



## AFSM • Air Force Scenario Manager

Plan • Generate • Manage • Stimulate

IABG's Air Force Scenario Manager (AFSM) is an advanced Commercial-off-the-Shelf (COTS) software application using a powerful Luciad Light-speed Pro Geographical Information System (GIS) engine. It provides an intuitive and comprehensive capability to create Computer Generated Forces (CGF) based on the international Simulation Interoperability Standards Organization (SISO) models. Using these models, their properties, the scenario definitions and systems are able to be stimulated on distributed simulation networks. AFSM supports integrated test beds, multinational exercises, engineers, planners and decision makers.

### Background

AFSM has been developed on behalf of the German Armed Forces as an integral part of the Simulation, Training, Evaluation, Planning and Experimental Networked Air Missile Defence System (SAAPES).

AFSM is in use since 2006 and has undergone formal acceptance by the German Armed Forces as the standard for CGF Scenario Generation. AFSM has evolved with the support of the various national and international Defence Programs aimed at providing users with a comprehensive CGF suite.

### Problem Statement

Networked simulation systems and hardware in the loop components, such as real weapon systems,

require stimulation with virtual threats relying on standardized interfaces in order to provide a realistic training or an analysis environment for the exercise participants and system engineers respectively.

### Use Case

AFSM handles thousands of aerodynamic moving entities and additionally TBMs (Tactical Ballistic Missiles) on ballistic trajectories. Link16 PPLI messages of airborne or ground elements are sent via the SIMPLE and/or JREAP-C networks.

Furthermore, AFSM directly stimulates tactical Ground Based Air Defence (GBAD) systems, such as PATRIOT via the FMS-D (Flight Missile Simulator – Digital) interface. In this configuration radar, launcher and missile data is simulated and injected.

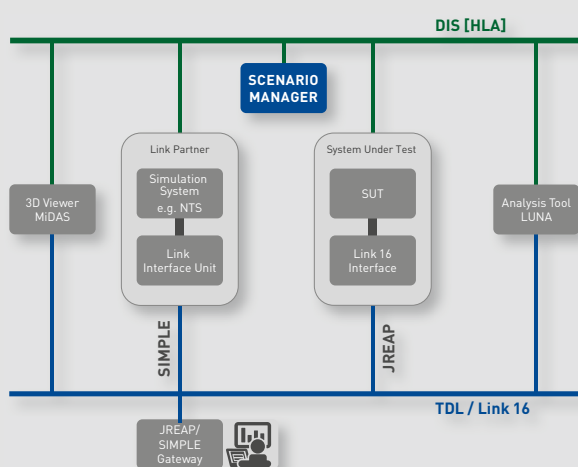
AFSM supports realistic 3-DOF (Degrees of Freedom) simulations of various threats, including ABT (Air Breathing Threat), TBM, CM (Cruise Missile), ARM (Anti Radiation Missile)/ASM (Anti Ship Missile), RAM (Rocket, Artillery and Mortar), helicopters, ground and surface entities.

## Value Proposition

AFSM's user interface saves time when generating and testing scenarios. Furthermore, it reduces simulation turnaround time.

Together with the Luciad Lightspeed Pro components including Terrain Analysis Engine (TAE) and Defence Symbology, AFSM delivers advanced geospatial analytics in a desktop application.

AFSM generates a wide range of scenarios including complex air warfare missions, Ballistic Missile Defence, suppression of Enemy Air Defence (SEAD), deployment of anti-radiation and anti-ship missiles (ARM/ASM) as well as weapon release planning/Weaponneering and much more.



## Key Advantages

- Integrated Artificial Intelligence (AI) algorithms
- Runs on COTS Windows 10 operating system
- Employs commercial Luciad© GIS system
- Replaces costly equipment
- Provides terrain following algorithms
- ACO import and display
- Flexible workspace configuration
- AFSM software is 100% ITAR-free

## Main Components

AFSM's Graphical User Interface (GUI) provides a Scenario Editor, Scenario Generator and Entity Observer. The GUI offers a variety of panels that can be released from the workspace and distributed among single or multiple monitors. Furthermore, it includes different system models provided to simulate planned entity behaviour.

## References

AFSM is regularly deployed on technical CD&E experimentation events and complex virtual military training exercises in a networked environment.

The following users and missions benefit from AFSM:

- German Armed Forces Simulation and Test Environment (SuTBw)
- Networked Air Missile Defence System (SAAPES)
- German Air Force Simulation Centre
- MBDA Germany
- Federal Procurement Office for German Armed Forces (BAAINBw)

## Simulation Technical Data and Compliance

- Network Interface Ethernet IEEE 802.3, TCP/IP
- JREAP-C • STANAG 5518, MIL-STD 3011
- SIMPLE • STANAG 5602/5516
- DIS • IEEE 1278.1, 1278.1a & 1278.1-2012
- Pitch & MAK HLA • IEEE 1516-2000
- Pitch & MAK HLA EVOLVED • IEEE 1516-2010
- ADatP-3 • APP-11(c) Chg 1, XML Format

## Scope of Delivery/Services

- USB Installer and product documentation
- Luciad Lightspeed Pro© license including Terrain Analysis Engine (TAE) and Defence Symbology
- Additional modules available on request

## System Support & Training Services

IABG software products are delivered in accordance with their respective software release plans and maintenance agreements. Support plans delivered with IABG products include regular software and maintenance updates.

IABG training courses deliver the essential content required to ensure trainees are able to apply systems in the context of their operations. All aspects of the use, configuration and administration of the system are covered. Successful completion of the interactive training provides the basis to support continued proficiency improvement.

For further information please contact

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