

HTZ warfare

Overview

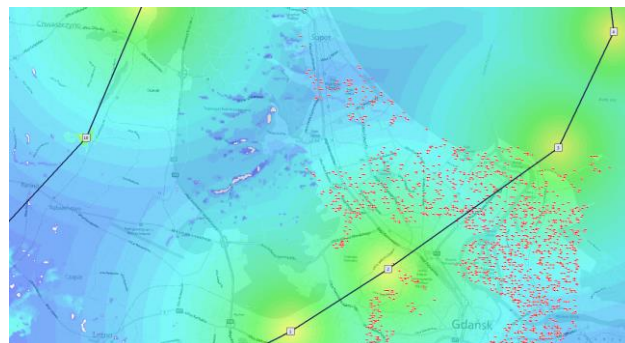
HTZ warfare is the complete solution provided by ATDI for defense organizations, forces, intelligence services, C4ISR, military spectrum regulator, Police, emergency/security services and military equipment makers. HTZ warfare supports more than 50 propagation models (2D and 3D), digital terrain data and multi-technology equipment characteristics to offer a common operational picture of the electromagnetic environment.

Considering that the military operations will take place in an increasingly complex electromagnetic environment, where both technical military capabilities (CEW) and civilian technologies are being used to support military operations at an unprecedented rate, HTZ warfare integrated three systems: The EWPMT (Electronic Warfare Planning and Management tool), MSMT (Military Spectrum Management Tool), and MRPT (Military Radio Planning Tool).

EWPMT (Electronic Warfare Planning and Management tool)

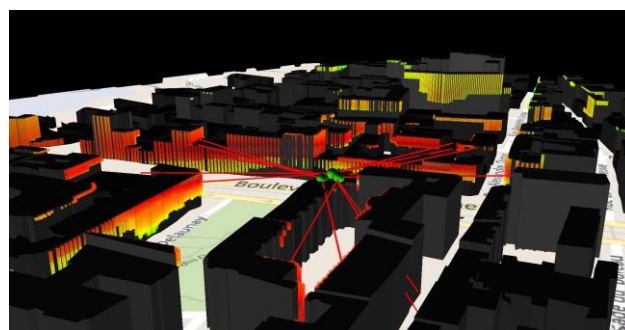
The EWPMT is one of three parts of the HTZ warfare software. Primarily intended to help army's electronic warfare experts to de-conflict offensive, defensive and allied signals. The EWPM features aims to assist commanders during planning, coordination and synchronization of electronic warfare in the battlefield.

- **CEW (Communication Electronic Warfare)**
Provides EW support for static and mobile jammers equipment (ground, space, land, air):
 - Ability to optimize the number, location, power and efficiency of the jammers deployed in the OA (Operation Area) to disturb enemy command, control and communications;
 - Radar counter-measure with Mobile and Static jammers;
 - **On-The Move** capabilities;
 - Advanced features to assist the deployment of defense Electronic Attack components to protect troops from IEDs;
 - Human hazard.



OTM-UAV coverage

- **EMS (Electromagnetic Surveillance)**
Provides EW support for the multiple sensors deployed over the OA (Operation Area):
 - Interception of the commercial communications: civil (broadcast, broadband systems, satellites, microwave links, etc.) and radio communication systems (GSM, UMTS, LTE, TETRA, PRM ,etc.) , evolving in the shared frequency bands;
 - Provides EW support for the multiple sensors deployed over the OA (Operation Area): Maritime sensors, Airborne sensors, Ground based sensors, DF, SSR, ADS-C, ADS-B, radar transponders; UAV, MLAT calculations.



3D network coverage

The most advanced CEW planning and spectrum engineering software

MSMT (Military Spectrum Management tool)

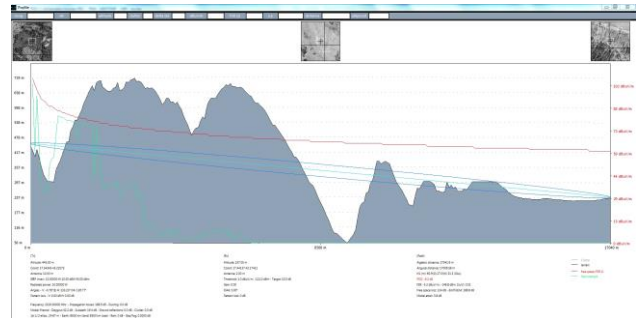
The MSMT is the second of three parts of the integrated HTZ warfare tool. The MSMT features aims to coordinate the use of the electromagnetic spectrum for operations, communications and intelligence functions:

- Spectrum management;
- Spectrum engineering;
- Automated frequency planning (advanced algorithms);
- National and international coordination;
- Monitoring and control;
- Coexistence between different systems/equipment;
- Cognitive radio;
- Out of band interference, intermodulation products calculations and EMC analysis;
- Coexistence between radars and windfarm.

MRPT (Military Radio Planning Tool)

Those capabilities of the tool are intended to model and optimize (in terms of coverage, traffic, interference, throughput, etc.) all kind of wireless networks (fixed or mobile) evolving in the range of a few kHz up to 450 GHz. Traditional systems like HF, VHF/UHF, PMR, Trunked Radio Systems, Microwave Links, Satellites, Tactical communications but also all Broadband systems (WiMAX, Wi-Fi, 3G, LTE advanced) and Machine to Machine systems are also fully integrated in the tool.

- **RNP (Radio Network Planning)**
 - Network coverage and optimization ;
 - Battlefield communications modeling (including drones systems);
 - Microwave Links and broadband network (3G, LTE advanced, WiMAX, etc.);
 - Interference and traffic analysis;
 - SMADEF, XML, SFAF (exchange formats);
 - Monitoring equipment and field test measurement.

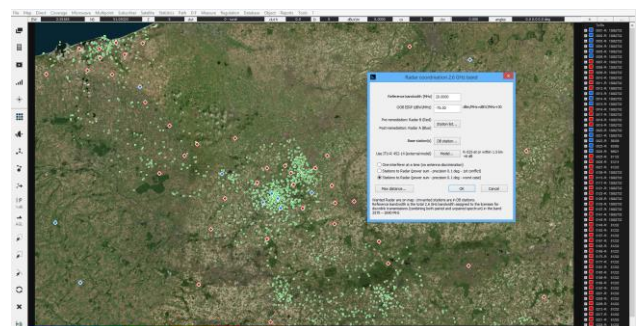


Path profile

- RNS (Radio Navigation System)

HTZ warfare is able to supporting and modelling aerospace radio systems (Ground-to-air, air-to-ground and air-to-air):

- Coverage prediction and coexistence with radar systems (including bi static radars);
- Modeling of all the Radio Navigation systems: MLS AZ, MLS EL, ILS, ILS GP, VOR, DME, TACAN, MLAT (interrogator), MLAT (sensor), GBAS (RX), VDB;
- ICAO – Building Restricted Area module;
- ITU-R SM 1009 recommendation;
- Coordination with aeronautical radio navigation radar in the 2.7GHz band;
- Aeronautical propagation models;
- MLAT calculations (TDOA, TSOA, etc.).



Coordination Radar vs LTE