



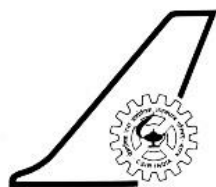
Request for Proposal (RFP)

For

**Joint Collaboration in R&D, Manufacturing and
Commercialization of 150 kgs Category Loitering Munition UAV**



**National Aerospace Laboratories
Council of Scientific & Industrial Research
HAL Airport Road, Kodihalli
Bengaluru-560 017**



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ISO: 9001:2008 Certified

23rd August 2024

REQUEST FOR PROPOSAL

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research, an autonomous body under Department of Scientific and Industrial Research (Government of India), New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. It is internationally known for its excellence in Scientific Research in Aerospace Engineering and other disciplines.

A RFP is invited to receive proposals in **Two-Stage Bid (Technical & Commercial)** at CSIR-National Aerospace Laboratories (CSIR-NAL) for “Joint Collaboration in R&D, Manufacturing and Commercialization of 150 kgs Category Loitering Munition” from the **Indian** aerospace and allied engineering companies.

RFP Document Number	Item Description
CSIR-NAL/PBMD/LM-UAV RFP-02/2024	Joint Collaboration in R&D, Manufacturing and Commercialization of 150 kgs Category Loitering Munition (LM) UAV

1. The address for submission of document for obtaining further information:

Mr. R.Venkatesh
Head, PBMD
CSIR-National Aerospace Laboratories
Old Airport Road, Kodihalli
Bengaluru-560017
Tel-080-25086130
Email: rvenkatesh@nal.res.in

2. The RFP document for submitting the offers can be downloaded free of cost from e-publishing Central Public Procurement Portal (CPPP) of Government of India, <https://www.eprocure.gov.in/epublish/app> A copy of the RFP Document is also available on CSIR-NAL Website, www.nal.res.in/en/tender The prospective firms willing to submit their offer shall adhere to due dates in the RFP details

3. The schedule for submission of offers and opening of the offers is as follows

Last Date & Time of Submission of Offers		Date & Time of Opening Technical Offers	
Date	Time (IST)	Date	Time (IST)
22nd October 2024 with provision for pre-bid conference at NAL on 23rd September 2024	16.00 PM	23rd October. 2024	11.00 AM

Note : Firms desires to attend the Pre-bid conference may please send their request for the visit to NAL to email : rvenkatesh@nal.res.in and satya@nal.res.in

The hardcopy of the proposal shall be dropped in the box kept at CSIR-NAL Reception before the due date.

- Date and Time for receipt of hard copy of proposals:** The proposals in hard copy should reach the address given for submission at Sr.no 1 before date and time mentioned at Sr. No.3 for submission of proposals. Late/delayed proposals will not be considered. Postal/Courier delays will not be accepted as an excuse. In case the last date and time is declared a holiday at a later date, then the due date and time for receipt, opening will be shifted to the next working date and time automatically. No corrigendum will be issued in this regard.
- A brief description of the qualification criteria is provided herewith. The Participants are requested to submit documentary evidence to prove technical capabilities, client list, experience and credentials as per formats 1-9 enclosed.
- The CSIR-NAL Committee shall scrutinize and finalize the firms meeting the qualification criteria after knowing/obtaining details about relevant/available details and R&D needs of our Laboratory.
- For evaluating the responses, CSIR-NAL, if required, may call the firms for presentation of their case. Presentation can be considered via WebEx/Skype/Video Conferencing also.
- The Director, CSIR-National Aerospace Laboratories (NAL), Bengaluru, India reserves the right to accept or reject any or all RFP notification/tenders/offers in part or full or withdraw the Notice at any stage of processing without assigning any reasons whatsoever, such an event would not cause obligation of any kind to CSIR-NAL.

Sd/-

Head, PBMD
For and behalf of CSIR-NAL

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Please indicate above RFP number & due date on the Envelopes while responding

Request for Proposal (RFP) for Joint Collaboration in R&D, Manufacturing and Commercialization of 150 kgs Category Loitering Munition (LM) UAV

Two - Stage Evaluation / Bidding

1. ORGANIZATION BACKGROUND

1.0 National Aerospace Laboratories (NAL), a constituent of the Council of Scientific and Industrial Research (CSIR), India, established in the year 1959, is the only government aerospace R&D laboratory in the country's civilian sector. CSIR-NAL is a high-technology-oriented institution focusing on advanced disciplines in aerospace. CSIR-NAL has several advanced test facilities, many of them are recognized as National Facilities. CSIR-NAL has provided significant value-added inputs to all the Indian national aerospace programmes. Over the last five decades, its contributions have enabled it to create a niche for itself in advanced aerospace research and technology development. CSIR-NAL has also developed many critical technologies for the strategic sector and continues to support the mission-mode programmes of the country. CSIR-NAL's mandate is to develop aerospace technologies with strong science content, design and build small, medium-sized civil aircraft, and support all national aerospace programmes.

1.1 About 150 kg LM-UAV:

Loitering munition (LM) UAVs have become popular in the recent conflicts all over the world due their distinct advantages over the missiles and other aircraft. These UAVs combine the features of both UAVs and missiles. As loitering munitions can loiter around a particular area in the enemy territory for a long duration till they detect the targets. Role of Loitering Munition UAVs in the suppression of enemy defence has been proven in the recent past. As per the published news articles, India has recognized the role of LMs in the operational/tactical battlespace and is gearing up to induct approximately 1000 LM UAVs to meet immediate operational requirements. The Air Force has already begun the induction of LMs HAROP LM UAVs manufactured by Israel Aerospace Industries (IAI). Indian armed forces are also encouraging Indian defence industry under Make-II projects to take up similar projects. Motive behind this proposal is to develop indigenous LM UAV to replace the foreign imports.

In the proposed development, the Loitering Munition UAV is going to be powered by CSIR-NAL developed Wankel engine. The indigenous LM UAV shall be designed to carry an approximately 15 kgs of warhead and 10-15 kgs of suitable sensing payloads. It is aimed

to have contemporary performance characteristics such as loitering endurance of 6 – 9 hours with a maximum range of 900 Kms. The overall weight of the LM UAV to be restricted below 150 Kgs.

Proposed Key Features of 150Kg LM-UAV

- Maximum Range: 900 Kms
- Maximum Endurance: 9 Hours
- Maximum Altitude: 5 Kms
- Maximum payload: 15 Kg warhead and 10 Kg Sensing payload
- Wing Span < 4.0 Meters
- Assisted Launch
- GPS denied Navigation
- Stealth features to achieve comparatively Low RCS
- Increased autonomy levels
- Indigenous Hardware / Software

Further details of LM-UAV proposed specification and mission accomplishment shall be shared only on submission of signed NDA by the interested industry submitting the proposal.

2. OBJECTIVE OF JOINT COLLOBORATION

In order to accelerate the development and production activities of LM-UAV, CSIR-NAL is looking for industrial partners who are willing to participate as Technology cum Investment and risk sharing partners towards the development manufacturing & commercialization of LM UAV

The objective of this RFP is to select suitable technology cum investment & risk sharing partner for the joint design and development of LM UAV followed by commercialization of product. The bidder is expected to actively participate in the joint design, analysis, development and testing of the various subsystems of the LM UAV. Up on successful completion of the flight testing, certification and user acceptance for LM UAV, the bidder will have first right of its manufacturing, marketing, commercialization, and after sales support.

3. BROAD SCOPE OF WORK

The Industrial partner shall carry out design, development and testing of the following subsystems either solely or jointly with CSIR-NAL. The partner shall also produce the subsystems as per the final design in a stipulated time to meet the overall **project schedule (3 years)**.

- a) 32bit ARM Cortex processor based embedded hardware boards or similar embedded boards for UAV autopilot applications
- b) Implementation of flight control algorithms on Embedded hardware
- c) GUI based ground control station software development

- d) Sensing payloads such as 2-axis / 3-axis gimbal based Electro-Optical and IR camera units
- e) Communication system
- f) Electro-Mechanical Servo actuators
- g) Production of CSIR-NAL designed IC Engines
- h) Tooling and jigs and production of composite UAV airframe

The Industrial partner shall also take up the production, marketing and after sales of the developed Loitering Munition UAV immediately after the PDC of the project.

Subject to the terms and conditions of a license agreement (to be signed on completion of product development), CSIR-NAL shall grant an limited exclusive License to the **shortlisted firm(s)**, on a royalty bearing right and license to use and practice the Technology and PROCESSES ("Licensed Technology") to manufacture, sell and commercialize the jointly developed product in India or abroad, including without limitation the right to use and otherwise exploit the Licensed Technology during the Term of this Agreement ("License").

Firms shall quote above the minimum threshold value of Royalty fixed by CSIR-NAL for the 150 kg LM – UAV technology as given in **Clause 11.4 & Format -8**.

This LICENSE shall be valid from the EFFECTIVE DATE (Date of signing of License Agreement) and subject to covenants and conditions herein contained and shall remain in force for a period of ten (10) years commencing of commercial production with an obligation to pay Royalty to CSIR-NAL, after the commercialization of the Product (the "Term"). After 5 years, royalty rate shall be reviewed and decided on mutual consent of parties in light of business experience.

4. BROAD SPECIFICATION OF 150 Kg LM-UAV

The design and development of proposed subsystems listed in the above scope of work are considered as part of the Loitering Munition project. Concurrent design and development of other subsystems or part of the above subsystem is going take place at CSIR. Therefore, specification defined in this section are indicative. However, final specifications will be evolved along with Industrial partner.

4.1 32bit ARM Cortex processor based embedded hardware board for Autopilot Application

CSIR-NAL will carry out the detailed hardware design of the 32bit ARM Cortex processor or similar based embedded hardware board. The required Sensors such as Accelerometers, Gyros, magnetometer, etc will be configured by CSIR-NAL. Carrier board design and peripheral interface design will be provided by CSIR-NAL.

Industrial partner is expected to source the components as per the CSIR-NAL design and assemble the units to realize the flight worthy autopilot hardware.

4.2 Embedded Software development

CSIR-NAL with its strong expertise in the design and development of flight control law algorithms for both manned and unmanned aircraft will be undertaking the control law design activity for the LM UAV. The designed algorithms will be released in the form of functional requirements document for implementation on the developed embedded hardware (4.1).

Industrial partner is expected to develop flight worthy software based on algorithms supplied by CSIR-NAL.

4.3 Ground Control Station software

Loitering Munition UAV is going to be launched using a Ground Control Station (GCS) and commanded using a Main Control Station (MCS). GCS and MCS shall consist of ground based GUI based software and hardware that allows user to communicate with and control the LM UAVs. CSIR-NAL will develop the requirement specifications in consultation with prospective users.

Industrial partner shall design and develop the software jointly with CSIR-NAL team during the project period.

4.4 Sensing payloads

Loitering munition UAVs carry out lot of search operations using on-board EO/IR camera based sensing payloads. CSIR-NAL will formulate specification requirements in consultation with prospective users.

Industrial partner shall design develop and supply flight worthy 2/3-axis gimbal with EO/IR Camera with required zooming features.

4.5 Communication system

Loitering munition UAVs are required to have 200 Kms LOS. The details of frequency band and power will be specified in consultation with prospective users.

Industrial partner shall design develop and supply flight worthy communication system.

4.6 Electro-Mechanical Servo actuators

Electro-Mechanical Servo actuators shall be integrated on LM UAV to operate aircraft control surfaces (Elevators, Ailerons or (Elevons), Rudder and other surfaces). Load and bandwidth specifications will be specified by CSIR-NAL.

Industrial partner shall design, develop and supply flight worthy Electro-Mechanical servo actuators

4.7 IC Engines

CSIR-NAL has already developed Wankel engine. It has been certified by CEMILAC for carrying out flight tests. The technology for manufacturing these engines will be transferred on Non-Exclusive basis to the Industrial partner.

Industrial partner shall produce required number of Wankel engines along with accessories for the LM project.

4.8 Tooling and jigs and production of composite UAV airframes

CSIR-NAL will carry out the airframe structural design and will produce detailed engineering drawings. It will also develop detailed engineering drawings for manufacturing required Tooling and jigs for production of composite UAV airframes.

Industrial partner shall manufacture Tooling and jigs as per CSIR-NAL drawings and produce required number composite airframes for the LM project.

4.9 Documentation and Certification

Industrial partner shall actively participate jointly with CSIR-NAL in the certification of subsystems and the LM UAV.

Documentation Standard	Specification	Remark
LM UAV subsystem needs to qualify minimum requirements laid down by CEMILAC	As per Applicable Mil Standards	Mandatory
Documents required for submitting the same to CEMILAC	As per Applicable Mil Standards	Mandatory

4.10 Delivery of Units

Sl. No	Module	Quantity
1	CSIR's Wankel Engine Production	10 Numbers
2	Autopilot hardware Manufacturing	10 Numbers

3	Autopilot software development and porting on to the hardware	Joint activity with CSIR Team
4	Ground Control Station development	Joint activity with CSIR Team
5	Gimballed payload (EO, IR & Laser)	10 Numbers
6	Actuators	10 sets
7	Jigs and Fixtures	One set
8	LM UAV frames	10
9	Launcher	2 units

Delivery/Production Capabilities: successful bidder, shall have the facility and manpower having capability to deliver 10 LM-UAVs within the project approved PDC time from the date of signing of the agreement with CSIR- NAL.

5. REQUIREMENTS OF TECHNICAL EXPERTISE

Industrial Partner is requested to submit details of technical expertise or projects of similar nature executed earlier in the following areas.

- a) Manufacturing capability of 32bit ARM Cortex processor based embedded hardware boards or similar embedded boards for control applications
- b) Embedded Software development capability
- c) GUI based ground control station software development
- d) Assembly of sensing payloads such as 2-axis / 3-axis gimbal based Electro-Optical and IR camera units
- e) Manufacturing of Electro-Mechanical Servo actuators
- f) Manufacturing capability of IC Engines or similar systems
- g) Manufacturing capability of composite airframes
- h) Manufacturing capability of Jigs and fixtures

Note: If single Industrial Partner is not having all the required technologies within the company, it may enter into agreements with suitable third parties. However, CSIR-NAL will enter into agreement with the lead partner only.

6. RESPONSIBILITIES OF CSIR-NAL & COLLABORATING INDUSTRY PARTNER

6.1 The major responsibilities of the Industry Partner as well as CSIR-NAL for this RFP are given as under:

6.1.1 CSIR-NAL's Workshare & Responsibilities

Sl. No	Module	Remarks
1	Aircraft configuration design CFD, Wind tunnel testing, Aerodynamic Data generation	-
2	Wankel Engine technology and propeller development; First five proto type units	-
3	Aircraft Simulation, Autopilot flight control algorithms	-
4	Autopilot hardware design	-
5	Autopilot hardware development & Manufacturing	Jointly with Industry
6	Ground Control Station development	Jointly with Industry
7	GPS denied Navigation algorithms	-
8	AI based vision algorithms for object detection and tracking	-
9	Structural design & Analysis	-
10	Detailed engineering	-
11	First two aircrafts manufacturing for engine testing	-
12	Test rigs	-
13	Launcher design and development, First prototype	-
14	Stealth Technologies	-
15	Warhead	Jointly with Industry
16	Aircraft Integration and flight testing	Jointly with Industry

6.1.2 Collaborating Industry Workshare & Responsibilities

- a) The successful Collaborating Firm should comply and responsible for the clause 4 & 5 in addition the following:

Sl. No	Module	Remarks
1	Wankel engine manufacturing	10 Units
3	Propeller Manufacturing	-
4	Autopilot hardware development & Manufacturing	Jointly with CSIR-NAL
5	Autopilot software development and porting on to the hardware	-
6	Ground Control Station development	Jointly with CSIR-NAL
7	Gimballed payload (EO, IR & Laser)	10 Units
8	Vision algorithms processing hardware design and development (with GPU cores)	-

9	Vision algorithms software development & porting on the hardware	-
10	Actuators	10 sets
11	Communication system	10 Units
12	Final configuration UAV -manufacturing including tooling and jigs	10 Units
13	Launcher Manufacturing	-
14	Warhead	Jointly with CSIR-NAL 10 Units
15	Aircraft Integration and flight testing	Jointly with CSIR-NAL

6.1.3 Rough Order of Magnitude Cost

The RoM cost of the project is Rs 102 Crores. Out of which CSIR-NAL share is Rs. 64 Crore and Industry share is Rs 38 Crore. **(Detailed Cost Break-up and Workshare will be shared on signing the NDA)**

7. INTELLECTUAL PROPERTY RIGHTS

The Parties cooperation under this RFP is exclusive. Accordingly, CSIR-NAL and selected bidder shall not cooperate with any other Party/manufacturer with respect to Development of Product mentioned under this RFP.

Any Proprietary Information disclosed by either Party to the other under this RFP shall be kept confidential by receiving Party and shall be sole property of the disclosing Party. Neither **Party** does, by virtue of disclosure of the **Confidential Information**, grant, either expressly or by implication, estoppels or otherwise, any right or license to any of their background IP including but not limited to their patent, trade secret, invention, trademark, copyright, or other intellectual property right unless it is specifically specified in the written and signed documents

Intellectual Property (IP) shall mean patents, rights to inventions, copyright and related rights, moral rights, rights in designs, rights in trademarks, rights to preserve the confidentiality of information (including know-how and trade secrets) and any other intellectual property rights, in each case whether registered or unregistered and including all applications (or rights to apply for and be granted), divisional, continuations, continuations-in-part, reissues, renewals or extensions of, and rights to claim priority from, such rights and all similar or equivalent rights or forms of protection which subsist or will subsist now or in the future in any part of the world regarding subject matter disclosed in Licensed patents.

Any Foreground IP, if generated during the course of collaboration, including any improvement thereof, shall be jointly owned by CSIR-NAL and the Selected Bidder. Commercial benefits arising from third Party licensing of the technology will be shared in proportion of investment in collaboration as stated in Clause 6.1.3 of this RFP. Decision on protection, management of Foreground IP shall be taken on mutual consent of Parties and Party not willing to participate in such protection shall convey the decision to other Party, to enable that party to decide on future course of action on management of such foreground IP.

On completion of product development, selected bidder shall be given limited exclusive right with royalty payment on mutually agreed rate for a period of 5 years on signing of license agreement from the date start of commercial production. However, to commence such right, selected bidder shall give the willingness in written within 3 months of product development and shall start the commercial production within 6 months from the date of signing of license agreement. After 5 years parties will review the commercial terms. If the selected bidder is unable to execute the commercialisation of product within stipulated timeline, in such case CSIR-NAL reserve the right for exploring the product commercialisation through third Parties, subject to sharing of commercial benefits with collaborating bidder in proportion of investment in collaboration.

Notwithstanding the above, CSIR-NAL shall have the right to license the technology during the period of license given to collaborating bidder, if government of India desires CSIR-NAL to disclose the technology for its use in India in national interest. In such cases, money accrued there from shall be shared between CSIR-NAL and collaborating bidder in proportion of investment in collaboration.

8. PROCESS INVOLVED IN PARTNERSHIP/COLLABORATION

Interested companies/manufacturers are invited to join hands with CSIR-NAL for co-development & commercialization of the Technology/ Product(s). Under this RFP, the manufacturers/companies who are responsive and fulfilling all the technical need will be shortlisted based on their R&D plan, facilities and capabilities. On shortlisting of technically suitable companies, **Request for Commercial Proposal will be shared only with the shortlisted candidates.** At the RFP stages, technically suitable candidates will be required to provide complete technical details along with their financial capabilities. Qualified companies/manufacturers will only be contacted for execution of MoA /MoU / Agreement for partnership/collaboration/technology transfer, etc. Subsequent to the execution of the Agreement such companies/manufacturers shall be responsible to pay the Royalty, subject to approval as provided under CSIR Guidelines for Technology Transfer and Revenue Sharing.

9. PUBLICATION

- i. In case of Co-development, the Parties shall have equal rights on the manuscripts/scientific publications (joint publication/acknowledgment /other credits as applicable) and in accordance with guidelines of respective Journal Editors.
- ii. Support of CSIR/NAL must be duly acknowledged in all publications by the Collaborating Bidder.
- iii. CSIR/NAL Scientists can be given due to advantage of authorships in the publications arising out of Licensing/co-development.

10. DATA RIGHTS

- i. Data rights shall be jointly owned by CSIR/NAL and Licensee/Co-developer.
- ii. Data rights in cases where Artificial Intelligence is involved shall be dealt separately.
- iii. Licensee/ Company to ensure that data is anonymized, kept confidential and strictly abide by the provisions of Information Technology Act, 2000 while dealing with such data.

11. SUBMISSION & EVALUATION OF OFFER:

11.1 Submission of Offer: The proposal/offer is to be submitted in **Two (2) Stage Bidding System** as given below:

- a) **Technical Capabilities** and
- b) **Commercial Offer** (terms & conditions for production/after sales support, royalty payment terms etc.,)

Note: Request for Commercial Quotes will be sent by invitation to only those shortlisted firms found to be eligible as per the Technical Evaluation.

11.2 The offer should be submitted in separate sealed envelopes/covers. The envelope should be marked as **“Request for Proposal (RFP) for Joint Collaboration in R&D, Manufacturing and Commercialization of 150 kgs Category Loitering Munition (LM) UAV”** with RFP No., offer due date, firm’s name and address.

11.3 TECHNICAL CAPABILITIES EVALUATION CRITERIA

The minimum qualification criteria for the production partner have been provided in the table below:

Following will be the minimum pre-qualification criteria. All eligible Firms/Organizations must satisfy the criteria listed below. Responses not meeting the minimum pre-qualification criteria will be rejected and will not be evaluated.

Sl.no	Pre-qualification Criteria	Supporting Compliance Document	Reference
1	The firm shall be a Company registered under the Indian Company Act, 1956	Copy of certificate of Incorporation	
2	The firm has to be profitable in its field of business and should not have incurred loss in the last three financial years and have not incurred any loss in more than 2 years during last 5 financial years subject to force majeure situation.	Profit & Loss Statement and Balance Sheet	
3	The firm should have a minimum average annual turnover of INR 50 CRORE in the last three (3) financial years.	Profit & Loss Statement and Balance Sheet certified by CA	
4	The firm shall have past experience (more than 5 years), during the last three years in executing similar type of related assignments in Central Government / State Government / PSUs/Autonomous Bodies/Private Sector in India or Abroad	Copy of work order from the Department /Organization is to be enclosed	
5	Certification of the firm by the statutory authorities like DGCA,CEMILAC etc. will be an added advantage/given preference	Copy of Certificate(s)	
6	The firm should not be black listed by any Central Government / State Government / PSU /Government Bodies / Autonomous Bodies / Private Sector	Self-declaration signed by the Authorized signatory	
7	The firm should have indigenous design and development capabilities and should not offer finished products of foreign OEMs to this project.	Self-declaration signed by the Authorized signatory	
8	The firm should have skilled workers/professionals / experts in relevant Clause 3 & 5 pf the RFP. This is essential of the pre-qualification criteria as hiring entirely new manpower and training/upgrading their skills is not only time consuming but makes the proposal un-viable.	Copy of Certificate by Statutory Auditor or Company Secretary of the firm and subject to audit by CSIR-NAL team to verify the HR skills available for the RFP deliverables	
9	The firm should have minimum basic facilities for LM UAV manufacturing facility, assembly, integration & equipping facility as per Clause 3 & 5. This is essential of the pre-qualification criteria as setting-up new facility and getting certification etc., not only cost & time consuming but makes the proposal un-viable.	Proof of existing facilities subject to inspection by CSIR-NAL team	

Note: Please supply documents which directly indicate above parameters, do not attach documents from where information needs to be interpreted /inferred. Formats for providing the relevant information with supporting documents are provided below.

11.3.1 Details of Past Similar Experience

Please provide details of assignment during the last 5 years only relate to working with aerospace/defence sectors in manufacturing, assembly, testing, evaluation, certification and production of similar products/technology								
Sl.no	Category	Title and Brief details of work executed	Name of Client	Project/Assignment value	Nature of work with specific areas addressed	Year of Award	Execution Time Frame	Litigation/ Arbitration, if any with details
1	Government							
2	Public Sector							
3	Private sector							

Note: Decision of the Technical Evaluation Committee in ascertaining “Similar Nature” and “Similar Assignment” and the site will be final.

11.3.2 Infrastructure & Facility Available

Sl.no	Infrastructure	Qty/Size/Area	Yes/No, If yes provide details separately enclosed layout
1	UAV Manufacturing Facility		
2	Metallic Manufacturing		
3	Civil Infrastructure		
4	Any other facilities		

11.3.3 List of Skilled Workers/Experts in the Area

List of Skilled Workers/Professional/Experts				
Sl.no	Name	Qualification & Designation	Date of Joining the Post	Date of joining the organization
1				
2				
3				
4				

11.3.4 Experience of Key Personnel

Overview of the qualification and past experience of key personnel					
Sl.no	Particulars	Title of assignment	Order Value	Project Value	Execution time frame
1.	Experience of assignments of "Similar Nature"				
1.1	Experience in carrying out assignments in Government	(i) (ii) (ii)			
1.2	Experience in carrying out assignments in Public Sector	(i) (ii) (ii)			
1.3	Experience in carrying out assignments in Private Sector	(i) (ii) (ii)			
Note: 1. Decision of the Technical Evaluation Committee in ascertaining "Similar Nature" and "Similar Assignment" and the site will be final.					

11.3.5 Guidelines for Preparing Capability Statement

Firms are requested to address the following areas in their Capability Statement. The Capability. Please note that CSIR-NAL will also take into account the financial standing and other aspects during the RFP assessing process.

- a) Give a brief description of the core areas of operation of your organization as they relate to the subject RFP domain and or similar aerospace products including physical presence and geographical strength.
- b) Understanding and proposed Approach to this kind of collaboration/partnership/business.
- c) Illustrate your skills and experience of doing business in this kind of business model.
- d) Experience in the country and region on similar business.

11.3.6 Pre-Application Conference

- a) A Pre-Application conference of the interested parties shall be convened at the designated date, time and place. A maximum of three representatives of each Applicant shall be allowed to participate on production of authority letter from the Applicant.
- b) During the course of Pre-Application conference, the Applicants will be free to seek clarifications and make suggestions for consideration of CSIR-NAL. The Authority shall endeavor to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Bidding Process.

11.3.7 Overall Process followed for Two Stage RFP

Following process shall be followed for the procurement of consultancy services:

A	Stage 1- Technical Capabilities Evaluation	
	i.	Publication of RFP by CSIR-NAL
	ii.	Pre-Bid/Application Conference to understand the CSIR-NAL's RFP / Terms of Reference and revise the Scope / Terms of Reference for purpose of improving the clarity if required.
	iii.	Replies to queries raised by the firms (if any) by CSIR-NAL
	iv.	Submission of Technical Capabilities by bidders/firms
	v.	Evaluation of RFP as per Technical Evaluation Matrix of this document by the Technical Evaluation Committee as constituted by Director, CSIR-NAL.
	vi.	Intimation to shortlisted firms: Director NAL reserve the right to inform to only those qualified in technical capabilities invited to submit a commercial offer in the next stage may be informed.

B	Stage 2- Commercial offer Evaluation	
	i.	Request for Commercial Offers will be sent by Invitation to only those shortlisted firms found to be eligible in the Technical Capabilities as per the evaluation
	ii.	Receipt of Commercial Offers from the selected Firms
	iii.	Opening of Commercial Offers
	iv.	Negotiation with the most competitive commercial offer (plz. refer indicative commercial bid evaluation criteria 11.4)
	v.	Execution of production partnership agreement with the successful vendor and monitoring of the progress by Project Monitoring Committee (PMC) constituted by Director, CSIR-NAL

11.3.7 Criteria of Proposal Evaluation and Selection Procedure

Evaluation of the proposal is as per CSIR guidelines for Technology Transfer & Utilization of Knowledge Base - 2017.

11.3.8 Technical Evaluation Methodology

As per sl.no. 7.3.7 above and the matrix for evaluation is given below.

Sl. No	Criteria	
	Sub-criteria	Criteria Total
1	Past experience of the firm/industry partner (track record)	50%
2	Existing infrastructure & facilities (as per 7.3.2)	20%
3	General profile of qualification, experience and number of key staff (not individual CVs)	20%
4	Overall financial strength of the firm in terms of turnover, profitability and cash flow (liquid assets) situation	10%
	Total	100%

- The CSIR-NAL shall shortlist all the firms who secure a minimum of 70% marks
- Decision of Technical Evaluating Committee in ascertaining ‘Similar Nature’ and ‘Similar Assignment’ and the site will be final.
- Please also provide as an Annexure to this form a Capability Statement of no more than 5 pages in font size Arial Narrow 12, which provides the necessary details as per guidelines given in section 7.3.4.

11.4 INDICATIVE COMMERCIAL BID EVALUATION CRITERIA

The indicative commercial bid parameters/criteria for the firms qualifies the **successful Technical Capabilities** have been provided in the table below:

Sl. No.	Criteria	CSIR- NAL Terms	BIDDER	Remarks
1.	Source of funding	The firm should provide details and documentary evidence for source of funding of Rs. 38 Crores (RoM) for the development of the project	Acceptance to CSIR-NAL terms	
2.	The partner capability produce the subsystems as per the final design and detailed in Clause 3	Expect the industry partner to produce & supply the Subsystems meeting the final design	Acceptance to CSIR-NAL terms	
3.	Meeting the requirement of technical expertise as detailed in Clause 5	Industry partner to have technical expertise to meet the project objectives and deliverables	Acceptance to CSIR-NAL terms	
4.	Facility and manpower having capability to deliver 10 LM-UAVs within the project approved PDC time from the date of signing of the agreement with CSIR- NAL.	Plz. Refer clause 4.9 & 4.10	Acceptance to CSIR-NAL terms	
5.	Royalty payment to CSIR-NAL	Min. expected 5% on ex-factory sales	Bidder offer Of Ex-factory sale	
6.	Acceptance to make investment as per RoM cost and sharing risk in the project	Must have good financial strength/Cash-flow/ Turnover to commit funds for the project	Acceptance to CSIR-NAL terms	
7.	Readiness of mass production Facility at Bidders premises.	Within 6 months from the PDC of the project	Acceptance to CSIR-NAL terms	
8.	Obtaining necessary certification from DGCA & CEMILAC for prototype production as well as series production	Within 6 months from the date of signing of the agreement	Acceptance to CSIR-NAL terms	
9.	Acknowledgement for the product: LM-UAV	The name shall be displayed on each of manufactured UAV with "Technology of CSIR-NAL"	Acceptance to CSIR-NAL terms	

Note: The Commercial Offer format will be prepared by CSIR-NAL team and sent only to the Firms who qualify in the Technical Capabilities Offer

12. INSTRUCTIONS TO PROSPECTIVE COLLABORATING FIRM (S)

12.1 Documents to Furnish

The Prospective Collaborating Firm(s) are requested to go through all pre-qualification requirements, scope of collaborating R&D, Manufacturing & Commercialization for execution & requirements w.r.t technical / financial capabilities for acceptance and submission of documents for verification by CSIR-NAL.

Documents to be furnished are as follows.

- a. Authorization Letter (Format – 1)
- b. Declaration - Expression of Interest (Format – 2)
- c. Applicant Profile for Technical Capabilities (Format-3)
- d. Strength & Merits of the Applicant (Format-4)
- e. Undertaking with regard to Blacklisting (Format-5)
- f. Undertaking with regard to Non-Litigation (Format- 6)
- g. Letter of Compliance to cost & risk sharing partnership (Format-7)
- h. Financial Offer for Royalty payments (Format-8)
- i. Self-declaration for offering indigenous products (Format – 9)

Additional requirements

- j. RFP document with each page duly stamped and signed by the Authorized signatory.
- k. Supporting documents, as mentioned in Formats 1-9
- l. Latest Certificate of Registration of the Industry
- m. Any other information which Prospective firm like to provide.

CSIR-NAL reserves the right to call for any clarifications confined in the broad scope, wherever such a clarification become necessary for proper judgment in evaluation.

12.2 Rejection Criteria

The application is liable to be rejected if:

- a. The proposal is not submitted as per the requirements indicated in the RFP.
- b. Not in the prescribed format.
- c. Not properly stamped and signed as per requirements.
- d. Received after the expiry of due date and time.
- e. All relevant supporting documents are not furnished with the Pre-Qualification Criteria (PQC).
- f. The proposal shall be substantially responsive without any material deviation, failing which the proposal shall be summarily rejected.

12.3 Disclaimer

- a. CSIR-NAL may at its discretion or as a result of a query, suggestion, comment of the offerer, may modify the RFP documents by issuing an amendment or a corrigendum at any time before opening the RFP. Any such amendment or corrigendum will be uploaded on CSIR-NAL's website www.nal.res.in and the same will be binding on the all the proponents, as the case may be.
- b. CSIR-NAL at its discretion may extend the due date of submission of RFP and the decision of CSIR-NAL in this respect would be final and binding on the respondents. In the event of changes in the time schedule, CSIR-NAL shall notify the same only through its website www.nal.res.in. Interested respondents are advised to check the above website regularly for corrigendum/addendum, if any which will be published only in the website.
- c. If at any time during the examination, evaluation and comparison of RFP, CSIR-NAL at its discretion can ask the firms for the clarification of its RFP. The request for clarification and the response shall be in writing/email.
- d. All cost and expenses associated with the preparation and submission of RFP response shall be borne by the proponents. CSIR-NAL shall not be responsible for any late receipt of applications for any reasons whatsoever.
- e. No agent/agents or third party/parties are engaged by CSIR-NAL in this process. It is advised to deal directly with CSIR-NAL representative who is signatory to this document.
- f. Conditional offers will be summarily rejected. RFP which is found to be incomplete in content and/or attachments and/or authentication etc., is liable to be rejected. CSIR-NAL reserves the right to reject all applications without assigning any reasons thereof.
- g. CSIR-NAL may relax or waive any of the conditions stipulated in this document as deemed necessary in the best interest of the CSIR-NAL without assigning any reasons thereof.
- h. The Director, CSIR-NAL, Bengaluru reserves the right to accept or reject any or all the prospective RFP Responses in full or part thereof without assigning any reason.

12.4 Governing Law & Arbitration

- a. This **RFP, agreement therein** and all questions relating to its validity, interpretation, performance and enforcement (including, without limitation, provisions concerning limitations of actions), shall be governed by and construed in accordance with the laws of India.
- b. In the event of any question/dispute/difference arising under the agreement or in connection herewith (except as to matters the decision of which is specially provided under the agreement), the same shall be referred to the Delhi International Arbitration Centre for appointment of Arbitrator to adjudicate the dispute.
- c. The award of the arbitrator shall be final and binding on the Parties. The Arbitrator may give interim award(s) and /or directions, as may be required.
- d. Subject to the aforesaid provision, the Arbitration and Conciliation Act, 1996 and the rules made hereunder and any modification thereof from time to time being in force shall deemed to apply to the Arbitration proceedings under this clause.
- e. Alternatively, Parties may adjudicate the dispute through alternative dispute resolution mechanism by referring to India International Arbitration Centre Located at New Delhi.

In case of any clarification required, please contact:

Commercial/Business Queries

1. Mr. R Venkatesh
Head, PBMD
CSIR-National Aerospace Laboratories
HAL Airport Road, Kodihalli
Bengaluru-560017
Tel-080-25086130
Email: rvenkatesh@nal.res.in

Technical/Project Related Queries

2. Dr P V Satyanarayana Murthy
Head – UAV
CSIR-National Aerospace Laboratories
HAL Airport Road, Kodihalli
Bengaluru-560017
Tel-080-25086549/25051730
Email: satya@nal.res.in

Authorization Letter

(To be submitted on Firm's Letter Head)

To,

Director,
CSIR-NAL, HAL Airport Road,
Kodihalli, Bangalore- 560017.

Subject: Letter for Authorized Signatory

Ref. No. Ref: RFP No.dated 2024

Sir,

This has reference to your above mentioned Request for Proposal
(RFP) for

Mr./Miss/Mrs/Dr _____ is hereby
authorized to submit the RFP documents and participate in the processing on behalf
of M/s _____ (Firm Name).

The specimen signature is attested below:

Name: _____

(Specimen Signature of Representative)

Yours faithfully,

(Signature of the Authorized
signatory)

Name:

Designation

Seal :

Date:

Place:

Expression of Interest

(To be submitted on Firm's Letter Head)

To

Director,

CSIR-NAL, HAL Airport Road,

Kodihalli, Bangalore- 560017.

Subject: Submission of RFP for Joint Collaborative R&D
on.....

Ref: RFP No.dated

Sir,

The undersigned having read and examined in detail all the RFP documents pertaining to your transfer of technology, do hereby express the interest to undertake the manufacture of the product as mentioned in the RFP document. The details of the Company and contact person are given below:

1	Name of the Proponent	
2	Address	
3	Name, designation & address of the person to whom all references shall be made	
4	Telephone No. (with STD code)	
5	Mobile No. of the contact person	
6	Email ID of the contact person	

The following documents are enclosed:

Sl. No.	Documents required	Type of document attached	Page No.
1	Company Incorporation Certificate from ROC/start up/Partnership deed		
2	GST Registration or GST exemption certificate/ PAN Card.		
3	Pamphlet or Brochure		
4	Certificate from the Chartered Accountant of the Organization/Audited Balance sheets for last three financial years, Income Tax return.		
6	Proof of a registered office and a manufacturing Unit in India.		
7	Authorization Letter	As per format – 1	
8	Expression of Interest	As per format – 2	
9.	Applicant Profile for Technology Expertise	As per format – 3	
10.	Strength & Merits of the Applicant	As per format - 4	
11	Business Plan	A brief concept notes on planning & execution, production, marketing etc. (not more than 5 pages)	

12	Undertaking on the Letter Head regard to black listing	As per format – 5	
13	Undertaking with regard to Non-Litigation	As per format – 6	
14	Letter of Compliance to cost and risk sharing partnership	As per format - 7	
15	Financial Offer for Royalty Payments	As per format – 8	
16	Self-declaration for offering indigenous products	As per format – 9	
17	Any accredited & ISO certifications (If applicable)		

I/we hereby declare that my/our RFP is made in good faith and the information contained is true and correct to the best of my/our knowledge and belief.

Thanking you,

Yours faithfully,

(Signature of the Authorized signatory)

Name:

Designation:

Seal:

Place:

Applicant Profile for Technical Expertise

(To be submitted on Firm's Letter Head)

1. Organizations interested may kindly provide background information on their organization/experience. This information will help CSIR-NAL to identify the suitable industry partner for collaborative R&D.
2. Kindly attach copies of **annual report, product brochures/ pamphlets** and any other relevant information along with this form. Add additional sheets if needed.

Sl. No	Organization Background & Experience/Expertise/Facilities
1.	Please state nature and details of business carried out at present (please add separately, if needed)
2.	Major products/brands with market share
3.	Company's marketing set-up and plans for marketing the products (domestic & exports)

4.	Company's manufacturing set-up/strength with brief description of facilities/equipment/processes handled
5.	Company's human resources and highlight qualification/experience of key technical and managerial
6.	Company's R&D set-up/strength/technology tie-up with other organizations
7.	Company's experience in commercializing technology/technology absorption
8.	Company's experience in aircraft manufacturing and allied technologies

9.	Company's set-up on technical assistance & after sales support to clients
10.	Please highlight any other relevant information such as synergy in technology or marketing of the product on offer

I/we hereby declare that information given above is true and correct to the best of my/our knowledge and belief.

Thanking you,

Yours faithfully,

(Signature of the Authorized signatory)

Name:

Designation:

Seal:

Date:

Place:

Strengths & Merits of the Applicant

(To be submitted on Firm's Letter Head)

The following details may be submitted by the applicant to highlight the strength and merits of applicant. Attach additional sheet, if required.

1. Do you have the necessary/related manufacturing facility that may be required for the technology/product selected? Yes / No

If yes provide details

2. If No, what is your strategy for manufacturing set up with time limit as specified in RFP?

Provide infrastructure & facility setting-up plan within 6 months from the PDC of the project.

4. Do you have any experience in manufacturing and/or marketing of products of this kind? Yes /No

5. If Yes, kindly share the details

6. If No, kindly share your plan of action in accomplishing the technology commercialization of this technology.

7. What is your plan for scaling up?

8. How will the after sales & MRO will be undertaken?

9. What support do you anticipate from CSIR-NAL?

I/we hereby declare that information given above is true and correct to the best of my/our knowledge and belief.

Thanking you,

Yours faithfully,

(Signature of the Authorized signatory)

Name:

Designation:

Seal:

Date:

Place:

Undertaking with regard to blacklisting

(To be submitted on Firm's Letter Head)

To,

Director,
CSIR-NAL, HAL Airport Road,
Kodihalli, Bangalore- 560017.

Subject: Undertaking regarding Blacklisting / Non-Debarment

Ref. No. Ref: R F P No.dated..... 2024

Sir,

It is hereby confirmed and declared that
M/s

is

Not blacklisted/debarred by any Government Department/Public Sector
Undertaking/Private Sector/or any other agency for which
works/assignments/services have been executed / undertaken.

Yours faithfully,

(Signature of the Authorized Signatory)

Name:

Designation:

Seal:

Date:

Place:

Undertaking with regard to Non-Litigation

(To be submitted on Firm's Letter Head)

To,

Director,

CSIR-NAL, HAL Airport Road,

Kodihalli, Bangalore- 560017.

Subject: Undertaking regarding Litigation

Ref. No. Ref: RFP No.dated.....2024

Sir,

It is hereby confirmed and declared that M/s -----,
does not have any litigation / arbitration history with any Government department/
Public Sector Undertaking/ / or any other public authority with which any MoU
was / has been executed / undertaken.

Yours faithfully,

(Signature of the Authorized signatory)

Name:

Designation:

Seal:

Date:

Place:

Letter of Compliance for Cost & Risk Sharing Partnership

(To be submitted on Firm's Letter Head)

To,

Director,
CSIR-NAL, HAL Airport Road,
Kodihalli, Bangalore- 560017.

Subject: Compliance to Cost & Risk Sharing Partnership

Ref. No. Ref: R F P No.dated..... 2024

Sir,

It is hereby confirmed and declared that as a collaborating industry partner, we comply with cost & risk sharing partnership with a RoM cost of Rs. 38 Crore as our share. Being the R&D project, we also understand the risk involved in the outcome and its market commercialization and not have financial claim in case project risk failures.

Yours faithfully,

(Signature of the Authorized signatory)

Name:

Designation:

Seal:

Date:

Place:

Financial Offer to Royalty

(To be submitted on Firm's Letter Head)

To,

Director,

CSIR-NAL, HAL Airport Road,

Kodihalli, Bangalore- 560017.

Subject: Undertaking for License Fee and Royalty

Ref. No. Ref: R F P No.dated.....2024

Sir,

It is hereby confirmed that M/s -----, agrees to pay a Royalty of ---- % (in words----) on Net Sales to the CSIR-NAL, as per the terms for the Transfer of Technology for 150 kg LM-UAV.

Yours faithfully,

(Signature of the Authorized signatory)

Name:

Designation:

Seal:

Date:

Place:

Note: Threshold limit of royalty payment is min. 5% and firms should quote above the threshold value

Self-declaration for offering indigenous products

(To be submitted on Firm's Letter Head)

To,

Director,
CSIR-NAL, HAL Airport Road,
Kodihalli, Bangalore- 560017.

Subject: **Self-declaration for offering indigenous products**

Ref. No. Ref: R F P No.dated..... 2024

Sir,

It is hereby confirmed and declared that
M/s

Have reviewed the requirements and understands that project is of very much strategic in nature for the nation. Further we have indigenous design and development capabilities and agrees not to offer finished products of foreign OEMs to this project.

Yours faithfully,

(Signature of the Authorized Signatory)

Name:

Designation:

Seal:

Date: Place: