(11 pages)

QUESTIONNAIRE: DEVELOPMENT OF 30 MM AMMUNITION FOR NAVAL SURFACE GUN UNDER MAKE-II CATEGORY

1. **Proposal**. The Ministry of Defence, Government of India, intends to procure **30 mm ammunition for Naval Surface Gun (NSG) through Make-II procedure of DAP-2020**, as a new induction.

2. **Description**. 30 mm Naval Surface Gun is under development through Make-I procedure of DAP-2020. The gun shall fire all types of NATO standard ammunition of 30 mm calibre. It is presently envisaged to develop HE/ Armour Piercing and HE/ Tracer types of 30 mm NATO standard ammunition.

3. **Prototypes**. Following prototypes of 30 mm NATO standard ammunition will be required:-

(a) 100 rounds HE/ Armour Piercing (Incendiary).

(b) 100 rounds HE/ Tracer.

4. **Production Quantity**. 30 mm ammunition for NSG will eventually be a recurring requirement. Requirement of about 1,56,800 rounds for five years is currently envisaged as follows:-

(a) HE/ Armour Piercing - 1,17,600.

(b) HE/ Tracer - 39,200.

Note. Quantity indicated is only an indicative requirement and is not a firm commitment. Quantity has been provided so as to enable firms to arrive at economy of scale prior providing statement of cost of production.

5. Vendors are requested to furnish information as elucidated in succeeding paragraphs in order to identify prospective vendors who can undertake the said project.

6. Please provide details of the vendor in accordance with Proforma at Annexure I.

7. Please provide description of the vendor organisation in terms of research and development of ammunition, including financial capability and technical expertise.

8. Please provide details regarding major successful projects/ products/ technologies developed/ under development involving Research and Development in the field of ammunition, particularly ammunition of 30 mm calibre.

9. Please provide details of annual turnover for last three years.

10. Please provide details of ammunition manufactured by the vendor and supplied in India/ abroad.

11. Please provide details of any ammunition manufactured by the vendor and supplied to Indian Navy.

12. Does the vendor have the capability to develop prototype of 30 mm NATO standard ammunition and produce the same indigenously?

13. Will NSG ammunition be designed and developed indigenously in India? If no, please provide details of all foreign companies with whom there is a partnership/ Joint Venture/ MoU for carrying out the design and development? Will your company finally hold the IPR of the design so generated during the prototype development phase?

14. Does the vendor have adequate infrastructure to develop, test and manufacture 30 mm NATO standard ammunition? If yes, please provide details of the same. If no, what would be the timeframe for establishing the same?

15. What are the areas of uncertainty envisaged by the vendor in the design, development and production of the indigenous development of 30 mm NATO standard ammunition?

16. What is the approximate indigenous content (in terms of cost percentages) at both Prototype Development Stage and Production Stage?

17. What are the major components of 30 mm NATO standard ammunition?

18. What are the major components that will be indigenously manufactured by the vendor? What will be the source of acquisition for the remaining components (details of the source firms may be specified indicating whether the source firms are domestic/ foreign)?

19. What is the modus operandi for Transfer of Technology (ToT) of the imported technology to achieve self-reliance?

20. What are the anticipated timelines for development of the prototype (including Quality Assessment Tests) and production of bulk quantities? Specify the timelines separately for each.

21. What is the quantity that can be manufactured per year during production?

22. What will be the annual rate of supply? What would be the estimated lot/ batch size for supply of ammunition?

23. How will the vendor ensure continuous supply of components, especially for those components being procured ex-import, if any?

24. Where will the propellant for the ammunition be sourced from?

25. Where will explosive be filled in the shell?

26. Is the vendor ready to undertake development on No Cost basis in accordance with Make-II scheme including requisite type tests?

27. What are the likely design and development costs for prototype of 30 mm NATO standard ammunition?

28. What will be the approximate budgetary cost for manufacture of 1,56,800 rounds of 30 mm NATO standard ammunition over a period of five years? Please provide an estimated budgetary quote as per Annexure II.

29. What are the proprietary technologies incorporated in the ammunition being developed? Are the proprietary technologies indigenous or ex-import? If ex-import, will the foreign vendor transfer the technology? Clarify the Intellectual Property Rights (IPR) for 30 mm NATO standard ammunition.

30. Is the vendor willing to transfer the technology to any DPSUs in future? If yes, will the ToT include the proprietary technologies?

31. Does the vendor have a valid Government Industrial License for design, development and manufacture of 30 mm NATO standard ammunition in India?

32. Please provide compliance to industry standards, including quality control.

33. Will the vendor carry out necessary R&D on more types of 30 mm NATO standard ammunition?

34. Any additional details in respect of the proposed development carried out may be provided.

35. Please provide details on technical/ operational parameters as follows:-

Ser	Description
Operational Parameters	
(a)	Calibre.
(b)	Dimensions.
(c)	Weight.
(d)	Operational Limits. Are there any environmental temperature/ humidity limits for operating 30 mm NATO standard ammunition in Indian atmospheric conditions? Please provide limits and their impact on performance of ammunition.
(e)	Muzzle Safety Distance
(f)	Minimum distance for round functioning on impact.
(g)	Penetration capability (API variant).
(h)	Is there any Self Destruction mode?
Quality Assurance Standards	
(i)	Environmental test specifications.
(j)	Vibration requirements.
(k)	Withstanding salt water spray.

Ser	Description
(l)	Electromagnetic effects.
(j)	Shock test specifications.
(k)	Provide details of IP rating and applicable standards of compliance.
(l)	Painting
Maintenance	
(m)	Shelf life of ammunition in both afloat and ashore stowage.
(n)	Warranty.

36. Is there a need for building any infrastructure for 30 mm NATO standard ammunition?

37. Is there a requirement of setting up a dedicated proof facility for testing the ammunition prior exploiting onboard ships and to check serviceability during entire ammunition life cycle?

38. How will ammunition be proven for reliability and safety?

39. Considering each ammunition component is required to be subjected to static and dynamic proof/ firing prior using the same for assembly in the final batch/lot of ammunition, how would the requirement of Proof-in-aid components be met?

40. Does the firm possess Environmental test facilities/provisions to undertake Qualification and Acceptance tests as per the specification requirements?

41. Please indicate willingness for trials of 30 mm NATO standard ammunition on No Cost No Commitment basis.

42. Please provide envisaged modalities for trials of prototype viz. location, platform, source of gun, duration and methodology.

43. Please submit MSME/ Start Up certificate with validity.

44. Please enclose an undertaking to comply with indigenous design which the firm will be required to submit at EOI stage (Appendix A to Chapter I of DAP 2020 refers).

45. Any other information which the vendor would like to submit before the Feasibility Study may be provided.

Annexure I

VENDOR INFORMATION PROFORMA

1. Name of the Vendor/Company/Firm. (Company profile including share holding pattern, in brief, to be attached)

2. Type.

   (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/Web Site:_____

Email: _____

4. Local Branch/Liaison Office/ Agent (If Any).

   (a) Name and Address.

   (b) Pin code.

   (c) Tel.

   (d) Fax.

   (e) Email.

5. Financial Details. Category of Industry (Large/ Medium/ Small Scale):_____

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 Licence Number.

(f) Indigenous component of the product (in percentage).

(g) Status (in service/design & development stage).

(h) Production capacity per annum.

(i) Countries/agencies where equipment supplied earlier (give details of quantity supplied).

(j) Estimated price of the equipment.

10. Any other relevant information.

11. **Declaration**. It is certified that the above information is true and any changes will be intimated at the earliest.

(Authorised Signatory)

Annexure II

STATEMENT OF COST FOR PROTOTYPE DEVELOPMENT OF 30 MM NATO STANDARD AMMUNITION FOR NSG

Ser	Items	Qty	Imported components cost (i)	Indigenous components Cost (ii)	Approximate Unit Cost in Rupees (o) + (ii)	Any other Details Please mention specific IC content that will be achieved
A.	Cost of fully formed 30 mm NATO Standard Ammunition					
B.	Cost of associated equipment (specify each line item)					
C.	Cost of any special maintenance Tools or special test equipment					
D.	Project Monitoring and Admin costs	-				
E.	Cost of ToT if any	-				
F.	Any Other Costs (*please specify head*)					
Total						

STATEMENT OF COST FOR PRODUCTION GRADE VERSION OF 30 MM NATO STANDARD AMMUNITION FOR NSG

Ser	Items	Qty	Imported Components Cost (i)	Indigenous Components Cost (ii)	Approximate Unit Cost in Rupees (i) + (ii)	Any Other Details
A.	Cost of 30 mm NATO Standard Ammunition					
B.	Cost of associated equipment (specify each line item)					
C.	Cost of any Special Maintenance Tools or special test equipment					
D.	Cost of recommended MRLS					
E.	Cost of documentation					
F.	Any other costs					
	Total					

Note: *The quantity indicated for production is only an indicative requirement and is not a firm commitment. The quantity has been provided so as to enable firms to arrive at economy of scale prior providing statement of cost of production.*