

BAPL/AV-M/EOI/01

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Expression of Interest (EOI)

PNEUMATIC ACTUATION SYSTEM AND EMERGENCY ACTUATION SYSTEM

Hyderabad
November 25, 2025



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1 Introduction

BrahMos Aerospace Private Limited, a joint venture between India's Defence Research and Development Organization (DRDO) and Russia's NPO Mashinostroyeniya, is a leading aerospace and defense corporation specialized in Design, Development and Production of supersonic cruise missile systems. BrahMos missile, a versatile weapon deployable from multiple platforms, the company plays a critical role in enhancing India's defense capabilities and is actively pursuing advancements in missile technologies, solidifying its position as a key player in the global defense sector.

BAPL invites Expressions of Interest (EOI) from qualified manufacturers for development and supply of Pneumatic Actuation System (PAS) and Emergency Actuation System (EAS) for integration into BAPL's critical airborne defense systems. Responses should demonstrate adherence to relevant Aerospace standards, robust quality control procedures, and a proven track record in delivering reliable solutions for demanding defense applications.

Intending Manufacturing Industries[s] are advised to read the EOI document, Terms and Conditions and other details carefully relating to the work contemplated in the development and supply of Pneumatic Actuation System (PAS) and Emergency Actuation System (EAS).

2 Objective

The EOI aims to develop new vendors qualifying to the technical requirements of PAS and EAS under consideration. The information collected will be used to identify suitable partners for subsequent phases of vendor development activity.

3 Description

PAS is used for release of weapon system from aircraft on command. PAS consists of solenoid valves (normally closed and normally open), nitrogen bottle, pressure switch, pressure gauges, safety relief valve, inline filter, discharge valve, actuator assembly, metallic pipeline, check valve. System including the valves shall be qualified for -54°C to +85°C for leak proofness (bubble tight) and shall operate between -40°C to +71°C. PAS shall operate between 75 bar to 150 bar. RCMA (CEMILAC) & MSQAA will be involved during development stage to ensure airworthiness of item.

Raw material for manufacturing all components should confirm to AMS grade. Checks tests of the material to be carried out by vendor. Each component and system shall be subjected to qualification testing as per the following test-

Component level tests

- Random Vibration tests
- Low & high temperature tests
- Cyclic tests



- Acceleration test
- Burst pressure tests
- Min voltage
- Leak tests
- Proof pressure tests
- Functional test

System level tests

- Random Vibration tests (with pressure)
- Low & high temperature tests
- Cyclic tests
- Acceleration test
- Burst pressure tests
- Min voltage
- Leak tests
- Proof pressure tests
- Functional test
- Bump test
- EMI/EMC test
- Thermal shock test
- Sand and dust
- Tropical exposure test
- Shock test

4 Eligibility criteria

Interested Manufacturing Industries must meet the following minimum criterion in order to apply for EOI:

- i. The Manufacturing Industries must be an Indian Registered Partnership / LLP / Company with a majority stake of the company held by a Resident and Citizen of India.
- ii. The average annual turnover of the interested partner during the last three years shall be at least INR 25 Cr. Audited Annual Financial Statements in support of the same shall be furnished. The long-term credit rating by ICRA/CRISIL or equivalent as on date of submission of EOI shall be "A" or above.
- iii. QMS Certifications AS9100D or equivalent is mandatory, and the valid certification shall be submitted along with EOI.
- iv. Experienced technical manpower availability for assembly and production of pneumatic valves for aerospace.
- v. Experience on working with inspection & certification agencies viz., MSQAA, R&QA, RCMA is mandatory.
- vi. Data and Cyber Security Certification is mandatory.



- vii. In-house design and manufacturing of solenoid valves (normally closed and normally open), coil winding, machining fixtures & jigs, welding fixtures, assembly fixtures, pipe bending, pneumatic pressure testing.
- viii. Prior experience of studying & conversion of design documentation into integration process sheet, heat treatment process sheet, surface treatment process sheet, welding process sheet is preferred.
- ix. Dedicated design team with capability of designing of springs, solenoid valves (NC & NO), pneumatic circuits.
- x. Previous experience of developing pneumatic system, buying AMS grade raw materials & its qualification testing.
- xi. Pneumatic charging panel is required for charging using nitrogen. All tests to be carried using nitrogen.
- xii. In-house armored room and industrial safety norms are required.
- xiii. In-house ultrasonic cleaning facility.
- xiv. Sourcing of PTFE, silicone rubber, teflon sealing.
- xv. Sourcing of custom fasteners from reputed industries.
- xvi. Experience of sourcing raw materials (steel & aluminium) with MIL test certificates.
- xvii. Sourcing of standard item like pressure switch, pressure gauge, connectors.
- xviii. Requirement of space for stores, machine shop and assembling facility.
- xix. Dedicated in-house QA department.
- xx. Stringent quality control and traceability system.
- xxi. Capability/Capacity for following **Machining Facilities**
- CNC turning and milling machines with capability of precision machining
 - CNC turn Mills
 - Vertical Turning Lathe
 - 5- Axis Milling machine
 - EDM Machine / Wire cutting facility
 - Precision Grinding
 - Drilling machines
 - Pipe bending
- xxii. Capability/Capacity for following **Welding facilities**
- Welding machines - TIG, MIG Welding (steel)
- xxiii. Capability/Capacity for following **Heat Treatment facilities**
- Hardening, Tempering, Annealing, Solutionising
 - Stress Relieving
- xxiv. Capability/Capacity for following **Surface Treatment facilities**
- Anodization
 - Chemical passivation
 - Chromium plating



- Cadmium plating as per HPS227
- Phosphating as per HPS227
- Brush & spray Painting facility

xxv. **Capability/Capacity for following Inspection and Testing facilities**

- Vibration testing machine (with pressure)
- Shock testing machine
- Bump test facility
- Thermal shock test facility
- Tropical exposure test facility
- Sand and dust facility
- Salt spray test facility
- EMI/EMC test facility
- Low and high temperature test facility
- Armoured Leak test facility
- Custom cyclic test facility
- Ultrasonic testing facility with ASNT Level-II inspectors
- Ultrasonic cleaning facility for cleaning facilities for pipelines
- High pressure hydraulic (Oil & Water) and pneumatic facility
- In-house welding facility
- Armoured Chamber for conducting high pressure strength & leak check
- NDT facilities-radiography, MPI, DP, UT.
- Profile Projector
- CMM & metrology for 100% inspection of components including thread gauges

- xxvi. Minimum experience of 5 years in manufacturing and supply of pneumatic systems for Defence/Aerospace industry. Shall be supported with contract references.
- xxvii. Capability to carry out comprehensive testing (In-house/ NABL labs) to conform to mandatory acceptance tests as per technical specifications.
- xxviii. The manufacturer shall ensure minimum service life of 15 years for the sections/assemblies manufactured for BAPL and extendable to 20 years.
- xxix. Failure rate of last three financial years shall be declared; zero rejection is preferred.
- xxx. Availability of in-house research & development facility and reverse engineering capability is required. Proof of earlier R&D to be submitted.
- xxxi. All the sub-assemblies are required to undergo stringent acceptance testing which includes various environmental tests such as shock, vibration, bump, linear acceleration etc. prior to its mounting on the final assembly.
- xxxii. The inspection of the components/assemblies is to be carried out by Missile Systems Quality Assurance Agency.
- xxxiii. Indigenous content shall be >70%.



5 EOI Submission

Interested Manufacturing Industries are requested to submit their response as per Format enclosed in **Annexure-A as per Demand Notification.**

6 Evaluation Criteria

The evaluation of responses will be based on the following criteria:

- Technical capabilities and experience in defence applications.
- Production capacity and lead time for high-reliability products.
- Quality management system and compliance with Defence and Aerospace Standards
- Financial stability and references in the defense sector.
- Infrastructure/Facility evaluation.
- Security Certifications and its compliance.

The shortlisted Industries will be called up for further processing of the subsystems mentioned in Demand Notification.

7 Confidentiality

All information provided in response to this EOI will be treated as confidential and may be subject to non-disclosure agreements.

8 Disclaimer

This EOI does not constitute a commitment for placement of contract/P.O and BAPL reserves the right to accept or reject any or all the responses.

9 Contact Information

For any inquiries, please contact: Refer demand notification

10 Vendor to provide compliance of EOI (33 points) with proof.



Expression of Interest

Demand Notification Ref.: _____

Demand Notification Date: _____

S.No.	Particulars	Details to be filled up by FIRM	Supporting Document
a.	Name Of the Firm & Address		Company Registration Document with State/Central Government
b.	Firm's Contact Person & Details		
c.	Category of Industry (Raw Material /Conversion/Standard Items/Ready to use Components/Other) *		
d.	Nature of the Company (Pvt. Ltd. / Ltd./PSU/DPSU etc.)		
e.	Organizational structure		Self-attested document
f.	The average annual turnover of previous three (3) financial year.		Annual Financial Statements
g.	What is the core competence of the company?		-
h.	What are principal products(s)?		-
i.	How long has company been in business as presently organized?		-
j.	List of principal Subcontractors, along with processes subcontracted		-
k.	List of principal customers to whom the vendor supplied stores in the past two (2) years.		-
l.	List of principal companies and /or Government agencies which have surveyed and approved the firm with scope of approval.		Copy of attestation document
m.	Contract /S.O. No. from Defence/Missile complex Labs along with status of order. (Completed/Ongoing/Short closed)		-
n.	Certification - Quality (ISO/AS/SAMAR)		Copy of latest certificate
o.	Employee Strength (Design, Quality, Production, Welding, Testing (Skilled / Semi- Skilled/Casual) Other)		-



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Annexure - A

S.No.	Particulars	Details to be filled up by FIRM	Supporting Document
p.	Certification of skilled manpower (if any)		Copy of latest certificate
q.	Attrition rate of employee		-
r.	Failure incidence reported by customer in last three years in PPM and percentage		-
s.	Average import percentage in products manufactured and delivered in last financial year		-
t.	Security compliance certification (If any). Shall specify the road map and certification plan if not existing.		Copy of latest certificate/ Road Map
u.	List of available equipment and machinery (e.g. CNC machines, Testing equipments and Welding equipments etc.)		
v.	Maximum Assembly size and complexity handled		
w.	Production capacity - Lead time for prototype and production runs		
x.	Inventory Management System		
y.	Controlled Storage Facility		
z.	Cybersecurity and data security practices		Compliance Certificate/Self certification

Note : The firm shall enclose supporting documents as applicable.

Declaration: The details provided above are true and it is understood that BAPL reserves the right to accept or reject the EOI filed herein.

Authorized Signature with Name & Company Stamp.

