

SHORAD System Upgrade of SA-13 GOPHER (S-10M) fire units

MLV3213

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SA-13 SHORAD System is intended for engagement of visible air targets - aircraft, helicopters, cruise missiles, etc. The system upgrade consists in modification of control and communication modules and advanced equipment implementation for improvement of combat effectiveness related to centralised command and SA-13 SHORAD system interoperability.

Upgrade purpose:

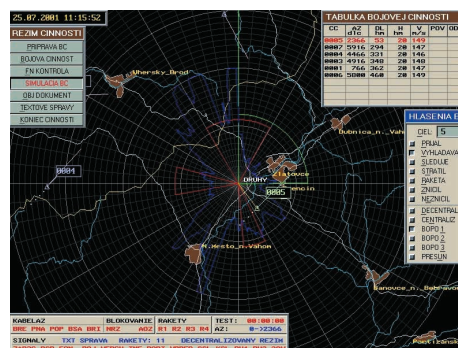
- ☐ SA-13 SHORAD System integration into C³I systems
- ☐ Data exchange between SA-13 unit and higher echelon
- ☐ Real-time radar data input from the area of interest
- ☐ Improved probability of target detection
- ☐ IFF equipment integration acc. to STANAG 4193
- ☐ SA-13 SHORAD system position/azimuth determination

Main features of upgraded modules:

- Tactical Data Terminal (TDT) at SAM commander working position
 - support to commander decision-making process
 - fire parameters calculation
 - slew-to-cue capability
 - processing and display of radar data and other information
 - communication via radiomodem
 - IFF data processing and display
- GPS receiver and interface to navigation system (TNA3)
 - Data transmission to TDT
 - UTC time synchronization
 - System positioning in WGS 84 system
 - System azimuth determination
- Radio communication equipment
 - data exchange between fire unit and higher echelon
 - voice communication with higher echelon
- Other equipment connected to TDT
 - interface module for automatic turret slewing to target azimuth
 - module for monitoring of gunner control panel and messages transfer to TDT
 - target lock-on indicator located in turret
 - IFF interrogator (AN/TPX-56)

TDT capabilities:

- Calculation of System north deviation using GPS data and TNA3 interface data
- Status messages and combat actions reporting to higher echelon
- Orders processing received from higher echelon
- Data receipt, processing and display of air picture within area of responsibility
- Support to commander decision-making process
- Calculation of predicted target position
- Adjustment and control of IFF interrogator (AN/TPX-56), target ID decoding and display
- Control signals transmission for automatic turret slewing to a target
- Status and operation modes diagnostics of System modules
- Log files creation for crew activities, orders, messages and radar data record
- Text messages exchange with higher echelon
- Maps and supplementary information display



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Basic parameters:

- Position accuracy < 10m
- Turret slewing accuracy < 0,3°
- Radar data update rate < 8 sec
- Data delay time < 2 sec
- TDT Intel based computer; 12,1" TFT screen (800x600 resolution)
- Voice radio communication
 - Band VHF
 - Range up to 25km, line-of-sight
 - Radiostation RF 1325 series
- Data radio communication
 - Band 250 - 320 MHz
 - Range up to 20 km, line-of-sight
 - Signalling rate 19,2 kbps

Upgraded SA-13 SHORAD System is comparable with advanced short-range AD systems, and thus suitable for integration and effective employment within C³I systems.

References

SHORAD System Upgrade of SA-13 GOPHER for the Slovak Armed Forces was completed in 2001.