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Integrated HQ of MoD (Army)
Engineer-in-Chief's Branch
Kashmir House
DHQ PO, New Delhi-110011

71619/TUNNELING JUMBO/CE-5(A)

13 May 2022

**REQUEST FOR INFORMATION (RFI) FOR PROCUREMENT OF TUNNELING JUMBO
WITH ACCESSORIES FOR INDIAN ARMY**

1. Indian Army is planning to procure approximately **Seven Numbers of Tunneling Jumbo with Accessories**. The RFI intends to achieve aim and objectives as per Paragraphs 2 and 4 of Chapter II of DAP 2020.
2. The Request for Information (RFI) consist of two parts as indicated below:-
 - (a) **Part I**. The first Part of RFI incorporates operational and technical characteristics and features of the Tunneling Jumbo with Accessories. The 'Response by Vendors' column in the tabulated sheet to be filled in by the Vendor as to whether the specified parameter is complied with or not and with any other details, as applicable. **Amplifications or comments to fresh inputs or changes suggested, also be brought out in order to facilitate review of the operational requirements.**
 - (b) **Part II**. The second part of RFI states the conditions to be acceptable to Vendors and methodology of seeking response from Vendors. **Submission of incomplete response format will render the Vendor liable for rejection.**
 - (c) **Part III**. Guidelines for framing criteria for Vendor selection/ pre-qualification in Buy Indian (IDDM), Buy (Indian) and Buy & Make (Indian).

PART I

3. **Intended Use of Equipment (Operational Requirements)**. The Tunneling Jumbo would be employed for drilling holes in tunnels with deployment in High Altitude Areas up to 5000 M and at temperatures ranging from (-) 20⁰C up to (+) 45⁰C. The equipment shall have two drilling booms and one service platform electro/ hydraulic type **suitable for cross sections of minimum 100 m² or more**. The machine and accessories are designed for drilling holes in tunnels.
4. **Important Technical Parameters**.
 - (a) Two drilling booms and one service platform electro/ hydraulic type suitable for cross sections of minimum 100 m² or more.

- (b) An air/ water cooled turbo charged diesel/ petrol engine developing power output of 110 kW (148 HP) or more at rated rpm for Carrier.
- (c) Requirement of feed length of 5500 mm or more, Rod length of 4000 mm or more, hole depth of minimum 3900 mm or more and feed force of 21 KN or more.
- (d) The rock drill of capacity 22 kW or more shall be capable of drilling in all types of rocks and shall facilitate high speed drilling.
- (e) Suitable hydraulic/ electric driven onboard air compressor of required capacity shall be provided to meet the system's pressurized air requirements.
- (f) Computerised control system with color display and data transfer facility along with capability of Total station Navigation.

5. Vendors should confirm that the following conditions are acceptable:-

- (a) The solicitation of offers will be as per 'Single Stage - Two Bid System'. It would imply that a 'Request for Proposal (RFP)' would be issued soliciting the technical and commercial offers together, but in two separate sealed envelopes. The validity of commercial offer would be **at least 18 months** from the date of submission of offers.
- (b) The technical offers would be evaluated by a Technical Evaluation Committee (TEC) to check its compliance with RFP.
- (c) The equipment of all TEC cleared vendors would be put through a 'Field Evaluation Trial' in India on a 'No Cost No Commitment (NCNC)' basis. A staff evaluation would be carried out by Indian Army Service HQ to analyse the result of field evaluation and shortlist the equipment for introduction into service.
- (d) Amongst the vendors who have been cleared by the TEC, a Commercial Negotiation Committee (CNC) would decide the low cost bidder (L1) and conclude the approved contract.
- (e) Vendor would be bound to provide product support for time period specified in the RFP, which includes spares and maintenance/ product support package.
- (f) Vendor would be required to accept the general conditions of contract given in the Standard Contract Document at Chapter VI of DAP 2020 and subsequent amendments.
- (g) Acceptance of terms of payment as per DAP 2020 and subsequent amendments.
- (h) **Integrity Pact (if applicable)**. An integrity pact along with appropriate Bank Guarantee is a mandatory requirement as per Annexure I to Appendix O of Schedule I to Chapter II of DAP 2020.
- (j) **Performance-cum-Warranty Bond**. Performance-cum-Warranty Bond both equal to **3 %** value of the contract inclusive of taxes and duties or as amended from time to time; is required to be submitted after signing of contract.

PART II

6. Procedure for Response.

(a) Vendors must render response as sought at **Appendices A to D** to this RFI. Apart from filling details about company, details about the exact product meeting technical specifications should also be carefully filled. Additional literature on the product can also be attached with the form.

(b) Any queries on the RFI be posted on email **ce5-einc-army@nic.in** latest by **23 May 2022**.

(c) A Vendor interaction is proposed on **29 May 2022** at Engineer in Chief's Branch, Kashmir House, New Delhi to resolve the above mentioned queries.

(d) Last date of acceptance of all documents is **24 Jul 2022**. The Vendors shortlisted for issue of RFP would be intimated.

7. The Government of India (GoI) invites responses to this request from **Original Equipment Manufacturers (OEMs)/ authorised Indian Vendors**. The end user of the equipment is the Indian Army.

8. This RFI is being issued with no financial commitment and the Ministry of Defence (MoD), GoI reserves the right to change or vary any part there of at any stage. GoI also reserves the right to withdraw should it be necessary at any stage. The acquisition process would be carried out under the provisions of DAP 2020 and subsequent amendments.

9. The parameters in **Appendix C** are 'Operational Requirements (OR)' and **are amenable to changes based on capability of the Industry**.

PART III

10. **Criteria for Qualification in Buy Indian (IDDM)/ Buy (Indian)/ Buy & Make (Indian)**. Vendors are required to understand criteria for qualification in Buy (Indian (IDDM)/ Buy (Indian)/ Buy & Make (Indian) categories as given at Chapter I of DAP 2020. Criteria for 'Indian Vendor' shall be as at Annexure IV to Appendix A of Chapter II, DAP 2020. **Towards this, answers to specific questions as at Appendix D shall be filled in detail.**

Appendix A

(Refers to Paragraph 6 (a) of Combat Engineers Directorate letter No 71619/ Tunneling/ CE-5(A) dt 13 May 2022)

**REQUEST FOR INFORMATION (RFI) FOR PROCUREMENT OF TUNNELING
JUMBO EQUIPMENT WITH ACCESSORIES FOR INDIAN ARMY**

RFI for Tunneling Jumbo Equipment with Accessories.

1. The Indian Army is planning to procure Tunneling Jumbo with Accessories. With the view to identify probable Vendors who can undertake the said project, OEMs/ Authorised Vendors are requested to forward information on the product which they can offer. The parameters/ broad specifications of the equipment are mentioned in the questionnaire attached as per **Appendix C**. In addition the vendors are required to furnish details as per proforma at **Appendices B & D**.

2. Apart from the information as per the Appendices, the Vendors may also forward technical details/ product brochures/ literature etc pertaining to the item in question.

3. The required information/ details may please be forwarded at the following address by **24 Jul 2022** :-

- (a) **Combat Engineers - 5(A)
Combat Engineers Directorate
E-in-C's Branch
Room No 91, Kashmir House
Integrated HQ of MoD (Army)
Rajaji Marg, New Delhi-110011
Tele : 011-23019604
Fax : 011-23019675
E mail : ce5-einc-army@nic.in**

- (b) **Directorate General of Capability Development (CD- 6)
General Staff Branch
A Wing, Sena Bhawan
IHQ of MoD (Army)
DHQ PO, New Delhi-110011
E mail : dpack-542@gov.in**

- (c) **Directorate General of Capability Development (RFP Cell)
General Staff Branch
Room No 444, Sena Bhawan
Integrated HQ of MoD (Army)
DHQ PO, New Delhi - 110011
Fax : 011-23012794**

- (d) **Additional Director General of Army Design Bureau (T&WS) (GSQR Cell)**
General Staff Branch 'C' Wing
Room No 16, Sena Bhawan
Integrated HQ MoD (Army)
DHQ PO, New Delhi - 110011
Fax : 011-23014742

- (e) **Additional Director General Technical (Army)**
Room No 30, D-II Wing, Sena Bhawan
Ministry of Defence, New Delhi – 110011
Fax : 011-23792414

Appendix B

(Refers to Paragraph 6 (a) of Combat Engineers Directorate letter No 71619/ Tunneling/ CE-5(A) dt 13 May 2022)

PERFORMA FOR REPLY TO RFI TO BE FOLLOWED

1. **Name of the Vendor/ Company/ Firm.**

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

2. **Type (Tick the Relevant Category).**

- | | | |
|-----|---------------------------------------|------------------------------------|
| (a) | Original Equipment Manufacturer (OEM) | Yes / No |
| (b) | Authorised Vendor of foreign Firm | Yes/No
(attach details, if yes) |
| (c) | Others (give specific details) | |

3. **Contact Details.**

Postal Address

City:_____ State :_____

Pin Code:_____ Tele:_____

Fax:_____ URL/Website:_____ E-mail._____

4. **Local Branch/ Liaison Office in Delhi (if any).**

Name and Address

:_____

Pin Code :_____ Tele:_____ Fax : _____

E-mail_____

5. **Financial Details.**

- (a) Category of Industry (Large/ Medium/ Small Scale) :

- (b) Annual Turnover: _____ (in INR).

- (c) Number of Employees in Firm : _____
- (d) Details of Manufacturing Infrastructure: _____
- (e) Earlier Contracts with Indian Ministry of Defence/ Government Agencies:

Contract Number with Date	Equipment	Quantity	Cost

6. **Certification by Quality Assurance Organisation.**

Name of Agency	Certification	Applicable from (Date & Year)	Valid till (Date & Year)

7. **Details of Registration.**

Agency	Registration No	Validity (Date)	Equipment
GeM			
DGQA/DGAQA/DGNAI			
OFB			
DRDO			
Any other Government Agency			

8. **Membership of FICCI/ ASSOCHAM/ CII or other Industrial Associations.**

Name of Organisation	Membership Number

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

- (a) Name of Product : _____
(IDDM Capability be indicated against the 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): _____
- (g) Status (in service /design & development stage) : _____

(h) Production capacity per annum: _____

(j) Countries/ agencies where equipment supplied earlier (give details of quantity supplied) Also specify if the supplied equipment is the COTS variant or bring out details of modifications. _____

(k) Estimated price of the equipment _____

10. Alternatives for meeting the objectives of the equipment set forth in the RFI.

11. Any other relevant information: _____

12. **Declaration.**

(a) It is certified that the above information is true and any changes will be intimated within five (05) working days of occurrence.

(b) This information is being issued with no financial commitment and the Ministry of Defence, Government of India reserves the right to change or vary any part thereof, at any stage. The Government of India also reserves the right to withdraw it, should it be necessary at any stage. The acquisition process would be carried out under the provisions of Defence Acquisition Procedure (DAP) 2020 and subsequent amendments.

(Authorised Signatory)

Appendix C

(Refers to Paragraph 6 (a) & 9 of Combat Engineers Directorate letter No 71619/ Tunneling/ CE-5(A) dt 13 May 2022)

REQUEST FOR INFORMATION (RFI) : TUNNELING JUMBO WITH ACCESSORIES

Ser No	Specifications/ Parameters	Vendor Response
<u>OPERATIONAL PARAMETERS</u>		
1.	<p><u>General.</u> The tunneling drill jumbo with power propulsion equipment shall have two drilling booms and one service platform electro/ hydraulic type suitable for cross sections of minimum 100 m² or more. The machine and accessories are designed for drilling holes in tunnels. These booms shall provide for fast and accurate positioning between the holes. The system shall be mounted on a carrier with four wheel drive for easy maneuvering. The carrier shall be capable of driving on its own power and fitted with an air/ water cooled turbocharged diesel engine of reputed make. The carrier shall be provided with hydraulic jacks for stable set-up. Equipment operator compartment shall have sound pressure and vibration levels as per International Standards. It shall have visibility for both tramming and drilling operations.</p>	
2.	<p><u>Carrier.</u> The carrier shall be driven by an air/ water cooled turbo charged diesel/ petrol engine developing power output of 110 kW (148 HP) or more at rated rpm as per BIS/ BS/ DIN/ SAE/ equivalent specifications with direct electric starter 24/12V, alternator, lubricating oil pump, air</p>	

Ser No	Specifications/ Parameters	Vendor Response
	cleaner, cooling fan as per manufacturer design. It shall be Bharat Stage (CEV) IV/ EU STAGE IV/ EPA IV/ or improved standard. Deration is required to be factored as per altitude. It shall have four wheel drive with hydrostatic power steering system. Automatic differential lock shall be provided in case of slippage in slushy area. Pneumatic tyres shall be provided for both the front and the rear axles. The carrier shall be provided with jacks for stable set-up. It shall consist of the following sub-systems:-	
	(a) Service, emergency and parking brakes.	
	(b) Fuel tank.	
	(c) Trimming and working lights.	
	(d) Central lubrication system.	
	(e) Hand held fire extinguisher.	
	(f) Driver's seat for trimming.	
	(g) Horn, beacon and reverse alarm.	
	(h) Hydraulic jacks (front and rear).	
	(j) Automatic fire suppression system.	
	(k) Heating (cold start) kits for engine operation for extreme cold region.	
	(l) Anti-freeze system/ freeze prevention measures.	
3.	Boom.	
	(a) The machine shall have heavy duty stable hydraulic booms with accuracy of movement to give fast and accurate positioning between holes and shall be capable of carrying powerful hydraulic rock drills. The feed and boom extension shall be suitable for covering the cross section requirement of minimum 100 m² or more and hole depth of minimum 3900 mm or more. The boom shall be controlled and maneuvered	

Ser No	Specifications/ Parameters	Vendor Response
	by a joy stick enabling tunneling operations with ease and convenience. The minimum performance parameters are as under:-	
	(i) Number of drilling booms -02. (ii) Feed roll-over - $\pm 180^{\circ}$ or more. (iii) Boom extension -1800 mm or more. (iv) Feed extension -1600 mm or more. (v) Net Weight -3000 Kg or less (b) The machine shall be fitted with aelectro/hydraulically operated service platform/ basket having long reach (minimum 7 m height) to assist in other applications such as scaling work, bolting, service, charging, pipe installation applications etc.	
4.	Rock Drill. The rock drill of capacity 22 kW or more shall be capable of drilling in all types of rocks and shall facilitate high speed drilling. It shall have anti-jamming facilities to avoid loss of tools and damage to equipment. The rock drill shall have a suitable lubrication system for the long life of the drill. It shall also have a rotation/ percussion system for faster drilling. The minimum performance parameters are as under:-	
	(a) Impact rate - 60 Hz or more. (b) Rotation speed - 0-200 rpm or more. (c) Rotation torque - 600 Nm or more. (d) Hole Range - 38 to 64 mm (drifting) / 76 to 128 mm (cut holes).	
5.	Feed.	
	The machine shall be fitted with a suitable feed system which is capable of drilling all types of holes like face drilling/ bolt holes/ drainage holes/ grouting holes/ pipe roofing which are required in tunneling applications. The minimum performance	

Ser No	Specifications/ Parameters	Vendor Response
	parameters are as under:-	
	(a) Feed length - 5500 mm or more.	
	(b) Rod length - 4000 mm or more.	
	(c) Hole depth - 3900 mm or more.	
	(d) Feed force - 21 kN or more.	
	(e) Net Weight - 700 Kg or less.	
6.	<p><u>Hydraulic System.</u> It shall consist of two separate units, one for each boom. Each system shall consists of variable/ constant flow pumps for efficient operation of the machine. The complete hydraulics shall be capable of providing percussion, feed, rotation, positioning along with other necessary operation required for efficient tunneling. There shall be provision of low oil level indicator and oil temperature gauge. Oil coolers shall be provided for cooling of the oil. Oil filters shall be provided for necessary filtration of oil so as to avoid any damage to the hydraulic system. The system shall be such that the service platform can be operated with either of the power pack. Minimum volume of oil tank shall be 250 ltr.</p>	
7.	<p><u>Air System.</u> Suitable hydraulic/ electric driven onboard air compressor of required capacity shall be provided to meet the system's pressurized air requirements.</p>	
8.	<p><u>Water System.</u> The machine shall have an efficient water flushing system for cooling drill head, dust suppression and flushing of the drilled holes. The water pump of the machine shall be electrically or hydraulically driven and shall be easily serviceable. Machine shall also have air flushing system to clean water in hoses to avoid freezing during night. Maximum water pump capacity shall not be less than 300 lit/min at 15 bar with minimum water inlet of 200 lit/min at 2 bar. It shall also</p>	

Ser No	Specifications/ Parameters	Vendor Response
	include water hose with reel of size 1.5" diameter of minimum length 65 m. Requirement of the machine for an integral provision for heating water, if any, in storage as well as in hoses in order to operate the water flushing system at temperature up to (-) 20 ⁰ C to be specified.	
9.	Electrical System. The onboard electrical system shall be capable of meeting all the electrical power requirements of the entire system (Maximum total capacity of the electrical motors installed shall not be less than 2 x 75 kW i.e. 150 kW). It shall function at standard voltage of 380-400 V (± 10 %) at 50-60 Hz. The electrical cable reel shall be buflex/ PUR/ equivalent type of minimum diameter 50 mm and length 90 m. It shall also consist of the following:-	
	(a) Electronic overload protection.	
	(b) Ground fault relay (fire protection).	
	(c) Ground fault breaker (personal protection).	
	(d) Phase sequence monitor.	
	(e) Motor protection relay (one relay for each hydraulic pump motor).	
	(f) Digital percussion hour meter.	
	(g) Digital voltmeter.	
	(h) Digital ampere meter.	
	(j) Battery charger.	
	(k) Transformer as per requirement.	
	(l) Cable reel along with electrical cable, optimised as per machine configuration.	
10.	Cabin. The machine shall have air-conditioned protective cabin with heating system for functioning and protection of operator from falling objects. It shall be of FOPS/ ROPS as per	

Ser No	Specifications/ Parameters	Vendor Response
	ISO 3449/3471 standards. It should have sound pressure level ≤78 dB(A). It shall have stairs and indoor lights along with safety seat belt. It should have fully adjustable chair/ seat.	
11.	<p>Control System. The control of the machine shall be operator friendly and all the controls shall be located in suitable position inside the cabin and shall be easily accessible to the operator. All the controls shall be protected by water and clear description of all the controls should be displayed. The control system shall be computerised with colour display with data transfer facility and shall have capability of Total Station Navigation. It shall facilitate full automated drilling with planning software and having feature of drill plan designing and Measure While Drilling (WMD) analysis. Drill plan, boom position and hole depth reference shall be visible in the colour display. It shall also have Automatic Rod Handling System in one boom for extension drilling / probe hole drilling with controls in operator's cabin with automated operation. The other boom shall have pipe roofing / umbrella drilling / casing drilling system of maximum diameter 114mm with controls in operator's cabin. It shall have MWD facility in both the booms. Specify the following:-</p>	
	(a) Weight of the Control Panel.	
	(b) Details of Ingress Protection.	
	(c) Details of Control Panel Assembly.	
	(i) Dimension.	
	(ii) Gland and Base Plate.	
	(iii) Tally Plate	
	(iv) Panel Coupling Mounting Arrangement of components.	

Ser No	Specifications/ Parameters	Vendor Response
	(v) Wiring arrangement and ferruling.	
	(vi) Cable Gland & Gasket Fixing.	
	(d) Surface. Preparation, painting, shades and coating thickness, adhesion details,	
	(e) Size of wiring and details of electrical circuit like insulation resistance.	
	(f) Details of Cable.	
	(i) Voltage Grade.	
	(ii) Toxicity.	
	(iii) Index Colour.	
	(iv) Nominal Cross Section Area.	
	(v) Thickness of Insulation.	
	(vi) IR Value.	
	(vii) Conducting Resistance.	
	(vii) Thermal Endurance.	
	(viii) Screen Solidity.	
	(g) Details of Control Panel instruments like Range/ Make, analog/ digital, Calibration/ Accuracy and the operations controlled like drilling, boring, booming mov etc.	
	(h) Safety Protection mechanism (including details of overload, under voltage)	
	(j) Details of Relay (including Model/ Type No, Auxillary contacts)	
12.	Tramming System. Equipment shall be fitted with a hydraulically operated transmission and shall be able to move up and down on a slope with minimum gradient of 1:4 or 14°. The tramming speed in horizontal surface should be more than 10 Km/h.	

Ser No	Specifications/ Parameters	Vendor Response																																								
13.	Drilling Accessories & Rock Reinforcement. The equipment shall be supplied with following accessories to facilitate commissioning and operation:-																																									
	<p>(a) Rock Drilling Tools (RDT).</p> <table border="1" data-bbox="331 488 1238 1158"> <thead> <tr> <th data-bbox="331 488 539 635">RDT Description</th> <th data-bbox="539 488 719 635">Quantity Required (Face Drilling)</th> <th data-bbox="719 488 943 635">Quantity Required for Rock Reinforcement</th> <th data-bbox="943 488 1128 635">Quantity Required (Long Hole Drilling)</th> <th data-bbox="1128 488 1238 635">Total</th> </tr> </thead> <tbody> <tr> <td data-bbox="331 635 539 715">Button Bit 38mm</td> <td data-bbox="539 635 719 715">-</td> <td data-bbox="719 635 943 715">10</td> <td data-bbox="943 635 1128 715">-</td> <td data-bbox="1128 635 1238 715">10</td> </tr> <tr> <td data-bbox="331 715 539 786">Button Bit 45 mm</td> <td data-bbox="539 715 719 786">14</td> <td data-bbox="719 715 943 786">09</td> <td data-bbox="943 715 1128 786">-</td> <td data-bbox="1128 715 1238 786">23</td> </tr> <tr> <td data-bbox="331 786 539 866">Button Bit 57 mm</td> <td data-bbox="539 786 719 866">-</td> <td data-bbox="719 786 943 866">-</td> <td data-bbox="943 786 1128 866">01</td> <td data-bbox="1128 786 1238 866">01</td> </tr> <tr> <td data-bbox="331 866 539 946">Drifter Rod 4300 mm</td> <td data-bbox="539 866 719 946">02</td> <td data-bbox="719 866 943 946">01</td> <td data-bbox="943 866 1128 946">-</td> <td data-bbox="1128 866 1238 946">03</td> </tr> <tr> <td data-bbox="331 946 539 1018">MF for Long Hole</td> <td data-bbox="539 946 719 1018">-</td> <td data-bbox="719 946 943 1018">-</td> <td data-bbox="943 946 1128 1018">04</td> <td data-bbox="1128 946 1238 1018">04</td> </tr> <tr> <td data-bbox="331 1018 539 1090">Coupling sleeve</td> <td data-bbox="539 1018 719 1090">02</td> <td data-bbox="719 1018 943 1090">01</td> <td data-bbox="943 1018 1128 1090">-</td> <td data-bbox="1128 1018 1238 1090">03</td> </tr> <tr> <td data-bbox="331 1090 539 1158">Shank adapter</td> <td data-bbox="539 1090 719 1158">02</td> <td data-bbox="719 1090 943 1158">01</td> <td data-bbox="943 1090 1128 1158">01</td> <td data-bbox="1128 1090 1238 1158">04</td> </tr> </tbody> </table>	RDT Description	Quantity Required (Face Drilling)	Quantity Required for Rock Reinforcement	Quantity Required (Long Hole Drilling)	Total	Button Bit 38mm	-	10	-	10	Button Bit 45 mm	14	09	-	23	Button Bit 57 mm	-	-	01	01	Drifter Rod 4300 mm	02	01	-	03	MF for Long Hole	-	-	04	04	Coupling sleeve	02	01	-	03	Shank adapter	02	01	01	04	
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	<p>(b) <u>Rock Reinforcement Bolts & Plates.</u></p> <table border="1" data-bbox="338 360 1234 587"> <thead> <tr> <th data-bbox="338 360 495 472">Type</th> <th data-bbox="495 360 701 472">Description (Size)</th> <th data-bbox="701 360 880 472">Quantity Required</th> <th data-bbox="880 360 1055 472">Load Capacity (kN)</th> <th data-bbox="1055 360 1234 472">Geometry</th> </tr> </thead> <tbody> <tr> <td data-bbox="338 472 495 512">Bolt</td> <td data-bbox="495 472 701 512">4000 mm</td> <td data-bbox="701 472 880 512">370</td> <td data-bbox="880 472 1055 512">240 kN</td> <td data-bbox="1055 472 1234 512">-</td> </tr> <tr> <td data-bbox="338 512 495 587">Plate</td> <td data-bbox="495 512 701 587">150 x 150 x 6 mm thick</td> <td data-bbox="701 512 880 587">370</td> <td data-bbox="880 512 1055 587">170/190</td> <td data-bbox="1055 512 1234 587">152 x 152</td> </tr> </tbody> </table>	Type	Description (Size)	Quantity Required	Load Capacity (kN)	Geometry	Bolt	4000 mm	370	240 kN	-	Plate	150 x 150 x 6 mm thick	370	170/190	152 x 152	
Type	Description (Size)	Quantity Required	Load Capacity (kN)	Geometry													
Bolt	4000 mm	370	240 kN	-													
Plate	150 x 150 x 6 mm thick	370	170/190	152 x 152													
14.	<u>Basic Dimensions.</u>																
	(a) Width - Maximum 3500 mm.																
	(b) Height - Maximum 3600 mm.																
	(c) Length - Maximum 1700 mm.																
	(d) Weight - 30000 to 40000 Kg.																
	(e) Tyres - 14.00 x 24 or as per carrier requirement.																
15.	<u>Special Conditions.</u>																
	(a) Since the equipment is expected to be deployed at remote locations with limited access and weight restrictions, it shall, by design, be capable of being dismantled into smaller components and re-assembled in situ. The maximum weight of the dismantled component shall not exceed 10 Tons. It shall be the responsibility of the manufacturer to arrange these services (maximum twice (dismantling and re-assembly each)) during warranty period.																
	(b) The dismantled components by design should be capable of being transported in 10 Ton Civil Hired Truck/ trailer, rail and air in order to transport it, post warranty period.																

Ser No	Specifications/ Parameters	Vendor Response
16.	Undercarriage. Undercarriage shall be robust and sturdy and shall last as long as the other major components of the machine. The undercarriage shall be fitted with suitable pneumatic tyres along with hydraulic jack for providing stability while drilling.	
17.	Lights. The machine shall have sufficient lights for driving inside the tunnels and also for working at the face while drilling. The machine shall have HID (High Intensity Discharge) or LED (Light Emitting Diode) lights in appropriate numbers.	
18.	Brakes. Front and rear axle shall have separate brake circuit. Equipment shall have spring applied hydraulically released emergency and parking brakes.	
19.	Oils/ Lubricants. All oils/ lubricants used in machine as per OEM offering or it's equivalent grade from IOC/ HPCL / BPCL/ reputed make, shall be available in India.	
20.	Environment. The equipment shall meet all the statutory and laid down requirements to protect the environment, as well as, the workers from its hazardous emissions.	
21.	Paint. The equipment shall be painted in olive green colour as per IS :5/2007.	
22.	Site Conditions. The equipment shall be suitable for use at following ambient conditions with permissible limit in deviation of power output:-	
	(a) Temperature - (-) 20 ⁰ to (+) 45 ⁰ C.	
	(b) Altitude - Up to 5000 m above MSL. In case of an additional external compressor or any other equipment with effect from any interim altitude up to 5000 m, details of the same along with technical specifications to be submitted by the Vendor.	

Ser No	Specifications/ Parameters	Vendor Response
	(c) Relative Humidity - 100% irrespective of temperature.	
23.	Service Life. The service life of the equipment shall be 10 years or 15,000 operating hours, whichever is earlier.	
24.	Warranty. The warranty shall be 12 months from the date of commissioning or 1500 operating hours, whichever is earlier.	
Notes		
	(a) The external power set-up of DG set of appropriate capacity (considering the possible derating of the engine at maximum altitude of 5000 m) for operating the equipment shall be provided by the Buyer at its deployment location. The capacity of DG Set at Mean Sea Level required for functioning of Tunneling Jumbo, shall be provided by the Vendor.	
	(b) In case of necessity of additional external compressor or any other equipment with effect from any interim altitude up to 5000 m, details of the same along with technical specifications shall be submitted by the Vendor.	
	(c) Any other miscellaneous parameters (separate pages to be added).	
INDIGENOUS CONTENT/ PRODUCTION		
25.	Will your product meet Buy (Indian)/ Buy (Indian-IDDM) specifications as per DAP 2020. Specify with details including Indigenous Content.	
26.	Can the Tunneling Jumbo with Accessories be produced indigenously? If yes, what will be the Indigenous Content provided & verification process?	
27.	What is the overall percentage of indigenisation for the Tunneling Jumbo with Accessories in terms of cost?	

Ser No	Specifications/ Parameters	Vendor Response
CRITICAL TECHNOLOGIES		
28.	If your firm is not the OEM, is the OEM willing to provide transfer of critical technologies? If yes, what are the critical technologies which your industry has taken from global partners or Joint Venture (JV), if any? Or what are the essential critical technologies that can be provided (depth and range also to be qualified)?	
29.	How much time will the start up/ JV take to start production?	
30.	Does Indian Industry have the capacity to design develop, manufacture, test and integrate the system including the critical technology?	
31.	How much time is required by the Industry to deliver the Tunneling Jumbo with Accessories/ platform with the stipulated indigenous content, post trials/ contract for operational use?	
32.	Please furnish details of IPR documentation/ patents/ design resignation/ copyright etc registered with the authorised agency in respect of the Tunneling Jumbo with Accessories?	
33.	Is complete set of design and production drawing and source code for all software applications/ programmes available with your company? Can they be produced for verification?	
34.	Is there any Transfer of Technology (ToT) involved? If so, specify complete details including qualifying terms and conditions if any.	
35.	How and in what 'Time Frame' will you ensure the ToT?	
36.	If the equipment is of foreign origin then, what is the capability of the Indian Vendor to indigenously design and develop the required equipment?	

Ser No	Specifications/ Parameters	Vendor Response
<u>TRIALS/ PROTOTYPE/ COTS</u>		
37.	Is the prototype readily available or has to be designed/ manufactured?	
38.	In what time frame can the prototype of Tunneling Jumbo with Accessories be fielded for trials post issue of RFP? This data should factor time for transportation etc.	
39.	Specify the parameters which can be certified by NABL accredited laboratories along with the details of such laboratories.	
40.	Elaborate on the infrastructure and logistics aspects of conduct of trials and suggested location of trials.	
41.	Is the proposed equipment readily available as COTS? If so what quantities have been sold to various agencies (Govt/ otherwise) in the last five years? Details to be furnished.	
42.	Will you/ OEM be willing to participate in trials as per DAP 2020 in India on NCNC basis?	
43.	Will you be providing the crew required for operating the equipment for trials?	
<u>EMI/ EMC AND OTHER STANDARDS</u>		
44.	What Military Standards are being confirmed to by the Tunneling Jumbo with Accessories produced by the OEM/ Vendor?	
45.	What Joint Service Specifications/ Joint Service Guidelines are being confirmed by the Tunneling Jumbo with Accessories produced by you?	
46.	Which accredited laboratory (Indian/ International) has certified your Tunneling Jumbo with Accessories?	

Ser No	Specifications/ Parameters	Vendor Response
<u>PRODUCT SUPPORT</u>		
47.	What is the warranty period offered for the Tunneling Jumbo with Accessories (in years and hours of operation)?	
48.	Have you supplied the Tunneling Jumbo with Accessories to any other firm in India/ abroad? If yes, furnish details of the supply, including quantity.	
49.	Does your firm have major repair and overhaul facility for major assemblies and component level repairs?	
50.	What is the likely 'Service Life' of the Tunneling Jumbo with Accessories produced by your company?	
51.	Is there a requirement of periodic calibration of any Special Machine Tools/ Special Test Equipment (SMTs/ STEs)? If yes, will you provide capability to undertake calibration, as part of Engineering Support Package?	
52.	What kind of Engineering Support Package will you be offering? Please also mention cost implications, if any.	
53.	Will the Engineering Support Package cater for repairs of Special Test Equipment (STEs) also, to include spares, technical literature, training etc? If not, then what is your proposal for sustenance of Special Test Equipment's (STEs)?	
54.	What life time support can be provided by the vendor?	
<u>MAINTENANCE/ REPAIR/ UPGRADATION PHILOSOPHY</u>		
55.	What would be the Maintenance Philosophy for repair and maintenance of the Tunneling Jumbo with Accessories? Can it be aligned with the system of unit and Field level repairs prevalent in the Defence Services?	
56.	Are you ready to provide on-site AMC/ CMC for the equipment?	

Ser No	Specifications/ Parameters	Vendor Response
57.	Please provide inputs, including costs (as a percentage of basic cost of the main equipment) for on-site Comprehensive AMC and AMC without spares separately?	
58.	Are you willing to provide Maintenance Transfer of Technology (MToT) for sustenance of equipment as per requirements given at Appendix H to Schedule I to Chapter II of DAP 2020?	
59.	What is the type of product support and period for which you commit the product support for sustenance of equipment in terms of supply of spares/ AMC/ calibration etc?	
60.	How many sub vendors are involved in the manufacturing of product? Is product support from all sub vendors also assured for the same period, as committed by you?	
61.	What would be the infrastructure & skill sets needed for maintenance?	
62.	Does your Tunneling Jumbo with Accessories have Built in Test Equipment (BITE) to support diagnostics and repair through modular replacement?	
63.	Is there any software applicable to your Tunneling Jumbo with Accessories? If yes, can it be restored in field in case of any fault? Is it upgradable? Whether open paper license is available or not?	
64	Does your equipment or any of its sub system have counter to display cumulative usage to facilitate usage based preventive/ period maintenance?	
65.	What would be the training requirement for maintenance of the Tunneling Jumbo with Accessories at field level?	
66.	List out the special maintenance required for storage at temperature below (-)5°C to (-) 20°C.	

Ser No	Specifications/ Parameters	Vendor Response
67.	List out the tools and accessories provided with the Tunneling Jumbo with Accessories.	
68.	Is there any automatic diagnostic equipment available to check the health of engine, Hydraulics and sensors?	
69.	What would be the upgradation philosophy with respect to the Tunneling Jumbo with Accessories?	
70.	Elaborate upon the frequency and nature of upgrades recommended by you.	
71.	Will software upgrades/ patches be provided whenever required?	
72.	Is the equipment modular in construction to facilitate repairs in field by replacing defective module? What is the Mean Time to Repair (MTTR) for repairs through replacement?	
73.	What is Mean Time Between Failure (MTBF) for equipment and its main assemblies?	
74.	Please provide details of inspection standards to ascertain serviceability of equipment as well as its modules/ components.	
75.	Please provide details of Indian origin generators and batteries to be provided with your equipment, where applicable.	
76.	Please provide details of Indian equivalents of oil and lubricants used with your equipment?	
TRAINING		
77.	Will you be able to offer Sectionised/ Cut Models, 3D models CDs for training? Please elaborate the scope/ components covered and the indicative cost of training in terms of basic cost of the equipment.	

Ser No	Specifications/ Parameters	Vendor Response
78.	Have you developed a class room trainer and a Computer Based Training (CBT) package for training? If Yes, what would be the indicative cost of CBT in terms of basic cost of the equipment.	
79.	Will you be able to provide IETM Version 4 or higher? If Yes, what would be the indicative cost of IETM Version in terms of basic cost of the equipment.	
80.	What are the facilities available at OEM/ Vendor premises to conduct training?	
81.	How will you assist in carrying out training for user, maintenance personnel and QA personnel?	
82.	What is the recommended training period of maintenance and QA personnel and user/ crew?	
83.	Can a user bilingual hand book, repair and maintenance manual and spare parts catalogue be provided with each Tunneling Jumbo with Accessories?	
COMMERCIAL TERMS/ COST		
84.	Please provide list of all the elements which need to be structured in the costing of the equipment system (including comprehensive maintenance/ product support package)	
85.	What will be the estimated price of the complete Tunneling Jumbo with Accessories? Also mention the Minimum Order Quantity for the price quoted.	
86.	What is the approximate cost of the Tunneling Jumbo with Accessories as defined above in Indian Rupees (including taxes and duties)?	
87.	Please provide inputs on the cost of Engineering Support Package {which shall include Manufactured Recommended List	

Ser No	Specifications/ Parameters	Vendor Response
	of Spares (MRLS) for three to five years post warranty, Special Machine Tools (SMT)/ Special Test Equipment (STE), Training Aggregates, Technical Literature and Training} as a percentage of the cost of the main equipment along with details of taxes & duties applicable.	
88.	Please provide an approximate cost (to include taxes and duties) of a similar commercial off the shelf version of the equipment, if it exists?	
89.	Please provide a list of the features, included in this RFI which are not included in the commercial version along with the approximate cost implication for each individual feature?	
90.	What INCOTERMS 2020 are suitable/ preferred by your company and for what reasons? If the case is being processed under the ibid category, specify the number of years (from three to five years) MRLS will be provided along with the equipment?	
TIME SCHEDULE		
91.	What is your annual production capacity for the Tunneling Jumbo with Accessories? Is it likely to increase? What is the recommended 'Delivery Schedule?	
92.	What is the earliest timeframe by when the Tunneling Jumbo with Accessories can be delivered after placing of order?	
MISCELLANEOUS		
93.	Are you an OEM of the equipment or an authorised vendor? If OEM, then forward your company profile?	

Ser No	Specifications/ Parameters	Vendor Response
94.	Will your firm be willing to supply the Tunneling Jumbo with Accessories to Indian Army under provisions of DAP-2020?	
95.	What are the enhanced parameters/ specifications of Tunneling Jumbo with Accessories which can be offered?	
96.	Are you willing to accept the Option Clause? Give the duration for which the clause would be valid?	
97.	Have you supplied similar equipment as defined above to Border Roads Organisation, Central Armed Police Forces, Para-Military Forces or any other Ministry of Defence Agencies (if yes, please provide details of year of supply, quantities and specifications of product. Also specify if the supplied equipment is the COTS variant or bring out details of modifications)?	
98.	Any other relevant information in terms of specifications/ terms of ref, the OEM/ Vendor would like to share.	

Appendix D

(Refers to Paragraph 6 (a) of Combat Engineers Directorate letter No 71619/ Tunneling/ CE-5(A) dt 13 May 2022)

**QUESTIONNAIRE ON GUIDELINES FOR VENDOR SELECTION/ PRE-QUALIFICATION
FOR INDIAN VENDORS**

1. Is the Applicant Entity an Indian Company as defined under the Companies Act 2013?
2. Has the Applicant Entity or any of its allied entities ever been banned or suspended by MoD/ SHQ of any Government Department or Organisation? Details of vigilance action viz ongoing investigations by any Department/ agency of Central Government may be provided.
3. Is the Applicant Entity a Manufacturing Entity or System Integrator or a Trading Company?
4. Does your Company have any previous experience/ expertise in this field? Specify the field of expertise/ experience of your company and the duration of experience in years.
5. Specify the turnover and net worth of your Company in the last three (03) years.
6. Is your Company under insolvency resolution as per Indian Bankruptcy Code?
7. What is the Credit Rating of your Company equivalent to CRISIL rating?
8. Does your Company qualify under Start Up or MSME Category?