

TOPAZ Field Artillery Command and Fire Control System



TOPAZ is the Automated Field Artillery Command and Fire Control System.

TOPAZ covers all general and artillery-specific commands and tasks characteristic on battalion command level.

Every command post is equipped with a computer terminal and a dedicated software providing efficient carrying out of commands in a fully computer-assisted mode, without a need to give any spoken order.

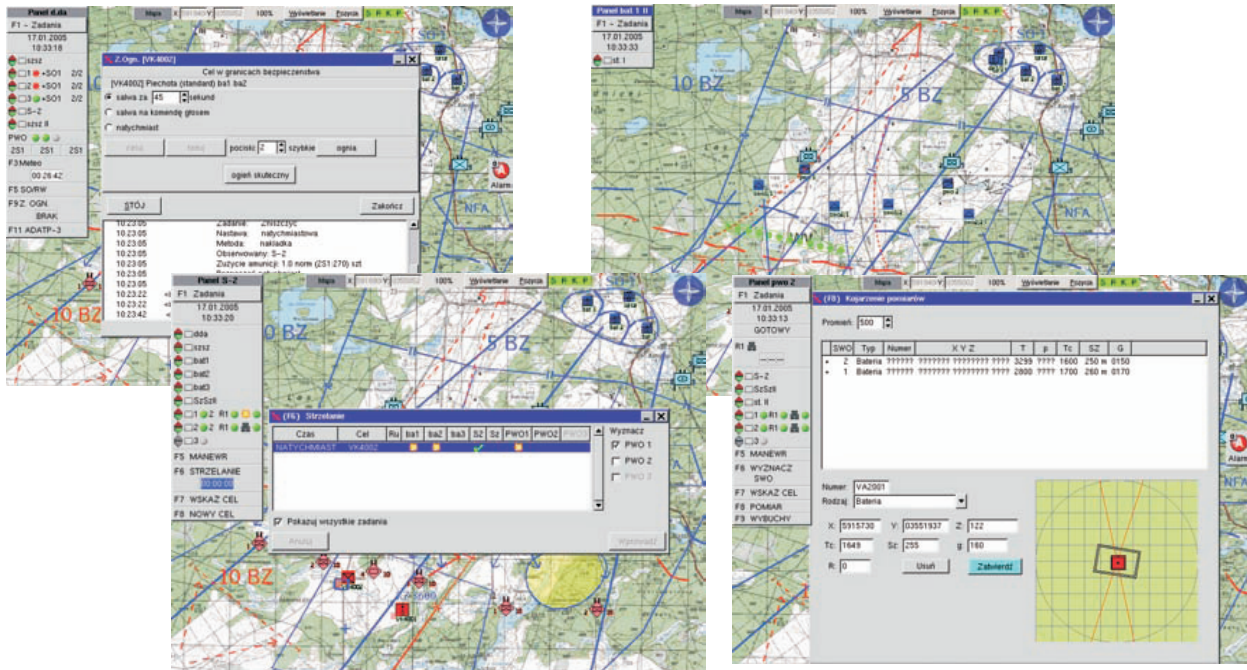
The system is fully modular, thus easily adaptable to diverse artillery systems. Provided that relevant ballistic calculation formulas are available for the given barrel/charge/projectile combination in form of look-up tables or MPMT computation factors - the system can be used from virtually any tracked, wheeled and towed gun or mortars.

The system is a combination of communication equipment, rugged computer hardware and the advanced software. The relevant set is allocated for every gun and every command vehicle.

Multiple post can be installed one a given vehicle in any reasonable arrangement. The modular configuration and uniform hardware provides the high maintainability of the system.

Due to the approach taken, the system can be installed in new-built guns and command vehicles. It can be also used in modernization programs.

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Basic system tasks

- on-line presentation of the battlefield situation layered on the digital map. Presentation includes own forces and enemy positions, target sizes and locations, safety regions, fire ranges depending on the available charges/projectiles etc.
- forward observer tasks - target spotting and impact observations; interface to automated observation instruments available
- constant evaluation of the target database regarding the possible threat level
- fire mission planning in computer assisted mode:
 - selection of the fire mission execution mode according to the target type
 - safety check against no-fire areas
 - distribution of the impacts over the target relevant to the target size and amount of guns used for the mission
 - ballistic calculations both for the gun laying purposes and for the fire mission evaluation
- fire mission control:
 - continuous corrections to ballistic solution according to forward observers measurements of impact coordinates
 - emergency halt
 - timing and synchronization of shooting guns
 - multiple round single impact (MRSI) capability
- simultaneous control of several fire missions, shared between batteries/fire platoons/autonomous guns
- fire support coordination measures
- inventory management and on-line information regarding the battalion ammunition and logistics status, amount of available resources, communication status etc.
- manoeuvres and redeployment
- distribution of preformatted tactical data including free text, orders, reports, returns and states relevant to Field Artillery routines