

**M/s. BEML LIMITED,
BEML SOUDHA,
23/1, 4th Main
SAMPANGIRAMA NAGAR,
BENGALURU - 560027**

**Notice for Inviting
Expression of Interest (Eoi)
for
Identifying Eligible & Technically Competent Firms for Collaboration as
Consortium Partner for Design, Development, Co-Production, Installation &
Maintenance of Multi Layered Integrated Perimeter Security System (IPSS)**

Issued by
BEML LIMITED
(Schedule 'A' Company under Ministry of Defence, Govt. Of India)

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SECTION-1

Disclaimer

The information contained in this Expression of Interest (Eol) document provided to the Prospective Firm (s), by or on behalf of M/s BEML Ltd., or any of its executives or advisors, is provided to the Prospective firm (s) on the terms and conditions set out in this Eol document and all other terms and conditions subject to which such information is provided.

1. The purpose of this Eol document is to provide the Prospective Firm (s) with information to assist the formulation of their proposal. This Eol document does not purport to contain all the information each Prospective Firm may require. This Eol document may not be appropriate for all persons, and it is not possible for BEML Ltd., its executives, or advisors to consider the business/investment objectives, financial situation and particular needs of each Prospective Firm who reads or uses this Eol document. Each Prospective Firm should conduct his own investigations and analysis and should check the accuracy, reliability, and completeness of the information in this Eol document and where necessary obtain independent advice from appropriate sources.
2. BEML Ltd., its executives and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the Eol document.
3. BEML Ltd., may, in its absolute discretion, but without being under any obligation to do so, modify, amend, or supplement the information in this Eol document.
4. The issue of this Eol does not imply that BEML Ltd., is bound to select and shortlist any or all the Prospective Firm (s). Even after selection of suitable Prospective Firm, BEML Ltd., is not bound to proceed ahead with the Prospective Firm and in no case be responsible or liable for any commercial and consequential liabilities in any manner whatsoever.
5. The Prospective Firm (s) shall bear all costs associated with the preparation, technical discussion/presentation, and submission of response against this Eol. BEML Ltd.,

shall in no case be responsible or liable for these costs regardless of the conduct or outcome of the Eol process.

6. Canvassing in any form by the Prospective Firm (s) or by any other agency on their behalf shall lead to disqualification of their Eol.
7. Notwithstanding anything contained in this Eol, BEML Ltd., reserves the right to accept or reject any application and to annul the Eol process and reject all applications, at any time without any liability or any obligation for such acceptance, rejection or annulment and without assigning any reasons, thereof. In the event that BEML Ltd., rejects or annuls all the applications, it may at its discretion, invite all eligible Prospective Firm to submit fresh applications.
8. BEML Ltd., reserves the right to disqualify any applicant during or after completion of Eol process, if it is found there was a material misrepresentation by any such applicant or the applicant fails to provide within the specified time, supplemental information sought by BEML Ltd.,
9. BEML Ltd., reserves the right to verify all statements, information and documents submitted by the applicant in response to the Eol. Any such verification or lack of such verification by BEML Ltd., shall not relieve the applicant of his obligations or liabilities hereunder nor will it affect any rights of BEML Ltd.,

SECTION-2**Schedule of Eol process & contact details****A. Schedule of Eol process**

The schedule of activities during the Eol Process shall be as follows -

Sl.No.	Description	Date
01	Issue of Eol Document	18.05.2024
02	Last date & Time of Submission of Eol response	03.06.2024, Time:15:00 Hrs

B. Contact Details related to Eol

<p>AGM – Materials, ASMD Aerospace Manufacturing Division BEML Limited, Belavadi Post, Mysuru- 570018 Karnataka, India. Tel: Email : vishwanatha.k@bemlltd.in</p>

C. Interested firm (s) meeting essential eligibility criteria and important terms & conditions of Eol should submit their response in Company Letter Head indicating line – wise compliance to technical specification and operational requirements of Annexure – I, and Annexure -II, III and Annexure IV along with requisite details.

D. The Eol response in hard copy should reach to above address on or **before 15:00 hours of 03.06.2024**. Soft copy of the response may be sent to the email id: vishwanatha.k@bemlltd.in and aerospace@bemlltd.in

E. Technical queries if any, may be forwarded to aerospace@bemlltd.in with Cc to vishwanatha.k@bemlltd.in

SECTION-3

Expression of Interest (Eoi) Identifying Eligible & Technically Competent Firms for Collaboration as Consortium Partner for Design, Development, Co-Production, Installation & Maintenance of Multi Layered Integrated Perimeter Security System (IPSS)

1. Introduction:

BEML Ltd. a 'schedule 'A' Company under Ministry of Defence, Govt. of India, plays a pivotal role and serves India's core sectors like Defence, Rail, Power, Mining and Infrastructure. Details of BEML Ltd are available at www.bemlindia.in

2. Objective of EOI

2.1. In order to meet customer requirements, BEML Limited intends to identify the technically competent firm(s) to collaborate and partner with as consortium partner to Design, Co-develop, Supply, Install, Integrate and Commission (SITIC) all the equipment/ sub- systems of IPSS to provide a composite surveillance picture embedded with video analytics to generate decision making solutions for its potential customer.

2.2. The broad Technical specifications & Operational requirements of IPSS are mentioned in **Annexure I**.

2.3. Interested Firm are required to furnish details as per Proforma at **Annexure II and undertaking at Annexures III & IV**

2.4. Apart from above, Interested Firm needs to submit their area of expertise in Development, Installation, Integration & Maintenance of various layers of IPSS along with plan of action to undertake work involved.

3. Scope of Work

3.1. Shortlisted firm(s) shall enter into an irrevocable consortium, NDA & MOU (till completion of project undertaken) with BEML Ltd. as lead partner and its other partners on mutually agreed equity and terms & conditions.

3.2. Shortlisted firm(s) shall extend techno-commercial and other support to BEML Ltd. for submission of its response as lead partner to RFI, RFQ/RFP on IPSS.

- 3.3. Design & Development, Manufacturing & Supply, Installation & Integration of equipment's/sub systems/ software's solutions for comprehensive Integrated Perimeter Security System (IPSS) as per broad technical specifications & User Operational Requirements furnished at **Appendix-I**.
- 3.4. Developed IPSS system must provide a composite surveillance picture embedded with video analysis to generate for decision making solutions for a comprehensive perimeter security & intrusion detection with a Command & Control Station located suitably within the perimeter. It must be capable of providing perimeter surveillance in all weather and ambient light conditions throughout the year in day and night conditions. IPSS shall consist of five layers of sensors for intrusion detection as given below
- a) Layer-1: Electrical Smart Power Fence
 - b) Layer-2: CCTV (Visible/Near-IR) cameras with IR illuminators and inbuilt video analytics and automatic intrusion detection capabilities
 - c) Layer-3: Radars
 - d) Layer-4: Underground Vibration Detection System (UVDS) connected with dedicated Optical Fibre Cable (OFC)
 - e) Layer-5: Dual PTZ (Thermal & visible Cameras)
 - f) Mini unmanned aerial vehicle which can be controlled centrally for launch & recovery during the threat/intrusion to provide for aerial surveillance within the perimeter
- 3.5. Prototype systems / solutions to be developed by consortium partners on No-Cost No- Commitment basis. The investment by each partners shall be equivalent to the technology / layers of IPSS being offered.
- 3.6. Consortium shall participate in Field Evaluation/ User Trials conducted by User at a designated location and for designated length at No Cost No Commitment Basis.
- 3.7. Upon Successful qualification in field Trails and receipt of Contract from Customer/End User, Consortium shall Jointly Supply, Install, Integrate, and Commission Comprehensive IPSS at 30 different locations/ bases within India

having approximately 310 km of perimeter length with an average of 12 km per base.

3.8. Consortium shall provide comprehensive products and maintenance support in terms of warranty, AMC, LSCP and obsolescence management including spares support as per mutually agreed terms & Conditions for the time period as per the contract.

4. Time Lines:

4.1 It is envisaged that NC-NC Trails shall be conducted within 6 months of submission of RFP/RFQ.

4.2 Project Deliveries shall be accomplished within 36 months from award of contract by the end User.

5. Essential Eligibility Criteria

5.1 The applicant firm should be an Indian company or holding company as defined at paragraph 20 of chapter I of DAP 2020. It should have a registered office in India. Dealers / distributors / agents / representatives need not respond.

5.2 The applicant firm should be OEM/ System Integrator, Its Subsidiary, an associate Company (As per Company Act 2013) providing comprehensive systems/ Solutions in 2 layers or more of IPSS as stated in para 3.4.

5.3 The applicant firm should have minimum 3 years of experience in Development, Supply & Installation, Integration, and maintenance of various layers (Min. 2 Layers) of IPSS System.

5.4 The Applicant Firm should have accomplished the IPSS/Similar projects worth 50 Crores (Cumulative) in last 5 years.

5.5 The applicant firm should have Gartner Quadrant/ISO9001/ CMMi3/AS9100D/ISO 27001 certifications. For Information Security and large value projects preferably CMMi5 may be specified.

5.6 The Applicant firm has to confirm that it is not black listed by Govt/PSU/MoD.

5.7 The Applicant firm has to confirm their eligibility as per Govt. guidelines viz. Any bidder from a country which shares a land border with India will be eligible

to Bid in any Procurement whether of Goods or Services (Including Consulting Services and non-consultancy services) or Works (Including Turnkey projects) only if the bidder is registered with competent Authority as per Ministry of Finance notification: F. No.6/18/2019-PPD dated 23.07.2020.

- 5.8 The Applicant firm shall have positive Net worth (Assets-Liabilities) for FY ending on 31.3.2024 along with average annual turnover of at least 10 Crore (INR) in last 5 three Financial Years (Audited Financial Statements to be furnished).
- 5.9 Micro, Small & Medium Enterprises (MSMEs) are exempted as per Ministry of Finance vide their OM No.F.20/2/2014-PPD(Pt.) dated 25 July 2016
- 5.10 The Applicant Firm should not be under insolvency resolution as per IBC.
- 5.11 The Applicant Firm should not be restricted under GFR Rule 144(xi) amended.
- 5.12 The Applicant Firm should be willing to absorb the transfer of technology and manufacture the required components/ sub-assemblies in India, if the accomplishment of the contract with customer warrants.

6. Important Terms & Conditions:

- 6.1. Applicant Firm (s) must accept the general conditions of contract given in the Standard Contract Document at Chapter-VI of DAP 2020, MoD, Govt. of India, as the potential contract will be governed by the DAP-2020 & specific clauses of BEML MoU, extract of which is placed as Annexure-V.
- 6.2. Applicant Firm (s) must be willing to collaborate with BEML Ltd. & other partners in irrevocable consortium and BEML Ltd. as a lead Partner on the mutually agreed terms to accomplish the IPSS contract for potential customer
- 6.3. Applicant Firm(s) shall not collaborate & participate with another firm/Consortium in IPSS RFQ/RFP
- 6.4. Intellectual Property Right (IPR) if any involved shall be owned on mutually agreed T&C jointly by BEML & Selected firm(s).
- 6.5. Selected firm(s) shall have to disclose any information about source of supply, malicious certificate as required by the potential customer in the gambit of DAP-2020.

- 6.6. The applicant firm shall agree to execute the IPSS Project & Its Deliverables with BEML Limited as per mutually agreed Terms & Conditions.
- 6.7. The firm shall accept co-branding of the product.
- 6.8. The firm shall be ready to share complete technical details including software with exe files, hardware, and engineering details to BEML Ltd for ensuring seamless support to customers. Further firm also shall provide continuous support to BEML Ltd and its customers for the period of minimum 10 years

7. Selection Criteria

Applicant Firms will be shortlisted based on sequential criteria as below

- 7.1. First preference will be given to the firm(s) providing Comprehensive Products & Solutions in all 5 layers of IPSS as per broad Technical Specification mentioned at Annexure-I
- 7.2. Second Preference will be given to the firm(s) providing Comprehensive Products & Solutions for maximum layers of IPSS
- 7.3. In case of more than one firm having same Products/ solutions for layers of IPSS, preference will be given to,
- 7.3.1. The firm who have executed maximum number IPSS or similar project in last 5 years
- AND
- 7.3.2. The firm who has executed maximum Installation & commissioning of IPSS/ Similar Project to Indian Defence Services
- AND
- 7.3.3. The firm positive net worth with strong average annual turnover for last 3 FY
- 7.4. If firm(s) are offering different layers of solutions within para 3.4 (a) to (f), Based on overall project scope, BEML reserve the rights to shortlist more than one firm for the project following preference criteria indicated at sub para 7.3.1 to 7.3.3.

8. Quality Requirements.

Certificates from NABL/Government accredited laboratories/ Internationally recognized laboratories to be provided for all raw materials and other components/items used by Selected firm. In case the same is not possible then a self-certification from the firm shall be issued and provision for the BEML / Customer representative to witness the subject tests shall be incorporated.

Annexure-I

Technical Specifications of Integrated Perimeter Security System and Operational Requirements

1. The IPSS system must be capable of providing perimeter surveillance in all weather and ambient light conditions throughout the year in day and night conditions.
2. The IPSS shall consist of five layers of sensors for intrusion detection as given below:-

- (a) **Layer-1**. Electrical Smart Power Fence (ESPF).
- (b) **Layer-2**. CCTV (Visible/ Near-IR) cameras with IR illuminators and inbuilt video analytics and automatic intrusion detection capabilities.
- (c) **Layer-3**. Radars.
- (d) **Layer-4**. Underground Vibration Detection System (UVDS) connected with dedicated Optical Fibre Cable (OFC).
- (e) **Layer-5**. Dual PTZ (Thermal & visible Cameras) Note: Sensors may be either in mounted in same or different boxes on a platform.
- (f) Mini unmanned aerial vehicles which can be controlled centrally for launch & recovery during the threat/intrusion to provide for aerial surveillance within the perimeter.

Each layer of sensor mentioned from (a) to (e) above has to provide 'Gap Free coverage' throughout the perimeter.

3. The above-mentioned layers of sensors are to be integrated by AI enabled software & automation network. The main components of the network are given below:-

- (a) OFC based network with switches and accessories.
- (b) AI enabled Software required for automatic detection and monitoring.
- (c) Power Supply for each sensor and its associated equipment.

- (d) Ground Defence Control Centre (GDCC) for each base for monitoring and control of the entire network and all sensors.
4. Water bodies such as drainages, canals, culverts etc. passing through the perimeter shall be protected using Metallic grills with OFC based electro-optical sensors.
5. The above-mentioned system shall be supplemented with following equipment:
- (a) Main and stand-by silent DG sets (along with dedicated 3 phase power line laid exclusively for IPSS load) to cater for standby power supply at each base. Total No. of DG sets are to be calculated by the seller to provide standby power supply @ 1.2 times of the entire load of the IPSS.
 - (b) Metallic poles of different heights for installation of cameras and radars and fibre poles where metallic poles are restricted/prohibited.
 - (c) Hydraulically operated maintenance platform for each base.
 - (d) Ruggedized PDAs for QRT at each base.
6. **Electrical Smart Power Fence (ESPF)**. ESPF along with other accessories will be installed on the perimeter wall at each of the designated air force stations of air bases. The scope of the work includes design, supply, installation, testing commissioning and maintenance of non-lethal electric smart power fence. The fence is to serve dual functions of deterring intruders by a non-lethal high voltage low current DC shock and sounding an alarm both at the place of attempted intrusion and at GDCC to facilitate suitable contingency response. Anyone who touches the power fencing when the system is armed shall be repelled by a short, sharp, painful, but regulated safe pulsed DC high voltage shock. Alarms shall be generated when someone attacks, tries to climb through or tampers with the power fencing system. The system has to be integrated with other sensors such as CCTV cameras and thermal cameras in slew to clue mode along with its integration at GDCC for control and monitoring of the system.
- (a) The ESPF is to be firmly fixed on supporting post grouted firmly on the inner side of the perimeter wall. The ESPF is to withstand strong winds (up to **120 Kmph**) and weather conditions like snow, hailstorm, and sandstorm prevailing in the area. All posts are to be grouted securely to hold the post perpendicular to the wall while

withstanding the tension. Corner posts need to be suitably strengthened to ensure stability and strength of the fence.

- (b) The system should be capable of deterring and detecting intruders and sounding an alarm in case of cutting of any wire, shorting the wires, tampering of energizer or power failure to facilitate a suitable response.
- (c) The system performance should be unaffected in day or night conditions and the system should be capable of detecting and locating multiple simultaneous intrusions.
- (d) Each Zone of the smart electric fence should not exceed 200m effective height of the fence should not be less than 1.5m.
- (e) Should function on commercial power supply/ standby power supply.
- (f) Must have central monitoring system for monitoring at centralised place.
- (g) ESPF to be integrated with CCTV of appropriate specification for identifying & tracking intruders.
- (h) Detection accuracy must of + 100m.
- (i) ESPF is to be installed on the existing perimeter.
- (j) Energizer cabinet shall comply with IP 66 standards for outdoor installation. Energizer shall conform to safety requirement as per latest international safety standards IEC /EN 60335 or equivalent. Energizer must indicate change in resistance owing to vegetation.

7. **Visible/ Near-IR Cameras.** The Visible/ Near-IR Camera based Video Surveillance System shall be installed at perimeter for effective surveillance from GDCC. A combination of vari-focal cameras of low and high focal lengths shall be installed at suitable distance along the perimeter to provide gap free coverage from ground to the top of the electric smart power fence which is at height of 4.5m. The cameras should be a combination of both long- & short-range detection (both auto slewed). The combination of the cameras shall be decided by the vendor in consultation with the AF Station authorities suitable to enable gap free coverage. The coverage area shall be illuminated with infrared illuminator for surveillance during night.

- (a) The fixed Cameras are to be installed on steel metallic/fibre poles at suitable heights not less than 7m. Cameras of fixed and variable focal lengths shall be installed such that the camera system covers the entire perimeter without any gap up to a height of at least 4.5m.
- (b) The system performance should be unaffected in day or night conditions and the system should be capable of detecting and locating multiple simultaneous intrusions.
- (c) Ruggedized day/ night HD resolutions CCTV/ FLIR/PTZ cameras for 24x7 surveillance integrated via IP multicast protocol with adequate video date storage for 30 days.
- (d) Camera should be of latest imager with progressive scan EXMOR/CCD/CMOS or better.
- (e) The cameras should have built-in motion detector.
- (f) Certification UL and CE or FCC or any other standard.
- (g) Specify detection, recognition, identification ranges by day and night, resolution, optical/ digital zoom, field of view, light requirements for night vision etc.
- (h) Details of suitable IR illuminators shall be specified. Suggested interval shall be 50/100/150m.

8. **Thermal Camera with Wide Area Surveillance, Video Analytics and Object Tracking**. Cameras with thermal radiation must be provided all along to ensure gap free coverage.

- (a) System to acquire 360 degree visualisation of surrounding & real time full panoramic images in weather conditions such as darkness, fog, smoke etc. on 24x7 basis with automatic intrusion detection and tracking.
- (b) Resolutions of images should be at least 12 megapixels or more.
- (c) Should be able to detect object such as human, vehicle, UAV, low level air targets. Limitations of detection shall be specified by the vendor.
- (d) Details of scanning speed shall be specified.
- (e) Equipment should perform in Indian tropical condition.
- (f) Cooling system if any may be specified with details of recurring servicing cost.

9. **Radar.** Radar must be installed all along the perimeter of the 30 bases to ensure gap free coverage.

- (a) Prospective vendor is to specify capabilities of equipment to detect movements, sensing distance, its accuracy etc.
- (b) Prospective vendor is to specify detection capabilities of various elements such as human, moving objects etc. Details of modalities and limitations shall be specified.
- (c) The system should be capable of detecting intrusion and sounding an alarm.
- (d) The system performance should be unaffected in day or night conditions and the system should be capable of detecting and locating multiple simultaneous intrusions.
- (e) Radar is to be firmly fixed on pole along the perimeter wall and radar is to withstand strong winds (**up to 120 Kmph**).

10. **Underground Vibration Detection System.** The UVDS shall be capable of detecting vibration generated by human intruders while walking, crawling and tunnelling across the perimeter. The vibration sensors are to be buried underground and have to be integrated with IPSS through OFC. The system should be able to distinguish disturbances from background vibrations.

11. **Drainage Intrusion Detection System.** Drainage intrusion detection system shall be capable of detecting attempts of intrusion through drains offering human size access.

- (a) Securing material for drains and suitable pressure sensor or any other similar equipment capable of intrusion detection through drainage system is to be specified.
- (b) System should permit periodical cleaning of drainage without hampering security.
- (c) Detailed technical specification along with working principle, maintainability, ruggedness etc. shall be specified.

- (d) The drain intrusion prevention system would include Tamper proof Corrosion resistant of IS 2062 or higher MS Grill at both ends of the drain.
- (e) The sensors should be programmed to automatically slew to cue the nearest PTZ dual camera on intrusion detection and notify the GDCC of the exact location of intrusion.
- (f) The arrangement should be so designed as to prevent access, cutting and bending of the grills.
- (g) Grills are to be constructed of galvanized steel rods or pipes securely welded into galvanized angle iron frame.
- (h) The grills should be so spaced as to not obstruct small effluents. The system should be designed to ensure consistent water flow and to overcome silt build up which could block the grid.

12. **Network System**. All the sensors mentioned above are to be integrated through an OFC network.

- (a) An optical fibre cable shall be laid to cater for the communication with control room, data link from equipment installed remotely in the field. OFC network would act as nerve for integration of all the equipment proposed herein.
- (b) Vendor to specify/ suggest suitable type(s) of OFC cable required for integration and establishment of data link.
- (c) Detailed technical specifications of OFC may be provided.
- (d) ROM cost of OFC cable and underground laying shall be specified by the vendor.

13. **Personal Digital Assistants (PDAs)**. Four PDAs per base are to be provided along with necessary networking and other wireless components. These are required to provide situational awareness and geographical data to the QRT personnel and the inputs will be relayed from the GDCC. The PDA should have required applications to view geographical data, alarms dispatched from the security control centre, video from the UAV.

- (a) Suitable PDAs shall be specified by the perspective vendor. It should be rugged, light weight, easy to use pre-loaded with latest OS and applications.

- (b) Should not be prone to jamming, hacking. It should be capable of integrating with command-and-control centre.
- (c) **Applications**. The PDA must be installed with the applications for following functionalities: -
 - (i) **Geographic Map Display**. The PDA must have an application to view vector and Raster GIS maps served by a central server on WMS format. The app must have functionality to display offline maps in Geo Tiff/ SHP and other popular formats.
 - (ii) **Video Viewer**. The PDA must be installed with an application to display UAV video streamed on RTMP/ RTSP format.
 - (iii) **Alert Viewer**. The PDA must have an application to display text alerts dispatched from the security control centre.
- (d) **Data Connectivity with the PDA**. Following security measures are to be implemented:-
 - (i) PDAs shall be integrated with the network for UAV/Camera video through the AFCEL WCDMA network. **No separate/dedicated wireless network is to be provisioned for integration of the PDAs.**
 - (ii) The PDAs must be provided with the required android apps to view the GIS data, UAV/Camera video and alert messages. The app must be developed to meet the user interface and integration requirement of the USER.
 - (iii) All the PDAs must be configured for the authentication and authorized on services to control the access to the data.
 - (iv) The SIM shall be provided by the USER for the integration of the PDAs. Data related configurations will be undertaken by the USER. Vendor is to provide PDA and required application Software.

14. **Power Supply including Standby Power Supply**. All the sensors and associated equipment shall be powered using a dedicated 3-phase power line laid exclusively for the IPSS by the vendor. The power line shall be connected to the MES/ commercial power supply provided by the USER using appropriate number of isolation transformers provided by the vendor. The vendor shall provide earthing protection as

per IS 3043/1987 (latest revised edition) for all the equipment connected to the power line. The stand-by power supply system shall consist of following components: -

- (a) **DG Sets.** The vendor shall supply, and commission requisite number of DG sets for each Air Force base to provide electric supply in case of the power failure. Main and Stand by Silent DG sets (along with dedicated 3 phase power line laid exclusively for IPSS load) to cater for standby power supply at each base. Total No. of DG sets are to be calculated by the seller to provide standby power supply @ 1.2 times of the entire load of the IPSS. The DG set should automatically start and supply the required power for the functioning of IPSS.
- (b) **UPS with Batteries.** The vendor shall supply, and integrate UPS along with IPSS to cater for the power failures caused due to the interrupted commercial supply or sabotage of dedicated power cables of IPSS. The UPS should be able to take the load of the entire IPSS for at least 30 minutes, unless specified, in case of the power failure. The UPS and batteries are to be placed at appropriate locations of IPSS such that any open circuit on the dedicated power line of the IPSS should not cause interruption of power supply to any of the IPSS components. In case of UPS cut-in an alert should be generated at GDCC indicating the location.

15. **Provision of Bulk SMS Service.**

- (a) A suitable facility for sending bulk SMS to a select group shall be suggested by the prospective vendor.
- (b) Detailed system requirement along with technical specifications shall be specified.

16. **Establishment of Communication Network to Select Group.**

- (a) Suitable communication system shall be suggested by the prospective vendor for communication between control room and various security post situated along the perimeter.
- (b) Communication facility shall form part of command and control centre and integrated wherever possible with PDAs, bulk SMS facility.

17. **Hydraulically Operated Maintenance Platform.** The vendor shall provide two vehicle mounted hydraulically operated maintenance platforms at each of the bases.
- (a) Suitable hydraulically operated platform shall be suggested by the prospective vendor. Suggested height of the platform is 30-35m or able to reach the sensors for maintenance/ repair/replacing etc.
 - (b) Vendor to specify ROM cost, maintainability, long term product support etc in unambiguous terms.
18. **Communication and Jamming Systems.**
- (a) Secure communication system of TETRA/ P25 standards to provide uninterrupted communications for security staff with range of 20km or more.
 - (b) Cell Phone/ mobile directional RF Jammer and UAV Jammers.
19. **Un-attended Ground Sensors.**
- (a) Passive covert ground sensor surveillance system (wireless) that provides continuous monitoring of remote areas of assets by giving alarms to command and control centre.
 - (b) Should be easy to deploy within few minutes.
 - (c) Low power mesh network communication.
 - (d) Power source and endurance.
 - (e) Should be able to integrate with CCTV.
 - (f) Prospective vendor is to specify capabilities of equipment to detect tunnelling, specify sensing distance, its accuracy, depth etc.
20. **Security Control Software.** Certified and proven control AI enabled software which will carry out automated real time processing and correlation of security sensors data with minimum false alarm rate. The software would be required to provide the following capabilities:-
- (a) Integrate all sensors inputs, including existing legacy sensors/ equipment and provide centralised monitoring.
 - (b) Integrated display walls to depict real time situational pictures, sensors status, sensor feedback and perimeter overview.

- (c) Automated intruder evaluations, detection, tracking and alarm with capability to filter out false/ non relevant alarms.
- (d) Automated camera control to zoom into an alarm event to capture and track intruder activity.
- (e) Event logging, documentation, and storage of all sensors data to permit construction of chain of events of any incident.
- (f) Automatically activate a centralised alarm system for warning station authorities by audio, visual and V/UHF means.

21. **Ground Defence Control Centre.** Two GDCC shall be established by the perspective vendor in each of the bases for the command and control of the IPSS. The building for GDCC shall be provided by the USER. Composite information of all the sensors shall be made available at the GDCC for surveillance and initiating response by the operator in case of any intrusion. Each base shall be equipped with a Containerised Data Centre for processing and storage of the IPSS data.

- (a) A Command and Control Centre shall be established wherein all the visual from CCTVs, Electrical Smart Power Fences, Thermal Cameras and audio signal from various sensors shall be monitored.
- (b) Control Centre would be having various facilities such as communication facility, data wall/ LED monitors for composite display of CCTVs, alarms, system status indicators, workstations, office furniture etc.
- (c) Perspective vendor to specify suitable system that can be provisioned for better monitoring. The facility should provide redundancy for display and storage of sensors data, centralised control with manual overrides for all related subsystem equipment, secure communication systems.
- (d) Ruggedized central warning system to simultaneously alert all deployed security staff and station authorities by audio, visual and V/UHF means on receipt of positive breach information from security control software. The system should indicate the type of breach, locations and estimated threat with preset buttons.

22. **Environmental Conditions.** All the sensors, associated outdoor equipment shall withstand the following environmental conditions and must deliver the minimum acceptable output as given in the technical specifications:-

- (a) Ambient temperature (°C) : -30 to 55°C
- (b) Relative Humidity (%) : up to 95%
- (c) Wind speed (Kmph) : up to 120 KMPH

23. **Reliability/ Specifications.** Reliability aspects/ specifications being followed for the equipment with respect to

- (a) Environmental test specifications.
- (b) Withstanding exposures to rain, adverse weather condition etc.
- (c) Reliability of electronic equipment.
- (d) Design of electronic equipment.
- (e) Control of EMI
- (f) Electromagnetic effects
- (g) Software development and documentation
- (h) System documentation

24. **Commissioning of Equipment.** Equipment mentioned above are to be designed, developed, supplied, integrated with each other and commissioned at 30 various stations of USER in collaboration as consortium as per mutually agreed terms and conditions.

Annexure-II

COMPANY INFORMATION

1. **Name, Address and Unique ID (if any) of the Company/Firm.**

(Company profile including Share Holding pattern, in brief, to be attached.

2. **Type (Tick the relevant category).**

Original Equipment Manufacturer (OEM) Yes/No

Authorized Vendor of OEM Yes/No (attach details, if yes)

Others (give specific details) _____

3. **Contact Details**

Postal Address:

City:..... State:

Country:..... Pin/Zip Code.....

Tele: Fax:.....

URL/Web site:.....

4. **Local Branch / Liaison Office / Authorised Representatives, in India (if any)**

Name & Address:

City:..... State:

Country:..... Pin/Zip Code.....

Tele: Fax:.....

5. **Financial Details.**

Audited financial statements of last 3 financial years to be attached:

6. Category of Industry (Large/Medium/Small Scale):_

Company registration certificate to be furnished.

7. **Certification by Quality Assurance Organisation.**

Name of Agency	Certification	Applicable from (date & year)	Valid till (date & year)

Relevant certificates to be furnished.

8. **Equipment/Product Profile (to be submitted for each product separately)**

(a) Name of Product: _____

(Should be given category wise for e.g. all products under night vision devices to be mentioned together).

(b) Description (attach technical literature): _____

(c) Whether OEM or Integrator: _____

(d) Name and address of Foreign collaborator (if any): _____

(e) Industrial License Number: _____

(f) Indigenous component of the product (in percentage): _____

(i) Overall IC (in %): -----

(ii) IC for material /components /software manufactured in in India (in %): ----- & similarly the auditor's certificate.

(g) Status (in service /Design development stage): _____

(h) Production capacity per annum: _____

(i) Countries/agencies where equipment supplied earlier (give details of quantity supplied): _____

(j) Estimated price of the equipment _____

(k) Indigenously produced subsystems, line repair Units, software and critical spares of the product: -----

(l) Devices/line repair Units for which input/output protocols are indigenously available for enabling replacement by indigenous equivalents or interfacing equipment of own choice :-----

(m) Brief on Capability for carrying out comprehensive maintenance ,repair and overhaul ,calibration and obsolesce management of equipment's

/platform/system along with associated jigs ,fixtures and test setups during the designated service life of equipment within India, may be furnished:-

9. Any other relevant information. ____

10. **Undertaking.**

It is certified that the Company/ SME Unit has adequate capability in India for production/ manufacturing/ system integration for the product(s) being procured or for similar product as well as the capability for maintenance and life cycle support for such product(s).

11. **Declaration.** It is certified that the above information is true and any changes will be intimated at the earliest.

(a) I/We_____hereby declare that the information given above is true, correct and complete in every respect to the best of my/our knowledge and belief and any changes will be intimated within one month of occurrence.

(b) I am/ We are authorized to sign this information.

(Authorized Signatory)

ANNEXURE-III

UNDERTAKING

This is to certify that _____ (Name of the Firm) has not been banned / black listed / debarred from Trade by any PSU/Government of India / Autonomous Institution/any State Government in India / Central or State Government undertaking for corrupt or fraudulent practices or non-delivery, non-performance

I / we hereby certify that all the information given above is factual.

Signature with date of Authorized signatory

Name: _____

Designation: _____

Firm's Seal: _____

ANNEXURE-IV

UNDERTAKING

This is to certify that _____ (Name of the Firm) has _____ number of arbitration cases pending and details regarding the same is furnished below.

- 1.
- 2.
- 3.

I / we hereby certify that all the information given above is factual.

Signature with date of Authorized signatory

Name: _____

Designation: _____

Firm's Seal: _____

ANNEXURE-V

BEML MoU clause:

ARTICLE 1: RELATIONSHIP

Nothing herein contained in this MoU shall be construed as establishing or creating any agency, partnership or Joint venture or any other form of joint enterprise between the Parties or so as to constitute either Party as the agent of the other and both the Parties carry their own responsibilities and liabilities without any recourse to other Party.

ARTICLE 2: EXCLUSIVITY

Exclusivity shall be mutually discussed and dealt in the Definitive Agreement to be entered into between the parties.

ARTICLE 3: REPRESENTATIONS AND WARRANTIES

Each party represents and warrants to the other that it has full power and authority to enter into and perform its obligations under this MoU.

Each party represents and warrants to the other that it has full compliance with applicable laws/rules.

ARTICLE 4: CONFIDENTIAL INFORMATION

The parties have entered into a Non-Disclosure Agreement (NDA) dated _____ and the exchange of Confidential Information shall be dealt by the said NDA and the same is deemed to have been incorporated herein.

ARTICLE 5: TERM and TERMINATION

This MoU shall be valid for a period of five (05) years from the effective date and may be extended for a further period on mutual agreement of the Parties.

This MoU shall, unless otherwise extended by mutual agreement of the Parties, terminate upon happening of any of the following events:

- (a) Termination by mutual consent;
- (b) on execution of the definitive agreement between the parties;

- (c) by giving written notice of thirty (30) days by either party to the other party in the event of the liquidation, bankruptcy, reorganization, dissolution or insolvency of the other Party resulting in that Party's inability to perform the obligations under this MoU;
- (d) by giving ninety (90) days written notice to the other with or without attributing reasons.
- (e) if a Party is blacklisted by any Govt., Statutory Authorities, which make the performance of this MoU by that party impossible. In such case, the party shall give appropriate notice to the other informing the incidence of blacklisting and also the impossibility in performing the obligations under this MoU.

Notwithstanding the above, termination shall not prejudice any rights and obligations of the parties that accrued prior to the effective date of termination.

ARTICLE 6: GOVERNING LAW & JURISDICTION

This MoU shall be governed by the laws of Republic of India. The courts at Bengaluru, India shall have exclusive jurisdiction to deal with any matter arising out of or relating to/in connection with this MoU.

ARTICLE 7: DISPUTE SETTLEMENT

Disputes if any, arising between the Parties, in connection with this MoU or any other matters connected therewith, will be mutually discussed and amicably settled between the parties by conciliation/negotiation. The disputes which are not settled as above, shall be settled by arbitration in accordance with the rules of Arbitration of the India International Arbitration Centre (IIAC), New Delhi, and the award made in pursuance thereof shall be binding on the Parties. The Arbitration shall consist of a Sole Arbitrator to be appointed mutually by the Parties. The arbitration proceedings shall take place in Bangalore or New Delhi, in case Bangalore venue is not available and be conducted in the English Language. The Arbitration proceedings will be administered by the India International Arbitration Centre (Conduct of Arbitration) Regulations, 2023..

ARTICLE 8: NOTICE AND CONTACT PERSON

Any notice or communications between the Parties hereto shall be made in writing in the English language and sent by registered mail or e-mail or fax immediately confirmed in writing by registered mail in the last two cases and it will be considered as valid from the date of its receipt by the receiving

Party. Any notice or communications addressed to the Parties in connection with this MOU shall be addressed to the following:

BEML Limited	Firm
BEML Soudha, 23/1,4 th Main SR Nagar, Bangalore – 560027	Address:

Either Party shall be entitled to replace their authorized person or the address for communication at any time by duly notifying the other Party in writing. The change becomes effective at the moment when the other Party gets to know about it.

ARTICLE 9: ASSIGNMENT

Neither Party shall under any circumstances delegate, assign or transfer to any third party the duties and obligations contracted hereunder, without the prior written consent of the other Party. It is expressly understood and agreed that the parties shall remain solely responsible for all obligations assumed by it under this MOU, without regard to any such delegation, assignment or transfer.

ARTICLE 10: INDEMNITY

10.1 Either party shall keep the other party(s), its officers, directors and employees indemnified and harmless from and against any and all costs, liabilities, losses and expenses (including and not limited to, reasonable fees of attorneys) arising out of any claim, suit, action or proceeding arising out of any act(s) and omission of such party.

10.2 Second party will defend, indemnify and hold BEML, and its officers, directors, and employees harmless against any and all claims, losses, costs, expenses, liabilities, and damages (including without limitation reasonable attorney's fees) suffered as a result of any claim, demand, action or suit made or raised against BEML or its officers, directors, and employees by reason of claim of infringement of any patent, trademark, copyright or any other intellectual property right of any third party in relation to the product developed by the second party in connection with this MoU.

ARTICLE 11: AMENDMENTS

No modification to, amendment of, or waiver of any provision of this MoU will be binding, unless the same is made in writing and signed by the parties or by their expressly authorized representatives.

ARTICLE 12: APPROVALS

Any statutory requirement and/or compliance under the respective laws in force for the purpose of this MoU shall be the responsibility of respective parties. Parties shall obtain all approvals, licences, permissions, consents, etc. as may be required for the performance of obligations under this MoU.

ARTICLE 13: NON-SOLICITATION

No Party shall, either directly or indirectly, on its own behalf or on the behalf of others, solicit or hire for work any person(s) employed by the other Party, whether or not such employment is pursuant to a written contract or is at will, without the express written permission of such other Party, or until such employee has ceased his/her employment with such other Party for at least two (2) years. This clause shall be effective for a term of three (3) years from the date of termination of this MoU

ARTICLE 14: SEVERABILITY AND WAIVER

If any provision of this MoU is held to be invalid or unenforceable for any reason, the remaining provisions shall continue in full force without being impaired or invalidated in any way. The parties shall replace any invalid provision with a valid provision, which must closely approximate the intent and effect of the invalid provision. The waiver by the Party of a breach of any provision of this MoU shall not operate or be interpreted as a waiver of any other right or obligations under the provision of this MoU.

ARTICLE 15: MISCELLANEOUS

Each Party will bear its own costs and their respective expenses and shall not cast any commitment or any financial obligation on the other party in connection with the performance and execution of this MoU and its implementation unless otherwise agreed to by prior mutual agreement between the parties.

Notwithstanding anything to the contrary provided in this MoU, neither party shall be liable to the other party for any special, speculative, punitive, indirect, incidental, consequential loss and/ or damages of any kind (in contract or in tort), but not limited to loss of profits, loss of anticipated profit, loss of revenue, loss of income, loss of data, loss of business, loss of reputation as well as loss of financing cost or increased cost of operations or damages incurred.

This MoU contains the entire understanding of the Parties hereto with respect to the subject matter hereof and supersedes all prior agreements, understandings, oral and written, and commitments relating to the performance of the work. Neither party has relied upon any representation, express or implied, not contained in this MoU.

This MoU may be executed in one or more counterparts each of which when executed and delivered shall constitute one original but all of which shall together constitute one and the same instrument.

Parties declare and agree that in connection with activities under this MoU they have not performed or will not perform any act which would constitute a violation of any applicable anti-corruption laws and/or regulation or which would cause either party hereto to be in violation of the relevant anti-corruption laws.

Each party shall use its best endeavour to ensure that all acts, deeds and things as are necessary for due fulfilment of any obligation mentioned hereinabove are fulfilled with the agreed time frame.