HTZ warfare

Overview

HTZ warfare is the complete planning and modelling solution provided by ATDI for armed forces, intelligence and reconnaissance services, military spectrum planners, emergency and security services, and military equipment makers. HTZ warfare supports more than 50 propagation models (2D and 3D), plots digital terrain data and works across a range of technology to offer a common operational picture of the radio environment.

Armed forces operations now take place in an increasingly complex electromagnetic environment where both military and civilian technologies are being used to support actions to a degree not previously seen. HTZ warfare features three core functions: an EW planning and management tool, a military spectrum management tool and a military radio planning tool.

EWPMT (Electronic Warfare Planning and Management tool)

The EW planning and management function is primarily intended to help an army's electronic warfare experts manage their own forces' signals and those of allies in an environment where enemy forces are also broadcasting. The EWPM assists commanders during planning, coordination and execution of electronic warfare in the battlefield.

- **Communication Electronic Warfare (CEW)**
  This provides electronic warfare support for static and mobile jamming equipment on the ground and in the air. It encompasses:
    - the ability to optimize the number, location, power and efficiency of the jammers deployed in the operation area to disrupt enemy command, control and communications;
    - radar counter-measures with mobile and static jammers;
    - **On-The Move** capabilities;
    - advanced features to assist the deployment of electronic attack components to protect troops from improvised explosive devices;
    - features to help reduce operator exposure to radio waves (Human hazard)
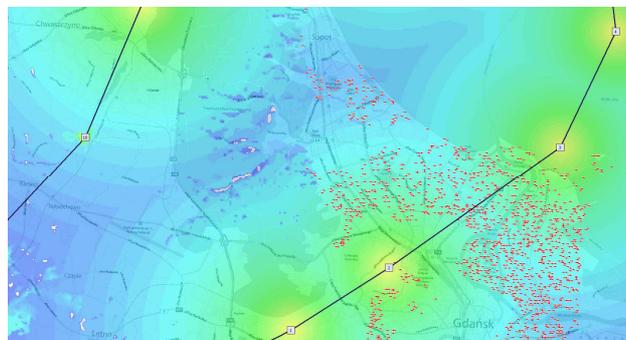

OTM-UAV coverage

- **Electromagnetic Surveillance (EMS)**

  HTZ warfare provides support for a range of communication activities in the operation area:
    - The interception of commercial communications including civil broadcasts, broadband systems, satellite and microwave links along with radio communication systems such as GSM, UMTS, LTE, TETRA, and PMR;
    - Maritime and airborne systems, ground-based sensors, DF, SSR, ADS-C, ADS-B, radar transponders; UAV, MLAT calculations.
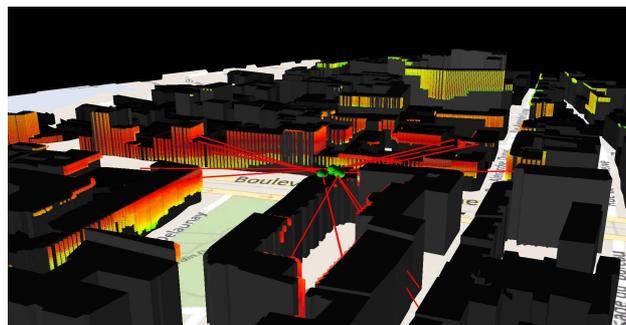
3D network coverage

The most advanced CEW planning and spectrum engineering software

## Military Spectrum Management tool (MSMT)

The MSMT has facilities to coordinate the use of the radio spectrum for operations, communications and intelligence functions. These encompass:

- spectrum management;
- spectrum engineering;
- automated frequency planning (advanced algorithms);
- national and international coordination;
- monitoring and control;
- coexistence between different systems and equipment;
- optimization of network capabilities through cognitive radio;
- out of band interference, intermodulation calculations and EMC analysis;
- co-existence between radars and windfarms.

Military Radio Planning Tool (MRPT)

These capabilities of the tool are intended to model and optimize - in terms of coverage, traffic, interference, and throughput - all kinds of wireless networks (fixed or mobile) operating in the range from a few kHz up to 450 GHz. Traditional systems like HF, VHF/UHF, PMR, trunked radio systems, microwave links, satellites and all broadband systems (WiMAX, Wi-Fi, 3G, LTE advanced) along with machine-to-machine systems are also fully integrated in the tool.

- **Radio Network Planning (RNP)**
  - Network coverage and optimization;
  - Battlefield communications modelling (including drone systems);
  - Microwave links and broadband networks (3G, LTE advanced, WiMAX);
  - Interference and traffic analysis;
  - SMADEF, XML, SFAF (exchange formats);
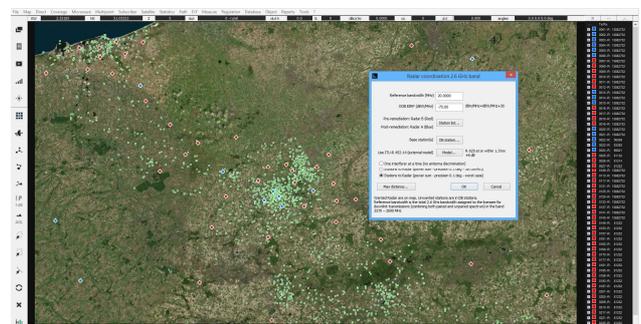 - Monitoring equipment and field test measurement.
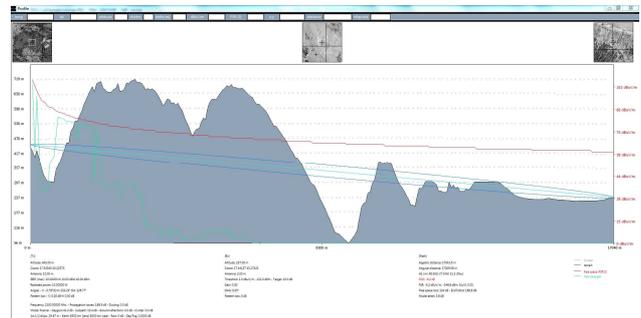
Path profile

- **Radio Navigation System (RNS)**

HTZ warfare is able to support and model aerospace radio systems (ground-to-air, air-to-ground and air-to-air). This incorporates:

- Coverage prediction and coexistence with radar systems (including bi-static radars);
- Modelling of all 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

For more information: **www.atdi.com**