INCREASING TACTICAL SITUATIONAL AWARENESS BY MEAN OF OPEN SOURCE MULTIPURPOSE INTEGRATED UAS-C2 SYSTEM

ROADMAP OF DEVELOPMENT

- July 2014 – roll out version 1, Android-based digital map system for tactical level operation (Situational awareness at group and company levels)

- September 2014 – version 2, the first version of field artillery C2 system including 3D digital maps, guns libraries and calculators

- November 2014 – integration with counter artillery radar system AN/TPQ-48 (NATO)

ROADMAP OF DEVELOPMENT

- March 2015 – connectivity addon module, its integration with Russian AZK-7 artillery radar system (*A3K-7 "ME3OTPOH"*), which is still used by the Ukrainian Army

- April 2015 – roll out own mobile high-level encrypted router, its integration with Motorola and Harris communication systems (NATO)

- December 2015 – integration with firefinder weapon locating system AN/TPQ-36 (NATO)

ROADMAP OF DEVELOPMENT

- 2015-2016 – UAV integration (aerial reconnaissance, weather observation, relay radio communications)

- 2016-2017 – integration with Aselsan communications system and SatCom

- 2017-present – integration with armored C2 vehicle and UAV fleet

MATERIALS

- Open source Linux OS
- Open source Android OS
- Open source Java programming language
- Off-the-shelf moderately priced rugged laptop and lightweight commercial tablet
- Moderately priced COTS UAV

AND CRUCIAL THING IS
BRIGHT AND TALENTED BRAINS

DESCRIPTION:
Standard configuration

Rugged laptop or tablet
Encrypted modem
Radio/comm module (BT, Wi-Fi, USB, RJ-45)
Fuzzy module (calculator, visualization, reports, scenes)
Guns libraries (basic, optional customer dependent)
UAV module
Digital maps (optional customer dependent)

MAIN FUNCTIONS

- 2D/3D battlefield visualization
- Target definition
- Gun definition
- Real time field artillery fire control
- Real time aerial video surveillance
- Real aerial reconnaissance
- Aerial weather forecast using UAV
- Real time communications

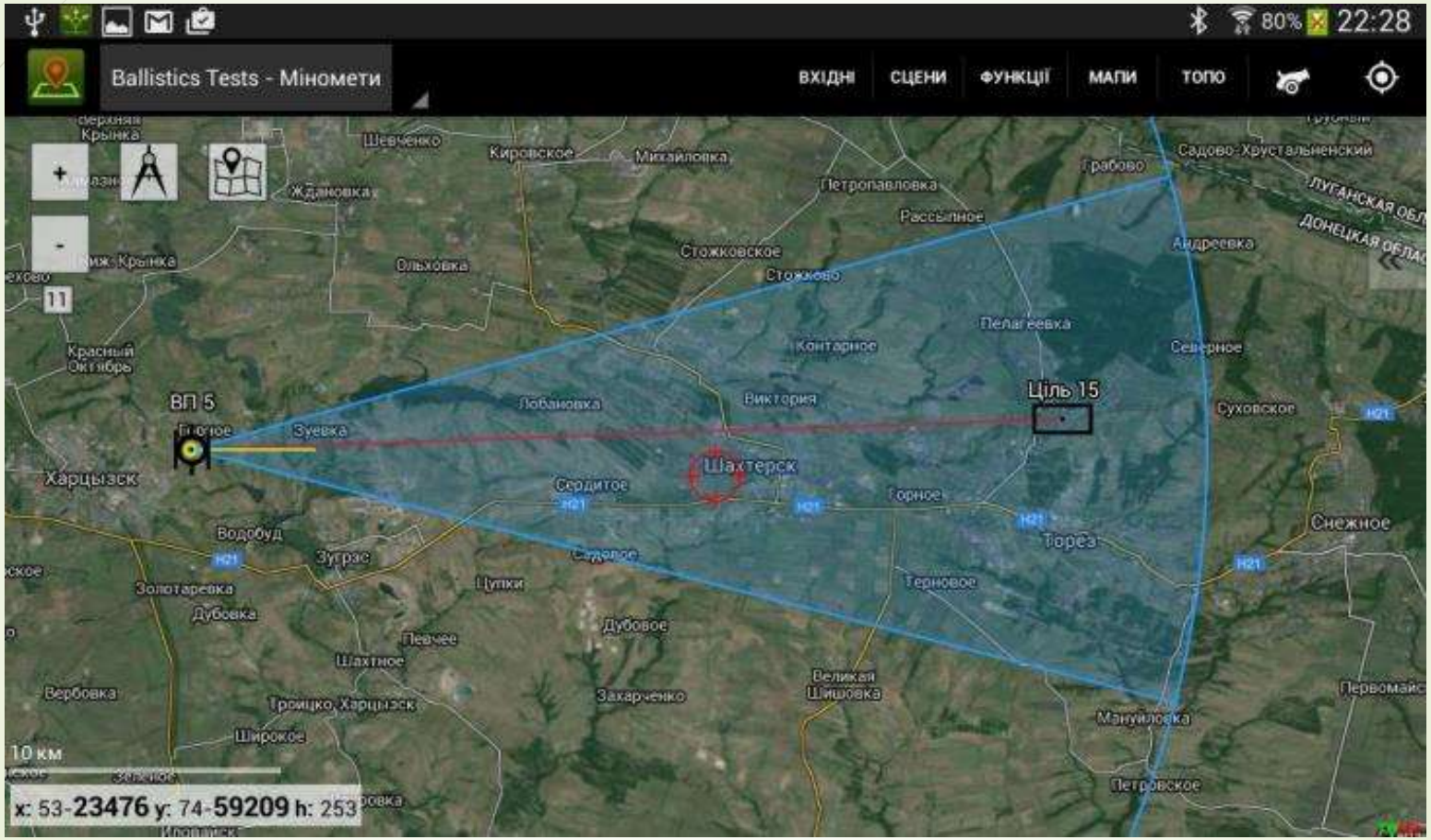
Different configurations are currently used by:

- Defense Forces
- Border Guards
- National Guards

MAIN PERFORMANCES

Feature	Value	Comments
Operating system	Android	4.4+
Communications	Bluetooth, Wi-Fi, RJ-45, USB, radio, SatCom, Internet	AES-256, VPN, IP
Geo	Offline and online maps, WGS-84, UTM and CG-42	OpenStreetMap, Google, propriate
GUI language	English, French, Ukrainian	Easily customizable
Outdoor operating temperature	-20 ... +40 ºC	
Weight, kg	0.710	Fieldbook K80 - Rugged 8"
Size, mm	226 x 145 x 22	Fieldbook K80 - Rugged 8"
Power supply	AC 220 W, DC 12/24 W	

CONCLUSIONS



Scene visualization, target estimation and gun fire sector

CONCLUSIONS

Calculation and visualization of direct fire visibility and the terrain elevation profile

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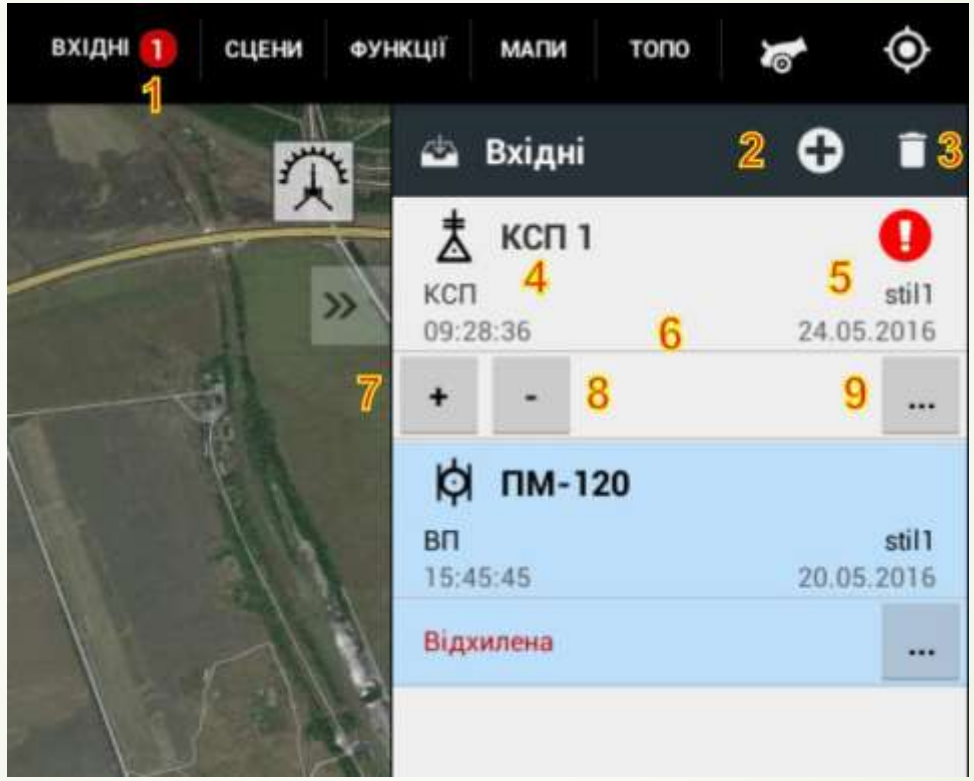
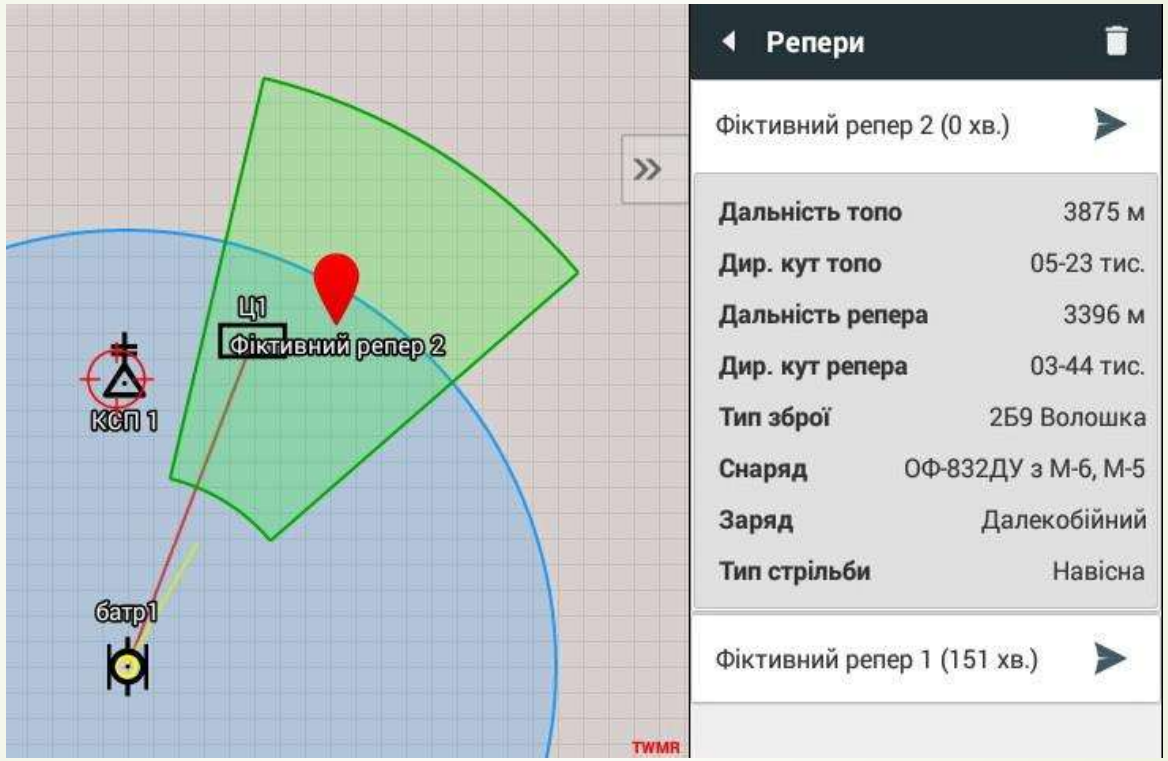


The scene definition and the gun setup on the map: model, position, avatar, and time in position

CONCLUSIONS



The gun settings:
maximum fire distance, parameters of fire sector, type of gun, type of shell, shell feature, type of gun fire