ЧЕВАРА

UKRAINIAN ARMOR
Design and manufacturing company

WB ELECTRONICS
WB Group

THE RECONNAISSANCE-STRIKE COMPLEX

SOKIL

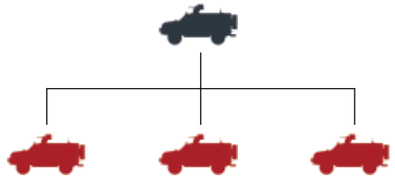
TABLE OF CONTENTS

THE APPLICATION OF THE RECONNAISSANCE-STRIKE COMPLEX SOKIL

The reconnaissance-strike complex (RSC) SOKIL is meant for observation, detection, tracking and destruction of the armament, military hardware and manpower of the enemy under conditions of possible combat operations.
The RSC SOKIL is equipped with light weapons (lightweight weapon station), communications facilities, special equipment, as well as reconnaissance and strike unmanned aircraft systems.
The RSC SOKIL is used for provision of the ground units during patrolling, reconnaissance, defense, anti-terrorist operations and other military missions.
The RSC SOKIL performs military missions at any time of the day and night. The basic running gear of the complex is a specialized armoured vehicle VARTA, which provides traffic on paved roads (highways), soil roads and off-roads, as well as stream crossing (fording depth up to 1.8 m).
The RSC SOKIL with the use of modern control and communications systems ensures digital, integrated closed data transmission, automatic mission performance when EW devices are in play, automatic target tracking day and night using thermal imaging camera, transmission of target position to the command post, and destruction of detected targets within a radius of 10 km with various types of ammunition.

THE RECONNAISSANCE-STRIKE COMPLEX SOKIL

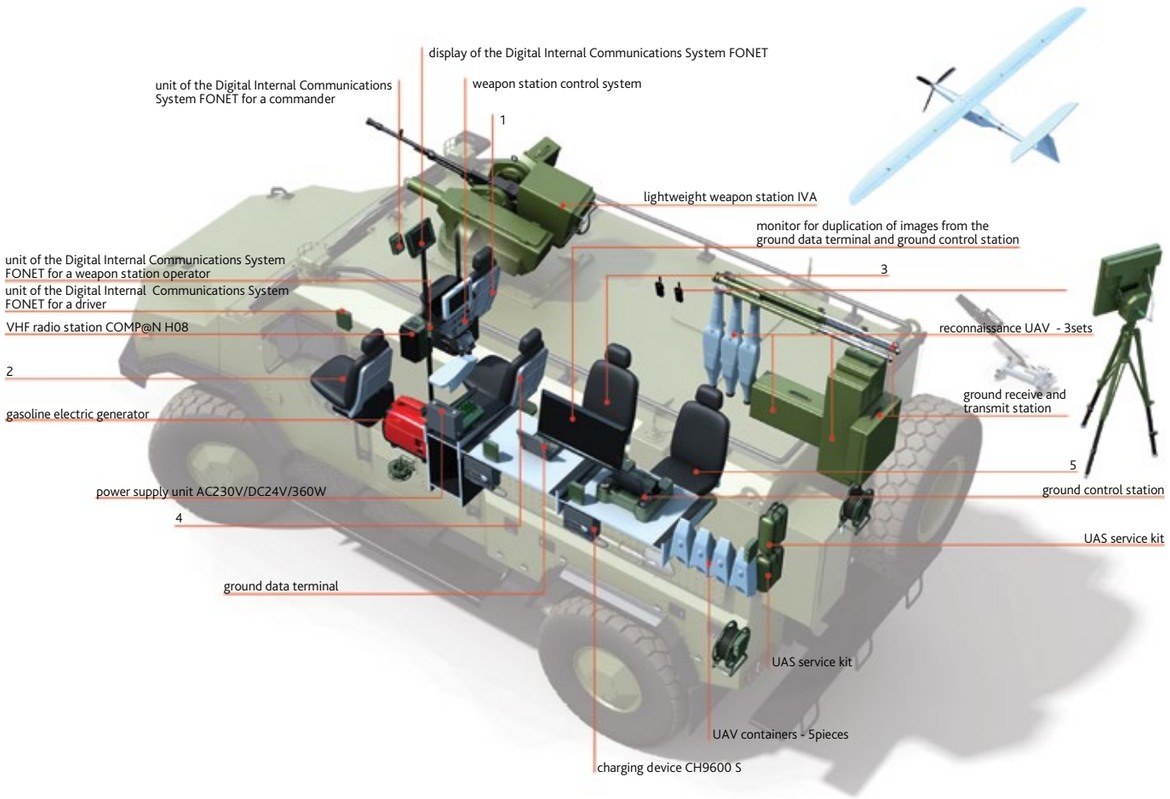
THE STRUCTURE



surveillance and reconnaissance unmanned aircraft system FlyEye in the armoured vehicle

strike unmanned aircraft system Warmate in the armoured vehicle

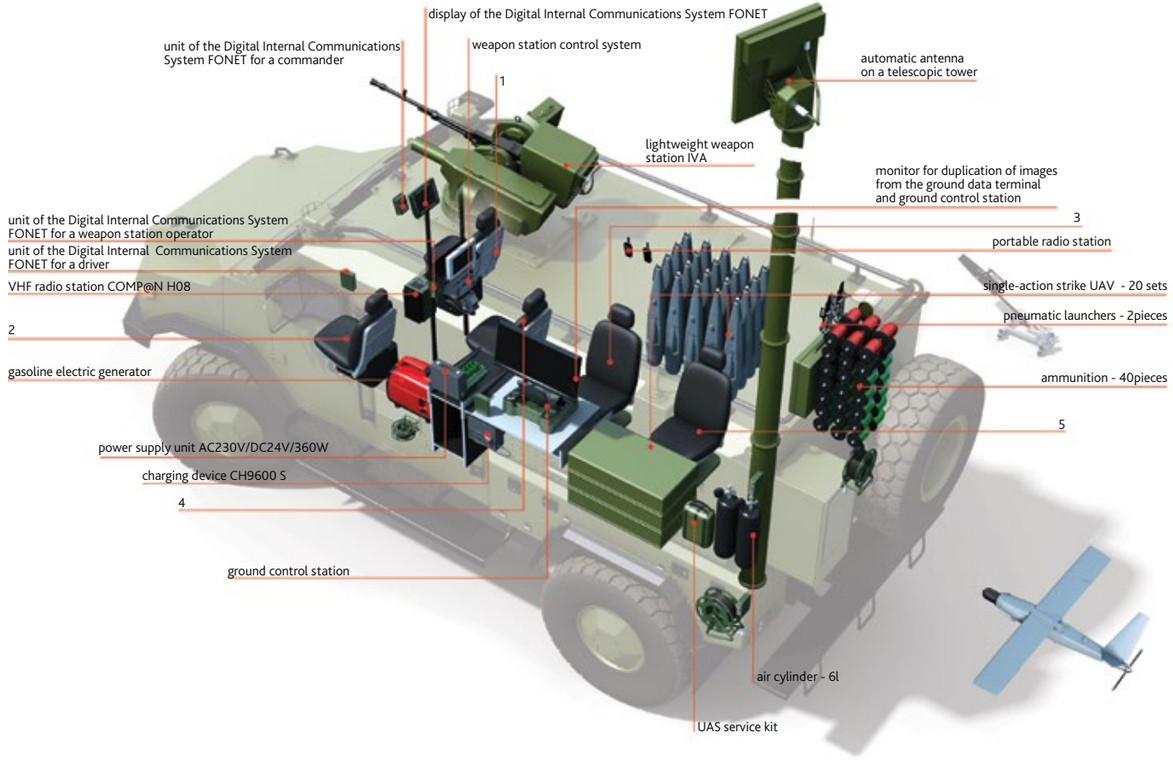
ARRANGEMENT OF THE RECONNAISSANCE UNMANNED AIRCRAFT SYSTEM FLYEYE IN THE ARMOURED VEHICLETHE



CREW:

1	2	3	4	5
commander	driver	UAV operator	weapon station operator	analyst

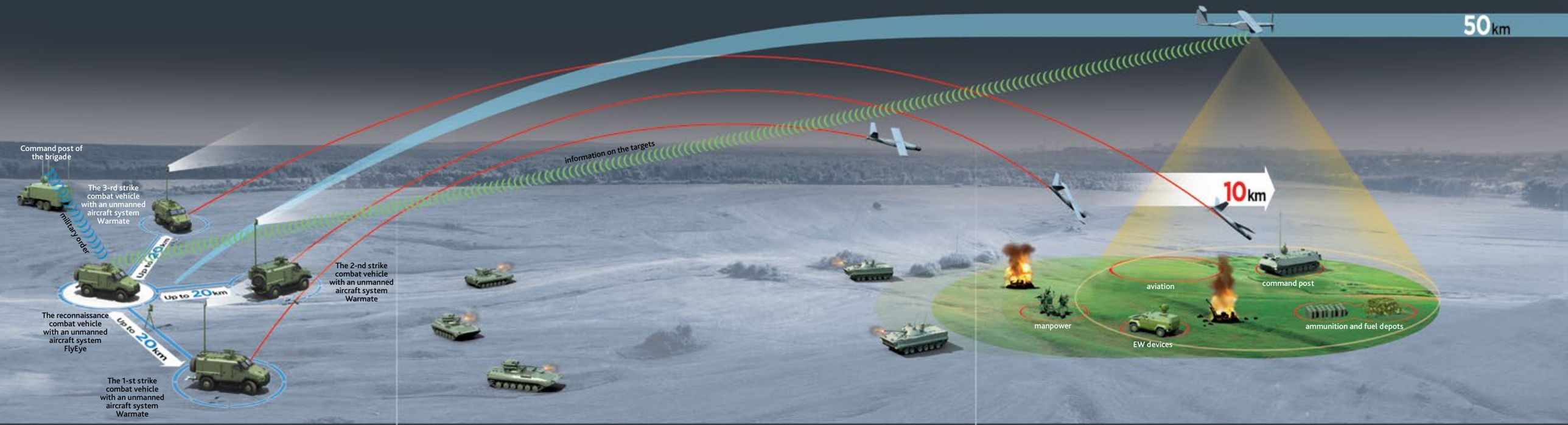
THE ARRANGEMENT OF THE STRIKE UNMANNED AIRCRAFT SYSTEM WARMATE IN THE ARMOURED VEHICLETHE



CREW:

1	2	3	4	5
commander	driver	operator	weapon station operator	second operator

THE SCHEME OF TACTICAL EMPLOYMENT OF THE RECONNAISSANCE-STRIKE COMPLEX SOKIL



Defense area - 4 km

The zone of military showdown - 4 km

4 km defense area of the enemy

SURVEILLANCE AND RECONNAISSANCE UNMANNED AIRCRAFT SYSTEM FLYEYE

developer: “WB Electronics” S.A., licensed producer: PJSC “CHEZARA”

Combat application of the UAS «FlyEye» has been realized since March 25, 2015. The system has shown high efficacy and run over 1,000 hours. It has surveyed over 700 group and individual targets.

BASIC PERFORMANCE CHARACTERISTICS

Parameters	Values
Crew, persons	3
Take-off weight, kg	12
Payload mass, kg	3
Number of vehicles in the system, pieces	3
Operation radius, km	50
Maximum flying speed, km/h	160
Operating altitude, m	1000
Maximum altitude above sea level, m	4000
Flight endurance, min	120-180
The ability for self-return into the "home" point in case of GPS signal loss	Provided
Digital integrated closed data transmission, localization of detected objects	Provided
Automatic mission execution in full absence of radio-frequency transmission line	Provided

STRIKE UNMANNED AIRCRAFT SYSTEM WARMATE

developer: “WB Electronics” S.A., licensed producer: PJSC “CHEZARA”

SYSTEM COMPOSITION:

- airborne weapons «Warmate»;
- ground control station;
- automatic target tracking antenna;
- cassette pneumatic launcher;
- transportation containers.

BASIC PERFORMANCE CHARACTERISTICS

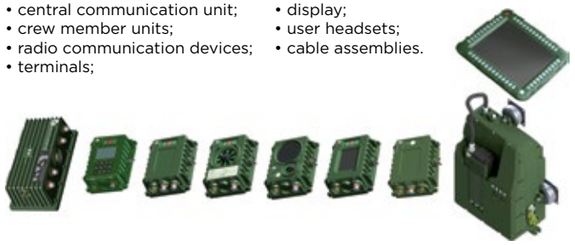
Parameters	Values
Take-off method	pneumatic launcher
Operation radius, km	10
Ceiling, m	500 m above ground level, 3000 m above sea level
Operation altitude, m	30 - 200 m above ground level
Flight endurance	30
Maximum take-off weight, kg	4
Maximum velocity, km/h	150
Type of payload/warhead	fragmentation, high-explosive fragmentation, high-explosive anti-tank
Flight control	Automatic
Security: - degrees of security - safety devise	5 SAD type (Saving - Armament - Disarmament)
Digital integrated closed data transmission, localization of detected objects	Provided
Automatic mission execution in full absence of radio-frequency transmission line	Provided

DIGITAL INTERNAL COMMUNICATIONS SYSTEM FONET

developer: “WB Electronics” S.A., licensed producer: PJSC “CHEZARA”

SYSTEM COMPOSITION:

- central communication unit;
- crew member units;
- radio communication devices;
- terminals;
- display;
- user headsets;
- cable assemblies.



SYSTEM ADVANTAGES AND PROPERTIES

- modular structure of the system;
- complete software configuration;
- ability to create a set of weapons and equipment for various purposes;
- ability to apply digital and analog radio stations in the system;
- access to data transmission from each crew member unit;
- maintenance of many data transmission protocols, including packet data;
- integration of equipment with numerous interfaces;
- data exchange and digital voice communication inside the vehicle and between vehicles in the detachment;
- monitoring of emergency sensors associated with the output of voice and text messages;
- the system is the basis for creation of complex battle management system.

APPLICATION:

provision of digital voice communication in the command line on the basis of the available radio and cable communication facilities, creation of a single base for voice messaging and data exchange, integration of the vehicular electronic equipment (chemical threat detectors, laser-homing and warning systems, navigation systems), telecommunication network manage-ment, work in a single system of command and fire control using digital and analog radio stations.

RADIO STATION COMP@N

developer: “WB Electronics” S.A., licensed producer: PJSC “CHEZARA”

TRANSMITTER:

- output power: programmable, max. 5 W
- harmonic suppression > 50 dBc

RECEIVER:

- sensitivity - 116 dBm (SINAD 20 dB)
- adjacent channel selectivity > 50 dB
- noise protection (tone, noise level)

ENVIRONMENTAL PARAMETERS:

- operating temperatures from -32°C to +55°C
- tightness 1m under water for 2 hours (MIL-STD-810G)
- test method MIL-STD-810F
- EMC MIL-STD-461F
- defense standards NO-06-A500, NO-58-A213, NO-06-A103, NO-06-A107, NO-06-A200

GENERAL SPECIFICATION OF PLATFORM:

- dimensions (without antenna) 220 x 86 x 44 mm
- weight (with battery and antenna) < 1000 g
- built-in GPS receiver

INTERFACES OF COMP@N PLATFORM:

- audio with PTT, RS232, USB, Ethernet 10/100

THE FAMILY OF COMP@N RADIO STATIONS

Configuration elements of COMP@N radio stations		Work-ability	H07/1	H07/2	H07/3	The client's
WF	BMSIP	+				Freedom of configuration
	W2FH	+				
	DV Reutech	+	+	+	+	
	STANAG 4203	+	+			
	STANAG 4204	+	+	+		
	STANAG 4205	+	+		+	
	AIRBAND	+	+	+		
	Radmor Serial Data RSD	+	+	+	+	
		+	Freedom of use			
RF	30- 137 MHz	+		+		
	20 - 520 MHz	+	+			
	225 - 400 MHz	+			+	
		+	Freedom of use			
BCP	BCP RADMOR	+				
	BCP Developed on		+	+	+	
	client's request	+	Freedom of use			

AMMUNITION FOR THE STRIKE UNMANNED AIRCRAFT SYSTEMS

KEY PERFORMANCE CHARACTERISTICS OF AMMUNITION

	Types of warheads			
Parameters	high-explosive warhead **HEW**	cumulative warhead **CW**	blast-fragmentation warhead **BFW**	incendiary warhead **IW**
Explosive material	RDX	HMX	RDX	RDX
Explosive weight, g	1350	1100	530	530
Range of effective destruction, m²	>50		>70	>70
Armour-penetrating ability, mm		100-120 (homogeneous armour)		
Damage agents			pre-formed fragments	
			weighing 2g, 524 pieces	
Combustion temperature, °C				2000
Security: • degrees of security • safety device	5 SAD type (Saving-Armament-Disarmament)			
Full information on the current status of the warhead			+	
Remote detonation			+	

The warhead is a part of the unmanned aircraft system carrier.
The warhead (WW-II) is prepared for the integration into the unmanned aircraft system WARMATE.

THE WEAPON STATION IVA

COMPOSITION OF THE FIRE CONTROL SYSTEM:
- TV camera with a dual field of view;
- Thermal imaging camera;
- Laser rangefinder;
- Processors for information control and display.

KEY PERFORMANCE CHARACTERISTICS

Parameters	Value
Combat load, kg	270
Cartridges 12.7 mm, pieces	500
Grenades in the magazine case, pieces	29 (32)
Operating angles range: • in a horizontal plane, degrees • in a vertical plane, degrees	 360° from minus 6° to plus 60°
Maximum speed of weapon guidance: • in a horizontal plane, degrees per sec. • in a vertical plane, degrees per sec.	 36° 30°
Target detection/recognition range: in the daytime, km at night, km	10/3,3 4/1.5
Range finding with a laser rangefinder, m	from 160 to 7 000
Measurement accuracy of the range on target, m	±5
Time of entering in combat mode, min	2
Possibility of weapon stabilization	provided (additional option)

THE RUNNING GEAR OF THE COMPLEX-ARMOURED PERSONNEL CARRIER

KEY PERFORMANCE CHARACTERISTICS

Parametrs	Index
Protection	Protection against firearms high-explosive incendiary/ armor-piercing ammunition 7.62x39mm caliber from a distance of 10 m and mine blast protection under a wheel or bottom up to 6 kg TNT.
Wheel arrangement	4 x 4 (chassis with increased all-terrain travel capability)
Load capacity	2 t
GVW	17 500 kg
Overall length/width/height	8000/2740/3600 mm
Wheelbase	3950 mm
Ground clearance engine	320 mm
Engine	6-cylinder in-line turbo diesel, 380 hp, 1460 N*m
Maximum speed	90 km/h on road
Fuel tank capacity	350 l
Tire size	14,00 R 20 or 16,00 R 20
Crew members	10
Transmision	9 Gear Manual Transmission FAST GEAR 9JS200TA
Maximum range	700 km on the high-type road
Gradient	30°

Public Joint-Stock Company
“CHERNIHIVSKY ZAVOD RADIOPRYLADIV”,
PJSC “CHEZARA”
25 Zakhysnykiv Ukrainy Str. Chernihiv 14030 Ukraine
tel.: (04622) 3-61-65, fax: (04622) 3-43-44
e-mail: mail@chezara.com
www.chezara.com

Design and manufacturing company
UKRAINIAN ARMOR
18 O.Dovzhenko srt. Kiyv 03057 Ukraine
tel./fax: +380 44 337 70 10
e-mail: info@ukrarmor.com,
www.ukrarmor.com

WB Electronics S.A.
ul. Poznańska 129/133
05-850 Ożarów Mazowiecki, Poland
tel.: +4822 731 25 00, fax: +4822 731 25 01
e-mail: info@ukrarmor.com,
www.ukrarmor.com