INSTITUTE FOR SYSTEMS STUDIES & ANALYSES

ISSA

About the Lab

ISSA is involved in System Analysis, Modeling & Simulation for various defence applications pertaining to employment/deployment, tactics & force potential evaluation, tactical/strategic & mission planning etc. We develop wargames for all the three Services.

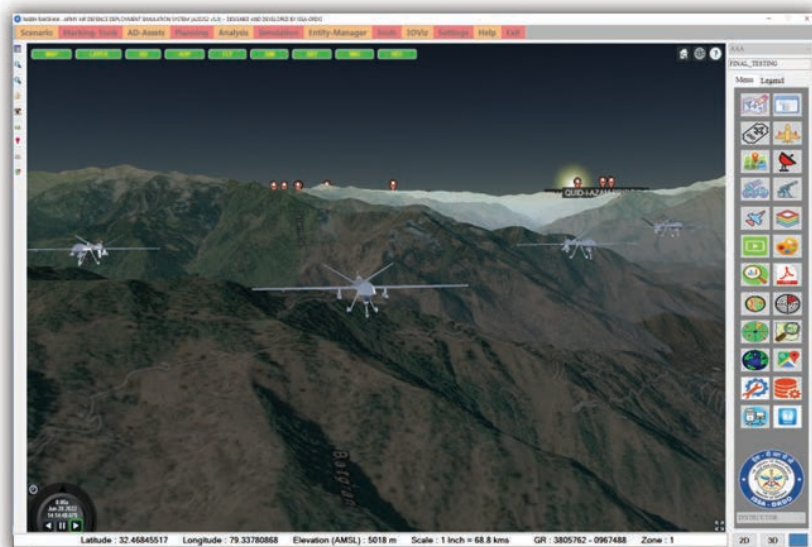# Air Warfare Simulation System (AWSS)

AWSS simulates air warfare scenarios between two or more opposing forces. This application software can be configured for meeting the training requirements of the users and as well as for operational analysis at the tactical and operational levels of warfare for decision making and formulating strategies.

Application of the Product

> To impart roles based training to users.

> To simulate variety of offensive, defensive and combat support operations.

> To evaluate mission objectives and plans in a quantitative manner.

> To compute effect of weather and jamming on performance of sensors.

> 'What-if' scenario analysis.

Status of the Product

Customized version of this product is deployed at user sites and DRDO sister laboratories.
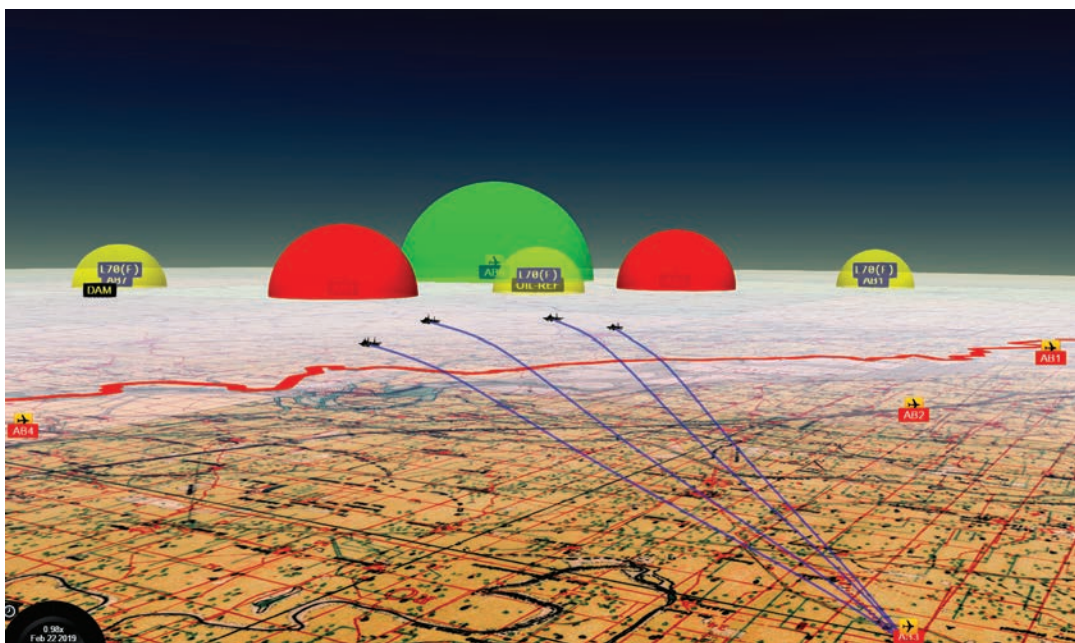
Air Defence Simulation System (ADSS)

ADSS evaluates the effectiveness of various deployment patterns of Ground Based Air Defence Weapon Systems (GBADWS) deployed to protect critical assets against Enemy Air Threats.

Application of the Product

> To impart training to AD officers in tactical handling of GBADWS.

> To simulate air defence scenarios.

> To compute effectiveness of missions and deployment strategies.

> To compute effective converge of a given radar system considering terrain.

> To generate optimal deployment solutions for given radar systems considering terrain and deployment site constraints of road, rail and water bodies.

> To generate Auto AD layout for a given weapon system.

> To visualize tactical scenarios in 3D.

Status of the Product

Software is operational at training college and several operational units of the Indian Army.

Tactical Simulation System
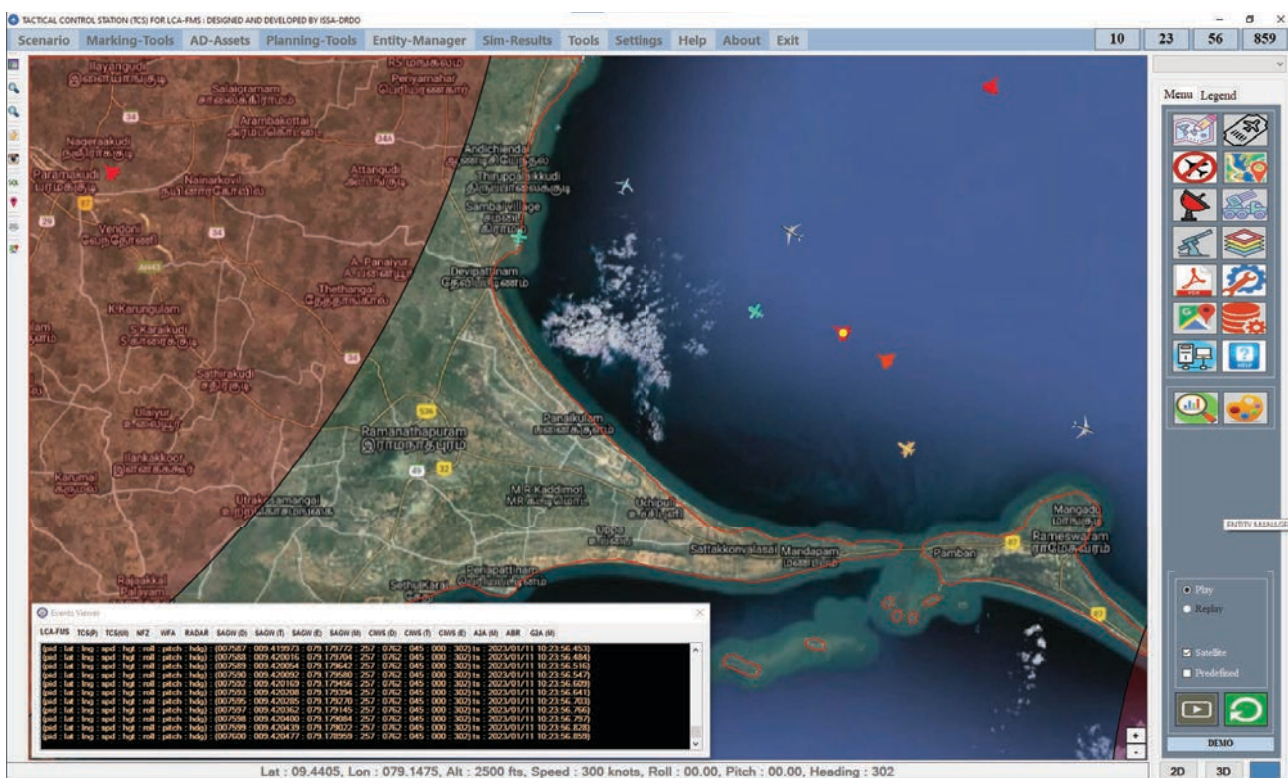## for Combat Aircraft

A tactical Simulation System for Combat Aircraft is an important subsystem of any full mission simulator. It helps in providing a context of warfare and create war scenarios in which training for the pilot is provided. Air, Ground and Sea entities can be deployed to depict the scenario. It integrates constructive and virtual simulation for imparting scenario based training to pilots

Application of the Product

To impart scenario based training to squadron pilots. TCS interacts with the cockpit simulator in real-time through exchange of data packets to simulate different sets of missions in various ground, sea and air tactical scenarios.

Status of the Product

Software integrated with full simulator of LCA at ADE and 45 Sqn Sulur.

Air Direction Simulator

The software system would enable simulation based training of Air Direction Officers of Indian Navy for Air Direction and Helicopter Control. It would enable simulation of combat scenarios for Fixed Wing Aircrafts and deck landing scenarios for Helicopters. The simulator would have the capability to train 15 Air Direction officers together on same or different missions. The system would enable seamless transition of trainees from simulator to actual system on board ships.
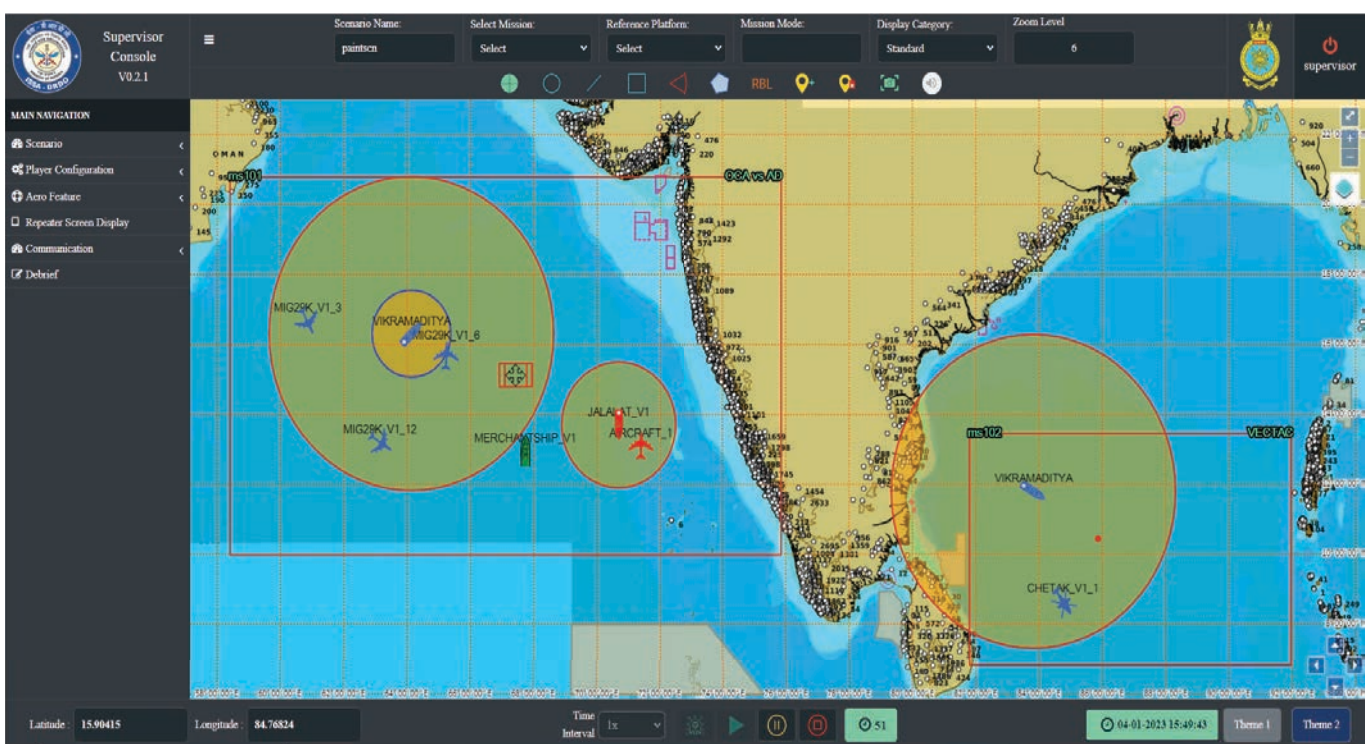
Application of the Product

The system would be utilized to train Direction officers on:-

> Realistic Combat Scenarios in the air domain for Fixed wing Aircraft.
> Full spectrum of air operations undertaken from a Carrier Task Force.
> Combat and Deck Landing Scenarios for training Helicopter Controllers.

Status of the Product

The system testing of Air Direction Simulator has been completed with IN and is now ready for acceptance testing.

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