



# TECHNOLOGY DEVELOPMENT FUND (TDF) SCHEME



## TITLE: DEVELOPMENT OF PULSE TWT FOR ASJP

### 1. Objective:

To design and develop an indigenous Pulse Traveling Wave Tube (Pulse TWT) for the Active Self-Protection Jammer (ASPJ), ensuring enhanced electronic warfare capabilities for airborne platforms. The project aims to eliminate dependency on imports, reduce costs, and improve system performance.

### 2. Background:

The ASPJ plays a crucial role in protecting airborne platforms from radar-guided threats by jamming and deceiving enemy radar systems. The Pulse TWT is a key component, providing high-power RF pulses needed for jamming operations. Currently, the reliance on imported Pulse TWTs leads to high costs and logistical challenges. An indigenous solution is essential to meet operational requirements and achieve self-reliance in critical defense technologies.

### 3. Problem Statement:

The lack of an indigenously developed Pulse TWT limits the operational flexibility of electronic warfare systems and increases dependence on foreign suppliers. A high-performance, locally developed Pulse TWT is urgently needed to enhance the ASPJ's effectiveness while ensuring cost and supply chain efficiency.

### 4. Proposed Solution:

1. **Indigenous Development:** Design and manufacture a Pulse TWT capable of generating high-power RF pulses to meet ASPJ specifications.
2. **High Reliability:** Ensure the TWT operates reliably under the harsh environmental conditions of airborne platforms.
3. **Testing and Validation:** Perform rigorous performance evaluations to validate effectiveness and durability.
4. **Scalability:** Establish a scalable production framework to meet current and future operational demands.

### 5. Expected Outcome:

1. A fully functional, indigenously developed Pulse TWT for ASPJ systems.
2. Reduced costs and dependency on imported components, enhancing supply chain resilience.
3. Improved electronic warfare capabilities for Indian armed forces.

### 6. Key Deliverables:

1. Prototypes of the Pulse TWT meeting performance specifications.
2. Comprehensive testing and validation reports.
3. Manufacturing and maintenance guidelines.
4. Documentation for seamless integration with existing ASPJ systems.

**7. Strategic Relevance:**

The development of an indigenous Pulse TWT is critical for strengthening India's electronic warfare capabilities, reducing foreign dependency, and ensuring operational readiness. It aligns with the national objectives of self-reliance in defense technology and supports the modernization of Indian defense infrastructure.

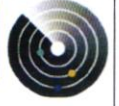
**8. Future Expectation:**

The indigenously developed Pulse TWT will enhance the ASPJ's electronic warfare capabilities, ensuring operational readiness and reducing reliance on imports. It will provide cost efficiency, scalability for broader defense applications, and strengthen India's self-reliance in critical defense technologies. Additionally, it opens avenues for export, boosting India's position in the global defense market.

**--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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