**INVITATION FOR EXPRESSION OF INTEREST (EOI) FOR**

**INDIGENOUS DEVELOPMENT OF CHAFF & FLARES**

**UNDER MAKE II PROCEDURE OF DPP 2016**

**Reference**: **Defence Procurement Procedure 2016 (DPP - 2016)**

**Appendices**:  **A** Preliminary Service Qualitative Requirements for Chaff and Flares

**B** Commercial Evaluation Criteria.

**C** Technical Evaluation Criteria.

**D** Information Performa.

**E** Confidentiality Agreement.

**F** Correctness Certificate.

**Annexure**: **I to Appendix C** Technical Evaluation Compliance Matrix.

**Introduction**

1. Passive Counter Measures are employed for degrading hostile weapon systems. They are also referred to as expendable ECMs as these are dispensed from the platform they are designed to protect. Chaff and IR Flares are two of the most common ECM expendables, dispensed from a Counter Measure Dispensing Systems (CMDS). Chaff (1”x1”x8”) & Flares (1”x1”x8” and 2”x1”x8”) are proposed to be procured under the Make in India initiative from Indian companies.

**Objective**

2. The objective of this EoI is to seek responses from eligible Indian vendors (defined in Annexure I of Chapter III A of DPP 2016) for the development of prototypes of indigenised Chaff (1”x1”x8”) and Flares (1”x1”x8” and 2”x1”x8”).

**Layout**

3. The EoI has been covered under the following parts:-

(a) Part I : General Information

(b) Part II : Scope of Project

(c) Part III: Evaluation Criteria

(d) Part IV: Procedure for submission of Response to the EoI

(e) Part V: Miscellaneous

4. The nodal officer for this project for all queries/clarifications/coordination will be Secretary, Project Facilitation Team, Indigenised Chaff and Flares. Address and contact details of the nodal officer are given at Paragraph 29 of the EoI.

**PART I: GENERAL INFORMATION**

5. **Categorisation**. The project is categorised as under:-

(a) **Prototype Development Phase**. ‘Make-II (Industry Funded)’ as per Make-II Procedure laid down in Chap III A of DPP-2016.

(b) **Procurement Phase**. ‘Buy (Indian-IDDM)’ as per Chapter II of DPP 2016.

6. **Quantities**. The quantities sought for the project are:-

(a) **Prototype Development**. 800 Chaff, 400 Flares (1”x1”x8” & 2”x1”x8”) each will be required for prototype development and testing.

(b) **Procurement Phase**. 11, 00,000 Chaff, 90,000 Flares (1”x1”x8”) and 1, 50,000 Flares (2”x1”x8”).

7. **Amended MAKE-II Procedure**.Detailed guidelines on Make II Procedure (Chapter III A) may be downloaded from MoD website for reference.

**PART II: SCOPE OF THE PROJECT**

8. **Scope**. Regular and continuous training is undertaken against dynamic threat scenarios. To accomplish this, there is a requirement to ensure adequate quantities of chaff & flares. This amounts to an annual recurring requirement of chaff & flares to match operational and training needs. Presently, both chaff and flares are imported and hence, there is a need for Indigenous Design, Development & Manufacture (IDDM) of these chaff & flares by Indian Industry under “MAKE-II” category.

9. **Preliminary Service Qualitative Requirements (PSQR)**. PSQR of Chaff (1”x1”x8”) & Flares (1”x1”x8” and 2”x1”x8”) is attached as **Appendix A**.The developed products are required to meet the specified technical characteristics for operational utilization.

**Timelines & Milestones**

10. **Timelines**. Stages of the development and procurement process are as given at Para 9 of the Make-II Procedure of Chapter III A of DPP 2016.

11. **Milestones**. Major activities in the procurement process will be as given below:-

|  |  |  |  |
| --- | --- | --- | --- |
| **Serial No** | **Activity** | **Remarks** | **Timelines** |
| **PHASE-I** |
| a. | Issue of EoI | By PFT | T0 |
| b. | EoI Response Submission | By EoI Respondents | T0 + 6 Weeks |
| c. | EoI Response evaluation | By PFT | T0 + 11 Weeks |
| d. | Issue of Project Sanction Order (PSO) for Development of Prototype | By PFT to qualified Development Agencies (DAs) those meeting evaluation criteria | T0 + 13 Weeks |
| **PHASE-II** |
| e. | Prototype Development & evaluation. | Qualified DAs will develop the prototype(s) after issue of PSO. | 52 Weeks |
| f. | Conduct of User Trials.  | -User trials would be carried out to validate the performance of the system against the parameters/specifications approved after the development of prototype. -User trials will be conducted after submission of responses to commercial RFP. | 16 Weeks |

**Development of Prototype and Trials**

12. The design of Chaff and Flares to meet the PSQRs will be decided by respective DAs. Any clarification related to functional or operational aspects of development as sought by the DAs will be provided by the Project Facilitation Team (PFT). The prototypes are to be inspected at DAs premises/on site. In case, DAs do not have test facility, plan to progress the trials is to be indicated in the EoI response.

13. After the prototype has been developed as per PSQR given at **Appendix A**, the PFT would carry out User Trial Readiness Review of the prototype (s) and freezing of Technical Specifications before conduct of User Trials. Evaluation will be carried out during the User Trials to validate performance against the Final Technical Specifications. Necessary technical literature pertaining to the design & material will be provided by the DAs for the User Trial Readiness Review and conduct of User Trials on the prototype.

14. Development Agencies (DAs) shall prepare the following documents for vetting and approval by user, QA agencies and Design Certification Agency.

 (a) Environmental Qualification Test Procedure (EQTP) with respect to PSQR.

(b) SOP document containing Master Drawing Index (MDI), Bill of Material (BOM) and Part list (PL).

(c) Manufacturing Process Document.

(d) QAP and ATP Document.

15. The Design and Development of the prototype is required to be undertaken by the DA as per Section III of Design, Development and Production of Military Aircraft and Airborne Stores (DDPMAS) 2002. Trials after successful development of prototype will comprise of Ground Acceptance Test (GAT) and Flight Trials. The GAT broadly envisages lab checks for technical compliance, fitment checks on the platform and functional checks post fitment. The GAT schedule is to be prepared by DAs in consultation with PFT, CEMILAC and DGAQA. The GAT results along with requisite Qualification Test results are required to be compiled by the DA. Post successful completion of GAT, a separate Directive will be issued by SHQ for conduct of Flight trials. The DAs are to coordinate with CEMILAC for issue of Flight Clearance Certificate for undertaking flight trials for Chaff and Flare. The requisite flying effort for the conduct of flight trials would be provided by the user. There would be a requirement of approximately 800 Chaff, 400 Flares (1”x1”x8”) and 400 Flares (2”x1”x8”) each of type at the trial venue. In case Chaff and Flares do not meet the PSQRs, additional timelines as mutually agreed by the PFT and DA will be granted for rectification and repeat trial. The suitable platform for flight trial would be provided by the user for fixed number of sorties only. The results of flight trials would be compiled by the user and forwarded to CEMILAC.

16. In case, the results of flight trials are successful, the DA would co-ordinate with CEMILAC for issue of final type approval as per DDPMAS 2002. The Type Approval from CEMILAC as per DDPMAS-2002 is necessary for production clearance.

**Solicitation of Commercial Offers**

17. A commercial Request for Proposal (RFP) for ‘Buy (Indian-IDDM)’ phase would be issued to DA(s) prior to commencement of User trials to solicit their commercial offers and additional technical information/ documentation, as may be necessary.

**Deliverables**

18. The project is envisaged to have the following deliverables:-

* 1. 800 Chaff, 400 Flares (1”x1”x8”) and 400 Flares (2”x1”x8”) each for prototype development and testing.
	2. Required Tools, Testers and Ground Equipment (TTGE), Technical literature comprising user handbook, operations & technical documents/manuals are to be made ready during prototype development stage.
	3. Approximately 11, 00,000 Chaff, 90,000 Flares (1”x1”x8”) and 1, 50,000 Flares (2”x1”x8”) catering for five year requirement during procurement phase. Details will be further amplified in the Commercial Request for Proposal (RFP).

**Intellectual Property Rights (IPRs)**

19. Policy on IPRs will be as given at Paragraph 42 of the Make-II Procedure of the Chapter – IIIA of DPP 2016.

**PART III: EVALUATION CRITERIA**

**Commercial Evaluation Criteria**

20. Indian entity satisfying criteria given at Annexure I of the Make-II Procedure of the Chapter– IIIA of DPP 2016 will be considered as an eligible “Indian vendor” for the project. EoI respondents will furnish their response to the Commercial evaluation Criteria as per **Appendix B**.

**Technical Evaluation Criteria**

21. The respondents to this EoI are required to furnish information about their technical capability as per **Appendix C**. Compliance/information as per **Annexure I to** **Appendix C** is also required to be submitted as per the proposed solution offered by the DA against the PSQR of chaff and flares.

22. **Indigenous Content**. Post successful development of prototype(s), further procurement will be as per the ‘Buy (Indian-IDDM)’ procedure with a minimum of 40% IC as per DPP.

23. **Additional Information**.Additional information required to be furnished as part of the EoI response is given at **Appendix D.**

24. **Foreign Collaboration**. If the DA is collaborating/plans to collaborate with a foreign technology provider, the nature of such collaboration and the technology areas being transferred must be stated in the response (please refer paragraphs
12 & 13 of **Appendix D**).It is essential to have min 40 % Indigenous content based on the cost. All relevant deliveries made under contract shall be accompanied by a certificate of IC issued by the Chief Financial Officer (CFO) of the prime/main contractor. All final deliveries under contract shall be accompanied, in addition to the certificate issued by the CFO of the prime (main) contractor as aforesaid, by its Company Auditor’s certificate.

**PART IV : PROCEDURE FOR SUBMISSION OF RESPONSE TO THE EoI**

25. The response to the EoI shall be submitted as per formats given at **Appendices B, C & D**.

26. **Guidelines for Submitting EoI Responses.**

(a) The responses should be submitted strictly as per the formats given in respective Appendices. Should a vendor need to mention any other information, a separate column/row may be added.

(b) All responses and Appendices should be submitted in a single file/folder. Supporting documents/additional references should be submitted in a separate folder with proper reference mentioned against each parameter/sub parameter in respective appendices.

(c) Any supporting document/evidence without any reference to specific parameter of criteria will not form part of assessment.

27. **Rejection Criteria for Selection as DAs**. The following may lead to rejection of EoI response:-

(a) Failure to meet Commercial Evaluation Criteria given at **Appendix B**.

(b) Failure to meet/comply with the Technical Evaluation Criteria specifications given at **Appendix C**.

(c) Failure to offer compliance to any of the terms and conditions given in the EoI.

(d) Any other parameter of the response considered inadequate by MoD, Government of India.

28. The EoI respondent shall submit three (3) copies of response to the EoI, clearly marking one copy as ‘**Original Copy**’ and second & third as **‘Duplicate Copy and ‘Triplicate Copy’**. In the event of any discrepancy between them, the original copy shall govern/ prevail. Each page of the response will bear the signatures of the authorised signatory of the company. The EoI respondent shall also submit a soft copy of the response to this EoI in a CD/DVD.

29. The envelopes shall be addressed as under:-

 Secretary, Project Facilitation Team

 Indigenised Chaff and Flares

 DASR (Room NO. 449)

Air HQ (Vayu Bhawan)

Rafi Marg, New Delhi

 Telephone/ Fax: 011-23010231/ 23011753

30. The response to this EoI must be submitted by **1500 hours on 21 Aug 2018 (six weeks from issue of EoI)** at the address mentioned above.

31. The Company will be required to sign and honour the ‘Confidentiality Agreement’ with MoD Govt of India. The ‘Confidentiality Agreement’ will be furnished by each EoI respondent at the time of submission of EoI responses as per format given at **Appendix E**.

**PART V : MISCELLANEOUS**

32. **Pre EoI Response Meeting**. Companies may submit written queries/ clarifications/ amplifications on specific issues within 10 days of the issue of EoI. A pre-response meeting will be held within 3 weeks (tentative) after the issue of EoI to clarify issues / queries raised by the participating firms to facilitate submission of response. Date of pre-response meeting will be promulgated by the PFT.

33. Guidelines for penalties in business dealings with entities as promulgated by Government from time to time will be applicable on procurement process & bidders.

34. The Pre-Contract Integrity Pact (PCIP), as detailed in paragraph 92 of Chapter II of DPP 2016, shall apply mutatis mutandis, to ‘Buy (Indian-IDDM)’ phase of ‘Make’ project.

35. Respondent would be subject to disqualification if they make false, incorrect, or misleading claims in their response to this EoI. A ‘Correctness Certificate’ as per the format at **Appendix F** will be furnished as part of the response.

36. Please acknowledge the receipt of this invitation for EoI.

 ---Sd------

File No: Air HQ/S 96135/139/ASR (D Patnaik)

 Wg Cdr

 Secretary

Date: 09 July 2018 Project Facilitation Team

 Project Chaff and Flares

Appendix: - **As stated.**

**Appendix A**

(Refer to Para 9 & Para 13 of EoI)

**PRELIMINARY SERVICE QUALITATIVE REQUIREMENTS (PSQR)**

 **FOR CHAFF & FLARES**

**Proposed Specifications**.

1. **Chaff**. Chaff cartridges form a part of the Counter Measure Dispensing System (CMDS) to protect the host aircraft from Radar guided missile threats by providing a suitable alternative and preferred decoy (as chaff cloud). The decoy should be able to lead the Radar guided missile away from the host aircraft such that it passes the target aircraft without hitting. Technical specifications for Chaff (1”x1”x8”) are outlined below:

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **Specifications** | **Characteristic** |
|
| 1. | Frequency Coverage | 2 to 18 GHz |
|  2. | Average RCS | ≥30 m2 @ 0.2 sec |
|  3. | Ejection Velocity | 25 to 50m/sec |
|  4. | Bloom time | ≤ 0.2 sec |
|  5. | Cross section | 24.64x24.64x206 mm |
|  6. | Weight | 125g nominal |
|  7. | Ejected weight  | 90 g nominal |
|  8. | Operating Temperature | - 460C to ≥ + 710C |
|  9. | Exposure Temperature | - 650C to + 850C |
|  10. | Environmental conditions for storage | 5° C to 30° C and relative humidity lower than 70 % |
|  11. | Shelf Life | ≥ 10 years |
|  12. | Service Life | Min 90 days or 60 flying hrs |
|  13. | Squib (type, nomenclature, indigenous/ex-import etc may also be specified) | (i) No fire current: 1 Amp/1Watt for 5 min(ii) All fire current: >4.25 Amps @ 15-28 Volts, 15ms pulse length(iii) Pre-fire resistance value: 1.0± 0.15 Ohms(iv) Post-fire resistance: >500 Ohms(v) Shelf Life≥ 10 years |

2. **Flares**. Flares form a part of the CMDS to protect the aircraft from Infrared (IR) seeking missiles by providing an alternate suitable IR source to heat seeking weapons. The flares are dispensed so as to appear in the seekers resolution field of view and generate a new power centroid. The flares IR radiation should be stronger than the aircraft IR strength, so as to successfully shift the centroid away from the aircraft.

 **Flares (1”x1”x8”)**

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **Specifications** | **Characteristic** |
|
| 1. | IR output (3-5µm) | ≥12 kW/sr @0.2 secs |
| 2. | Burn Time | ≥3 sec |
| 3. | Ejection Velocity | 30 to 66 m/s |
| 4. | Cross section | 24.64X24.64X206 mm |
| 5. | Weight  | 180 g nominal |
| 6. | Ejected weight | 120 g nominal |
| 7. | Operating Temperature | - 460C to ≥ + 710C |
| 8. | Exposure Temperature | - 650C to + 850C |
| 9. | Environmental conditions for storage | 5° C to 30° C and relative humidity lower than 70 % |
| 10. | Shelf Life | ≥ 10 years |
| 11. | Service Life | Minimum 90 days or 60 flying hrs |
| 12. | Squib (type, nomenclature, indigenous/ex-import etc may also be specified) | (i) No fire current: 1 Amp/1 Watt for 5 min(ii) All fire current: >4.25 Amps @ 15-28 Volts, 15ms pulse length(iii) Pre-fire resistance value: 1.0± 0.15 Ohms(iv) Post-fire resistance: >500 Ohms(v) Shelf life ≥ 10 years |

**Flares (2”x1”x8”)**

|  |  |  |
| --- | --- | --- |
| **Sl No.** | **Specifications** | **Characteristic** |
|
| 1. | IR output (3-5µm) | ≥20 kW/sr @0.2 secs |
| 2. | Burn Time | ≥3.5 sec |
| 3. | Ejection Velocity | 25 to 54 m/s |
| 4. | Cross section | 51.82X24.64X206 mm |
| 5. | Weight  | 380 g nominal |
| 6. | Ejected weight | 300 g nominal |
| 7. | Operating Temperature | - 460C to ≥ + 710C |
| 8. | Exposure Temperature | - 650C to + 850C |
| 9. | Environmental conditions for storage | 5° C to 30° C and relative humidity lower than 70 % |
| 10. | Shelf Life | ≥ 10 years |
| 11. | Service Life | Minimum 90 days or 60 flying hrs |
| 12. | Squib (type, nomenclature, indigenous/ex-import etc may also be specified) | (i) No fire current: 1 Amp/1 Watt for 5 min(ii) All fire current: >4.25 Amps @ 15-28 Volts, 15ms pulse length(iii) Pre-fire resistance value: 1.0± 0.15 Ohms(iv) Post-fire resistance: >500 Ohms(v) Shelf life ≥ 10 years |

**Appendix B**

(Refer Para 20 of EoI)

**COMMERCIAL EVALUATION CRITERIA**

1. **Name of the Vendor**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. **Evaluation Criteria**.

 (a) **Mandatory Information**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Criteria**  | **Evaluation Criteria** | **Vendor Submission** | **Remarks** |
| i. | Explosive License | License should be available and valid before issue of Project Sanction Order. | Details to be provided. |  |
| ii. | Nature of the Company. | As mandated in Annexure I of Chapter III A of DPP-2016. | Details to be provided. |  |
| iii. | Ownership Status |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Information** | **Remarks** | **Vendor Submission and****Reference**(Reference against vendor claim/ response must be flagged and mentioned in this column) | **Remarks (if Any)** |
| i. | Registration Details. |  |  |  |
| ii. | Credit Rating. | Should be appropriate to ensure availability of credit for the project. |  |  |
| iii. | Present Net Worth and Turn over for the last three years. | Should commensurate with total development and production cost.  |  |  |

(b) **Additional Information**

**Note**:-1. Refer Paragraph 18 of EoI and Annexure I of Make-II Procedure.

2. All submissions must be supported by referenced documents duly authenticated, where applicable.

3. Any input with incorrect or missing reference will not be assessed.

Date: Signature Company Seal

**Appendix C**

(Refer Para 21 & Para 27 of EoI)

**TECHNICAL EVALUATION CRITERIA**

1. **Name of the Vendor**: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. **Evaluation Criteria**.

 (a) **Mandatory Information**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **S No** | **Criteria and Sub Criteria** | **Evaluation Criteria** | **Vendor Submission** | **Reference**(Reference against vendor claim/ response must be flagged and mentioned in this column) | **Remarks (if Any)** |
| i. | Proposed indigenous content in percentage of total cost. | Minimum of 40% IC as per DPP-2016. | Commitment to be given. |  |  |
| ii. | Confirmation of capability to develop and provide equipment to meet user requirements specified in Appendix ‘A’ (PSQRs). | Should comply with the requirements in the format mentioned at Annexure I to Appx C. | Compliance to be given. |  |  |
| iii. | Paragraph wise acceptance of all terms and conditions given in the EoI. |  | Compliance to be given. |  |  |

 **Appendix C contd…**

 (b) **Additional Information**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S No** | **Information** | **Vendor Submission** | **Reference**(Reference against vendor claim/ response must be flagged and mentioned in this column) | **Remarks (if Any)** |
| i. | Execution of similar/other projects for military users in India and abroad. | Details to be provided. |  |  |

 Date: Signature Company Seal

**Appendix D**

(Refer Para 23 and Para 24 of EoI)

**INFORMATION PROFORMA**

1. Name of the Company.

2. Name of CEO with Designation.

3. Address of the Registered Office.

4. Address of the Factory/Factories.

5. Company Website(s).

6. Date of Incorporation.

7. Brief History of the Company.

8. Category of Industry (Large/ Medium/ Small/ Micro).

9. Nature of Company (Public Limited/ Private Limited).

10. Nature of Business (Manufacturer/ Trader/ Sole Selling or Authorised Agent/ Dealer/ Assembler/ Processor/ Re packer/ Service Provider). Please give broad product range as applicable.

11. Details of current products:-

(a) Type/ Description.

(b) Licensed/ Installed Capacity.

(c) Annual Production for Preceding 3 Years.

12. Details of Foreign Collaborations if any planned for execution of project.

13. Technology Received from abroad and assimilated/ planned for execution of project.

14. Products already supplied:-

(a) To Indian Army/Air Force/Navy.

(b) PSUs.

(c) DRDO and its Laboratories.

(d) Ordnance Factories.

(e) Any other Defence Organisation.

(f) To other Principal Customers.

15. Details of developmental facilities:-

(a) R&D Facilities Available.

(b) Number of Technical Manpower.

(c) Percentage of Total Turn-Over Spent on R&D during the Last Three Years.

16. Turn-Over during the last Three Financial Years.

17. Any other relevant information

18. Contact Details of the Executive nominated to co-ordinate with the Assessment Team (please provide telephone, mobile and e-mail address)

**Appendix E**

(Refer Para 31 of EoI)

**CONFIDENTIALITY AGREEMENT**

1. It is certified that Expression of Interest document for the project of Indigenised Chaff and Flare will not be shared with any agency in part or in full with any other agency. Only relevant details, as applicable, will be shared with technology partners including foreign technology partners. However, the EoI document itself will not be shared with any technology partners.

2. The company understands the security sensitivity of such operational system and any information pertaining to deployment and usage of the system including system scaling will not be discussed with third party without a written permission from the Project Facilitation Team. The company understands that failure to observe this agreement will lead to disqualification from the project.

 Signature with Company Seal

**Appendix F**

(Refer Para 35 of EoI)

**CORRECTNESS CERTIFICATE**

 It is certified that information submitted in the documents as part of the response to Expression of Interest for the project of Chaff and Flare is correct and complete in all respects. It is acknowledged that the company will be disqualified from further participation if any information provided is found to be incorrect.

 Signature with Company Seal

**Annexure I to Appendix C**

 (Refers to Para 21 of EoI for Chaff & Flares)

**TECHNICAL EVALUATION COMPLIANCE MATRIX.**

**CHAFF (1”X1”X8”)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Specification** | **Requirement as per PSQR** | **Compliance/Partial Compliance/Non-compliance** | **Justifications ,if any** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**FLARES (1”X1”X8”)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Specification** | **Requirement as per PSQR** | **Compliance/Partial Compliance/Non-compliance** | **Justifications ,if any** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**FLARES (2”X1”X8”)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl No.** | **Specification** | **Requirement as per PSQR** | **Compliance/Partial Compliance/Non-compliance** | **Justifications ,if any** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |