



# TECHNOLOGY DEVELOPMENT FUND (TDF) SCHEME



## TITLE: DEVELOPMENT OF CW TWT FOR ASJP

### 1. Objective:

To design and develop a Continuous Wave Traveling Wave Tube (CW TWT) for the Active Self-Protection Jammer (ASPJ), ensuring enhanced electronic warfare capabilities for airborne platforms. The project aims to indigenize this critical technology to improve operational performance and reduce dependency on foreign sources.

### 2. Background:

The ASPJ is a critical component of electronic warfare systems used to protect airborne platforms from radar-guided threats. The CW TWT is a core element of the jammer, enabling the generation of high-power RF signals necessary for jamming and deception. The current reliance on imported CW TWTs limits operational flexibility, increases costs, and poses logistical challenges. Developing an indigenous solution is crucial for ensuring strategic self-reliance and sustainability.

### 3. Problem Statement:

The unavailability of indigenously developed CW TWTs for the ASPJ limits the operational readiness of electronic warfare systems. There is an urgent need to design and develop a high-performance CW TWT that meets the stringent requirements of modern airborne electronic warfare while reducing costs and dependency on foreign suppliers.

### 4. Proposed Solution:

1. **High-Efficiency Design:** Develop a CW TWT with optimal efficiency and high output power to meet ASPJ specifications.
2. **Indigenous Manufacturing:** Establish local production capabilities for CW TWTs to reduce procurement costs and ensure supply chain security.
3. **Testing and Validation:** Perform rigorous testing to ensure reliability and performance under the harsh environmental conditions of airborne platforms.
4. **Scalability:** Enable production scalability to meet the operational needs of various electronic warfare systems.

### 5. Expected Outcome:

1. Deployment-ready CW TWTs for ASPJ systems with proven performance and reliability.
2. Enhanced electronic warfare capabilities for the armed forces, improving survivability in contested environments.
3. Strategic self-reliance in critical RF component technology.

**6. Key Deliverables:**

1. Fully functional CW TWT prototypes meeting ASPJ requirements.
2. Test and evaluation reports validating performance under operational conditions.
3. Manufacturing and maintenance guidelines for scalable production.
4. Documentation for integration with existing ASPJ systems.

**7. Strategic Relevance:**

This project addresses a critical capability gap in electronic warfare systems, ensuring operational independence and improved performance. It aligns with national objectives of indigenization and self-reliance in defense technology, while also fostering advancements in RF and microwave engineering.

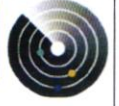
**8. Future Expectation:**

The indigenously developed CW TWT will enhance electronic warfare capabilities, ensuring operational readiness and cost efficiency by reducing dependency on imports. It will provide scalability for broader defense applications and lay the foundation for future advancements in RF and microwave technology. Additionally, it has potential for export, boosting India's global defense footprint.

**--End of Document--**



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### **FEASIBILITY CUM RFI RESPONSE FOR THE PROJECT REQUIREMENT UNDER TDF SCHEME (PROFORMA)**

1. **Name of the Institute** (Industry/Academia):
2. **Contact details:**
  - a. Email
  - b. PoC
  - c. Address
3. **Title of the project requirement:**
4. **Project Description** (Define broad understanding of the project requirement and proposed solution under the project).
5. **Briefly detail the proposed technical solution in terms of subsystem/submodule levels.**
6. **Road map for achieving the proposed outcome (Development Plan Phase wise -Max 5 phases).**
7. **Development and production Estimates:**
  - i. Estimated time required for development of the proposed technology /product (In Months).
  - ii. Estimated cost required for the for development of the proposed technology /product (BQs of submodules/subsystems if any pls attach).
  - iii. Estimated production cost of the end product after successful development ( per unit or batch cost).
  - iv. Whether the industry has already done any Suo moto design and development of the proposed product/technology at Technology Readiness Level – Yes/No
  - v. Details of Suo moto design and development done if marked Yes in previous question (within 250 words).
  - vi. Essential infrastructure required for development of the proposed product/technology for which funding is required.
8. **Technical strength in terms of manpower.**
9. **Relevant Work Experience.**
10. **Any other relevant information**

Queries if any and the reply in PDF FORMAT to be submitted online addressing to;

TO,

**THE DIRECTOR TDF, DRDO**

**DRDO BHAWAN, RAJAJI MARG, NEW DELHI 110011**

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