



TECHNOLOGY DEVELOPMENT FUND (TDF) SCHEME



TITLE: SIMULATOR FOR TRAINING AND TESTING SAGW CREW

1. Objective:

To develop a state-of-the-art simulator for the training and testing of Surface-to-Air Guided Weapon (SAGW) crew, ensuring proficiency in weapon operation, tactical decision-making, and system handling under simulated real-world conditions.

2. Background:

Effective operation of SAGW systems requires well-trained personnel capable of making split-second decisions in high-pressure scenarios. Traditional training methods are resource-intensive and expose equipment to wear and tear. A dedicated simulator offers a cost-effective and sustainable alternative for skill development and performance evaluation.

3. Problem Statement:

Regular training and skill assessment of Surface to Air Guided Weapon (SAGW) system and Ground-Based Air Defence Weapon Systems (GBADWS) requires extensive flying efforts, which are prohibitively costly. Furthermore, peace-time safety norms prevent the creation of realistic combat scenarios. To address these issues, system-specific simulators of SAGW systems are required. These simulators, which could be integrated with each other, would provide a cost-effective alternative for training and testing.

The challenge is to create simulators with the following features:

- a. The combat cabin should replicate the exact look and feel of the current SAGW system for the operator.
- b. The system should generate synthetic targets that can be maneuvered in real-time and customized by user-defined settings.
- c. The simulator should allow for target engagement in accordance with the philosophy of individual systems, and provide simulation of contingencies, assessing the correctness of crew actions.
- d. The simulators of each SAGW system should be capable of integration into a central control cabin, which would feature a large-scale display and enable simultaneous monitoring and control of various simulator crews.

4. Proposed Solution:

1. **Realistic Simulation:** Develop a high-fidelity simulator replicating SAGW system functionalities, engagement scenarios, and environmental conditions.
2. **Skill Assessment:** Integrate modules for performance monitoring, tactical decision-making, and scenario-based testing.
3. **Modular Design:** Ensure adaptability for various SAGW systems and future upgrades.
4. **Cost Efficiency:** Provide a cost-effective alternative to live training while maintaining operational readiness.

5. Expected Outcome:

1. Improved training and skill development for SAGW crew in a controlled and safe environment.
2. Enhanced operational efficiency through frequent and scenario-based practice.
3. Reduced wear and tear on live equipment, lowering maintenance and operational costs.

6. Key Deliverables:

1. Fully functional SAGW simulator with realistic training scenarios.
2. Comprehensive user manual and training guidelines.
3. Integration framework for deployment at training centers.
4. Evaluation reports validating simulator performance and training effectiveness.

7. Strategic Relevance:

This project is crucial for strengthening the combat readiness of SAGW crews, ensuring quick and accurate response to threats. It supports the broader goals of modernizing military training infrastructure and aligning with the indigenization of defense technologies.

8. Future Expectation:

This simulator will serve as a state-of-the-art technology demonstration, showcasing India's capabilities in IT and AI. The developed technology also holds tremendous export potential, offering further value beyond domestic use.

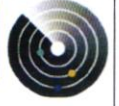
9. Like Order Quantity (MoQ):

An initial requirement of six integrated control cabin systems is expected, each with the ability to accommodate at least 20 different types of SAGW systems.

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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.