Expression of Interest (EOI)
for
'Portable Rugged Automated Meteorological Observation System (PRAMOS)'

Part 1

1. Preamble

1.1 Brief introduction of Lab/Estt.

Defence Geoinformatics Research Establishment (DGRE) is one of the premier R&D establishment under Defence Research and Development Organisation (DRDO), providing geo-hazard assessment and mitigation measures in its area of operation for Indian Himalayas.

1.2 Brief introduction of EOI

This establishment is in the process of design, development, realization and testing of 'Portable Rugged Automated Meteorological Observation System (PRAMOS) System' Qty-20 in Development Cum Production Partner (DcPP) mode of bidding.

The Expression of Interest (EOI) is, hereby, invited from the prospective developmental partners for providing their techno-commercial proposals with detailed technical specifications along with design approach, technical parameters, budgetary quotations, and delivery periods for above mentioned PRAMOS system. The scope of work is given in the subsequent section.

1.3 The objective of this EOI is to shortlist technically suitable and competent applicants having in-depth knowledge and proven track record of having successfully executed same or similar kind of contracts.

2. Scope of work: **Attached as Appendix 'A'**

3. Procedure for response:

Interested developmental partner may furnish their Expression of Interest with all the necessary documents in a sealed cover along with the covering letter duly signed by an authorized signatory on or before 18/06/,2025 by 14:00 hours at the following address:

Director
Defence Geoinformatics Research Establishment (DGRE)
HIMPARISAR, Plot No. 1, Sector 37 A
Chandigarh-160036 (India)
Email: mmg.dgre@gov.in
Phone No: 0172-2683200

Note: All the prospective developmental partner please note that the proposals received after the due date and time shall not be considered and out rightly rejected.

4. Instructions/Notes:

4.1 : General

(a) All Copies of documents submitted along with EOI should be clear, legible and self-certified by the authorized representative of the applicant.

(b) Lab/Estt reserves the right to physically check the original documents / certificates, the copies of which are submitted along with the EOI.

(c) The applicant language of Communication for all activities connected to this EOI and tasks thereof shall be in English.

(d) Lab/Estt reserves the right to cancel this process of EOI at any time without any financial or otherwise liability and without assigning any reasons thereof.

(e) The applicant may kindly note that shortlisted applicant will be required to sign a Non-Disclosure Agreement (NDA) and Integrity Pact (IP) at a later date as required by Lab/Estt.

(f) The applicant must meet the minimum criteria regarding the applicants specific and particular experience, specified in this document, as demonstrated by the *applicant's* responses provided in the **Forms at Part 2** other requested documentation.

(g) The applicants may note that mere meeting of the minimum criteria does not entitle any company/firm/organization the right for appointment.

(h) Lab/Estt will not be responsible/ liable to any party in any way for costs associated in preparation & submission of EOI.

(i) This notice is issued only to elicit an Expression of Interest (EOI) from parties interested in the collaboration and does not constitute any binding/commitment from Labs/Estt to invite any or all of the parties in any of the subsequent process.

(j) Lab/Estt is also not obliged to share clarification related questions with other respondents than the one who seeks clarification.

(k) Lab/Estt reserves the right to accept or reject any EOI proposal without signing any reasons whatsoever.

(l) This EOI is being issued with no commitments and Labs/Estt reserves the right to withdraw the EOI and change or vary any part thereof or foreclose the EOI at any stage

4.2 : Submission of Information/Documents: Information should be submitted in the formats specified in this document. The Prequalification documents shall be submitted as follows:-

(a) Two (hard) copies with all supporting documents.

(b) One digital copy on emails/CD/DVD of entire documentation.

(c) With covering letter duly signed by Authorized Representative of the company with company's seal. Document in support of authorization granted to authorize representative to be submitted.

4.3 : Failure by the applicant to provide information/documents, which is essential to evaluate the applicant's qualifications, or to provide timely clarification or substantiation of the information supplied may result in disqualification of the applicant.

4.4 : Any information/clarification regarding this subject matter can be obtained from: -

Contact details id of contact person of Lab/Estt (Address, phone, email-id):

Address:

Director
Defence Geoinformatics Research Establishment (DGRE)
HIMPARISAR, Plot No. 1, Sector 37 A
Chandigarh-160036 (India)

Phone No: 0172-2683200

Email-Id: mmg.dgre@gov.in

Part 2: Forms

5.1 Form A – Specific Experience

The applicant should have in-depth knowledge and proven track record of having successfully executed similar kind of design, development, realization, and testing of systems/sub-systems of system/communication/sensing application for national/international level clients in the past or current. The details of such contract should be submitted by the applicant.

In case single development partner does not have all the facilities, it may join hands with other industries/academia to deliver the final product. However, written documents are needed to prove the formal collaboration with other industries/academia at later stage along with respective role before placement of final contract.

5.2 Form B – Skilled Workforce requirement shall include following type of manpower but not limited to:

The applicant's workforce should have requisite skills of design, development, realization, and testing of sensor systems/sub-systems.

Note: The above requirement of manpower is indicative and shall be mutually agreed upon during the detailed discussion with the applicant as per the final RFP to be issued by Lab/Estt.

5.3 Form C – Willingness/ Undertaking Format

(*To be enclosed as part of Expression of Interest proposal on the letterhead of the company*)

To

Date:

Defence Geoinformatics Research Establishment (DGRE)
HIMPARISAR, Plot No. 1, Sector 37 A
Chandigarh-160036 (India)

Reference: Expression of Interest No. ---------- dated---------- 2019

Dear Sir,

We hereby confirm that we have examined the lab/Estt EOI document dated----------
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We hereby confirm the following:

i) That we agree to all terms and conditions of the EOI document.
ii) ...
iii) ...

Yours faithfully,

(Applicant Head Signature)

5.4 Form D – Summary Sheet: Organization Structure / Legal Status/ Current Contract Commitments / Works in Progress

The Applicant firm shall submit with EOI, the organization structure, legal status of the applicant, place of Registration, principal place of business and brief on business activities undertaken by the applicant, the ownership details, shareholder pattern, details of manpower viz. discipline and geographical location wise permanent manpower strength for providing support in execution of proposed project, names and addresses of the present Directors and the Senior management and such other relevant details as the Applicant may like to share in the following format.

a) Corporate

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.....

b) Corporate Structure

.....

.....

c) Applicant's Technical Capacity (State total number of professional staff indicating each Individual's experience/ qualification):

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.....

d) Applicant's Facilities and Experience in systems/sub-systems of systems/communication/ sensing application

.....

.....

Name & Signature of authorized representative of the Applicant:
Name and Stamp of Company:
Date:

e) Applicant should provide information on their work performed in the last 5 years and also the current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued in the following format.

Year	Project Name/Client	Contract No. & Date	Value of contract	Stipulated period of Completion	Actual date of completion

5.5 Form E – Financial Capability

5.5.1 The Applicant shall furnish complete audited annual financial year statements for last 03 years including balance sheets, profit & loss account statement, Audit Reports and all other schedules of immediate preceding financial year, self-certification of being not under liquidation, court receivership or similar proceeding.

5.5.2 Applicant should provide financial information to demonstrate firm's capability for assessment of the financial status by Lab/Estt. If necessary, use separate sheets to provide complete banker information.

5.5.3 Applicant should have positive net worth.

Banker	Name of Banker(s)	
	Address of Banker(s)	
	Telephone	Contact name and title of Senior Bank official
	Fax	E-mail

5.6 Form F - Litigation /Arbitration History

Applicant should provide information on history of Court litigation or arbitration proceedings resulting from contracts executed in the last 05 years or currently under execution. The information should also be provided for any significant sub-contractors.

Year	Decree/Award for or against Application	Name of client, cause of litigation, and matter in dispute	Disputed amount (current value)

Part 3 – COMPLIANCE TABLE

Compliance to all EOI Clauses

Sl. No	Section/ Para	Compliance of para/ sub para of the Main (Yes/ No)	Reasons/ Justifications for non-compliance /Suggestions (If any)	Remarks
1.	1.			
2.	2.			
3.	3.			
4.	4.			
5.	5.			
6.	6.			
7.	7.			
8.	8.			
9.	9.			
10.	10.			
11.	11.			
12.	12.			

Appendix-'A'

Scope of work

The responsibility of the shortlisted applicant shall include but not limited to: -

(i) Design, development, realization and testing (functional and environmental), of 'Portable Rugged Automated Meteorological Observation System (PRAMOS)'.

(ii) Transportation, site preparation/foundation work, installation and commissioning of mast and Portable Rugged Automated Meteorological Observation System (PRAMOS) at 20 field locations in Indian Himalayas.

(iii) Warranty period: min 02 years from the date of acceptance after installation and commissioning

Followings are the broader environment & terrain condition at remote field locations for deployment/testing of PRAMOS:

a). The locations are avalanche prone and the terrain is mountainous (mixed rock & soil).
b). Wind velocity upto 60 m/s is witnessed in the regions.
c). Temperatures as low as -40°C may be encountered during winters.
d). Region witness's heavy rains in rainy season.
e). Standing snow of up to 5m may exist during winter months.
f). Field locations for deployment of PRAMOS are in range or 3000 to 5500 m altitude.

1). Broad specifications:

PRAMOS will be used for automatic collection and transmission of snow & meteorological data of different climatic zones of Indian Himalayas. The PRAMOS foundation related civil work will be made ready before hand. PRAMOS should be portable, rugged, modular and easy to install within 1-2 hours excluding the foundation work.

PRAMOS will consists of following

- Single Multi-Parameter Weather Sensor with cable, mounting hardware and accessories
- Snow Specific Sensors (as described in subsequent section)
- DGRE specific Datalogger
- Satcom Terminal (NATSAT-M) with mounting hardware
- Solar panel with battery charge regulator & SMF lead acid battery
- Collapsible/modular/telescopic mast with fencing
- NEMA-IV enclosure with D38999 Series-III connectors

Tentative proposed tower/mast design of PRAMOS may be telescopic mast type or collapsible/modular with mechanized/motorized winch system for lowering and raising. The max raised height of mast should be 6 meters and collapsed height should be 0.5 (approx.) meters. The PRAMOS should have collapsible type arms of length 1 meters. There should be mechanical (automatic) mechanism for opening of collapsible type arms. Collapsible arm should have conduit with miniature junction boxes for the sensors/communication signal power wiring/cabling.

PRAMOS should have mounting hardware for placement of 20-watt solar panel (standard size) or better. The PRAMOS should have provision for lighting arrester on the top of mast with collapsible conduit.

PRAMOS should have mounting hardware for placement of Satcom Terminal (NATSAT-M) (mounting drawing will be shared later) and wiring/cabling of NATSAT and DGRE specific datalogger (mounting drawing will be shared later).

PRAMOS should have mounting hardware for placement of standard NEMA-IV enclosure with D38999 Series-III connectors. The NEMA-IV enclosure shall house the Datalogger and battery with charge regulator.

The PRAMOS should have a multi-parameter (single body) weather sensor with measurement capability of temperature, relative humidity, atmospheric pressure, wind speed/direction, precipitation intensity and quantity. PRAMOS should have separate sensors for measurement of snow surface temperature, radiation and snow depth. The snow specific and multi-parameter weather sensors output should have RS 485 interface for data exchange.

The broader specification of sensors is given in Table 1.

Table 1: Broader specifications of broader specification of sensors

Table-1	
Combined All in one weather sensor specifications for PRAMOS	**Requirement of DGRE**
General	
Weight	≤ 2 kg
Interface	RS 485
Power Supply	9 to 12 VDC
Operating Temperature	-40°C to +60°C or better (with heater)
Operating RH	0 to 100 %
Protection	IP 66 or better
Heater	Required
Temperature	
Principle	NTC or equivalent
Measuring Range	-40°C to +60°C or better
Accuracy	± 0.5°C or better of full scale
Relative humidity sensor	
Principle	Capacitive
Measuring Range	0 to 100 % RH
Accuracy	±2% or better of full scale
Atmospheric Pressure Sensor	
Principle	MEMS capacitive
Range	400 to 1000 mBar (hPa) or better
Accuracy	± 1 mB (hPa) or better over operating temp. range (-40°C to +60°C)
Wind Direction Sensor with Heating	
Principle	Ultrasonic

Range	0 to 359 degree
Accuracy	≤ 3 degrees or better
Threshold	1.0 m/s or better
Wind Speed Sensor	
Principle	Ultrasonic
Range	0-60 m/s or better
Accuracy	± 3 % of FSR or better
Threshold	1.0 m/s or better
Snow and Rain Precipitation (Solid & Liquid)	
Droplet Size	0,3.....5 mm
Detection sensitivity	0,01 mm/h
Particle Velocity	0.9.....15.5 m/s
Resolution	0.1 mm
Snow Depth Sensor	
Range	0.5 m to 5 m or better
Resolution	1 mm or better
Accuracy	0.5% of distance to target or better
Temperature Range	-40°C to +50°C
Power	9 to 12 VDC
Output	SDI-12/Digital
Net Radiation Sensor	4- Component Net Radiometer
Pyranometer Spectrally Flat Class C according t ISO 9060:2018	Albedo sensor will consist of two pyranometers one facing the sky and the other to the ground. Albedo sensor will provide readings of incoming and outgoing shortwave radiations.
Spectral range	300 to 2800 nm
Sensitivity	10-15 μV/W/m^2 or better

Field of view	180 degree
Operating Temperature Range	- 40°C to 60°C
Pyrgeometer	
Spectral Range	5.5 µm to 42 µm
Sensitivity	5-10 µV/W/m^2
Field of view	≥ 150 degree
Operating Temperature	-40 to + 60^0 C
Infra-red Snow Surface Temperature Sensor	The sensor will be Infra-red type and will have protective housing for long term outdoor use.
Sensing Temperature Range	-50° C to + 55° C or better
Accuracy	±0.5° C or better
Beam Angle	≤ 45^0
Spectral Range	8 to 14 µm
Sensitivity	60 µV/ Deg C (Approx.) or better
Output	Analog within 0 to 5 or ± 3.5 mV DC
Input Voltage	0 to 5 V DC

2). The Datalogger is a recorder device for unattended acquisition of meteorological and snow data. DGRE had designed and developed a DGRE specific Datalogger in past and same is being used in remote areas of Indian Himalayas where regular maintenance and supervision is difficult. Datalogger is having provision for quick and easy mounting in NEMA-IV rated enclosure.

3). The DGRE specific Datalogger was designed around ARM cortex-M7, RISC Architecture, 32Bits, Upto 216MHz Clock, 2MB Flash Memory, Make: ST Microelectronics, Model: STM32F765ZGT6.

4). The application programming was developed in bare-metal type style/format/environment.

5). The DGRE specific Datalogger automatically can power-up sensors, take readings from sensors, covert readings into the engineering values (for analog sensors) based on calibration parameters, and store them into its memory along with time stamp as per the scheduled time interval and same data is transmitted through GSM modem or/and Satcom (NATSAT-M) modem by providing data on RS232 port using AT command protocol.

General Features:

- Extreme temperature range -40 to 60 °C for components

- Support for MODBUS RS485, SDI12 and RS232 protocols for acquisition of sensors data
- Precision 8 Single Ended and 4 Differential Analog inputs
- On-board GSM/GPRS modem
- Regulated 5V and 12V sensors excitation
- Support M2M Modem and SatCom (externally)
- Easy configuration with USB port

The dataloggers various parameter and their specifications are given in the table below:

Datalogger various parameter and their specifications

Datalogger Parameters	Specifications
Microcontroller	ARM cortex-M7, RISC Architecture, 32Bits, Upto 216MHz Clock, 2MB Flash Memory Make: ST Microelectronics, Model: STM32F765ZGT6
ADC	24-bit ADC with 30 KHz sample rate (no missing codes), Sig Delta with PGA architecture, ± 0.0010% nonlinearity, SPI Interface Make: Texas Instruments, Model: ADS1256IDBTG4
Real –Time Clock	
(i) Resolution	Counts Seconds, Minutes, Hours, Day, Date, Month, and Year with Leap Year Compensation Valid Up to 2100
(ii) Accuracy	±3.5 ppm over industrial temperature range
(iii) Backup battery	Internal lithium battery
Memory	16GB SD Card (Extended Temperature Range) 2Mbit EEPROM (from internal Storage)
Display and Keypad	Make: Newhaven Model: NHD-0420CW-AY3
(i) Display Type	4x20 OLED Display (Sunlight readable)
(ii) Sunlight-readable	Yes
(iii) Time out feature	Yes (to conserve power)
(iv) Keypad	4x Keys (Up, Down Enter, Back)
(v) LED Indications	5 x LEDs (Status, GPRS, Cloud, Log, Reverse Power)
Ports/Channels	• 2 x EIA RS485, 1 x RS232, 1 x SDI12 • 2 x 4-20mA (Single Ended ±0.1% of FS) • 6 x 0-5V (Single Ended, Accuracy: 100µV) • 4 x ±2.5V (Differential, Accuracy: 100µV)) • 4 x Digital Inputs (0-5V) • 2 x Pulse Inputs (0-5V, 100KHz, 16 bits) • 4 x Digital Outputs (Open Collector, 125mA/ch)
Switched Power	• 3 x 5V (1A/ch, Cumulative: 1A, Regulated) • 3 x 12V (1A/ch, Cumulative: 1A, Regulated)
Telemetry support	• GSM/GPRS (4G) Quad Band (FDD LTE, TDD LTE, TDSCDMA, WCDMA CDMA2000 1x/EVDO, GSM (900/1800MHz)) • MODEM (DTE) Port for Satellite Communication • Ethernet for M2M Modem/VSAT Communication

Datalogger Parameters	Specifications
Programming, Data Collection, Logging, Transmission, and configuration	
a). Programming	Programmable though STM programmer using Micro USB port or using STM programming device.
b). Data Collection, Logging, and Transmission	• Collection: As per scheduled interval • Logging: 1 min - 24 hours / reading • Transmission: User configurable
c). Configuration	HMI, Debug (DCE) RS232 port
Power	
a). Input supply	9-18 VDC ± 10% (Nominal 12VDC)
b). Current	Sleep: 5mA @12VDC, Operating: 300mA (depend on no. of sensors connected to datalogger.
c). Power	5W (peak)
d). Protection	• Surge protection on sensor inputs • Over voltage and reverse polarity protection on Power i/p
e). Isolation	1.5KV Galvanic Isolation
Mechanical	
a). Dimensions	328 (L) x 194(W) x 50.2(D) mm
b). Mounting	Panel / Wall mount
c). Weight	1.6Kgs approx.
d). Color (RAL)	Black (9005)
e). Material	AL-5052
Environmental	
a). Operating Temperature	-40 to 60 °C excluding display
b). Humidity	0 to 100% RH (non-condensing)

6). DGRE is looking for Industry Partner who can ruggedize the existing system hardware with development of PRAMOS so that system can pass environment tests. The industry partner shall subject all the ruggedized Dataloggers for Environmental Stress Screening (ESS) as part of the Acceptance Test Plan (ATP) and one of the randomly selected ESS qualified item for qualification test (QT). These test are to be conducted at developmental partner premises or any other testing facilities approved by DGRE. The Acceptance Test Plan (ATP) and Qualification Tests (QT) plan documents will be issued later along with RFP. The list of tests to be done are given below as per applicability.

7). The firm will be allocating minimum two mechanical/CAD-CAM engineer for modelling of PRAMOS tower based on the inputs from DGRE. The CFD/ANSYS analysis should be carried by the firm on finalized tower design in their premises.

8). Training

The prospective developmental partner shall provide 5 days training at DGRE Chandigarh or at actual field location as decided by DGRE for integration, operation, configuration, diagnosis and maintenance of PRAMOS without any additional cost.

9). List of deliverables

The details of the list of deliverables are given in the table below.

Sl. No.	List of Deliverable Items	Qty.(No./set)
1.	PRAMOS System (Prototype units)	01 No.
2.	PRAMOS Systems(Qualified units)	20 No.
3.	Field installation *(of* PRAMOS systems at sites with altitude are in range or 3000 to 5500 m*)*	20 No.

10). Testing and Acceptance

The final acceptance will only be completed after the testing of PRAMOS system at actual field conditions. The PRAMOS system need to undergo following test procedures.

(a). **Prototype testing:** The prospective developmental partner shall arrange for the functional cum technical demonstration of prototype PRAMOS system at DGRE/developmental partner premises. The tentative list of tests to be carried out during functional cum technical demonstration are given below.

- Visual and physical examination of PRAMOS

Note: The acceptance test plan (ATP) document will be issued later along with RFP.

(b). **Environmental testing:** The prospective developmental partner shall subject all the qualified electronic deliverables of PRAMOS system, for Environmental Stress Screening (ESS) as part of the Acceptance Test Plan (ATP) and one of the randomly selected ESS qualified item for qualification test (QT). These test to be conducted at developmental partner premises or any other testing facilities approved by DGRE. The Acceptance Test Plan (ATP) and Qualification Tests (QT) plan documents will be issued later along with RFP. The list of tests to be done are given below as per applicability.

Environmental Stress Screening (ESS)	
Environmental Stress Screening (ESS) is to be carried out as part of the Acceptance Test Plan (ATP) for each of the delivered units. **ESS tests shall be conducted on the units prior to QT tests**. These tests will be carried out on all items (integrated or standalone), irrespective of whether they will be used for laboratory development or field usage. The following sequence shall be followed for ESS tests.	
i.	Screening Specifications Populated PCBs shall undergo stabilization bake at +55 °C with tolerance +5 °C / -0 °C for 24 hours period in non-operating condition and visual inspection carried out. After stabilization bake, the populated PCBs will undergo passive (non-operating) thermal shock for 10 cycles continuously as follows. (i) Low Temperature : -40 °C with +0 °C / -5 °C tolerance (ii) High Temperature : +55 °C with +5 °C / -0 °C tolerance (iii) Period of Exposure : 30 minutes (iv) Transfer Time : ≤ 2 minutes (v) No. of cycles : 10 In case of rework / repair, the PCBs shall again be subjected to thermal shock. Last three cycles should be defect free.
ii.	Visual / Physical Examinations
iii.	Initial Functional Tests
iv.	Power Burn-in
v.	Random Vibration (Pre-Thermal-Cycling) Test
vi.	Thermal-Cycling Test
vii.	Random Vibration (Post-Thermal-Cycling) Test
viii.	Final Functional Tests
Qualification Testing	
These tests, tailored as per JSS55555: 2012 Rev. No. 03, will be carried out only on 1 set of engineered hardware (integrated terminal or standalone modules), which will be randomly	

picked from the lot. Prior to conduct of QT, it shall be ensured that ESS is successfully completed on the selected test item.		
Following Environmental QT tests will be conducted:		
i.	Vibration	(JSS 55555: 2012, Rev. No. 3,Test No. 28)
ii.	High Temperature	(JSS 55555: 2012, Rev. No. 3, Test No. 17, Procedure 6, Test Condition K)
iii.	Solar Radiation	(JSS 55555: 2012, Rev. No. 3, Test No. 25, Procedure 1)
iv.	Damp Heat	(JSS 55555: 2012, Rev. No. 3 , Test No. 10)
v.	Low Temperature	(JSS 55555: 2012, Rev. No. 3, Test No. 20, Procedure 4,Test Condition K,L)
vi.	Altitude	(JSS 55555: 2012, Rev. No. 3 , Test No. 3, Procedure 1, Test Condition L1, A2)
vii.	Rapid Temperature Cycling	(JSS 55555: 2012, Rev. No. 3 , Test No. 22, Procedure 1)
viii.	Sealing (only if unit is hermetically sealed)	(JSS 55555: 2012, Rev. No. 3 , Test No. 23, Procedure 1, Test Condition A)
ix.	Driving Rain	(JSS 55555: 2012, Rev. No. 3 Test No. 12, Test Condition A)
x.	Immersion	(JSS 55555: 2012, Rev. No. 3 Test No. 19, Test Condition C)
xi.	Dust	(JSS 55555: 2012, Rev. No. 3, Test No. 14)
xii.	Tropical Exposure	(JSS 55555: 2012, Rev. No. 3, Test No. 27, Test Condition C)
xiii.	Mould Growth	(JSS 55555: 2012, Rev. No. 3, Test No. 21)
xiv.	Corrosion (Salt)	(JSS 55555: 2012, Rev. No. 3, Test No. 9, Procedure 2)
xv.	Drop	(JSS 55555: 2012, Rev. No. 3, Test No. 13,Test Condition F)
xvi.	Bump	(JSS 55555: 2012, Rev. No. 3 , Test No. 5)
xvii.	Shock	(JSS 55555: 2012, Rev. No. 3, Test No. 24, Procedure 2)
xviii.	Endurance Test	EUT powered ON at ambient for 72 hours

- **Field testing:** The final acceptance will only be completed after the testing of PRAMOS system at actual field conditions at Manali/Dhundi/Pateso/Base Camp field station as decided by DGRE. PRAMOS functional testing will be carried out for complete operational/functional requirements.

  Note: The acceptance test plan (ATP) document will be issued later along with RFP.

11). Broad terms and conditions:

(i) The prospective developmental partner shall arrange for the functional cum technical demonstration of prototype PRAMOS systems at DGRE/developmental partner premises.

(ii) The prospective developmental partner shall incorporate the changes (if any) in the prototype units as suggested by DGRE during functional cum technical demonstration.

(iii) The realization of qualified PRAMOS systems will start after successful demonstration of prototype units and obtaining the clearance from DGRE.

(iv) The expected delivery period for the complete scope of work: ≤ 24 months.

(v) Intellectual property right (IPR): The IPR shall be governed as per DRDO Purchase Manual (PM-2020)

(vi) Development cum Production Partner(DcPP):

a. For the purpose of development, limited quantity of PRAMOS systems shall be required, however, after successful development, the selected development partner will be nominated as DRDO DcPP as per DRDO policy post successful user trials.

b. The unit cost of the system without Non-recurrence expenditure (NRE) will become basis for calculating the unit cost during the production phase.

c. In the production phase and thereafter, DcPP shall be the single point of contact (SPoC) and shall be responsible for supply, maintenance and support during entire life cycle of the system.

12). Inputs required from the prospective developmental partner(s):

(i) The comments/ suggestions on the scope of the work mentioned above.

(ii) Techno-commercial proposals with detailed technical specifications along with design approach, technical parameters, budgetary quotations, and delivery periods.

(iii) The details of the resources and infrastructure available for developing the PRAMOS/ components.

(iv) Comprehensive Annual Maintenance Contract (AMC) cost in % of basic cost to be provided in budgetary quotation for a period of 5 years after the expiry of warranty period.

Vendor Eligibility Criteria

1. **Technical Competence**

   The firm should have technical competence in design and development of electronic system in India. The firm has to submit user satisfaction certificate in this regard.

2. **Experience**

   The firm should have experience of carrying out projects previously for national/international level clients. The contract should have been entered or concluded in past 10 years. Details of such contract should be submitted by the firm.

3. **Infrastructure**

   The firm should have suitable infrastructure facility including manufacturing units, testing facility related to electronic system development in India. Should have a repair center facility in India. DGRE team may visit these premises to assess infrastructure capability of the firm or partner (if any).