



TECHNOLOGY DEVELOPMENT FUND (TDF) SCHEME

TITLE: DEVELOPMENT HIGH SPEED RECOVERABLE, MANEUVERABLE PRACTICE TARGET WITH EW CAPABILITY FOR REALISTIC TRAINING OF AD CREW AND VALIDATION

1. Objective:

To design and develop a high-speed, recoverable, and maneuverable practice target equipped with Electronic Warfare (EW) capabilities. The target will provide realistic training for Air Defense (AD) crews and facilitate the validation of various weapon systems under simulated combat conditions.

2. Background:

Effective training of AD crews and the validation of advanced weapon systems require realistic practice targets that mimic modern aerial threats. Current practice targets lack maneuverability, speed, and EW capabilities, limiting their ability to simulate complex threat scenarios. This project addresses the need for advanced training tools to improve operational readiness and effectiveness.

3. Problem Statement:

Existing practice targets do not replicate the capabilities of modern aerial threats, particularly in terms of speed, maneuverability, and electronic warfare. As a result, AD crews face challenges in preparing for real-world engagements, and weapon systems cannot be fully validated under operationally realistic conditions. A high-speed, recoverable target with EW capabilities is essential to bridge this gap.

4. Proposed Solution:

- 1. High-Speed Design:** Develop a target capable of achieving speeds comparable to modern aerial threats.
- 2. Enhanced Maneuverability:** Incorporate agile maneuvering capabilities to simulate realistic evasive actions.
- 3. EW Integration:** Equip the target with EW features to simulate jamming, deception, and other electronic countermeasures.
- 4. Recoverability:** Ensure the target is reusable and cost-effective for multiple training and validation cycles.
- 5. Compatibility:** Design the target to interface with existing AD weapon systems for seamless integration during training exercises.

5. Expected Outcome:

1. A robust practice target capable of simulating advanced aerial threats.
2. Improved training quality for AD crews, enhancing their preparedness for real-world scenarios.
3. Validation of weapon systems under realistic operational conditions.
4. Cost savings through the development of a recoverable and reusable target.

6. Key Deliverables:

1. Prototypes of the high-speed, maneuverable practice target.
2. Validation reports demonstrating the target's performance under simulated scenarios.
3. Technical documentation, including operational guidelines and maintenance protocols.
4. Deployment-ready targets for use in training and weapon system validation.

7. Strategic Relevance:

This project is critical for modernizing the training infrastructure of AD forces and enhancing the effectiveness of weapon systems. It aligns with the national defense objectives of improving operational readiness and self-reliance in defense technology development.

8. Future Expectations:

1. **Enhanced Training Realism:** The practice target will provide highly realistic simulation of modern aerial threats, equipping Air Defense (AD) crews with superior training opportunities to prepare for real-world scenarios.
2. **Improved Operational Readiness:** With advanced EW capabilities and high-speed maneuverability, the target will ensure AD crews are adept at countering fast-moving, evasive, and electronically equipped aerial threats, boosting combat effectiveness.
3. **Weapon System Validation:** The target will serve as a versatile platform for testing and validating various weapon systems, ensuring their reliability and performance under operationally realistic conditions.
4. **Cost Efficiency:** The recoverable and reusable design of the target will reduce the cost of training and testing exercises, offering a sustainable solution for frequent use.
5. **Scalability Across Platforms:** The technology can be adapted for use across a wide range of AD weapon systems, including surface-to-air missiles, anti-aircraft artillery, and radar systems, making it a multipurpose solution.
6. **Support for Advanced EW Training:** By incorporating Electronic Warfare (EW) capabilities, the target will enable AD crews to train against jamming, deception, and other advanced tactics employed by modern adversaries.
7. **Boosting Indigenous Defense Capabilities:** The successful development and deployment of this system will demonstrate India's capability to design

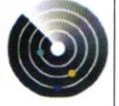
and manufacture cutting-edge training tools, reducing reliance on foreign systems.

8. **Potential for Export:** Once proven, the system could be marketed to allied nations, expanding its impact and creating new opportunities for defense exports.
9. **Foundation for Future Innovations:** The project will lay the groundwork for further advancements in high-speed aerial targets, including autonomous swarm targets or targets with enhanced stealth features for more challenging training scenarios.
10. **Increased Safety and Efficiency in Training:** The recoverable nature of the target will ensure safe and controlled training environments while allowing iterative improvements based on performance analysis.

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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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