

Appendix A

(Refer Para 5 of
Brief Anti-spoofing and Anti-
jam GNSS (GPS and IRNSS)
receiver)

TECHNICAL ASPECTS1. **Performance Specification.**

(a) Description	<ul style="list-style-type: none"> • Compatible with existing systems & IRNSS • Compatible with aircraft navigation system • Spoof and Jam resistant with active antenna
(b) GNSS Signals	L1,L2 - GPS, SBAS, GLONASS L1 &L2 L5 - IRNSS S – IRNSS
(c) Cold Start TTFF	Less than or equal 45 seconds with Multi-GNSS
(d) Hot Start TTFF	Less than or equal 15 seconds with Multi-GNSS
(e) Positioning Modes	<p>Single Frequency Single GNSS: GPS / GLONASS or IRNSS</p> <p>Single Frequency Multi-GNSS: GPS + IRNSS + SBAS</p> <p>Dual Frequency Single GNSS : GPS (L1, L2), GLONASS L1 &L2 and IRNSS (L5, S)</p> <p>Differential : Combination of SBNS mentioned above</p>
(f) Horizontal position Accuracy from receiver	<p>Single Frequency Multi-GNSS: better than or equal to 5M (CEP)</p> <p>Dual Frequency Single GNSS: better than or equal to 1.5m (CEP)</p> <p>Differential: better than or equal to 2.5m(CEP)</p>
(g) Speed Accuracy	better than or equal to 0.1 M/S (RMS)
(h) Position Update Rate	Upto 20 Hz
(i) Max Speed and Altitude range	515 m/s Max., -1,000m to + 18,000m
(j) Max 'g' load output complaint to airborne GPS receiver.	10g
(k) Platform for development	Will be identified during feasibility study

2. **Anti-Jamming and Anti-Spoofing Characteristic**

(a) Jamming Resistant	Using active antenna with beam steering
(b) Spoofing detection and mitigation	Using appropriate algorithm and topology

3. **Receiver Environmental Specifications**

(a) Operating temperature	-40 ⁰ C to + 75 ⁰ C
(b) Storage Temperature	-40 ⁰ C to + 85 ⁰ C

4. **Physical Parameters**

(a) Dimensions	Form factor as per the IAF platform
(b) Weight including antenna	Less than 5 Kg
(c) Interface Connector	To be compatible with the platform

Abbreviations Used:

TTFF – Time To First Fix

SBAS – Satellite based augmentation system

Appendix B

(Refer Para 6 of
Brief Anti-spoofing and Anti-
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GENERAL ASPECTS

1. Whether the company/Association of Persons (AoP) is eligible as per provisions of DPP 2016? (Eligibility of Participation: Indian vendors only).
2. Whether the vendor can provide an assessment of its capability (Financial and Technical)? If so provide the necessary documentation for verification.
3. Whether 40% or higher (specify) Indigenous Content (IC) that can be ensured?
4. Does the vendor envisage the feasibility of achieving future exports?
5. Whether R&D or ToT through foreign collaboration is proposed by the vendor? (Provide indicative information)
6. Estimated cost of development in case indigenous R&D is proposed.
7. Estimated tentative time period of completion of R&D or ToT.
8. Please indicate an assessment of minimum economic order quantities required, if applicable.
9. Please indicate plan/status of airworthiness certification of the system/components. Ab-initio indigenous designs will need to be certified through Centre for Military Airworthiness Certification (CEMILAC).
10. Please provide relevant and applicable technical details – specific to the product under development.
11. Any other information considered necessary to assess feasibility for indigenous design, development and manufacture.