify and/or take necessary action to overcome any nonconformities/observations with respect to their work as reported by department as promptly as possible and at no additional cost to department if such rectification / action is required to be undertaken during the contract period (that is, till the end of the O&M phase).

6.3.5 Role of TSTS

1. Tender Management & Identification of suitable Solution Provider and Contract Finalization
2. Drafting of RFPs
3. Assist department in Evaluation of RFPs and selection of suitable Solution Provider for specific module (in consultation with other partners)
4. Project Monitoring

6.4 Payment Terms

- The payment shall be made as per the scope delivery of services on milestone basis, and submission of invoices with necessary certifications from the competent authority.The following table depicts payment release criteria:

➢ **For Part A, Part B:**

Sno	Milestone	Payment release criteria (% of Tender Value)
1	Submission of project/implementation plan	20% of Tender value
2	Development/Customization and UAT of application	40% of Tender value
3	Go-Live of application	20% of Tender value
4	Maintenance of Application(6months)	Balance paid equally on quarterly basis

➢ **For Part C:**

Sno	Milestone	Payment release criteria (% of Tender Value)
1	Submission of project/implementation plan	20% of Tender value
2	Development/Customization and UAT of application	30% of Tender value
3	Go-Live of application	20% of Tender value
4	Maintenance of Application(18months)	Balance paid equally on quarterly basis

- **For Part D:**

Sno	Milestone	Payment release criteria (% of Tender Value)
1	Submission of SRS	10% of Tender value
2	Development/Customization and UAT of application	10% of Tender value
3	Go-Live of application	40% of Tender value
4	Maintenance of Application(6months)	Balance paid equally on quarterly basis

6.5 Payment Authority

The Agriculture Dept./TSTS will make the payment as per payment terms and conditions on submission of invoices with necessary certifications.

6.6 Service Level Agreement:

The purpose of this Service Level Agreement (hereinafter referred to as SLA) is to clearly define the levels of service which shall be expected by the Successful Bidder to department for the duration of this contract. Agriculture Department shall regularly review the performance of the services being provided by the Successful Bidder and the effectiveness of this SLA.

Definition

Service Level Agreement (SLA) is the agreement between Agriculture Department and the Successful Bidder bidding for the project. Department would monitor Successful Bidder's compliance of the SLA. SLA defines the responsibility of the Successful Bidder in ensuring the performance of the Proposed Project based on the agreed performance indicators.

S. No.	Deployment SLA component	Baseline * (T) (In weeks)	Low Performance	Penalty **
1	Submission of SRS, Project/ Implementation plan	=T+2	>T+2	A Penalty of 0.5% per week for first two weeks, 1% per week for every subsequent week or part thereof. This is subject to a maximum of 5%. Penalty will be computed on contract value.

2	Development and customization of the proposed solution	=T+7	>T+ 7	A Penalty of 0.5% per week for first two weeks, 1% per week for every subsequent week or part thereof. This is subject to a maximum of 5%. Penalty will be computed on contract value.
3	System Integration, Final User Acceptance Testing	=T+8	>T+8	A Penalty as 2% per week for first two weeks, 4% per week for every subsequent week or part thereof. This is subject to a maximum of 20%. Penalty will be computed on contract value.
4	Go Live of the proposed solution	=T+9	>T+9	A Penalty as 2% per week for first two weeks, 4% per week for every subsequent week or part thereof. This is subject to a maximum of 20%. Penalty will be computed on contract value.
5	Maintenance of the application	During the O&M period, the applications (both Web & Mobile) should be 24X7 accessible/ uptime. Project deliverables and MIS Reports as requested by the Dept. are to be provided from time to time including support on the customisation required. A deviation in this shall attract a penalty of 1% of the Quarterly payment.		

6.7 Exit Management

Near to the completion of the project/expiry of the contract the Successful Bidder needs to plan for an exhaustive Knowledge Transfer exercise which shall ensure that on expiry of the engagement, Department or its designated agency is able to operate and provide services to different Departments.

The Successful Bidder needs to ensure that the strategic control of entire solution is transferred to Agriculture Department or its nominated agency.

6.8 Intellectual Property Rights and Ownership

1. All data or information supplied by the Agriculture department to Service Provider and/or its employee or agent in connection with the provision of Services by Service Provider shall remain the property of the client.
2. Without the client's prior written approval, Service provider shall not, in performing the Services, use or incorporate, link to or call or depend in any way upon, any

software or other intellectual property that is subject to an Open Source or Copy-left license or any other agreement that may give rise to any third-party claims.

3. Service Provider shall, at its own expenses without any limitation, defend and indemnify the department against all third party claims or infringements of Intellectual Property Rights including patent, trademark, copyright, trade secret or industrial design rights arising from use of the Deliverables or any part thereof in India or abroad.
4. Service provider shall expeditiously extinguish any such claims and shall have full rights to defend itself there from. If the client is required to pay compensation to a third party resulting from such infringement(s), Service Provider shall be fully responsible therefore, including all expenses and court and legal fees.
5. All Work Product prepared by Service Provider in performing the Services shall become and remain the sole and exclusive property of the Agriculture department, TS and all Intellectual Property Rights in such Work Product shall vest with the Client. Any Work Product, of which the ownership or the Intellectual Property Rights do not vest with the department under law, shall automatically stand assigned to the department as and when such Work Product is created and Service Provider agrees to execute all papers and to perform such other acts as the department may deem necessary to secure its rights herein assigned by Service Provider. Any work made under this Agreement or respective Purchase Order shall be deemed to be 'work made for hire' under any Indian/U.S. or any other applicable copyright laws.
6. The Intellectual Property Rights on the software code, copyright and source code for various applications/ interfaces developed under this Agreement or respective Purchase Order(s), and any other component/ framework/ middleware used/ developed as pre-built software assets to perform the Services, shall belong to the department and the department shall have complete and unrestricted rights on such property.

6.9 Confidentiality

Information relating to evaluation of Proposals and recommendations concerning awards shall not be disclosed to the Bidder who submitted the Proposals or to other persons not officially concerned with the process, until the publication of the award of Contract. The undue use by any Bidder of confidential information related to the process may result in the rejection of its Proposal.

6.10 Other Information

The Solution Provider(s) shall submit regular monthly reports for development of application and support as agreed with the Agriculture department/ITE&C Department at the time of signing the Contract.

7. General Instruction to Bidders

Name of the Client/User Department	Information Technology, Electronics & Communications Department, Govt. of Telangana
Name of the Consultant/ Tendering Agency:	The Managing Director, Telangana State Technology Services (TSTS) Ltd., 2nd floor, HACA Bhavan, Near Assembly, Hyderabad.

7.1.Definitions

In this context, the following terms shall be interpreted as indicated. Terms defined in general instructions to bidders section shall have the same meaning.

- **Bidder/Service Provider/ Solution Provider** means any DIPP Registered Startup(s) offering the solution(s), service(s) and/or materials required in the tender call.
- **Client** means the agency with which the selected Bidder signs the Contract for the Services.
- **Contract** means the agreement entered into between the AgricultureDept and the selected bidder, as recorded in the contract form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein;
- **Contract price** means the price payable to the successful bidder under the contract for the full and proper performance of its contractual obligations;
- **Day** means calendar day**.**
- **Financial bid** means that part of the offer, that provides price schedule, total project costs etc.
- **GCC** means the general conditions of contract contained in this section.
- **Goods and services** mean the solution(s), service(s), materials or a combination of them in the context of the tender call and specifications.
- **Government** means the Government of Telangana.
- **Incidental services** means those services ancillary to the supply of the goods and services, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training and other such obligations of the selected bidder covered under the contract;
- **Instructions to Bidders** means the document which provides shortlisted Bidders with all information needed to prepare their Proposals.
- **LOI** (Section 1 of the RFP) means the Letter of Invitation being sent by the Client to the shortlisted Bidders.
- **Personnel** means professionals and support staff provided by the Bidder or by any Sub-Contractor and assigned to perform the Services or any part thereof;

- **Pre-qualification and Technical bid** means that part of the offer, that provides information to facilitate assessment, by TSTS, professional, technical and financial standing of the bidder, conformity to specifications etc.
- **Project site,** where applicable, means the place(s) where goods/services are to be made available to user.
- **Purchaser/ User** means ultimate recipient of goods and services- Agriculture Dept.
- **RFP** means the Request For Proposal to be prepared by the Client for the selection of Bidders
- **SCC** means the special conditions of contract if any.
- **Services** means the work to be performed by the Bidder pursuant to the Contract.
- **Specification** means the functional and technical specifications or statement of work, as the case may be.
- **Tender call or invitation for bids,** means the detailed notification seeking a set of solution(s), service(s), materials or any combination of them.
- **Terms of Reference (ToR)** means the document included in the RFP as Section 3 which explains the objectives, scope of work, activities, tasks to be performed, respective responsibilities of the Client and the Bidder, and expected results and deliverables of the assignment.
- **Three part bid** means the pre-qualification bid, technical and financial bids put in separate covers are evaluated separately and their evaluation is sequential.
- **TSTS** means the Telangana State Technology Services Ltd.,
- **The word goods** when used singly, shall mean the hardware, firmware component of the goods and services.
- **The word manufacture** when used in the context of services shall mean "performance" and in case of solution(s) shall mean "worked out", "developed" or "executed" depending on context.

7.2.General Eligibility

- This invitation is open to only DIPP registered Startups

7.3.Bidding Procedure:

- The Bidder is expected to respond to the requirements as completely and in as much relevant detail as possible and focus on demonstrating Bidder's suitability to become the implementation partner of the Purchaser.
- The bidder can opt to bid for one of the four solutions among Part A, Part B, Part C, Part D or can even opt to bid for multiple solutions. Please note that the bidder would need to provide separate documents for all the intended Parts in case bidder chooses to bid for more than one Part.
- The Bidders are expected to examine all instructions, forms, terms, project requirements and other information in the RFP documents. Failure to furnish all

information required as mentioned in the RFP documents or submission of a proposal not substantially responsive to the RFP documents in every respect will be at the Bidder's risk and may result in rejection of the proposal.

- Offers should be made in three parts namely, "Pre-qualification bid", "Technical bid" and "Financial bid" and in the format given in bid document.
- EMD should be enclosed in an envelope and be submitted to TSTS before bid closing date & time.
- Tenders will be accepted only from those who have received/ purchased bid document from TSTS.
- A complete set of bidding documents may be obtained by interested bidders from the TSTS contact person
- All correspondence should be with TSTS contact person.

7.4.Preparation of Pre-qualification bid:

It shall include the following information about the firm and/or its proposal.

- General information on the bidder's company in the prescribed Form
- Financial Turn over details in relevant field in the prescribed Forms
- List of Major Customers in support of Past Project Experience in the prescribed Form
- Certifications if any
- Manpower Availability
- Any other Proof documents as mentioned in Pre-qualification criteria

7.5.General business information:

The bidder shall furnish general business information to facilitate assessment of its professional, technical and commercial capacity and reputation.

7.6.Preparation of Technical Bid

It shall consist of the following parts.

- Check list in the prescribed
- Project Management & Implementation Plan for execution of project
- Technical Solution proposed
- Acceptance / Deviation statement
- Details of Manpower proposed for the project in the prescribed

7.7.Preparation of Financial bid:

The financial bid should provide cost calculations corresponding to unit price of each component of the project duly mentioning the applicable taxes in the prescribed Forms.

7.8.Pre-bid Meeting

In view of the COVID-19 pandemic all around, the bidders are requested to submit their queries through mail to the mentioned mail ids.

7.9.Bid evaluation procedure

Bids would be evaluated for entire scope of work. Bidders should offer prices for all the items and for the full quantity of an item failing which such bid will not be considered. Technical bid documentation should be in the prescribed format. If a bidder has any comment to offer about the procedural aspects of this tender, it should be intimated to TSTS during the pre-bid meeting. In case the scope or procedure of tender processing is revised, the same shall be communicated to all bidders who have purchased the bid document.

7.10. Opening of Bids

Immediately after the closing time, the TSTS shall open the pre-qualification bid' on eProcurement platform, and list them for further evaluation. The Technical bids of only those bidders who qualify in the pre-qualification bid will be opened. After evaluation of technical bids, the financial bids of only those bidders who qualify in technical evaluation will be opened. Since the bid opening is on e-Procurement portal, the bidders are advised to check the status of bid evaluation on eProcurement portal.

7.11. Pre-qualification bid documentation

The Pre-qualification bid documentation shall be evaluated in two sub-steps. Firstly, the documentation furnished by the bidder shall be examined prima facie to see if the technical skill base and financial capacity and other bidder attributes claimed therein are consistent with the needs of this project. In the second step, TSTS/Evaluation Committee may ask bidder(s) for additional information, visit to bidders site and/or arrange discussions with their professional, technical faculties to verify claims made in Pre-qualification bid documentation.

7.12. Technical bid documentation

Technical bid documentation shall be evaluated in two sub-steps. Firstly, the documentation furnished by the bidder shall be examined prima facie to see if the product /services offered, technical skill base and financial capacity and other bidder attributes claimed therein are consistent with the needs of this project. In the second step, TSTS/Evaluation Committee may ask bidder(s) for additional information, visit to bidders site and/or arrange discussions with their professional, technical faculties to verify claims made in technical bid documentation.

7.13. Financial bid

Final choice of firm to execute the project shall be made on the basis of conformity to technical requirements, appropriateness of the services offered, capability of bidder to execute and service the project and appropriateness of financial offer from the point of view of cost-effectiveness over the entire contract period for the product/services. The decision of the Evaluation Committee shall be final in this regard.

7.14. Bid forms

- Wherever a specific form is prescribed in the bid document, the bidder shall use the form to provide relevant information. If the form does not provide space for any required information, space at the end of the form or additional sheets shall be used to convey the said information.
- For all other cases the bidder shall design a form to hold the required information.

7.15. Cost of Bidding

- The bidder shall bear all costs associated with the preparation and submission of its bid, and TSTS will in no case be responsible for those costs, regardless of the conduct or outcome of the bidding process.
- Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not substantially responsive to the bidding documents in every respect will be at the bidder's risk and may result in the rejection of its bid.

7.16. Clarification of bidding documents

- A prospective bidder requiring any clarification of the bidding documents may notify TSTS contact person. TSTS response (including an explanation of the query but without identifying the source of inquiry) will be communicated.
- The concerned person of TSTS/AgricultureDept will respond to any request for clarification of bidding documents which it receives no later than bid clarification date mentioned in the notice prior to deadline for submission of bids prescribed in the tender notice. No clarification from any bidder shall be entertained after the close of date and time for seeking clarification mentioned in tender call notice. It is further clarified that TSTS shall not entertain any correspondence regarding delay or non receipt of clarification by bidder.

7.17. Amendment of bidding documents

- At any time prior to the deadline for submission of bids, TSTS, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, may modify the bidding documents by amendment.
- All prospective bidders those have received the bidding documents will be notified of the amendment, and such modification will be binding on all bidders.
- In order to allow prospective bidders reasonable time in which to take the amendment into account in preparing their bids, the TSTS, at its discretion, may extend the deadline for the submission of bids.

7.18. Period of validity of bids

- Bids shall remain valid for the duration specified in the bid document, after the date of bid opening prescribed by TSTS. A bid valid for a shorter period shall be rejected as non-responsive.

- In exceptional circumstances, the TSTS may solicit the bidders' consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. A bidder granting the request will not be permitted to modify its bid.

7.19. Submission of bids

The bidders shall submit the bids (PQ, TQ & Commercials) on eProcurement portal only. No other mode of bid submission is permitted.

7.20. Deadline for submission of bids

- Bids must be received by the TSTS contact person no later than the bid submission date and time specified in the tender call notice.
- The TSTS may, at its discretion, extend this deadline for the submission of bids by amending the tender call, in which case all rights and obligations of the TSTS and bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

7.21. Late bids

Any bid not received by the TSTS contact person by the deadline for submission of bids will be rejected

7.22. Modification and withdrawal of bids

- No bid can be modified subsequent to the deadline for submission of bids.
- No bid can be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity.

7.23. Bid prices

- The bidder shall indicate the unit prices (where applicable) and the total bid price of the goods/services it proposes to supply under the contract.
- The bidder shall indicate Basic Prices and taxes, duties etc. separately (if required) in the form prescribed.
- Bidder's separation of price components will be solely for the purpose of facilitating the comparison of bids by TSTS and will not in any way limit the purchaser's right to contract on any of the terms offered.
- Prices quoted by the bidder shall be fixed during the bidder's performance of the contract and not subject to variation on any account unless otherwise specified in the tender call. A bid submitted with an adjustable price quotation will be treated as non responsive and will be rejected.
- Bid currency: Prices shall be quoted in Indian rupees and Charges quoted should be inclusive of all types of Taxes.

8. Standard Procedure for Opening and Evaluation of bids

8.1.Outline of bid evaluation procedure:

1. The bid opening and evaluation process will be sequential in nature. Means that bidder must qualify a particular stage to be eligible for next stage. Immediately after the closing time, the TSTS contact person shall open the Pre-qualification bids and list them for further evaluation. The Technical and financial bid covers shall be listed and put into a bag to be sealed according to TSTS procedure. The sealed bag of technical and financial bids shall be in custody of a designated officer for opening after evaluation of Pre-qualification bids. Thereafter, Technical bids of qualified bidders will be opened, keeping financial bid in sealed bag. Finally financial bids of those bidders will be opened who are short listed in technical evaluation.
2. In case of composite bid - technical and financial bids combined together, first technical evaluation will be done followed by financial evaluation of only those bids, which have qualified in technical evaluation.
3. Any participating bidder may depute a representative to witness these processes.
4. The standard procedure, described here will stand appropriately modified, in view of special procedures of bid evaluation as mentioned in tender call or **elsewhere** in this bid document or TSTS may deviate from these in specific circumstances if it feels that such deviation are unavoidable, or will improve speed of processing and consequent project execution.

8.2.Opening of bids

Bids will be opened in the presence of bidder's representatives, who choose to attend. The bidder representatives who are present shall sign a register evidencing their attendance.

1. The bidders names, bid modifications or withdrawals, discounts, and the presence or absence of requisite bid security and such other details as the TSTS officer at his/her discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bids, which shall be returned unopened.
2. Bids that are not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances. Withdrawn bids will be returned unopened to the bidders.

8.3.Clarification of bids:

During evaluation of the bids, the evaluation committee may, at its discretion, ask the bidder for clarification of its bid.

8.4.Preliminary Examination:

1. Preliminary scrutiny will be made to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
2. Arithmetical errors will be rectified on the following basis.
    a. If there is discrepancy between the unit price and the total price, which is obtained by multiplying the unit price with quantity, the unit price shall prevail and the total price shall be corrected unless it is a lower figure. If the supplier bidder does not accept the correction of errors, its bid will be rejected.
    b. If there is discrepancy in the unit price quoted in figures and words, the unit price, in figures or in words, as the case may be, which corresponds to the total bid price for the item shall be taken as correct.
    c. If the bidder has not worked out the total bid price or the total bid price does not correspond to the unit price quoted either in words or figures, the unit price quoted in words shall be taken as correct.
3. TSTS may waive any minor informality, nonconformity or irregularity in a bid which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any bidder.
4. Prior to the detailed evaluation, TSTS will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these clauses, a substantially responsive bid is one which conforms to all the terms and conditions of the bidding documents without material deviations.
5. If a bid is not substantially responsive, it will be rejected by the TSTS and may not subsequently be made responsive by the bidder by correction of the nonconformity.
6. In addition to the above, activities and items described in the Technical Proposal but not priced, shall be assumed to be included in the prices of other activities or items. In case an activity or line item is quantified in the Financial Proposal differently from the Technical Proposal, the Evaluation Committee shall correct the quantification indicated in the Financial Proposal so as to make it consistent with that indicated in the Technical Proposal, apply the relevant unit price included in the Financial Proposal to the corrected quantity and correct the total Proposal cost.

8.5.Evaluation of Pre-qualification bids:

Pre - qualification bid documentation shall be evaluated in two sub-steps.

1. Firstly, the documentation furnished by the bidder will be examined prima facie to see if the technical skill base and financial capacity and other bidder attributes claimed therein are consistent with the needs of this project as mentioned in Chapter(2).

2. In the second step, TSTS may ask bidder(s) for additional information, visit to bidders site and/or arrange discussions with their professional, technical faculties to verify claims made in technical bid documentation.

8.6.Technical bid documentation & Evaluation:

1. Bidders who meet the pre-qualifications/eligibility requirements as on date of bid submission would be considered as qualified to move to the next stage of Technical evaluation.
2. The evaluation committee shall evaluate the Technical Proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria, sub criteria, and point system specified. Each responsive Proposal will be given a technical score (St). A Proposal shall be rejected at this stage if it fails to achieve the minimum technical score indicated in the Data Sheet. The Selection approach is QCBS(Quality-Cost based System) 75% point for technical criteria points and 25% weightage for financial evaluation points.
3. Evaluators of Technical Proposals shall have no access to the Financial Proposals until the Technical evaluation is concluded.
4. Technical bid documentation shall be evaluated in two sub-steps.
5. Firstly, the documentation furnished by the bidder will be examined prima facie to see if the offer made, technical skill base and financial capacity and other bidder attributes claimed therein are consistent with the needs of this project.
6. In the second step, TSTS may ask bidder(s) for additional information, visit to bidders site and/or arrange discussions with their professional, technical faculties to verify claims made in technical bid documentation.
7. As part of Technical bid, the bidders who qualify the pre-qualification criteria, would be invited for giving a technical presentation, which would be evaluated by the Committee.

The bidders have to be judged by certain technical parameters, as per the weightage given as under:-

Technical Evaluation Criteria:

#	**Criteria**	**Points**
(i)	Specific experience of the Bidders relevant to the assignment: • Experience using the relevant technologies in Agriculture -20 as mentioned below: Part A - IoT Technologies Part B – Robots Part C – Deploying Commodity grading Technologies Part D – Blockchain Technologies • Experience in Developing Emerging Technology Solution for Agriculture -20	40

(ii)	Adequacy of the proposed methodology and work plan relevant to the Terms of Reference	20
(iii)	Relevant qualification and experience of Key staff .	20
(iv)	Presentation of Solution(project Specific)	20
	Total points for the four criteria:	100

Note: Bidder has to score minimum 75 % marks to qualify in the Technical Stage.

8.7.Evaluation of Financial bids

Financial bids of those bidders who qualify all phases of the pre-qualification and technical bid evaluation including technical presentations and corresponding to chosen technical bid choices will only be opened. All other financial bids will be ignored. TSTS will assess the nature of financial offers and may pursue any or all of the options mentioned under financial bid .

8.8.Overall Bid Evaluation:

i. The Bid evaluation shall be undertaken by the Evaluation Committee comprising of officials from Agriculture Department, ITE&C Dept. and TSTS.
ii. A **three-stage** procedure will be adopted for evaluation of proposals, with the pre-qualification, technical and thereafter financial proposals being opened and compared.
iii. The Committee will evaluate the bids of the bidders to determine whether the bids are substantially responsive. Bids that are not substantially responsive are liable to be disqualified. The Bidders shall be asked to give technical presentation by the Committee on the approach methodology to implement the project as per scope of work.
iv. The evaluation Committee will assign points to the bidders based on the technical evaluation criterion mentioned & approved by committee.
v. The bidders have to score minimum of **75 marks** in Technical evaluation to be considered for commercial bid opening. The bidders who score less than 75 marks shall summarily rejected at TQ Stage and no reasoning what so ever will be provided.
vi. The commercial bids for the technically qualified bidders will then be opened and reviewed to determine whether the commercial bids are substantially responsive.
vii. **Financial Evaluation Criteria**

The lowest evaluated Financial Proposal (Fm) will be given the maximum financial score (Sf) of 100 points. The financial scores (Sf) of the other Financial Proposals will be computed as follows:

Sf = 100 x Fm / F.

Proposals will be ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) indicated as follows:

T = 0.75, and P = 0.25

S = St x T% + Sf x P%. The firm achieving the highest combined technical and financial score will be invited for negotiations.

viii. The ranking of bidders shall be decided on the basis of total bid value for all the items & most responsive option will be considered.

ix. Conditional bids are liable to be rejected. Any attempt by a bidder to influence it's the bid evaluation process may result in the rejection of the bidder's bid.

8.9.Evaluation and Comparison of financial bids

Evaluation of financial bids will exclude and not take into account any offer not asked for or not relevant to the present requirements of user.

8.10. Award criteria

The proposals will be ranked in terms of the combined technical and financial score obtained from Highest to Lowest. The bidder with the Highest score for the scope of services may be considered for award of contract by the Committee. The successful bidder shall enter into Contract Agreement with User Dept. with the stipulated time as mentioned in the RFP.

Final choice of firm to execute this project shall be made on the basis of conformity to technical requirements, appropriateness of the product/services offered, appropriateness of financial offer from the point of view of cost-effectiveness, total cost of ownership over entire contract period for the product/services and past track record of bidder.

8.11. Right to accept any bid and to reject any or all bids.

Agriculture Dept./ITE&C Dept /TSTS reserves the right to accept or reject any bid, and to annual the bidding process and reject all bids at any time prior to award of contract, without thereby incurring any liability to the affected bidder(s) or any obligation to inform the affected bidder(s) of the grounds for such decision.

8.12. Signing of Contract

8.12.1. Based on the approval of Evaluation Committee, TSTS notifies the successful bidder(s) that its bid has been accepted, will send the successful bidder the Contract Form provided in the bidding documents, incorporating all agreements between the parties.

8.12.2. On receipt of the Contract Form, the successful bidder shall sign and date the contract and return it to the Agriculture Dept.

8.12.3. The contract agreement shall be signed by the AgricultureDept, Govt. of Telangana.

8.13. Failure to Agree with the Terms and Conditions of the RFP

Failure of the successful Bidder to agree with the Draft Legal Agreement and Terms & Conditions of the RFP shall constitute sufficient grounds for the annulment of the award, in which event AgricultureDepartment, Govt of Telangana may award the contract to the next best value Bidder or call for new proposals from the interested Bidders.

8.14. Contacting TSTS

- Bidder shall not approach TSTS officers out side of office hours and / or out side TSTS office premises, from the time of the tender call notice to the time the contract is awarded.
- Any effort by a bidder to influence TSTS officers in the decisions on bid evaluation, bid comparison or contract award may result in rejection of the bidder's offer and bidder may also marked as ineligible for future bids. If the bidder wishes to bring additional information to the notice of the TSTS, it should do so in writing.

8.15. Corrupt, Fraudulent and unethical practices

8.15.1. "Corrupt practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the process of contract execution and

8.15.2. "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to detriment of the purchaser, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Purchaser of the benefits of free and open competition:

8.15.3. "Unethical practice" means any activity on the part of bidder which try to circumvent tender process in any way. Unsolicited offering of discounts, reduction in financial bid amount, upward revision of quality of goods etc after opening of financial bids will be treated as unethical practice.

8.15.4. Agriculture Dept/TSTS will reject a proposal for award and also may debar the bidder for future tenders in AgricultureDept/TSTS, if it determines that the bidder has engaged in corrupt, fraudulent or unethical practices in competing for, or in executing a contract.

9. Special Conditions of proposed Contract (SCC)

9.1. Other Terms and Conditions:

1. The Service Provider shall comply with such directions as the user may issue from time to time for the smooth working and in the furtherance of the overall objective.
2. The Service Provider shall be solely responsible for all acts of omission and commission occasioned by his personnel in carrying out the terms of the agreement.
3. The Service Provider or his personnel shall not use or cause to be used, the data or information provided to him or acquired by him during the process of providing services for any purpose, whatsoever, except for, which is required to perform the job as required in the agreement . Such data or information shall be surrendered to the Department at the expiry of the agreement.
4. In case the Service Provider is not able to rectify any of the problems, it shall be competent for the Department to get the same rectified by the manufacturer or any other suitable agency and recover the entire amount incurred by the Department in the process, from the Service Provider by way of deduction from the quarterly charges payable to the Service Provider.

9.2.Delays in the Service Providers performance

1. Delivery of the services shall be made by the Bidder in accordance with the service quality specified by AgricultureDept/TSTS in the bid document.
2. Any delay by the bidder in the performance of its obligations under the contract, shall render the bidder liable to the imposition of liquidated damages at a rate as indicated in bid document.
3. If at any time during performance of the Contract, the Bidder should encounter conditions impending timely performance of services, the Bidder shall promptly notify the AgricultureDept in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the bidder's notice, AgricultureDept shall evaluate the situation and may at its discretion extend the Bidder's time for performance, with or without liquidated damages.

9.3.Liquidated damages

If the Bidder fails to perform any one or all the services within the time period(s) specified in the Contract, the Agriculture Dept shall, without prejudice to its other remedies under the Contract, deduct from the amount payable to bidder as liquidated damages, a sum equivalent to, as per the terms indicated in the bid document, until actual delivery or performance, subject to maximum limit. Once the maximum is reached, the ITE&C Dept may consider termination of the contract.

9.4.Termination for Default:

1. AgricultureDept, without prejudice to any other remedy available for breach of Contract, may terminate the Agreement in whole or in part, by a 30 days' notice in writing to the Service Provider, for any one or all of the following. The Service Provider shall be paid for services rendered up to the effective date of termination.
2. If the Service Provider fails to maintain the systems to the minimum assurance quality as per the scope of the work, or
3. If the Service Provider fails to provide all or any of the Contracted services as per service standards specified in the Agreement, or
4. If the Service Provider fails to perform any other obligation(s) under the Agreement, or
5. If the Service Provider, in the judgment of the Dept., or TSTS has engaged in corrupt, fraudulent or unethical practices in competing for or in executing the Contract.
6. The AgricultureDept shall issue a notice explaining the nature of violations committed by the Service Provider and afford an opportunity to the Service Provider to represent his case, before termination of the agreement.
7. In the event AgricultureDept terminates the Agreement in whole or in part, AgricultureDept may procure, upon such terms and in such manner as it deems appropriate, services similar to those undelivered, and the Service Provider shall be liable to pay to AgricultureDept for any excess costs incurred for procuring such similar services. However, the Service Provider shall continue performance of the Agreement to the extent not terminated.

9.5.Termination for Insolvency:

If the Service Provider becomes bankrupt or otherwise insolvent, Agriculture Dept., may at any time terminate the Contract by giving written notice of 30 days to the Service Provider. In this event, termination will be without compensation to the Service Provider, provided that such termination shall not prejudice or affect any right of action or remedy which has accrued or will accrue thereafter to the Agriculture Dept.,

9.6.Termination for Convenience:

1. Agriculture Dept., may, by written notice to the Service Provider, terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that the termination is for its convenience, and the extent to which performance of the Service Provider under the Contract is completed.
2. The Contract may be terminated by AgricultureDept in case of withdrawal of the Scheme by Government of India or instructions of GoI to use the software developed or any other instructions issued by GoI/Government of Telangana from time to time.

3. In such an event, the AgricultureDept., may elect to pay to the Service Provider, a mutually agreed amount for partially completed services, within 30 days from the date of termination of contract.

9.7.Force Majeure:

1. The Service Provider shall not be liable for forfeiture or levy of Liquidated Damages, or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Agreement in the result of Force Majeure.
2. For purposes of this Clause, "Force Majeure" means an unforeseeable event beyond the control of the Service Provider and not involving the Service Provider's fault or negligence. Such events shall include, but are not restricted to, acts of the ITE&C Dept., in its sovereign capacity, war or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes.
3. If a Force Majeure situation arises, the Service Provider shall promptly notify the AgricultureDept., in writing of such condition and the cause thereof. Unless otherwise directed by the AgricultureDept., in writing, the Service Provider shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performances.
4. Note: Damage to any system due to Electrical fluctuations will not be covered under this clause.

9.8.Assignment & Sub Contracts:

As per the scope of this Agreement sub-contracting is STRICTLY PROHIBITED.

The Service Provider shall not assign, in whole or in part, its rights and obligations to perform under this Contract to any third party.

9.9.Amendment to the Agreement:

Amendments to the Agreement may be made by mutual agreement by both the parties. No variation in or modification in the terms of Contract shall be made except by written amendment signed by both the parties.

9.10. Applicable Law:

The Agreement shall be interpreted in accordance with appropriate Indian laws.

9.11. Resolution of Disputes:

1. AgricultureDept/TSTS, and the Bidder shall make every effort to resolve amicably by direct informal negotiations any disagreement or dispute arising between them under or in connection with the Agreement.
2. If, with in thirty (30) days from the commencement of such informal negotiations, parties are unable to resolve dispute amicably, either party may approach for resolution to the formal mechanisms, which may include, but are not restricted to, conciliation mediated by a third party, or in accordance with the Arbitration and Conciliation Act, 1996.

3. All Arbitration proceedings shall be held at Hyderabad, Telangana and the language of the arbitration proceedings and that of all documents and communications between the parties shall be in English language.

9.12. Use of Contract Documents and Information

1. The Service Provider or its employee shall not without prior written consent from AgricultureDept., disclose the Agreement or any provision thereof or any specification, plans, drawings, pattern, samples or information furnished by or on behalf of AgricultureDept., to any party during the contract and thereafter. Disclosure of such information to its employee shall be made in confidence and shall extend only so far, as may be necessary for such performance.
2. The Service Provider shall not without prior written consent of AgricultureDept., make use of any document or information made available for the project except for purposes of performing the contract and no more.
3. All project related documents issued by AgricultureDept., other than the Agreement itself shall remain the property of AgricultureDept., and shall be returned (all copies) to AgricultureDept., on completion of the Service Provider 's performance under the Agreement, if so required by the AgricultureDept.,.

9.13. Governing Language:

All correspondence and documents pertaining to the Agreement that are exchanged by the parties shall be written in English language only.

9.14. Notices:

1. Any notice given by one party to the other pursuant to this Agreement shall be sent to the other party in writing or by E-mail, Telegram or facsimile and confirmed in writing to the other party's address.
2. A notice shall be effective from the date, when it is delivered or tendered or affixed at a conspicuous place of normal working, whichever is earlier.

9.15. Indemnification:

TSTS, or ITE&C Dept will not indemnify for any loss or damages caused to the bidder or it staff in any form during their performance on the project.

9.16. Taxes and duties:

The bidder shall be entirely responsible for all taxes, duties, license fee, Octroi, road permits etc. incurred until delivery of the contracted Goods/services at the site of the user or as per the terms of tender document if specifically mentioned.

However, the Bidder has to submit invoices Inclusive of all Taxes. In case of imposition of any new taxes or increase/decreased in tax structure by the Government then the same would be to the account of the User Department.

Bid Letter Form

From:
(Registered name and address of the bidder.)

To:
The Managing Director
Telangana State Technology Services Ltd.,
2nd floor, HACA Bhavan, Near Assembly, Hyderabad

Sir,

Having examined the bidding documents, we the undersigned, offer to provide services/execute the works for the following project in response to your tender call dated .....

Project title:

We undertake to provide services/execute the above project or its part assigned to us in conformity with the said bidding documents for an amount as mentioned in commercial bid which may vary in accordance with the schedule of prices attached herewith and coverage options made by TSTS/Agriculture Dept.
If our bid is accepted, we undertake to;

1) Provide services/ execute the work according to the time schedule specified in the bid document.

2) Agree to abide by the bid conditions, including pre-bid meeting minutes if any, which remain binding upon us during the entire bid validity period and bid may be accepted any time before the expiration of that period.

3) We do hereby undertake that in the event of acceptance of our bid, and the work shall be started at designated places within as per the time lines from the date of Award of Contract.

4) We enclose the complete Bid enclosing all documents / information as required in the tender document.

5) We agree to abide by our offer for a period of 90 days from the date fixed for opening of the tenders and that we shall remain bound by a communication of acceptance within that time.

6) We have carefully read and understood the terms and conditions of a tender and the conditions of the Contract applicable to the tender and we do hereby undertake to the project as per these terms and conditions. The deviations from the above Technical specifications, Services and Terms & Conditions are only those mentioned in RFP.

We understand that you are not bound to accept the lowest or any bid you may receive, nor to give any reason for the rejection of any bid and that you will not defray any expenses incurred by us in bidding.

Place: Bidder's signature
Date: and seal.

Model Contract Form

THIS AGREEMENT made the ..... day of ..... (year). (hereinafter "the ITE&C Dept") of one part and ..... (Name of Bidder) of ..... (City and Country of Bidder) (hereinafter "the Bidder") of the other part:

WHEREAS the USER is desirous that certain solution, service and materials, as described in the bid document and briefly outlined below, should be provided by the Bidder.

Date of tender call:

Title of the project:

Brief outline of the work:

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

In this agreement words and expression shall have the same meanings as are respectively assigned to them in the bid document referred to.

The following documents shall be deemed to form and be read and construed as part of this Agreement, viz..

a. Notification of award.
b. clarification on bid document issued if any,
c. Bid submitted by successful bidder
d. pre - bid conference minutes if any,
e. bid documents

In consideration of the payments to be made by the ITE&C Dept to the Bidder as hereinafter mentioned, the Bidder hereby covenants with the ITE&C Dept to provide the goods and services (solution, service and materials) and to remedy defects therein in conformity, in all respects, with the provisions of the contract.

The ITE&C Dept hereby covenants to pay the Bidder in consideration of the provision of the goods and services and the remedying of defects therein, the contract price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

Brief particulars of the goods and services which shall be supplied / provided by the Bidder are given in Annexure.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with their respective laws the day and year above written.

Signed, and delivered by	Signed, and delivered by
for the Bidder.	
Bidder's common seal:	For
Place	Place:
Date:	Date:

In the presence of:.....

Pre Qualification Bid Formats

Form PQ-1

General Information of Bidder

S.No	Description	Supporting Documents with page nos.
1	Name of the Startup Company	
2	Date of Incorporation (Registration Number & Registering Authority) GST No., PAN No.	
3	DIPP Registration No	
4	Nature of Business	
5	Address of the Registered Office	
6	Date of Commencement of Business	
7	Name & e-mail id, phone number, fax of the Contact Person	Mobile No: Fax: Email
8	Web-Site	
10	Certification details (if any) (valid documents to be submitted)	

Place: **Bidder's signature**

Date : **and seal.**

Form PQ-2

Bidders Turnover, Net worth post Empanelment

S.No	Financial Year	Turnover from IT/ ITES services. (Rs in crs)	Total Profit after Tax	Net worth Amount (Rs. In crs)
1.	2018-19			
2.	2019-20			

Note- *Turnover in areas other than mentioned above shall not be considered for evaluation.*

(Chartered Accountant certificate or ITIRs along with extract of the audited balance sheets Audited Balance sheets as proof to be submitted).

Place: Bidder's signature

Date : Bidder's seal

Name of the Bidder :

Form PQ-3 – Project Experience

Assignment name:	Approx. value of the contract (in INR):
Country: Location within country:	Duration of assignment (months):
Name of Client:	Total No. of staff-months of the assignment:
Address:	Approx. value of the services provided by your firm under the contract (in INR):
Start date (month/year): Completion date (month/year):	No of professional staff-months provided by associated Consultants:
Name of associated Consultants, if any:	Name of senior professional staff of your firm involved and functions performed (indicate most significant profiles such as Project Director/Coordinator, Team Leader):
Narrative description of Project:	

Description of actual services provided by your staff within the assignment:

Note:

1. *Please submit supporting documents to support the claim and the certificates must be signed by Senior Executive/ Deputy GM of the organization clearly indicating his/her name, designation and contact details such as Telephone Number, Fax number, email-id etc.*
2. *Please attach certificate from the client for the successful completion & implementation of project.*

Place: **Bidder's signature**

Date : **with seal**

Name of the Bidder :

Name of the Project:

Form PQ-4 – IT Manpower Availability

#	Employee Name	Designation	Skills & Professional Certification, if any	Proposed Area of expertise	Previous Exp.	Experience with Service provider

Note: *The service provider should submit Self-Certification by the authorized signatory.*

Place: **Bidder's Signature**

Date: **with Seal**

Technical Bid Formats

Form T-1

The participating Startup to submit a detailed Technical proposal on the following:

a. Project Scope, Understanding of the project
b. Project Plan, Approach & Methodology for development.
c. Project Implementation approach
d. Solution Architecture
e. Business Architecture
f. Data Architecture
g. Cloud Implementation Strategy
h. Application Architecture
i. Security Architecture
j. Infrastructure Architecture proposed with details
k. License requirements& dependency on third party tools
l. Tools proposed for the Project (Reporting & Monitoring)
m. Operations & Management Approach
n. Security Standards Proposed, Methodology & Plan
o. Training & Capacity Building Plan
p. Manpower deployment plan. &Key staff proposed for the Project as per Scope of work
q. Exit Management Plan

Place: Bidder's Signature
Date: with Seal

Form T-2

Particulars of Personnel proposed for Project

Sl. no.	Name of the Employee	Qualification	Years of Experience	Area of Expertise	Task & Position Assigned

Note: Enclose C.V. In support of above claim. The bidder should submit the particulars of all personnel proposed project.

Place: Bidder's signature

Date : Bidder's seal

Check List

(to be submitted with TQ bid)

Compliance/Agreed/Enclosed/ Deviation statement.

The following are the particulars of compliance/deviations from the requirements of the tender specifications.(For every item appropriate remarks should be made like Complied, No deviation, Agreed, Enclosed)

#	**Bid Document reference**	**Remarks**
1	Form PQ-1	
2	Form PQ-2	
3	Form PQ-3	
4	Form PQ-4	
5	Form T-1	
6	Form T-2	
7	Commercial Bid Forms	
8	SLAs & Penalties	
9	General Instruction to bidders	
11	Standard procedure for bid evaluation	
12	General condition of proposed Contract(GCC)	
13	Special Condition of proposed Contract(SCC)	

The specifications and conditions furnished in the bidding document shall prevail over those of any other document forming a part of our bid, except only to the extent of deviations furnished in this statement.

Place: Bidder's signature

Date : Bidder's seal

Commercial Bid Formats

Form F1 - Commercial Proposal Submission Form

[Location, Date]

To: [Name and address of Bidder]

Dear Sirs:

We, the undersigned, offer to provide the Services for [Insert title of Assignment] in accordance with your Request for Proposal dated [Insert Date], and our Technical Proposal.

Our attached Financial Proposal is for the sum of [***Insert amount(s) in words and figures***].

This amount is inclusive of the Domestic taxes such as --------- (***Indicate the amounts against each***).
We hereby confirm that the financial proposal is unconditional and we acknowledge that any condition attached to financial proposal shall result in reject of our financial proposal.

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act, 1988."

We understand you are not bound to accept any Proposal you receive.

We remain,

Yours sincerely,

Authorized Signature [*In full and initials*]: _____

Name and Title of Signatory: _____

Name of Firm: _____

Address: _____

Name of the Bidder:

Name of the Project:

Form – F2

Cost Summary Table

Part Name:				
#	**Item Description**	**Total Price in Rs.(X)**	**Taxes and Other Duties in Rs. (Y)**	**Total Rs. (X+Y)**
1	Cost of Study, Design, Development /Customize, Implementation/Commissioning /Migration/training of application / solution			
2	Cost of Cloud deployment			
3	Cost of Operations &Maintenance			
	Grand Total (1+2+3)			

In Words: _____

1. All other tasks pertinent to the project even though may not have been mentioned in the bid document are assumed to have been included in the work.

2. Deduction of taxes at source will be made as per applicable laws from the payments to be made to the bidder.

3. Cost of Infrastructure will be borne by the Govt.

Date &Stamp **Signature of Bidder**

---End of Document---

Tender for Selection of Solution Provider(s) for Design, Development, Implementation and O&M of Agricultural Related Solutions using Emerging Technology for Agriculture Dept. - Pre-bid queries received and clarifications issued

Tender notice no: TSTS/CS/Agri-NeGPA/2021

Telangana State Technology Services Ltd. (TSTS) on behalf of ITE&C Department & Agriculture Department has floated tender on eProcurement Platform https://tender.telangana.gov.in with tender id:224503 and tender notice no: TSTS/CS/Agri-NeGPA/2021 on 19.02.2021 inviting proposals from the Startups registered with 'The Department of Industrial Policy & Promotion(DIPP)' to participate in the Competitive Bidding for Selection of Startups to Design, Develop, Implementation and Operations &Maintenance using Emerging Technology-Based and Agriculture-Related Solutions for Agriculture Department. Interested competent bidders are requested to submit their bids indicating that they are qualified to perform the services using Emerging Technologies to develop and implement the following modules:

1. Nutrient and Irrigation Management
    a. Smart Irrigation Management System
    b. Nutrition Management System
2. Farm Automation
3. Produce Grading and Quality Assaying
4. Seed Traceability using Blockchain Technology

The Pre-bid Clarifications/ Amendments against the queries received from various bidders are as follows:

I. As per G.O.Ms.No.08 dated 28/04/2018, eligible startups i.e. DIPP-registered or State-registered can avail the following benefits while participating in this RFP:
    i. Prior turnover – Startups shall not be subjected to any prior turnover criterion for being eligible to participate in a government procurement process
    ii. Prior experience – Startups shall not be required to have any prior experience of having participated in a public procurement process
    iii. Exemption from Submission of EMD – Startups shall not be required to submit an Earnest Money Deposit to participate in public procurement process

II. **Time Schedule of various tender related events**

Event	Existing Timings	Revised Timings
Bid Closing date and time	06.03.2021@ 03:00 PM on eProcurement portal	16.03.2021@ 03:00 PM on eProcurement portal
Bid opening date/time	06.03.2021@ 03:30 PM on eProcurement portal	16.03.2021@ 03:30 PM on eProcurement portal

Sl.No	Page	Section	Existing Clause	Bidder Request	Clarifications
1.	Page # 4 Clause 1.2,	Invitation for Competitive Bidding	Bid Closing date and time	We request for extension of the bid submission for 2 weeks for preparation of tender document.	Bid Submission Date is extended till 16.03.2021
2.	Page #6, Clause 2	Pre-qualification criteria	**Legal Entity** The Bidder must be a Startup registered with DIPP in India under guidelines, for at least one year before of March 2020 and such registration should be valid as on bidding date	"At least 1 year before" We are already registered under GST but not in DIPP. Request you to kindly allow companies who have applied for the same (and certification is under process) before the bid submission date.	The RFP is intended for startups only. The bidder needs to be empanelled with DIPP before award of project.
3.				Currently in the process of registering with DIPP	
4.				Date of recognition 08-09-2019, Whether we qualify	
5.				Relaxation from startups	
6.				Request you to consider relaxing 1 Year DIPP registration starting from March 2020 to start from the current month (Feb 2021). This will allow several emerging and promising start-ups to participate.	
7.	Page #6, Clause 2	Pre-qualification criteria		Please allow consortium bidding (if turnover and DIPP registration time line is not relaxed) so that early stage start-ups with promising solutions bid for the opportunity. Otherwise many solutions like us with proven pilots in the state of Telangana will not be able to bid as a result of pre-qualifying criteria	Consortium bid is allowed only for Part A: Nutrient and Irrigation management solution

8.	Page #6, Clause 2	Pre-qualification criteria	Sales Turnover Annual Sales Turnover generated from IT Services, should be at least Rs.25 Lakhs; for at least one financial year from the date of registration	As the revenues are in current financial year, IT returns submission would be post this financial year, hence request you to please confirm whether the Certificate from the Statutory Auditor would be sufficient.	As per G.O.Ms.No.08 dated 28/04/2018, no financial turnover criteria is applicable to participate in any tenders of Govt. of Telangana
9.				In 2019-20 INR 21.56 lakhs in 2020-21 till date INR 55.43Lakhs	
10.				Relaxation from Minimum sales turnover of 25 lakhs	
11.	Page #6, Clause 2	Pre-qualification criteria		Request to consider revising the sales turnover of the bidder for last 12 months (from now till the last 12 months) and relax the turnover to 10L. This will enable start-ups that already have proven solutions to participate in the bid	
12.	Page #6, Clause 2	Pre-qualification criteria	Technical Manpower Availability The bidder should have at least 10 Software Developers on its rolls with relevant experience	As the work is related to irrigation and application software, we request you to kindly add those categories also under relevant experience to the total manpower required.	The bidder should have at least 10 resources related to IT services
13.				Relaxation for 10 software developers on the payroll	
14.				We have 7 Developers on roll, 3 on salary and 4 working as long term contract. We are also hiring 3 more and expected to join by Mid of April. Offer letter issued.	
15.	Page #6, Clause 2	Pre-qualification criteria		Can the entire technical team be considered for qualification criteria for 10 Software engineers for e.g. Technical Founders, Software Engineers, QA &	

				Testing engineers, Product Management, Implementation consultants and so on?	
16.	Page #6, Clause #2	Pre-qualification criteria Important Note:	Consortium bidding is not permitted.	However, irrigation management and Nutrient mapping are specialised requirements and no single vendor would have both components, a consortium should be allowed. As the work is related to various categories, request you to allow JV/Consortium bidding for required competency of the solution. Additionally, as a start-up taking sole responsibility and liability for another vender's solution would have a financial impact.	Consortium bid is allowed only for Part A: Nutrient and Irrigation management solution (as the bidders have to apply for the said categories in single tender). Prime bidder shall be responsible for delivery of both the Projects of Part A.
17.	Page #6, Clause #2	Pre-qualification criteria	The bidder should have product /solution relevant to the proposed emerging technologies.	We have a product which makes easy to develop any solution in very fast and have successfully delivered many similar projects. In fact currently we are doing one pilot for India's largest FMCG for "procurement to payment"	Showcase the same during technical presentation
18.	Page #7, Clause 2	Pre-qualification criteria Important Note: Point(10)	Local office in Hyderabad	If bidder has promising solution with relevant experience but does not have local presence will impact the selection?	As per RFP Preference will be given to the Bidder having a Local Office & Development Team in Hyderabad. Self-certified Address on Letter head to be submitted.
19.				We would like to inform you that we do not have a local office at the said location, for now, however, we can get the setup done once the tender has been awarded to us	

20.	Page # 11, Clause 3.6.	Proposed Scope of work	The bidder is requested to study the document carefully and opt to bid for one of the four solutions among Part A, Part B, Part C, Part D or can even opt to bid for multiple solutions based on their competency	Please clarify whether sub-section of any Part can also be proposed (In case of Part-A)	As per RFP
21.	Page # 12, Clause 3.7.	Proposed Scope of work		What are the parameters to measure the success of Piloting?	As per RFP
22.				What is the tenure of pilot run?	As per RFP
23.				Does the Department provide a hosting access for piloting the solution	As per RFP
24.	Page # 13, Clause 4.1	Detailed Scope of Work	The locations will be in the State of Telangana only.	Please define the location, as the logistics itself will have huge impact on commercials, this needs to confirmed prior to bid submission only	Project location will be any location which could 150 kms from Hyderabad or less. Minimum number of plots: 5(4 treatment plots and 1 control plot) crop details will be provided at the time implementation. Any delay in implementation could be discussed

25.	Page # 13, Clause 4.1.1	Detailed Scope of Work	A 10 hectare plot with 3 types of crops along with control plots	Request you to define the 10 Ha Plot, location, shape, size of each plot along with its control plot, crop details to further evaluate the required IOT infrastructure and resources. If any delay not attributable to the agency(handing over the plot for implementation etc) delay will not be considered	and mutually agreed. However, the Dept of Agriculture, Govt. of Telangana will have the final rights to decide the penalty or compensation of any form to be paid by the company.
26.	Page # 13, Clause 4.1.1	Section A: Smart Irrigation Management System: Scope of Work	To set up an intelligent variable rate irrigation system with soil and weather sensors to understand conditions in real time.	Please confirm no. of Sensors	Bidder need to provide the details of the number of sensors required for 4 plots covering 10 hectares
27.			A 10 hectare plot with 3 types of crops along with control plots with requisite pumps, piping, drip lines and all other infrastructure required for irrigation and fertigation will be provided by the Agriculture department	Is supply and installation of actuated Valve-electronically controlled is part of the scope to be supplied. If yes please provide specifications	Yes, Specifications need to be provide by bidder while submission of proposal
28.	Page # 14, Clause 4.1.1.4.	Detailed Scope of Work: PART A, Crop Growth	Periodical plant growth stages monitoring (Crop Vegetation Index) will be preferred if integrated	Is there any existing system to be integrated or Satellite data needs to be integrated? Please confirm	No existing system to be integrated
29.	Page # 14, Clause 4.1.1.5.	Detailed Scope of Work: PART A, Irrigation	• To irrigate based on crop water stress index • to irrigate based on volume • to irrigation based on a fixed schedule	IF flow meters, Valves, Controllers are to be installed part of the scope. If yes Please provide the Numbers.	Bidder need to propose no. of devices required for mentioned area of 10 hectares spread in a maximum of 4 plots.

			i.e rotation • To irrigate on time basis • To irrigate based on climate/soil trigger The device shall enable the user • To irrigate based on crop water stress index • to irrigate based on volume • to irrigation based on a fixed schedule i.e rotation • To irrigate on time basis • To irrigate based on climate/soil trigger		
30.	Page # 17, Clause 4.1.1.10.	Detailed Scope of Work: PART A, Functionality of the application	The device shall enable the user to • Switch on / off individual valves. • Switch on / off all valves. • Operation of the valves with following minimum features • Switch on / off Immediately • Switch on / off by time • Switch on / off based on exceptions		
31.	Page # 18, Clause 4.1.1.13.	Detailed Scope of Work: PART A, Mobile Application		The Scope says controlling Sensors. Please confirm whether it is controlling of sensor or opening and Closing of Valves, Motors ON & OFF. Please confirm	Controlling of sensors
32.	Page # 18, Clause 4.1.2.4.	Detailed Scope of Work: PART A, Technical		Please provide more technical specifications on the device	Bidder need to be proposed technical specifications for the mentioned scope, evaluation will

		Specification			be done based on the technical details and solution proposed by bidder
	Page #28, Clause 4.4.	Scope of Work: Part D: Seed Traceability using Block Chain Technology		Can you please expand on dynamic QR Code? What are the expectations here?	Bidder can expand. Bidder should provide all the features as mentioned scope in section 4.4.2.
33.	Page# 31, Clause 4.4.	Scope of Work: Part D: Under Certification, Labeling & Sealing		Please let us know whether supplying printing equipment, labels for printing QR/bar codes to be considered while making the proposal. E.g. Supplying Printers, Consumables, Labels etc	Yes
34.	Page# 31 & 32, Clause 4.4.	Scope of Work: Part D: under Traceability		Should we expect the distributors, retailers of the private companies to be using the system and be on Blockchain network?	Distributors, retailers will be using the system (built by the bidder) that runs on blockchain, it is not expected that they are directly on the blockchain
35.	Page# 32, Clause 4.4.	Scope of Work: Part D		Is the department looking to use any GTINs (GS1 compatibility) unique identifiers for uniquely identifying Products and seller	As per RFP
36.	Page# 32, Clause 4.4.	Scope of Work: Part D		We understand that for showcasing Customer traceability, a customer mobile application needs to be developed for enabling the QR Code scan. can you please let us know whether both Android and iOS must be supported? or just Android is fine?	Should be able to support all the available platforms

37.	Page# 32, Clause 4.4.4.	Scope of Work: Part D, Mobile Application		Query: Should the Mobile App support both Android and iOS mobile environments?	
38.	Page# 32, Clause 4.4.	Scope of Work: Part D		As you have asked for support for GPS, camera, gestures, and notifications: Can you please elaborate if you have any additional expectations form the mobile app other than the ability to scan a QR code to retrieve traceability	Should provide all the features for scope , section 4.4.3
39.	Page# 32, Clause 4.4.	Scope of Work: Part D		Please elaborate specific expectation on offline capability for Traceability mobile app, as the data needs to come from a Blockchain ledger, offline functionality does not ensure the credibility	As per RFP
	Page # 34, Clause 5.3	Solution Design and Architecture for all the modules	Solution Design and Solution Architecture: Successful Bidder needs to ensure that the Infrastructure architecture designed for application needs to be in line with the SDC setup and follow the SDC guidelines.	Will hosting infrastructure be provided by M/s TSTS? If not, who will provide the infrastructure? Please provide applicable SDC guidelines. In case agency/service provider is supposed to host the solution, please provide the guidelines for transferring the same after completion of the project.	As per RFP Guidelines will be shared post implementation
40.	Page # 36, Clause 5	Infrastructure		What is the duration of the application maintenance to be considered?	As per RFP
41.	Page# 36, Clause 5.	Infrastructure		We are a SaaS Product company. Is there a requirement for setting up a dedicated instance of the existing product on Govt's Own cloud infrastructure or can the Govt. and its corresponding entities be commissioned as a user/organization on our own	As of now Govt. of Telangana doesn't have any own cloud infra, bidder need to propose own solution

				SaaS infrastructure?	
42.	Page# 36, Clause 5.	Infrastructure		Please clarify if it's mandatory to host the entire application infrastructure on ITE&C cloud data centre? Or should we consider hosting the application on any Public cloud such as AWS, Azure, GCP or so?	Bidder can propose for hosting any public cloud by following standards of SDC,ITE&C dept., Govt. of Telangana
43.	Page# 36, Clause 5.	Infrastructure		Should the bidder consider providing on-going infrastructure support or will the same be provided by ITE&C. E.g. We build the infrastructure and handover the same to ITE&C or we own the responsibility to continue to support it.	As per RFP
44.	Page# 36, Clause 5.	Infrastructure		Can we form an alliance with an infrastructure management company to provide the continuous support to manage infrastructure	As per RFP
45.	Page # 37 Clause 5.10	Solution Design and Architecture for all the modules: Third Party Audit (Security and Performance Audit)	The Successful Bidder needs to ensure that the proposed solution is in compliance with the Security Policy and Guidelines released by ITE&C Dept. and Agriculture Dept.	Please provide a copy of or the link to the Security Policy and Guidelines released by ITE&C Dept. and Agriculture Dept.	Guidelines will be shared post implementation
46.	Page # 37 Clause 5.12	Project Time Lines		The project timelines are too ambitious considering the scale and scope, can this be re considered?	As per RFP
47.	Page # 37 Clause 5.12	Project Time Lines		In the SLA, you have mentioned the Penalty, please clarify the % of penalty is on the total tender value? or something else	As per RFP

48.	Page # 43 Clause 6.8 Sub clause 5	Contract Terms & Conditions **:** Intellectual Property Rights and Ownership		How does the IP Rights and Ownership apply if the bidder is proposing a product based solutions as against building something ground up? For e.g. we are a product based company which can full fill all the requirements mentioned under Part D in the standard product offering we have. if this is implemented in the project, how does it impact IP Rights and Ownership of the product	The IPR of the customized solution will be with Govt. of Telangana.
49.			All Work Product prepared by Service Provider in performing the Services shall become and remain the sole and exclusive property of the Agriculture department, TS and all Intellectual Property Rights in such Work Product shall vest with the Client. Any Work Product, of which the ownership or the Intellectual Property Rights do not vest with the department under law, shall automatically stand assigned to the department as and when such Work Product is created and Service Provider agrees to execute all papers and to perform such other acts as the department may deem necessary to secure its rights herein assigned by Service Provider. Any work made under this Agreement or respective	The solution we are providing is productized by us and the Intellectual property rights of the technology /Hardware / firmware / application software / mobile app including the drawings / source code will remain with us. The ownership of the copy of the hardware / compiled firm ware will be transferred to the client. The application software will be licensed for use to the client during the tenure of contract / Agreement.	

			Purchase Order shall be deemed to be 'work made for hire' under any Indian/U.S. or any other applicable copyright laws.		
50.	Page # 44 Clause 6.8 Sub clause 6	Contract Terms & Conditions **:** Intellectual Property Rights and Ownership	The Intellectual Property Rights on the software code, copyright and source code for various applications/ interfaces developed under this Agreement or respective Purchase Order(s), and any other component/ framework/middleware used/ developed as pre-built software assets to perform the Services, shall belong to the department and the department shall have complete and unrestricted rights on such property.	The solution we are providing is productized by us and the Intellectual property rights of the technology /Hardware / firmware / application software / mobile app including the drawings / source code will remain with us. The ownership of the copy of the hardware / compiled firm ware will be transferred to the client. The application software will be licensed for use to the client during the tenure of contract / Agreement.	The IPR of the customized solution will be with Govt. of Telangana.
51.	Page #45 Clause 7	General		How many people and how many locations must be considered for estimating the efforts of staff trainings specifically referring to the point mentioned under Seed Traceability in the section Pre-harvesting stage	2 on-site trainings are to be provided by the bidder
52.	Page #45 Clause 7	General		Do we foresee any integrations of the proposed system with any of the existing systems in the department? If so, could you please indicate the same e.g. Integrations with accounting systems, ERP systems etc.	Currently, there is no such system that needs integration.

53.	Page #45 Clause 7	General		Are there any specific preference for custom built solutions as against a standard product offering which can be customized to meet the needs to the department	As per RFP
54.	Page #45 Clause 7	General		Will any preference be given to a product based company which already has these solutions as against the bidder who is building it ground-up?	As per RFP
55.	Page #60 Clause 9.8	Special Conditions of proposed Contract (SCC): Assignment & Sub Contracts:	Assignment & Sub Contracts: As per the scope of this Agreement sub-contracting is STRICTLY PROHIBITED. The Service Provider shall not assign, in whole or in part, its rights and obligations to perform under this Contract to any third party	As the work is related to various fields of expertise (like Irrigation, Software development, automation, O&M etc), some of these services need to be hired. Please allow sub-contracting option to the agency/ vendor/ service provider	As per RFP

Sd/-

GOVERNMENT OF TELANGANA
ABSTRACT

ITE&C Department - Relaxation of Norms for Startups in Public Procurement of Technology-Based Solutions through TSTS – Orders – Issued.

INFORMATION TECHNOLOGY, ELECTRONICS & COMMUNICATIONS (Promotions) DEPARTMENT

GO.Ms.No.08 **Dated:28.04.2018**
Read:

G.O.Ms.No.10, ITE&C (Promotions) Dept., Dated 25.07.2017.

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ORDER:

The Government of Telangana has announced its Innovation Policy 2016 on April 4th, 2016 for creating a conducive atmosphere for the growth of Startups in India. In the policy, the Government has promised to give priority to Startups in public procurement processes. To bring uniformity in the identity of enterprises, an entity shall be called a startup if it adheres to the criteria, as put forward by Government of India:

- If it is incorporated as a private limited company (as defined in the Companies Act, 2013) or registered as a partnership firm (registered under section 59 of the Partnership Act, 1932) or a limited liability partnership (under the Limited Liability Partnership Act, 2008) in India; and
- Up to seven years from the date of its incorporation/ registration; however, in the case of Startups in the biotechnology sector, the period shall be up to ten years from the date of its incorporation/registration; and
- If its turnover for any of the financial years since incorporation/ registration has not exceeded Rupees 25 crores; and
- If it is working towards innovation, development or improvement of products or processes or services, or if it is a scalable business model with a high potential of employment generation or wealth creation.

2 Provided that any such entity formed by splitting up or reconstruction of a business already in existence shall not be considered a 'Startup'. The explanation of the above conditions is given in below URL:

https://www.startupindia.gov.in/uploads/notifications/notification_Revised_notification_Startups_Notification_23_05_17.pdf

3. In addition to adhering to the above-mentioned definition of a 'Startup', the enterprise must satisfy the below mentioned conditions for the following relaxation of procurement norms to be applicable:

a. Have manpower strength of minimum of 10+ technical staff
b. Have a firm address and contact details including URL

4 In order to be deemed eligible, the Startup must submit a covering letter requesting for this relaxation in the format attached in Annexure 1. The Startup shall then be issued a certificate as prescribed in Annexure 2 which may then used for availing the benefits outlined in this Order..

5 Eligible Startups can avail the following benefits while participating in Government procurement processes of technology-based solutions through TSTS:

i. Prior turnover – Startups shall not be subjected to any prior turnover criterion for being eligible to participate in a government procurement process
ii. Prior experience – Startups shall not be required to have any prior experience of having participated in a public procurement process
iii. Exemption from Submission of EMD – Startups shall not be required to submit an Earnest Money Deposit to participate in public procurement process

iv. Financial advantage – Startups shall be given a 15% relaxation on their submitted financial quotations pertaining to procurement, subject to meeting of quality and technical specifications (process for the same is elaborated below)

Explanation:

a) If a startup quotes Rs X to be paid to them for goods/services in response to an RFP, then the following calculation is made:

$$Y=X*85/100$$

Rs Y is then used for all subsequent calculations as the financial bid of the startup for evaluation irrespective of the kind of evaluation i.e. QCBS, LCS etc.

b) If a startup offers to pay Rs X for owning/operating goods/services in response to an RFP, then the following calculation is made:

$$Y=X*115/100$$

Rs Y is then used for all subsequent calculations as the financial bid of the startup for evaluation irrespective of the kind of evaluation i.e. QCBS, LCS etc.

6. The method detailed below shall be used to procure technology-based solutions from eligible Startups with innovative technology solutions irrespective of a floated procurement notice/tender.

7 Interested Startups can submit an Expression of Interest (EoI) and detailed proposal by mailing the same to startup_cell@telangana.gov.in, irrespective of a floated procurement notice/tender. **Quality Evaluation Committee (QEC)**, a committee comprising of product specialists and technologists, shall then be constituted by the ITE&C department in consultation with relevant line departments for evaluating the quality and technical specifications of the product/service proposed.

8. If the solution is innovative and unique (as decided by QEC):

The QEC shall evaluate the solution within 30 days from receipt of EoI and submit its report to the relevant authority along with recommendation, failing which the solution will be deemed to be certified automatically.

Upon being certified by the QEC of the quality, Startups with unique products shall be asked to deploy a pilot as a Proof of Concept (PoC) for a stipulated time period in a designated location. During the course of the pilot, QEC shall conduct an impact study and submit its recommendations within 30 days of completion of the pilot to the line department, Secretary, ITE&C and MD, TSTS, failing which the pilot will be deemed to be approved for scale up automatically. Standard rate contracts such as NIXI, COTS, etc. shall be applied if possible.

9. If the solution is innovative but not unique (as decided by QEC):

Startups which have developed innovative, but not unique (ex. smart parking), products with potential Govt. utilization shall go through the Swiss Challenge method as described below.

The QEC shall evaluate the solution within 30 days from receipt of EoI and submit its report to the relevant authority along with recommendation, failing which the solution will be deemed to be certified automatically. Upon clearing the quality and technical evaluation by the QEC, the proposal shall be made public inviting suggestions and counter proposals. In case the original proposer is unable to match the more attractive and competing counter proposal, the project shall be awarded to the counter proposal. Financial advantage to Startups, as detailed earlier, shall be applicable in the Swiss Challenge method of procurement, as well.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

JAYESH RANJAN
PRINCIPAL SECRETARY TO GOVERNMENT

To
All the Departments of Secretariat

The Metropolitan Commissioner, HMDA, Hyderabad
The Commissioner, Greater Hyderabad Municipal Corporation, Hyderabad
The Commissioner and I.G., Stamps and Registration, Hyderabad
The Vice Chairman and Managing Director, TSIIC, Hyderabad
The Commissioner of Industries, Hyderabad
The Commissioner, Information and Public Relations, Hyderabad
The Member Secretary, TS Pollution Control Board, Hyderabad
The Chairman & MD, TSTRANSCO, Hyderabad
The Chairman & MD, TSSPDCL/TSNPDCL/ TNREDCL
The Commissioner of Labour, Hyderabad
The Development Commissioner, VSEZ, Hyderabad
The Director, STPI, Hyderabad
The President, HYSEA, Hyderabad
The Regional Director, NASSCOM, Hyderabad
The CEO, T-Hub, Hyderabad
The President, FTAPCCI, Hyderabad
All the District Collectors
Copy to:
The Secretary to GoI, DIPP, Ministry of Commerce & Industry, GoI, New Delhi
The Hon'ble Chief Minister's Office/PRO to C.M.
The PS to Hon'ble Minister for IT, MA&UD, Industries, Hyderabad
The PS to Hon'ble Minister for Finance, Hyderabad
The PS to Hon'ble Minister for Revenue, Hyderabad
The PS to Hon'ble Minister for Energy, Hyderabad
The PS to Hon'ble Minister for Labour, Hyderabad
The PS to Chief Secretary
SF/SC

// FORWARDED : : BY ORDER //

SECTION OFFICER