Selex ES
A Finmeccanica Company

Air Systems, UAS & Simulators

UAVBL
UAV BATTLELAB

Unmanned Aerial Vehicles (UAVs) are expected to take an increasing role in existing and future operations. Military and security forces need to prove and validate new roles and applications. For this emerging need, Selex ES offers the UAV BattleLab (UAVBL), a cost effective solution for multiple requirements.

UAV missions Operational Analysis
Definition and validation of Concept of Operation (CONOPS)/ Concept of Use (CONUSE) of typical UAV missions such as Intelligence Surveillance & Reconnaissance (ISR), Maritime Search & Rescue Support (SAR) and Surveillance & Target Acquisition.

System Requirements Definition/Simulation Based Acquisition (SBA)
According to the mission needs, the UAVBL can be used to define the requirements for UAV sensors and equipment to be developed or integrated.

Analysis and demonstration of innovative solutions/ technologies
For example, the co-operation of more UAVs in complex/ networked environments, new human-machine interfaces, data fusion and presentation techniques etc.

Training
The UAVBL can be used to train the crews to perform UAV missions in complex scenarios, improving the skill to interpret sensors images and data, and the ability to operate within wider C3ISR networks. The UAVBL also allows the mission rehearsal of real mission plans.

The UAVBL can be linked directly to a Ground Control System (GCS). Alternatively a simulated UAV GCS is available.

Thanks to its network enabled capability the UAVBL is ready be connected to any other existent or simulated platform, allowing data fusion and communication.

Electro-optical, Infrared, SAR high fidelity sensor simulation

Complex missions can be simulated for relevant C4ISTAR scenarios, involving a variety of different players, acting in the same network centric environment.

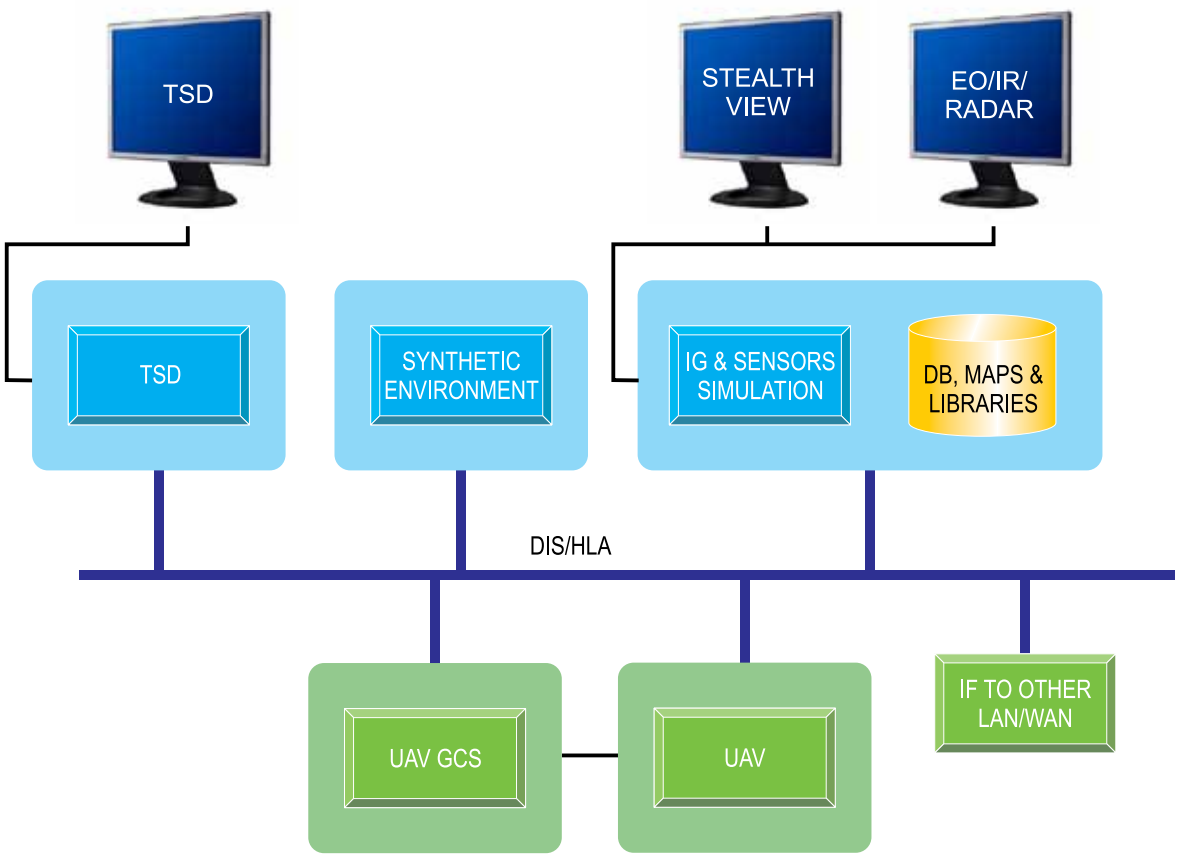
The system supports a wide range of tasks including the simulation and validation of:

- Route plans.
- Terrain avoidance/obstacle avoidance.
- Sensors Scan coverage verification.
- Radio link verification.
- LOS verification.
- Sensor/multi sensor comparison (Platform Optimization)
- UAV pilot and co-pilot briefing/debriefing.

UAV BATTLELAB COMPOSITION

The main elements of the UAVBL are:

- UAV simulator. Simulation of UAV dynamics and sub-systems (engine, fight management system, etc.).
- UAV ground control station. A UAV ground control station is available for connection.
- Sensors simulator. The sensor simulation includes the simulation of the sensor logic and tracking functionalities for electro-optics, infrared, radar (RBGM & SAR).
- Synthetic Environment for Computer Generated Forces (CGF) and Environment Simulation (ES).
- Geographic database. Geographic data, maps and the libraries of CGFs.
- 2D Tactical Situation Display (TSD).
- 3D visualization of the tactical scenario (Stealth View).
- Interface to other simulation networks



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