



TECHNOLOGY DEVELOPMENT FUND (TDF) SCHEME



TITLE: DESIGN AND DEVELOPMENT OF INDIGENOUS CONTAINERS FOR Airborne Articles WITH PROVISION OF SHOCK SENSOR & NITROGEN FILLING

1. Objective:

To design and develop indigenous containers for airborne articles with integrated shock sensors and nitrogen filling capabilities. These containers aim to ensure the safe transport and storage of airborne articles while maintaining their operational readiness and integrity.

2. Background:

Airborne article require secure and controlled environments during transportation and storage to prevent damage and ensure readiness for deployment. Existing solutions may lack advanced shock monitoring and environmental control capabilities, posing risks to missile systems. An indigenous solution is essential to meet the operational requirements and reduce reliance on imports.

3. Problem Statement:

The absence of advanced storage and transport containers for airborne article that can monitor shock events and maintain a nitrogen-filled environment increases the risk of damage, environmental degradation, and reduced operational readiness. A robust and indigenous solution is required to enhance the safety and reliability of airborne article handling.

4. Proposed Solution:

- 1. Indigenous Container Design:** Develop robust, reusable containers tailored for airborne articles, ensuring durability and reliability.
- 2. Shock Sensor Integration:** Incorporate advanced shock sensors to monitor and log impact events during transportation and storage.
- 3. Nitrogen Filling System:** Provide a nitrogen-filled environment within the container to protect the airborne article from corrosion and environmental factors.
- 4. Compliance with Standards:** Ensure the containers meet international military standards for transport and storage of munitions.

5. Expected Outcome:

1. Safe and secure transportation and storage of airborne article.
2. Enhanced missile operational readiness through environmental protection.
3. Reduced dependency on imported containers and associated costs.

6. Key Deliverables:

1. Prototypes of indigenous airborne article containers with integrated shock sensors and nitrogen filling provision.
2. Test reports validating durability, environmental protection, and shock monitoring capabilities.
3. Maintenance and operational guidelines for handling and reuse.
4. Scalable manufacturing plan for full-scale production.

7. Strategic Relevance:

This project supports the indigenization of critical defense components, ensuring self-reliance in missile storage and transportation solutions. It aligns with the broader objectives of enhancing the safety and operational efficiency of strategic weapon systems.

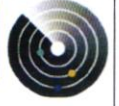
8. Future Expectations:

1. **Improved Missile Longevity:** The nitrogen-filled environment and shock monitoring will ensure extended shelf life and consistent performance of airborne articles.
2. **Enhanced Operational Readiness:** Reduced risks of damage during storage and transport will result in better availability and readiness of missiles for operational use.
3. **Cost Savings:** Indigenous manufacturing will lower procurement costs and reduce reliance on foreign suppliers.
4. **Scalability for Other Munitions:** The developed technology can be adapted for a wide range of munitions, providing a versatile solution for the armed forces.
5. **Export Potential:** Proven designs can be marketed to allied nations, creating opportunities for defense exports.
6. **Integration with Smart Systems:** Future iterations may include IoT-based monitoring for real-time condition tracking and enhanced situational awareness.
7. **Support for Indigenization Goals:** The project will contribute to the national objective of achieving self-reliance in defense manufacturing.
8. **Foundation for Advanced Container Technologies:** The project sets the stage for future developments in smart containers with advanced environmental control and monitoring capabilities.

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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

Email to, arjunk.hqr@gov.in, CC to dir.tdf-drdo@gov.in.