



# innovative Technology Projects Ltd.

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## EWMT EW MISSION TRAINER

The EW Mission Trainer (EWMT) simulator tool allows both to evaluate and/or validate the EW Systems operational performances and to train pilots/EW operators in the best 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 consequences.
- the correct countermeasure (Chaff, Flares, electronic jamming) selection against each radar threat.
- the correct pilot/operators EW operations.

EWMT allows the exploitation of the standard digital maps for the generation of very realistic 3D war scenarios. EWMT can be provided as a single user SW or as a Network where up to 16 users can be logged to operate simultaneously, as friends or enemies, in the same scenario.

### 1- Emitters Data Base

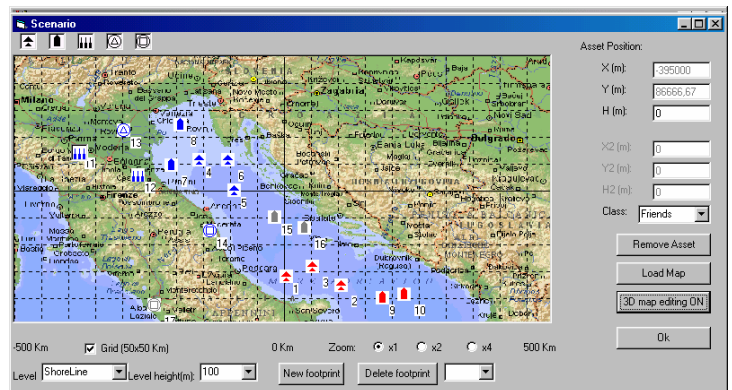
The user can edit (or import) an Emitters Data Base, where the characteristics of the emitters and the associated platforms and weapons are listed.

### 2- Platform Data Base

Platforms characteristics and associated emitters are stored in this Platform Data Base (PDB).

### 3- Operational Scenario Definition

The operational scenario is a geographic map area (typically 1000\*500 km) where each 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. Up to 32 assets can be placed in the scenario. Up to 100 emitters can be used simultaneously.

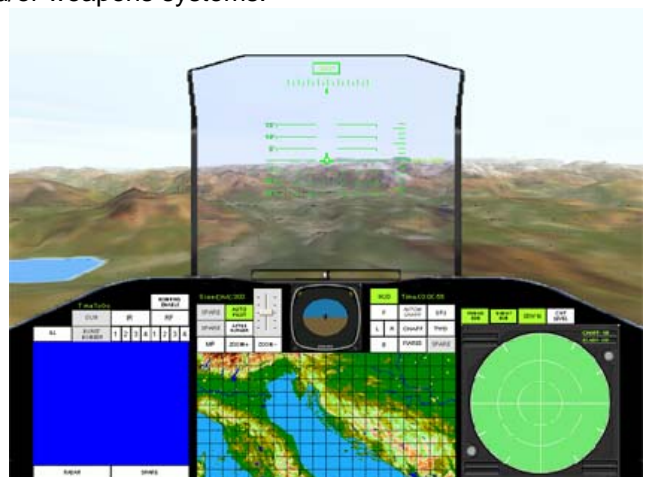


### 4- Assets Definition

Once the user has defined the Operational Scenario, it is possible to associate to each asset one of the platform listed in the PDB with its radars and/or weapons systems.

### 5- Mission

Each asset can be assigned to one of the Pilot/EW operator that participates to the Simulation session, or can be a "virtual" asset. For each asset it can be determined the route and its characteristics (speed, manoeuvrability (g), and RCS). 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 range of the weapons present in the scenario. The simulation takes into account the spherical earth, the multipath and, for 3D maps, the obscuration due to the presence of interfering mountains.



PILOT COCKPIT

## 6- DASS

In the Defence Aid Sub System (DASS) each user logged into the EWMT network can define the available EW Systems. Passive and active EW System and their parameters are stored in the relevant Data Base. Here it is possible to determine the characteristics of the Chaff and Flare dispensing Systems.

## 7- Weapons

In the weapons window each user logged into the simulation network can define its offensive/defensive weapons (Guns, RF Missile, IR Missile).

## 8- Briefing and Debriefing

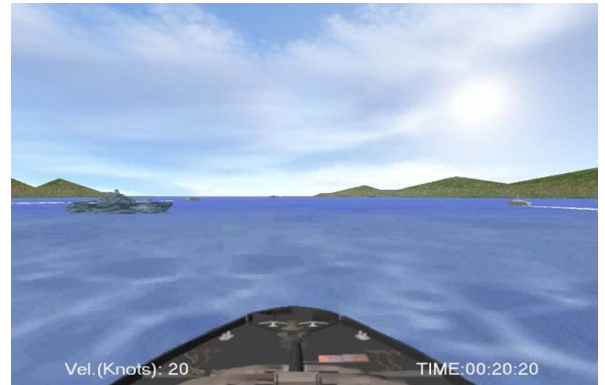
Before to run an operational mission, it is possible to exercise with **Briefing** sessions. In the briefing sessions it will be possible, for each pilot/EW operator, to analyse the "Survival Probability" the "Exposition" to enemy radar and the "Effectiveness" of the selected countermeasure against the foreseen radar threats. After the mission has been performed, it is possible to run **Debriefing** sessions where all the parameters recorded during the mission, for each Pilot/ EW Operator, will illustrate what really happened and what operations have been performed.

## 9- Identification Library (IDL)

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

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



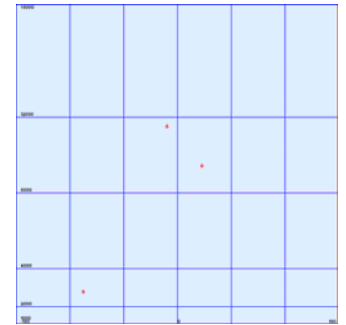
NAVIGATION DISPLAY

## 10- EW Operation

When running the On Board training, each user will be operating in the foreseen Scenario. A big effort was made to present a very realistic scenario with sky, mountains, lakes, rivers, sea, island, assets, etc. Each user has to accomplish its task and, depending on the simulated condition, can be under attack by enemy assets. Each user has to exploit its skill in order to use conveniently the EW or weapons systems. For instance, the RWR/ESM, at the end of the ID process, will present on the display the intercepted emitters with the proper symbol and 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.



TACTICAL DISPLAY



F-ALFA DISPLAY

EWMT simulates also the presence and detection of IR threats. In this case, it is foreseen the exploitation of Flares ejection to protect the Platform.

TN	STS	DDA	PW	Freq	dFreq	PRI	PRIty	dPRI	AST	ASP	ID	Class	Funct	Platf
1	1	-270.6	0.48	8992	502	496.6	Jitt	50.0	TRKc	.4	GW'S	ENMY	3	3
2	1	-263.6	0.52	9007	500	500.5	Jitt	50.0	TRKc	.3	GW'S	ENMY	3	3
3	1	-269.6	0.55	9011	501	502.1	Jitt	50.0	TRKc	.5	GW'S	ENMY	3	3
4	1	-330.6	0.48	8996	498	500.3	Jitt	50.0	TRKc	.4	GW'S	ENMY	3	3
5	1	-334.2	0.43	9012	503	489.2	Jitt	50.0	TRKc	.4	GW'S	ENMY	3	3
6	1	-326.7	0.47	8976	499	489.6	Jitt	50.0	TRKc	.3	GW'S	ENMY	3	3
7	1	-44.8	6.53	9019	498	396.7	STGG	100.0	TRKc	.9	GW'S	FRND	3	3
8	1	-60.4	6.51	9016	496	395.6	STGG	100.0	TRKc	1.1	GW'S	FRND	3	3
9	1	-59.8	6.53	8977	491	401.7	STGG	100.0	TRKc	.9	GW'S	FRND	3	3
10	1	-358.4	0.44	9444	-3	562.1	FKX	0.0	TW'S	1.0	GW'S	ENMY	1	1
11	1	-266.8	2.72	1517	4	507.6	FKX	0.0	CRC	5.0	alcr	ENMY	3	3
12	1	-374.4	20.06	3199	47	900.3	Jitt	50.0	CRC	1.9	SA21	FRND	2	2
13	1	-377.8	20.05	3208	49	900.8	Jitt	50.0	CRC	2.1	SA21	FRND	5	5
14	1	-302.4	60.01	3301	99	889.9	STGG	80.0	CRC	4.0	GW'S	ENMY	4	4
15	1	-60.9	20.00	3227	51	889.9	Jitt	50.0	CRC	2.0	SA21	FRND	3	3
16	1	-330.8	60.05	3285	101	883.0	STGG	80.0	CRC	4.1	AD	ENMY	3	3
17	1	-349.4	59.97	3289	102	879.1	STGG	80.0	CRC	4.1	MI21	ENMY	2	2
18	1	-163.3	20.05	3193	54	894.8	Jitt	50.0	CRC	2.0	alcr	FRND	5	5
19	1	-339.5	2.65	1501	-3	503.6	FKX	0.0	CRC	5.1	alcr	ENMY	3	3

TABULAR DISPLAY