EWMT
EW MISSION TRAINER

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The EW Mission Trainer (EWMT) simulator tool allows both to check the EW Systems operational performances and to train pilots/operators in EW equipment exploitation. EWMT allows to verify:
- the correct RWR-ESM Identification Library (IDL) editing in respect of the expected threats data and the RWR-ESM parameters measurement accuracy.
- the correct Jamming Program selection against each radar threat.
- the correct pilot/operators EW operations.

EWMT allows the autonomous generation of 3D maps and the generation of any kind of very realistic war scenarios. This will allow an effective training in choosing the best mission route to approach a target, minimising the platform exposition to enemy radars.

1- Operational Scenario Definition
The operational scenario is a geographic map area (typically 1000*500 km) where the user platform (aircraft or ship) will move to accomplish its mission. In this area it is possible to locate friendly and enemy assets (aircraft, ships, ground sites, airborne Early Warning Radars and Ground Early warning Radars, Targets) with their associated radars/weapons. On the map, the user can autonomously edit the relevant 3D map.

2- Electronic Scenario Definition
The user can edit an Electronic Data Base, where the characteristics of the emitters and the associated platforms and weapons are listed. Once the user has defined the Operational Scenario, the user can associate to each asset the relevant platform with their radars and/or weapons systems.
Up to 32 assets can be placed in the scenario.
Up to 100 emitters can be used simultaneously.
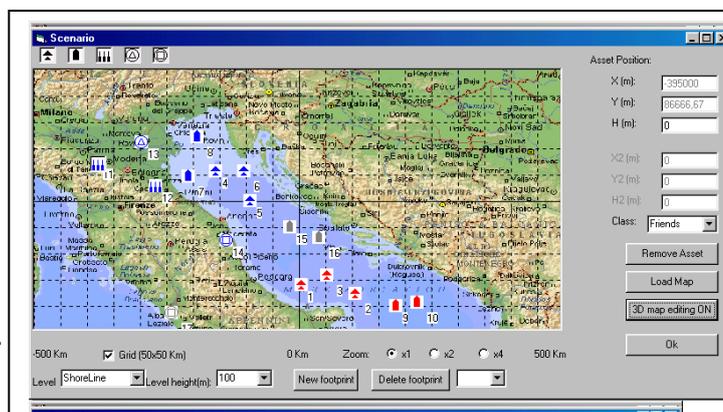
3- Mission
The user can establish the platform route and can determine the characteristics (speed and RCS) of the platform that has to perform the mission. In order to verify the correctness of the mission route and altitude, the EWMT simulator will automatically compute if the platform will be in the sensitivity range of the radars present in the scenario. The simulation takes into account the spherical hearth, the multipath and, for 3D maps, the obscuration due to the presence of interfering mountains.

4- Briefing and Debriefing
Before to run an operational mission, it is possible to exercise with Briefing sessions.
In the briefing sessions it will be possible to analys
and the "Effectiveness" of the selected jammin

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mission has been performed, it is possible to run debriefing sessions where all the parameters recorded during the mission will illustrate what really happened and what operations have been performed

5- RWR/ESM

In order to verify if the RWR/ESM system an associated ID library will perform correctly during the mission, the EWMT allows to determine the parameters of the RWR/ESM system . The parameters measurements accuracy of the RWR/ESM will determine the width of the ID association windows. The identification process takes into account the traditional parameters such as: PW (Pulse Width), PRI (Pulse Repetition Interval), Frequency, AST (Antenna Scan Type), etc. Depending on the Association Window selected, the ID process will compute the Confidence Level associated to each identified emitter. At the end of the ID process, the emitters are presented on the display with the appropriate symbol.

6- Identification Library (IDL)

The EWMT simulator tool, taking into account the created scenario, will automatically build the Emitters Identification Library.
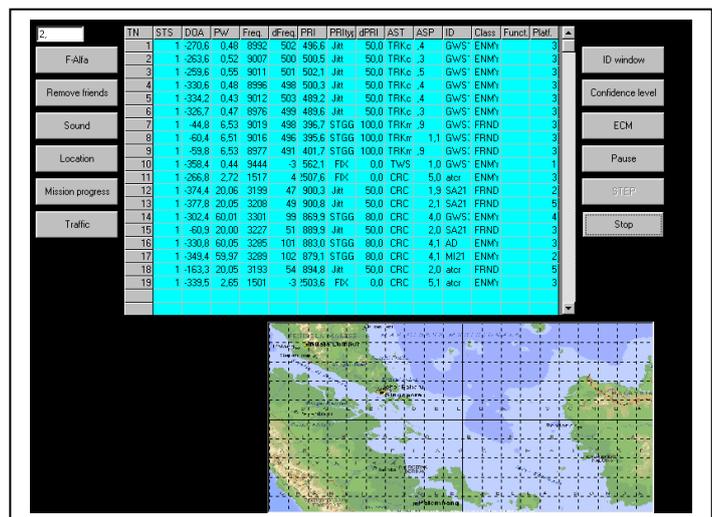
The user can accept it or can :

a) modify some parameters (to simulate the possible mismatch between the EDB and the real emitter)

b) add or remove emitters (to simulate the presence of unexpected threats)

Depending on the mismatches introduced in the IDL, the ID Process will utilise narrow, medium or wide Association Windows. Wider is the association window, lower will be the confidence level of the identification.

7- EW Operation

At the end of the ID process, the emitters are presented on the display with the proper Symbol, the associated weapon system and, if so requested, with the confidence level.

If the emitter is in "lock-on" mode, an appropriate warning is provided (audio alarm). At this time the operator can exercise the EW operations by choosing the best reaction to the warning signal: manoeuvres, chaff ejection, SPJ switch-on. EWMT can simulate also the presence and Detection of IR threats. In this case, it is foreseen The exploitation of Flares ejection to protect the Platform.

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