

Expression of Interest for collaboration with BEML Limited for Co-production and Supply of Super Structure for Airfield Crash Fire Tender (ACFT) for Indian Ministry of Defence (MoD) / Ministry of Civil Aviation (MoCA)

A. Introduction:

BEML Limited is a leading multi-technology and multi-location Mini-Ratna category-I company under the Ministry of Defence offering high quality products for diverse sectors of economy such as Defence, coal, mining, steel, cement, power, irrigation, construction, road building, metro & railways and aviation. It has emerged as the forerunner of heavy engineering industry with a track record of growth and revenues for over four decades. For further details please visit our website www.bemlindia.in

- B. The Ministry of Defence (MoD) and Ministry of Civil Aviation (MoCA) India have plans to acquire ACFTs to secure its various establishments, Airports and Air Force Stations. Potential for Export market also exists. ACFT is a specialized fire engine designed for use in aircraft rescue and firefighting at aerodromes, airports, and military air bases. Airport crash tenders are extremely powerful machines. They offer relatively good acceleration (for such large, heavy vehicles), are able to negotiate rough terrain outside the airport area, carry large capacities of water and firefighting foam, are fitted with powerful high-capacity pumps and water/foam cannons, and are capable of delivering firefighting media over long distances. They can be mounted on 4x4, 6x6 or even 8x8 wheeled chassis.

C. Objectives of the Eoi:

To identify potential OEM with whom collaboration can be established for development of ACFT superstructure preferably on BEML's TATRA chassis or any other chassis provided by BEML, Participation in Users trials (on NC-NC basis if demanded) and on qualifying Techno-commercially, supply of full quantity of ACFT to Indian MoD / MoCA or Export market.

D. Scope of the collaboration

Collaborate with BEML to develop, Testing and supply of ACFT.

- a) OEM shall submit the configuration details of ACFT super structure as per the Technical specification in [Annexure-1](#).
- b) BEML and the OEM will jointly respond to Request for Proposal (RFP) / Tenders.
- c) If the acquisition by MoD / MoCA is classified under “Buy Indian IDDM of DPP 2016, then The firm has to agree for developing/supply of 60% Indigenous Content on cost basis of the total value and 40% can be the import scope. Vehicle assembly will be carried at out BEML premises. OEM has to concur for License Agreement / ToT if necessary to meet 60% Indigenous Content.
- d) If User demands trial evaluation of a vehicle on No Cost - No Commitment (NC-NC) condition, OEM should be willing to provide its portion to BEML on same condition for build-up of the vehicle and participate in trials.
- e) On award of contract, BEML and OEM will meet the Contractual obligations as per mutually agreed terms & conditions.
- f) BEML & OEM will jointly provide the spares & maintenance, training and other support services for the project till the service life.

E. Eligibility Criteria for responding to this EOI

The following are the mandatory conditions to be fulfilled by the OEM for responding to the Eol.

- a) Should be a registered OEM with global reputation not placed on the restricted list for arms import by Indian MoD. Dealers/distributors/agents/representatives need not respond to this Eol.
- b) The OEM should have demonstrated / supplied ACFT equipment to its own country’s military or other reputed countries military and should have been accepted / in-service or shortlisted.
- c) Should have demonstrable experience of more than 5 years in developing/customizing ACFT for airport / naval applications.
- d) The OEM shall be willing to modify their proposed ACFT equipment to the User need and collaborate to assemble the equipment in BEML’s plant in India.

- e) The OEM shall be interested to transfer the technology to BEML to locally produce the parts/assemblies under Buy Indian (IDDM) or any other acquisition plan of DPP 2016.
- f) The OEM should be able to obtain export clearance from its government for co-producing the equipment with BEML and supply to Indian defence.
- g) The OEM shall note that Govt. of India, Ministry of Defence will be acquiring these stores only through a competitive tender process following the Defence Procurement Procedure (DPP) 2016. As per DPP 2016 one equipment has to be offered to the Ministry of Defence for trial testing on No-Cost-No-Commitment (NC-NC) basis. The firm shall be agreeable to offer one set of ACFT equipment with indigenous content along with BEML abiding this condition.
- h) BEML will have the sole right to market the product in India for MOCA / MoD and exports to friendly neighboring countries on mutual consent.
- i) The OEM shall accept co-branding of the product.

The OEM shall fill & submit the Eligibility Criteria for responding to this EOI enclosed at [Annexure-2](#) with supporting document/certificate.

F. Presentations on proposed Solution/ Methodology

The OEMs shortlisted based on the eligibility criteria may be invited / video conference to make a presentation at a date, time and location notified by BEML. The purpose of the presentation would be to allow the OEM to present its solution/ methodology, experience, capabilities, infrastructure, and other key points, if any.

G. Submission of the EOI

The EOI response on company's letter head along with above described Annexures, brochures and certificates, shall be submitted in a sealed cover **on or before 14:00 hours of 01.06.2020.**

The sealed cover should be sent to the following address ***super scribing the EOI reference and closing date*** to the following address.

General Manager –Corporate Materials

BEML Soudha, Room No. 2

23/1, 4th main, S R Nagar, Bangalore-560 027, Karnataka, India.

Tel (Off): +91-80-22963179, Email: gmcm@beml.co.in

H. Technical Clarification:

The following official may be contacted for any Technical clarification regarding submission of Eol.

Mr. Lingaraj V V

DGM (PMG)

Defence Business

Mob:91- 97413 51566

Email: defpmg@beml.co.in

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## Annexure-1

| Sl. No. | Technical parameter                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | OEM product specification |
|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
| 1       | <p><b><u>Water Tank:</u></b><br/>           (a) The water tank with horizontal / vertical baffles shall be of Heavy duty fabrication, robust, durable, leakage-free, heat- insulated, low-maintenance tank manufactured either with glass-reinforced plastic, polypropylene or any other material having similar properties, to provide optimum protection against corrosion (Bidder to specify the material) (designed to withstand required hydrostatic pressure) to carry water to cater for discharge of useable quantity from 4000 to 10000 ltrs. of water.</p> |                           |
|         | <p>(b) i) ACFT to pump out 100% on ground level.<br/>           ii) Pump out min of 75% to 85% of tank contents when ascending / descending a 30° slope and when sideways on a 20° slope</p>                                                                                                                                                                                                                                                                                                                                                                         |                           |
| 2       | <p><b><u>Foam Tank:</u></b><br/>           (a) Foam tank capacity of 500 to 1400 L<br/>           Heavy duty fabrication, robust, durable, leakage-free, heat-insulated, low-maintenance tank manufactured with material that provides optimum protection against corrosion (Bidder to submit design and specification of the foam tank). Dimensions to be selected so as to have a reduced height, thus a low centre of gravity from ground.</p>                                                                                                                    |                           |
|         | <p>(b) Filling of foam tank directly by 20 to 40 litre drums and also by external pump without interruption to fire fighting operation using foam solution.</p>                                                                                                                                                                                                                                                                                                                                                                                                      |                           |
| 3       | <p><b><u>Pump:</u></b><br/>           (a) Pump with independent automatic priming system to be mounted with corrosion resistant material / suitable alloy with SS shaft for use with brackish water and compatible with AFFF (Aqueous Film Forming Foam).</p>                                                                                                                                                                                                                                                                                                        |                           |
|         | <p>(b) Pump will be of heavy duty, engineered for operating in rough environmental conditions and have to operate correctly in water levels without cavitation. Capable of running dry for short periods of time Be designed to reach water at distances of range from 40 to 60 m horizontally, vertically, or any combination of both Operate correctly at temperatures of up to 40° to 45°C Be equipped with a floating body and a strainer</p>                                                                                                                    |                           |
|         | <p>(c) Pump to deliver not less than 4000 to 6000 litres/min of water at a pressure of 850 - 550 KPa (8.5 to 5.5 kgf/cm<sup>2</sup>) and 3000 to 5000 to litres/min of water at a pressure of 1250 - 6.5 KPa (12.5 - 6.5 kgf/cm<sup>2</sup>) when operated at a</p>                                                                                                                                                                                                                                                                                                  |                           |

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|   | suction lift of 3 to 6 m.                                                                                                                                                                                                                                                                                                                          |  |
|   | (d) Pump of closed impeller type with dynamically balanced impeller and having mechanical seal for dry running up to One minute without damage to be driven off the Power Take Off (PTO) through a drive shaft rated for transmitting a min of 135 KW at the pump operating rev/min.                                                               |  |
|   | (e) Tripping mechanism to be provided to prevent dry run of the pump more than 60 second.                                                                                                                                                                                                                                                          |  |
| 4 | <b>Priming</b><br>a) Priming of pump should be of fully automatic by a pair of positive displacement piston primers mounted either side of the bearing housing.                                                                                                                                                                                    |  |
|   | b) Primer should be capable of a suction lift of 6 to 10 mtrs in not more than 25 to 45 seconds with indicator and using 80 to 120 mm suction hose.                                                                                                                                                                                                |  |
|   | c) Automatic priming system with safety cut-off device.                                                                                                                                                                                                                                                                                            |  |
| 5 | <b>Pump Drive</b><br>Pump drive to permit operation of pump to discharge at full rated capacity and simultaneous operation of ACFT during vehicular crawl in both forward and reverse directions and not be affected by transmission ratio or clutch operation.                                                                                    |  |
| 6 | <b>Piping, Couplings And Valves</b><br>a) All piping, couplings and valves shall be made of material, conforming to relevant international standard, to prevent corrosive and galvanic action.                                                                                                                                                     |  |
|   | b) All valves shall be quarter-turn-type in manual operation and shall be easy in operation and free from leakage.                                                                                                                                                                                                                                 |  |
|   | c) All piping shall be tested for leakage at 50% above the maximum pressure developed by the pump in no flow condition.                                                                                                                                                                                                                            |  |
|   | d) Arrangement should be made to prevent overheating of pump at zero discharge.                                                                                                                                                                                                                                                                    |  |
|   | e) A drainage system with collector tubing from the low points on pump and piping shall be provided, operable with quarter turn valve.                                                                                                                                                                                                             |  |
|   | f) All plumbing shall be reasonably accessible for maintenance purposes. Drain cocks shall be provided where necessary and controls for these shall be readily accessible and so arranged as to prevent the cocks from being opened by vibration. The direction in which the valve/cock opens/closed shall clearly be marked near each valve/cock. |  |

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| 7  | <p><b><u>Foam Compound proportionator / Inductor</u></b><br/>                 The foam induction is to be automatic, with change in output required through a combination of monitor and sidelines at induction ratio</p>                                                                                                                         |  |
| 8  | <p><b><u>Foam Monitor</u></b><br/>                 (a) Mounted on cabin roof and remotely operated by one man (Driver) in an emergency. Additionally, it shall be possible to manually operate the monitor by provision of telescopic tube &amp; handle from inside cabin and also from cabin roof top.</p>                                       |  |
|    | <p>(b) Monitor (fitted with a deflector to lay a wide carpet of foam) to traverse through 270 deg in horizontal plane, elevating from horizontal to 45 deg and depressing from horizontal to not less than 15 deg (capable of direction at a minimum distance of 12m ahead of the cabin) and fully rotating in both directions.</p>               |  |
|    | <p>(c) Monitor be capable projecting the foam discharge to an effective distance range from 60 to 80 meters in still air when operated at a pump pressure range of 1250 to 1350 kPa in a straight jet pattern.</p>                                                                                                                                |  |
|    | <p>(d) i. Valve on top deck for opening and closing of water,<br/>                 ii. Throttle on top deck for adjusting water pressure,<br/>                 iii. Flow rate adjustment</p>                                                                                                                                                      |  |
| 9  | <p><b><u>Hand lines:</u></b><br/>                 (a) Four hand lines (two on either side of ACFT terminating in foam making branch pipes) fitted with spray/jet attachments, to be provided.</p>                                                                                                                                                 |  |
|    | <p>(b) Each foam making branch pipe to be capable of delivering in a range of 450 650 litres of water/foam solution with pump pressure not exceeding 850 - 650 kPa with an min throw of 25-40 m when either all four hand lines are used simultaneously (with monitor not operating) or two of them are used in combination with the monitor.</p> |  |
| 10 | <p><b><u>Suction and Delivery Connections. Piping, Couplings and Valves</u></b><br/>                 (a) Provision for suction inlet and delivery outlets of the pump shall be fitted on the pump control panels on both sides of the ACFT.</p>                                                                                                   |  |
|    | <p>(b) All piping, couplings and valves to be made of material conforming to relevant International Standard, to prevent corrosive and galvanic action.</p>                                                                                                                                                                                       |  |

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| 11 | <p><b><u>Supplementary Extinguishing Agent</u></b></p> <p>(a) Dry Chemical Powder: The DCP of 200 to 250 Kgs is to be in two pressure vessels with separate Nitrogen cylinders connected to a common manifold. One discharge outlet to be provided on the manifold for connecting the hose assembly. Provisions to be made for purging all piping and hose of dry chemical after use without discharging the dry chemical containers and for the depressurization of the dry chemical container(s) without loss of remainder dry chemical.</p> |  |
|    | <p>(b) CO2 gas extinguishing system: 45 kg (2x22.5 Kg cylinders) to be provided with cylinders connected to a common manifold. One discharge outlet shall be provided on the manifold for connecting the hose assembly. The nozzle shall be capable of discharging CO2 gas of single cylinder not less than 95% of the content in 20 to 60 seconds.</p>                                                                                                                                                                                        |  |
|    | <p>A first aid hose reel id to be provided on left side of the ACFT with minimum 50-80 mtr length, 20mm internal diameter, 7mm nozzle outlet size with 15 mtr minimum range of throw and discharge capability of approx 130 ltrs/minute water.</p>                                                                                                                                                                                                                                                                                             |  |
| 12 | <p>Testing and acceptance procedure : As per NFPA 414 - 2012 edition</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |
| 13 | <p>Rough order of magnitude cost of the proposed ACFT super-structure</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |



**Compliance for Eligibility Criteria**

| <b>Sl No</b> | <b>Eligibility Criteria</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>OEM response with supporting document / Certificates</b> |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 1            | Should be a registered OEM with global reputation not placed on the restricted list for arms import by Indian MoD. Dealers/ distributors/ agents/ representatives need not respond to this Eol.                                                                                                                                                                                                                                                                  |                                                             |
| 2            | The OEM should have demonstrated / supplied ACFT equipment to its own country's military or other reputed countries military and should have been accepted / in-service or shortlisted.                                                                                                                                                                                                                                                                          |                                                             |
| 3            | Should have demonstrable experience of more than 5 years in developing/customizing ACFT for ACFT for airport / naval applications.                                                                                                                                                                                                                                                                                                                               |                                                             |
| 4            | The OEM shall be willing to modify their proposed ACFT equipment to the User need and collaborate to assemble the equipment in BEML's plant in India.                                                                                                                                                                                                                                                                                                            |                                                             |
| 5            | The OEM shall be interested to transfer the technology to BEML to locally produce the parts/assemblies under Buy Indian (IDDM) or any other acquisition plan of DPP 2016.                                                                                                                                                                                                                                                                                        |                                                             |
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| 8            | BEML will have the sole right to market the product in India for MOCA / MoD and exports to friendly neighboring countries on mutual consent.                                                                                                                                                                                                                                                                                                                     |                                                             |
| 9            | The OEM shall accept co-branding of the product.                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                             |

**Compliance for Eligibility Criteria**

| <b>Sl No</b> | <b>Eligibility Criteria</b>                                                                                                                                                                                                                                                           | <b>OEM response with supporting document / Certificates</b> |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|
| 10           | Brief description on company profile covering below aspects:<br>a) Products profile.<br>b) Annual turnover of the company in the last 3 years.<br>c) Board of directors.<br>d) Head Quarters.<br>e) Subsidiaries / JVs in India<br>f) Contact details of the Single Point of Contact. |                                                             |