QUERY RESOLUTION MEETING–EoI OF PORTABLE HELIPAD

Sl No	Para/Clause No of EoI	EoI Parameter	Query /Clarification required	Response
	M/s Acculytics Chemicals Pvt Ltd			
1	Appendix A Para 7	Load and Downwash Bearing Capability	Maximum and Minimum point load bearing capacity? How much downwash bearing capacity are we expecting at maximum?	Maximum All Up Weight (AUW) 25000Kg. Six contact points (four in the front and two at the aft). Detailed dimensions are enclosed as Appendix. Each of the two wheels in front of the helicopter has a mean contact area of 04 sq ft each of the two aft wheels has a contact area of 02 sq ft. At maximum AUW, downwash of approx 60 knots. Maximum Rate of Descent (RoD) is approximately 330 ft/min. Vendor to further consider factor of safety.
2	Appendix A Para 3	Colour	Colour/ shade code of the paints/ colours to be used as camouflage paints & patterns of those colours?	Para 3 of Appendix A to EoI refers. Detailed colour /shade code shall be intimated during RFP stage.
3	Part II: Scope of the Product Para 18 (b)	Stage II; User Trials (Field Evaluation Trials)	After user trial, the prototype will be returned to us or it will be taken by Indian Army? If taken by Indian Army, who will pay for the cost as it is NCNC?	There shall be no retention of equipment whatsoever by Army during design & development phase. The equipment after user trails (post issue of RFP) shall be retained by Army and returned post conclusion of contract. Please refer Chapters II & III of DAP 2020.
	M/s Aakash Polytech Pvt Ltd			
4	Appendix A Para 4	Fabrication Material	Regarding your above Portable Helipad, please clear Raw Material so that we can discussed in detail with your project facilitation team on 10 May 2021, for manufacture of Portable Helipad.	The raw material for the equipment is the choice of the vendor.
	M/s Kinetix Engineering Solutions Ltd			
5	Appendix A Para 7	Load and Downwash Bearing Capability	MTOW of helos that are expected to take-off, land and remain picketed on the Portable Helipad.	Response at Ser 1 refers.
6.	Appendix A Para 6	Transportation	Diameter and width of the tyres of various helos that are expected to use the ALS. Whether any roller take-offs and/ or landings are planned to be conducted on the ALS.	This Paragraph in Appendix A relates to parameter of transportation of Portable Helipad in the Indian Army ‘in-service’ ALS (Ashok Leyland Stallion) vehicle.
7.	Appendix A Para9	Traction	Value of limiting surface friction required to be accommodated in our design?	Can be suitably calculated based on material of the Portable Helipad.

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8	-	-	Is there need to make ALS visible using NVD and/ or NVG?	Specifications of Portable Helipad is as per Appendix Á' of EoI. There shall be no changes at this stage. Any additional features/ accessories is the prerogative of the vendor, incorporation of which shall be considered by the Army as deemed necessary.
9	Appendix A- Para 7	Load and downwash bearing capability	Maximum down wash force and point load capacity (in psi @ temperature) from various helicopters which are expected to use the ALS. Maximum point load (ie concentrated) at the contact areas of MW & NW of helo (tricycle LG assumed).	Response at Ser 1 refers.
10	Appendix A Para 4	Fabrication material	Factor of UV resistance/ stability required.	Response at Ser 8 refers and Ser 20 refers.
11	-	Mil or ASTM standard	Applicable MIL or ASTM or other standards for the design and performance of ALS.	Vendors may give inputs.
12	Appendix A Para1	Dimensions and Weight	Actual length and width of the packed portable Helipad (PH) required so as to enable us to design the transportation package. The info given in the EoI is inadequate as only one dimension is stated and it is certain whether this is longitudinal or lateral limit. Kindly note that 4.6m given in the EoI is more than the Max Moving Dimension (MMD) issued by Ministry of Road Transport and Highways.	Details given at Para 1 of Appendix Á are adequate. This para needs to be read in conjunction with Para 6 of Appendix A.
13	-	-	Is a shipping pallet required alongwith the PH? If so, any specific limiting dimensions of the shipping pallet be provided?	Response at Ser No 8 refers.
14	-	-	Critical Radiant Flux	Response at Ser No 8 refers
15	-	-	Flame spread factor	Response at Ser No 8 refers

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16	-	-	Chemical resistance factor/s	Response at Ser No 8 refers.
17	Appendix A Para 2	Temperature tolerance	Limiting thermal resistance value of the material for design ie the R-value in Watts/m2 Kelvin	Response at Ser No 8 refers.
18	-	-	Warranty period?	Normally two years.
	M/s Alpha Design Technologies Pvt			
19	Appendix A Para 4	Fabrication material	As per the document, the Portable Helipad material should be of composite material/ polymer/ alloy. Kindly confirm ally meaning metal alloy only or the definition in the case includes some other materials also	Response at Ser 4 refers.
20	Appendix A Para 13	Service Life	As per the document, the equipment should have service life of 15 years. Service life here means what, specifically vis-à-vis storage and repair due to damages.	Service Life refers to the operational life of the equipment throughout its life cycle.
	M/s Horizon Aerospace India Pvt Ltd			
21	Appendix A Para 7	Load and Downwash Bearing Capacity	Type of Helicopters to be used with Aircraft Classifications Numbers.	Response at Ser 1 refers.
22	-	-	Number of annual cycle of operations envisaged of heaviest helicopter.	
23	-	-	Operating Max Take-off Weight and Optimal Maintenance weight Empty of the heaviest helicopter.	
24	Para 1	Introduction	Basic terrain characteristics envisaged for aiding the design of the portable helipad. We need to clearly know what is the max difference in elevation that the helipad must cater to i.e. +/-0.5 m or +/-2m what is the max difference in elevation that the portable helipad	The Portable Helipad has to be varying terrain conditions as at Para 1 of EoI. Specific acceptable elevation difference in an area of 25 M x 25 M be given out by the vendor.
25	-	-	Any rider material to be provide with the portable helipad	Response at Ser 8 refers.
26	Appendix A Para 1	Dimensions and weight	Any max width specified for the 4.2m lengths	Response at Ser No 12 refers.
27	-	-	Are lights required? LED or not? Helicopter controllable or not	Response at Ser No 8 refers.
28	Appendix A Para 3	Colour	Is any kind of Helicopter Landing marking (H marking) on the portable helipad envisaged	Response at Ser No 8 refers.
29	Appendix A Para 5	Accessories and fitment	Requirement of a windsock with a standard pole with each 25mx25m set.	Response at Ser No 8 refers.

<table>
<tr><th>Sl No</th><th>Para/Clause No of RFI</th><th>RFI Parameter</th><th>Query /Clarification required</th><th>Response</th></tr>
<tr><td></td><td colspan="4">M/s Electropneumatics & Hydraulics (I) Pvt Ltd</td></tr>
<tr><td>30</td><td>Para 7</td><td>Scope</td><td>For what landing the Helipad to be designed? Is it to be designed for soft landing or crash landing also.</td><td>Response at Ser 1 & 8 refers.</td></tr>
<tr><td>31</td><td>Para 1</td><td>Introduction</td><td>For what ground undulation/ condition the Helipad needs to be designed.</td><td>Response at Ser 24 refers.</td></tr>
<tr><td></td><td colspan="4">M/s Larsen & Toubro Limited Defence</td></tr>
<tr><td>32</td><td>Appendix A Para 7</td><td>Load and Downwash Bearing Capacity</td><td>It is understood that Portable Helipad should be capable of sustaining the landing of all in service helicopters, including Chinook and Apaches. Request to kindly share list of other in-service helicopters.</td><td>All other ‘in-service’ hepters have parameters less than as given out in response at Ser 1.</td></tr>
<tr><td>33</td><td>Appendix A Para 7</td><td>Load and Downwash Bearing Capacity</td><td>Request to kindly provide following information for all in-service helicopters:
<table>
<tr><th>Ser No</th><th>In service Helicopter</th><th>Weight</th><th>Location of point load (Position of wheels on helipad during landing)</th><th>Downwash velocity of air</th><th>Coverage area of downwash air</th></tr>
<tr><td>(a)</td><td>Chinook</td><td></td><td></td><td></td><td></td></tr>
<tr><td>(B)</td><td>Apache</td><td></td><td></td><td></td><td></td></tr>
<tr><td>(c)</td><td>Other in-service helicopters</td><td></td><td></td><td></td><td></td></tr>
</table></td><td>Response at Ser 1 refers.</td></tr>
<tr><td>34</td><td>Appendix A Para 7</td><td>Load and Downwash Bearing Capacity</td><td>What Factor of Safety (FOS) to be considered on landing velocity to calculate load on the helipad.</td><td>Vendors to submit inputs on maximum feasible FOS.</td></tr>
<tr><td>35</td><td>Appendix A Para 4</td><td>Fabrication Material</td><td>Request to kindly share fluids (fuel, oil, lubricants, coolants, etc) to be considered for which the helipad material is to be resistant.</td><td>Such a list be specified by vendors.</td></tr>
<tr><td>36</td><td>Para 18</td><td>Details of Trials</td><td>Request to kindly share trials and tests that will be conducted during the Field Evaluation Trails to validate performance of the product.</td><td>Inputs at Para 18 (b) of EoI is sufficient at this stage.</td></tr>
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Sl No	Para/Clause No of RFI	RFI Parameter	Query /Clarification required	Response
37	Para 1	Introduction	The helipad is expected to be used in desert/ semi desert conditions. How much of sinking of wheels is expected in this terrain. Request share details of terrain considered for landing.	Response at Para 24 refers.
	M/s Amalgamated Industrial Composites Pvt Ltd			
38	Appendix A Para 1	Dimensions and Weight	Weight: Appendix A of your EOI mentions mention that complete weight of helipad alongwith accessories should not be more than 3 tons. Kindly note helipad will have to be designed such that it should be able to sustain downwash and point load of Helicopter like Chinooks and Apaches. **Further we also like to confirm that helipad will be modular and each panel has to have some thickness such that it should have enough strength, so that its able to absorb the shock and load due to back wash and weight of the helicopter. Further weight of the panel as mentioned in the EOI should be <100 kgs> and on other hand its mentioned max weight to be 3 tons including accessories. This is very difficult since in 25mt x 25m helipads there will be around 250 panels(approx) and each panel will have weight of mini 25 to 40 kgs and if we multiply for complete panel it will weight around 6.25 tons, however we shall try to maintain it within 6 tons. Request your kind thoughts on this.** Helipad will be inform of panels and with interlockable arrangements. Accessories considered by us is related to interlocking of helipad assembly alongwith foundation bolts only and weight of the same would also be extra. It is mentioned that the helipad should be including all accessories. Kindly elaborate what all accessories you are expecting to come alongwith the helipad as accessories might change with the terrain.	Response at Ser 8 refers.
39	Appendix A Para 5	Accessories and Fitment (b) Tools	**We are trying to work the fitment of complete helipad in one stallion but it seems to be difficult. Further there are other parameters like, accessories which it not clear as to what you are looking for and further its mentioned something about tools required for the recovery of the Helipad, what are the type of tools required for the same. You may kindly furnish us the list so that same could be included.** Generally tools which area required for assembling the helipad will come as standard alongwith supply, but kindly specify what other tools are required from out end. Kindly clarify the tam Recovery.	Response at Ser 8 refers.

Sl No	Para/Clause No of RFI	RFI Parameter	Query /Clarification required	Response
40	Appendix A Para 6	Transportation	**Further regarding helipad for 25 x 25mtr should fit in one stallion?** Kindly give dimensions of stallion which will be used in transportation of helipad from one point to another as dimensions of the stallion may have to be altered for fitting the helipad alongwith accessories in order to fit the same in one stallion. Request you to kindly confirm the same so that could be included in the EOI	(a) Overall Length - 7425mm (b) Loading span length - 4700mm (b) Width - 2500mm (c) Overall Height - 3100mm
41	Appendix A Para 7 Appendix A Para 8	Load and Downwash Bearing Capability and time for assembling the helipad. Time of deployment	Please confirm the max point load impact of the helicopter and the max downwash forces. As same we need to consider during FEA analysis. **As per requirement complete helipad to be assembled within 90 min with 10 persons which should be possible depending upon the training of the team who will lay the helipad, and at the same time before laying the helipad your team will have to do ground work and prepare the basic surface before assembling the helipad at the desired location and that time would be excluding installation time of one helipad.** **Are you also planning to mount the helipad on mountain terrain then may be we will have to give a different type of foundation pads which will be telescopic in nature, and cost of the same would be additional, so you need to confirm us the exact dimensions of the helipad and the type of terrain where helipad is to be mounted.**	Response at Ser 1 & 24 refers.
	M/s Urban Aero			
42	-	**-**	Do we need certification like DGCA/ CAA/ FAA/ ICAO to let helicopters land on Helipads?	No such certification is presently sought. However, vendors may render inputs on the same.
43	-	**-**	Do we need a night landing lighting facility?	Response at Ser 8 refers.
44	-	**-**	Do we need a snow melt system, to make the Helipad usable in winter?	Response at Ser 8 refers.
45	-	**-**	Do we need any Navigation to identify Helipads in low visibility?	Response at Ser 8 refers.
46	-	**-**	Do we need a weather station at the helipad?	Response at Ser 8 refers.
	M/s Right Choice Aviation (ESSD) Pvt Ltd			
47	-	-	These helipads are a specific requirement of the Armed Forces. We have reached this conclusion after having survey the civil sector for demand for portable helipads for the last couple of months.	Further quantities shall be based on successful design, development and fructification of the project.
48	-	-	The demand for such helipads is limited and a repeat demand might not be very forthcoming owing to the longevity of the helipad mats.	
49	-	-	Inspite of the above two aspects if we plan to manufacture the helipad mats in India under Transfer of Technology (ToT) and as per DAP 2020 it might not be a feasibility business proposition till the quantity of the mats (25m x 25m) to be procured is increased to minimum 150.	

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	M/s Accurate Industrial Controls Pvt Ltd			
50	Appendix A Para 1	Dimension and Weight	For the total weight of a 25 metre x 25 metre helipad including all accessories, we would like to know if 3.7 Ton weight is acceptable?	Response at Ser 8 refers.
51	Appendix A Para 4	Fabrication material	Can a composite material of metal and non-metal be used?	Response at Ser 4 refers.
52	Para 10	Quantities	What would be the approx future potential quantity?	Response at Ser 47 refers.
	M/s Comfort Trim Private Ltd			
53	Appendix A Para 7	Load and Downwash Bearing Capability	The size and weight of Chinook and Apache with full load capacity to be indicated (for calculation of load carrying capacity).	Response at Ser 1 refers.
54	Appendix A Para1	Dimension and Weight	Weight criteria of 3 T for total size of 25 x 25 meter is neither maintainable with light weight metallic frame structure nor special grade composite material therefore total weight criteria be removed.	Response at Ser 8 refers.
55	Appendix A Para 2	Temperature and Tolerance	Single temperature range value to be prescribed for min and max temperature.	Response at Ser 8 refers.
56	Appendix A Para 6	Transportation	Size of Ashok Leyland Stallion Truck load body may be clarified for Transportation purpose.	Response at Ser 40 refers.
57	-	-	Why the 100% cost of development of prototype be borne by supplier, ie is proposed to keep the same as source development category under IDDM of DAP 2020.	Chapter III of DAP 2020 refers.
58	-	-	On acceptance of prototype in trials, who will be the Inspection and procurement agency for bulk supply?	Will be specified in RFP.
59	-	-	Clarification is required on solicitation of commercial offer para.	Commercial offer will be sought in RFP.
	M/s Altair Industrial Controls Pvt Ltd			
60	Para 21 (b)	MSMEs	What is the preference for MSMEs	Para 21 (b) of EoI refers.
	M/s Texla Plastics and Metals Pvt Ltd			
61	Appendix A Para 1	Dimension and Weight	It is very difficult to achieve weight criteria	Response at Ser 8 refers.