

**BRIEF OF PROJECT**  
**LIGHT WEIGHT INDIGENOUS KA BAND TERMINALS FOR MOBILE AND**  
**AIRBORNE PLATFORMS UNDER MAKE-I CATEGORY OF DAP-2020**

1. **Name of proposal.** Procurement of Light Weight Indigenous Ka Band Terminals for Mobile and Airborne Platforms.
2. **User Directorate in SHQ.** Directorate of System Application (DSA), DG Sigs.
3. **Brief Description.** There is a requirement of developing Ka Band terminals which can be utilised by high mobility and aerial platforms / weapon systems in Indian Army. While mobility solutions utilising Ka band exist in global markets, challenge lies in high mobility solutions where the path of the platform is not uniform. This is because, under these circumstances, velocity parameters and Doppler shifts create highly time varying channel conditions which need to be addressed using advanced signal processing techniques, and channel estimation.
4. **Operational Justification.** Beyond Line of Sight Communication is required for high mobility and aerial platforms / weapon systems which will be deployed by Indian Armed Forces for National Security.
5. **Approximate Quantity.**
  - (a) Low Mobility Ka Band Terminal - 400.
  - (b) High Mobility Ka Band Terminal - 100.
6. **Technical Parameters.** This project have two types terminals (form factors and specifications are indicative / approximate guidelines and are subject to change for betterment):-
  - (a) **Low Mobility Ka Band Terminal.** This terminal should be able to support data rates of upto 08 Mbps at a speed of 60 Kmph (minimum). The unit should have a small and compact form factor, wherein, net weight including antenna should be not more than 50 Kg. It should have a BUC power range of 40W to 50W. (Specifications are only indicative and subject to revision / improvement after feasibility study).
  - (b) **High Mobility Airborne Ka Band Terminal.** This terminal should be able to support data rates of upto 2 Mbps at a speed of 400 Kmph with random acceleration of (+/-) 4G. The unit should have a small and compact form factor, wherein, net weight including antenna should be not more than 18 Kg. It should have a BUC power range of 12W to 20W. (Specifications are only indicative and subject to revision / improvement after feasibility study).

*Note: Availability of Ground Hub and GEO Satellite with Ka Band Transponder can be assumed while working out the proposal / solution.*
7. **Indigenous Content.** Minimum 50%.
8. **Additional Information.** Nil.
9. **Contact Details.** Lt Col M D Gopinath, GSO1 DSA  
Directorate of System Application (DSA)  
Directorate General of Signals, IHQ of MoD of (Army)  
Room No 635, 'A' Wing, Sena Bhawan DHQ PO, New Delhi-11  
Tele : 011-23018984, Email : [skylight.74@gov.in](mailto:skylight.74@gov.in)
10. **Format of Response.** Indian vendors (term to include, public limited company, private limited company, partnership firms, limited liability partnership, one person company, sole proprietorship registered as per applicable Indian laws) desirous of participating in the case may submit their proposal along with duly completed questionnaire (as per format placed at **Appendix A**) through letter, fax or email to above contact details.

**QUESTIONNAIRE RELATED TO LIGHT WEIGHT INDIGENOUS KA BAND  
TERMINALS FOR MOBILE AND AIRBORNE PLATFORMS (MAKE -I)**

1. **Company Details.**

- (a) The category of company, whether large/ medium/ small or start up?
- (b) Years of existence (Established in \_\_\_\_\_)?
- (c) Annual turnover of the company?
- (d) The credit rating of company and net worth?
- (e) Annual profit in last three financial years?
- (f) The shareholding pattern of the company?
- (g) Whether the company is OEM, manufacturing agency or system integrator?
- (h) Experience of the company in related fields?
- (i) Whether similar equipment has been supplied to any other government agency (Type of equipment, quantity and cost)?
- (j) Whether company has patents/ IPR of any critical components/sub-systems?
- (k) Whether the company has any tie-ups/ Joint ventures with any foreign firm for producing similar equipment?

2. **Infrastructure.**

- (a) Does the company have adequate infrastructure to develop, integrate and manufacture? If not, what would be the procedure and timelines to establish the same?
- (b) Does the company have adequate infrastructure for carrying out trials and testing of the equipment?

3. **Cost.**

- (a) Rough Cost of the prototype and the product (unit cost and total cost)?
- (b) Minimum quantity economically viable for business?
- (c) Quantity of prototype recommended for user trials?

4. **Indigenous Content.**

- (a) Likely achievable indigenous content at prototype as well as production stage?

(b) Details of critical technologies identified for the system and details of critical technologies not likely to be available in India, to be sourced ex-import (in cost percentage terms)?

(c) Sub-systems/equipment manufactured by the company and details of outsourced equipment along with details of the manufacturer?

(d) Details of Intellectual Property Rights (IPR).

5. **Time for Manufacture.** Likely time for development of the prototype (in weeks) and manufacturing capability of the product (per year capability).

6. **Sustenance.**

(a) The ability of the company to sustain the product through the lifecycle of the equipment (including spares and upgrades).

(b) How will continuous supply of spares be ensured especially for components procured ex-import?

(c) How will continuous supply of spares be ensured from sub-contractors?

(d) What measures would be taken to mitigate the effects of extreme cold climate on the equipment.

(e) Recommended requirement of SMTs/STEs, jigs and fixtures.

(f) Warranty period of the product.

7. **Broad Details/Technical Specifications of Existing Products/ Under Development or Capable of Being Manufactured.**

(a) Form Factor & Wt.

(b) Gain parameters.

(c) Frequency Range.

(d) Power parameters.

(e) Achievable data rates.

(f) Deployment Mechanism.

(g) Operating and Storage Temperature Range.

(h) Security Module.

(i) Interface and Accessories.

(j) Reliability, Maintenance and Miscellaneous parameters.

8. Any other information relevant to the project not included in the questionnaire may be forwarded.