



SPETS  
TECHNO  
EXPORT



# MAIN UKRAINIAN MILITARY PRODUCTS AND SERVICES

## BRIEF CATALOGUE



**UKROBORONPROM**  
Ukrainian Defence Industry





**SPETS  
TECHNO  
EXPORT**

**MAIN UKRAINIAN  
MILITARY PRODUCTS AND SERVICES**



**30+**

partner  
countries

**70+**

private defense  
manufacturers

**100+**

state-owned  
enterprises

**60+**

research centers  
and design  
bureaus



# SPETSTECHNOEXPORT (STE)

- Ukrainian state-owned foreign trade enterprise that makes a significant contribution to the development of Defense industry and Strategic technologies
- Trading arm of SC “Ukroboronprom” and private defense manufacturers – consolidating over 200 enterprises and research centers

- Expert in export and import of products and services of the Defense industry, innovation development, establishment of defense and technical cooperation with partner countries and companies
- 23 years of experience in the world defense market



## BUSINESS PROFILE

EXPORT AND IMPORT OF PRODUCTS AND SERVICES



MODERNIZATION, REPAIR AND MAINTENANCE OF SPECIAL AND MILITARY EQUIPMENT



INVESTMENT IN HIGH-TECH DEVELOPMENTS



MARKETING AND INFORMATION CONSULTING ACTIVITIES



TECHNOLOGY TRANSFER AND JOINT PRODUCTION



LOCALIZATION OF MANUFACTURING





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## MILITARY AND SPECIAL PURPOSE VEHICLES

### OPLLOT

#### MAIN BATTLE TANK

The OPLLOT main battle tank is the latest generation of tracked combat vehicles of high firepower, reliable protection, and high mobility, successfully performing offense and defense combat operations under various weather and surface conditions. The tank also includes an air-conditioned crew compartment (operating temperature range is claimed to be -40 °C to 55 °C)



#### OPLLOT TANK IS LOW-OBSERVABLE AT THE BATTLEFIELD

- Smokeless engine start mode
- Smoke curtain creation
- Motor-transmission section with the heat-insulating cover provides low thermal visibility
- Heat point is 2 meters behind the tank
- Anti-radar coating of the tank
- Rubber shields on the front of the turret
- Protective grids
- Air-conditioner
- Auxiliary power generator

#### THE FIRE CONTROL SYSTEM

Gunner's day sight, PNK-6 commander's panoramic sighting system, PTT-2 thermal imaging sight, anti-aircraft sight and anti-aircraft machine gun control system

#### UPON REQUEST OF THE CUSTOMER THE TANK CAN BE EQUIPPED WITH

- 120 mm caliber main gun
- Communication system of the customer

#### COMBINED ACTIVE AND REACTIVE PROTECTION

Allows protection from all kinds of threats

- NIZH armor
- ZASLON APS



## MILITARY AND SPECIAL PURPOSE VEHICLES



### ENGINE

Multifuel engine 6TD-2  
1200 hp



### TRANSMISSION

Automatic



### MAXIMUM SPEED

70 km/h — forward  
40 km/h — backward



### MAXIMUM RANGE (ON ROAD)

400 km



### WEIGHT

51 t



### DIMENSIONS

9720 x 4176 x 2800 mm



### CREW

3



### ARMAMENT

### TYPE

### CALIBER

#### MAIN GUN

KBA-3

125 mm

#### COAXIAL MACHINE GUN

KT-7,62

7,62 mm

#### ANTI-AIRCRAFT MACHINE GUN

KT-12,7

12,7 mm



## KEY ADVANTAGES OF THE OPLLOT TANK

- powerful two-stroke diesel engine 6TD-2 (1200 hp, 883 kW)
- moving control combined system
- driver-mechanic digital board
- new generation active and reactive protection

- improved level of tank protection
- modern aiming and observation devices
- barrel fired guided-missiles
- automatic loading mechanism
- RCWS type anti-aircraft machine gun

### ADVANCED FIRE-CONTROL SYSTEM

### THERMAL SIGHTING SYSTEM OVER 8 KM

### TANK TURRET ROTATES 180 DEGREES IN 5 SEC

### BARREL FIRED 125 MM ATGMS





# ATLET

## ARMORED REPAIR AND RECOVERY VEHICLE

The Atlet ARRV is used in the composition of repair and recovery groups in the rear of tracked convoys when conducting a march, DVAPs, units and formations, recovery groups during fording operations, maintenance points, etc. They strengthen mobile maintenance means of tank battalions, division mechanized brigades and other units and formations, equipped with heavy tracked equipment



**ENGINE**

6TD-2, 1200 hp



**MAXIMUM TRACTION FORCE**

250 kN



**OPERATING WEIGHT**

46 t  
Ground pressure — 0.93 kg/cm<sup>2</sup>



**DIMENSIONS**

8890 x 3560 x 2740 mm



**ROPE OPERATIONAL LENGTH**

130 m



**CREW**

3

**CRANE**

<b>MAXIMUM CAPACITY</b>	25 t
<b>MAXIMUM RADIUS</b>	6.8 m
<b>JIB SWINGING ANGLE</b>	0-75°
<b>JIB TRAVERSING ANGLE</b>	360°
<b>CRANE TRAVERSING SPEED</b>	0.2-1.5 rpm
<b>HOOK LOWERING AND HOISTING SPEED</b>	0.2-6 m/min



## MILITARY AND SPECIAL PURPOSE VEHICLES



### LEV

#### ARMORED REPAIR AND RECOVERY VEHICLE

Designed for mechanical support on the battlefield, assisting with the emergency evacuation of tanks from the enemy war zone by pulling tanks that have become stuck or sunken, carrying, lifting, digging, welding works, and providing technical assistance of armed units in the field



### GPM-72

#### FIRE FIGHTING HEAVY VEHICLE

Designed for different classes firefighting using water or foam, transportation to the place of fire brigades, firefighting-technical equipment and carrying out rescue operations on arsenals, bases, ammunition depots, and oil wells, clearing passes to the place of fire



## MODERNIZATION OF ARMORED VEHICLES

#### MODERNIZATION AND SPARE PARTS SUPPLY FOR ALL SOVIET-ORIGIN ARMORED VEHICLES:

- **MBTs:** T-55, T-64, T-72, T-80 etc.
- **APCs:** BTR-50, 60, 70, 80
- **IFVs:** BMP-I, BMP-II, BRDM etc.

#### MODERNIZATION OF POWERPACKS WITH THE INCREASED HP — UP TO 1500 HP FOR:

- T-72, T-80, T-84, T-90, T-55, M60 tanks

#### SUPPLY OF ACTIVE AND REACTIVE ARMOR PROTECTION SYSTEMS:

- NIZH
- ZASLON
- Duplet
- range finder and jammer F3 Phantom installation on tanks and APCs



## BTR-4

### ARMORED PERSONNEL CARRIER / INFANTRY FIGHTING VEHICLE

The BTR-4 armored personnel carrier is designed for the transportation of infantry unit personnel and combat fire support in various conditions, including the NBC environment

Equipped with Deutz engine and Allison transmission. Turbocharged 6-cylinder 11.9-liter diesel engine BF 6 M 1015 CP has 515 hp output at maximum rpm of 1800

The engine compartment space allows the optional installation of more powerful engines

BTR-4 is equipped with remote control weapon station (RCWS) BM-7 PARUS. A number of different RCWS are available for installation, depending on the customer's requirements



## FAMILY OF VEHICLES



**4-MV** — INFANTRY FIGHTING VEHICLE



**4K** — COMMAND VEHICLE



**4-S** — MEDICAL VEHICLE



**4RM** — REPAIR AND RECOVERY VEHICLE



**4KSH** — COMMAND AND CONTROL VEHICLE



**ENGINE**

Deutz BF6M1015CP  
four-stroke diesel, up to 515 hp

**TRANSMISSION**

ALLISON 4500SP, automatic

**MAXIMUM SPEED**

100 km/h

**BALLISTIC PROTECTION**

STANAG level 2, up to level 4

**WEIGHT**

from 17,5 t to 21,5 t  
with additional protection

**DIMENSIONS**

7650 X 2900 X 2860 mm

**CREW**

3

**TROOPERS**

7-9

**BM-7 PARUS RCWS****ARMAMENT****TYPE****CALIBER**

ARMAMENT	TYPE	CALIBER
<b>MAIN GUN</b>	ZTM-1	30 mm
<b>COAXIAL MACHINE GUN</b>	KT-7.62	7.62 mm
<b>ANTITANK MISSILE COMPLEX (ATGM)</b>	Barrier/Skif	130/152 mm
<b>GRENADE LAUNCHER</b>	KBA-117 (AG-17)	30 mm
<b>MAXIMUM TARGET DEFEATING RANGE</b>	5000 m	

**AVAILABLE ADVANCED AMPHIBIOUS OPTION****ADDITIONAL PROTECTION**

- Against fragments of large-caliber projectiles
- Active protection system ZASLON + ERA

The APC can be used as a basic vehicle for equipping quick-reaction forces and marine units. The APC can fulfill its tasks day-and-night, under various climatic conditions, on hard-surface roads and off-road. The operating temperature range of the APC is from -40 to +55°C



## BTR-3

### ARMORED PERSONNEL CARRIER / INFANTRY FIGHTING VEHICLE

The BTR-3 Armored Personnel Carrier (APC) is intended to transport mechanized infantry units and to provide fire support in combat operations. It can be used as a basic vehicle for equipping quick-reaction forces and marine units

The APC can operate day-and-night, under various climatic conditions, on hard-surface roads, off-road, and in the NBC environment



## FAMILY OF VEHICLES



**3M2** — 120-MM SELF PROPELLED MORTAR



**3RK** — COMBAT VEHICLE WITH ATGM SYSTEMS



**3S** — ARMORED MEDICAL VEHICLE



**3BR** — REPAIR AND RECOVERY VEHICLE



**3DA** — ARMORED PERSONNEL CARRIER

**ENGINE**

MTU 6R106TD21, 326 hp

**TRANSMISSION**

ALLISON 4500SP, automatic

**MAXIMUM SPEED**

100 km/h

**MAXIMUM RANGE**

600 km

**WEIGHT**

16 t

**DIMENSIONS**

7850 x 2900 x 2774 mm

**CREW**

3

**TROOPERS**

10

**SHTURM-M RCWS****ARMAMENT****TYPE****CALIBER****AUTOMATIC GUN**

ZTM-1

30 mm

**COAXIAL MACHINE GUN**

KT-7.62

7.62 mm

**ANTITANK MISSILE COMPLEX (ATGM)**

Barrier/Skif

130/152 mm

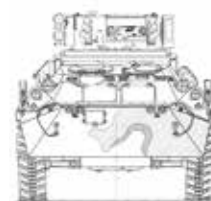
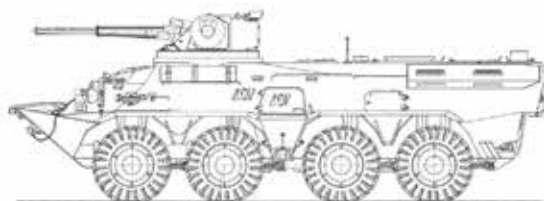
**GRENADE LAUNCHER**

KBA-117 (AG-17)

30 mm

**MAXIMUM TARGET DEFEATING RANGE**

5000 m



- Crew is accommodated in the airtight and waterproof cabin which protects them against nuclear radiation, chemical, and biological effects
- Design of the armored hull and chassis provides a high-level protection against explosions
- 8 firing ports for troops

**AVAILABLE ADVANCED AMPHIBIOUS OPTIONS**

Airtight and waterproof armored hull is the basis of the vehicle structure. The hull is made of armor steel and is reinforced with Kevlar from inside. The hull protects against 7.62 mm bullets and can be improved up to the level resisting to 12.7 mm bullets

**AUXILIARY EQUIPMENT**

- Winch pull power — 6 t
- Automatic firefighting system
- Filtration unit with full-flow filter
- Heater with efficiency 18 kW
- Air conditioner with cooling efficiency 10 kW





## HORUNGY

### ARMORED FIGHTING VEHICLE

Produced using some spare parts of BTR-60 (mostly suspension parts). Unlike traditional Soviet BTR, Horungy is designed according to modern-day trends in compartments disposition: engine compartment in front, troops compartment in the rear



#### ENGINE

Deutz, diesel, 210 hp



#### TORQUE

810 N\*m



#### BALLISTIC PROTECTION

STANAG level 1



#### WEIGHT

13 t



#### DIMENSIONS

7000 x 2660 x 2430 mm



#### CREW

3 + 11

## OTAMAN 6x6

### ARMORED FIGHTING VEHICLE

OTAMAN is a modern-type armored fighting vehicle, with a high level of ballistic and blast protection, powerful engine and suspension made by a world-leading manufacturer. The core feature of OTAMAN is its payload capacity, which gives possibility to install variety of heavy equipment, including 90/105 mm tank turret



#### ENGINE

Deutz, 558 hp



#### TORQUE

2080 N\*m



#### BALLISTIC PROTECTION

STANAG level 2-4



#### WEIGHT

23 t



#### DIMENSIONS

6500 x 2660 x 2450 mm



#### CREW

3 + 7

## TRITON

### LIGHT ARMORED VEHICLE

The TRITON is an armored vehicle with the 4x4 axle configuration, designed for the transportation of military personnel, armor, ammunition, special cargo and light weapon system, communication facilities, and special equipment



#### ENGINE

TAD620VE diesel engine, VOLVO, 211 hp



#### TRANSMISSION

Allison 1000 CP, Automatic, 6-speed



#### MAXIMUM SPEED

110 km/h



#### WEIGHT

8 t



#### DIMENSIONS

5650 x 2450 x 2300 mm



#### CREW

3 + 8



## VARTA

### ARMORED PERSONNEL CARRIER

VARTA is an armored personnel carrier (APC). It is ideal for transporting soldiers in combat situations and also can be equipped as a Command Vehicle, or vehicle for evacuating troops

The vehicle compartment is made from specialized 560-grade steel that protects the crew from armor-piercing incendiary ammo up to 7.62 mm. VARTA uses a V-shape hull structure to accommodate anti-mine seats, giving crew members protection to withstand the detonation of charges up to 6 kg of TNT

VARTA includes a combat module equipped with either the 7.62 mm or the 12.7 mm machine gun. The vehicle has ten gun ports around with the feasibility of accommodating a UBGL



**ENGINE**  
V6 TD, 270-300 hp



**MAXIMUM SPEED**  
120 km/h on road



**MAXIMUM RANGE**  
1250 km



**WHEEL ARRANGEMENT**  
4 x 4 (all-terrain chassis)



**BALLISTIC PROTECTION**  
STANAG 4569 Level 2,  
and mine blast 6 kg TNT



**MINE PROTECTION**  
STANAG 4569 Level 2ab



**WEIGHT**  
16,65 t



**DIMENSIONS**  
6900 X 2550 X 2800 mm



**CREW**  
2 + 8 + gunner

## NOVATOR

### ARMORED PERSONNEL CARRIER

NOVATOR armored vehicle is based on a redesigned and ruggedized Ford F550 chassis. It accommodates five soldiers within a cabin and has enough open-topped beds that can be configured for customer requirements

#### APPLICATION

Transportation of soldiers

Command vehicle

Evacuation of troops



**ENGINE**  
TD, 6,7 l, 300 hp



**TORQUE**  
895 N\*m



**TRANSMISSION**  
6 TorqShift automatic



**MAXIMUM SPEED**  
120 km/h



**BALLISTIC PROTECTION**  
STANAG 4569 Level 1



**MINE PROTECTION**  
STANAG 4569 Level 1ab



**WEIGHT**  
8845 kg



**DIMENSIONS**  
6400 x 2385 x 2350 mm



**CREW**  
2 + 3

## ARMORED VEHICLES

### DOZOR-B

#### LIGHT ARMORED PERSONNEL CARRIER

DOZOR-B is designed to protect the crew and troops from small arms fire, from 7.62 mm armor-piercing bullets at a distance of 30 meters, and from shrapnel from 150 mm high-explosive shells, exploding at a distance of 50 meters.

Designed as 4x4 APC



**ENGINE**

Deutz, diesel



**TRANSMISSION**

Allison, automatic



**SUSPENSION**

Independent



**ARMAMENT**

Machine gun KT-12.7 mm



**WEIGHT**

8450 kg



**DIMENSIONS**

5600 X 2400 X 2700 mm



**CREW**

3 + 8

DOZOR-B light armored personnel carrier arms allow inflicting damage on enemy manpower, light armored vehicles, and air targets that fly at subsonic speeds.

The body within is covered with ballistic protection material such as Kevlar

The television camera has an extended and narrow field of view. The spectral operating range of thermal and imaging cameras is 8-12 microns.

The wavelength of the laser rangefinder is 1.06 microns. Ammunition — 150. 450 bullets. Aiming angles vertically — from -5 to +60°, by the horizon — 360°. Possibility to equip with ATGM, 30 mm grenade launcher

- Four-stroke four-cylinder diesel engine with turbocharging DEUTZ BF 4M1013FC with 190 hp
- Automatic transmission — Allison LCT 1000
- Independent suspension with a torsion bar on a wishbone







## KOZAK 7

### TACTICAL ARMORED VEHICLE 4X4

KOZAK-7 is a tactical vehicle of light class. It is chassis-based but has special mil-spec axles with CTIS, which gives the vehicle outstanding off-road performance. In combination with the powerful engine, this gives a possibility to perform a wide range of auxiliary tactical tasks



#### ENGINE

Ford, diesel, 330 hp



#### TORQUE

1109 N\*m



#### BALLISTIC PROTECTION

STANAG level 2



#### WEIGHT

12000 kg



#### DIMENSIONS

6250 X 2310 X 2370 mm



#### CREW

2 + 8

## KOZAK 2M

### TACTICAL ARMORED VEHICLE 4X4

Full-fledged tactical armored vehicle. Next generation of Kozak-2 armored vehicle. Unlike its predecessor, does not have the base chassis, instead of this has a "monocoque" hull design. Key feature – monocoque hull, independent suspension, high ground clearance (430 mm) and CTIS, that together gives a high off-road performance



#### ENGINE

Iveco, diesel, 280 hp



#### TORQUE

950 N\*m



#### BALLISTIC PROTECTION

STANAG level 2



#### WEIGHT

13500 kg



#### DIMENSIONS

6200 X 2565 X 2425 mm



#### CREW

2 + 6

## KOZAK 5

### VEHICLE FOR POLICE AND SPECIAL FORCES

KOZAK-5 is designed to perform police and special forces combat missions. It is based on the Ford F550 truck and has complete crew compartment protection (STANAG level 2) and a non-armored rear cargo compartment. Suspension, brake system, and front axle were especially enforced due to the extended mass of the vehicle



#### ENGINE

Ford, diesel, 330 hp



#### TORQUE

1109 N\*m



#### BALLISTIC PROTECTION

STANAG level 2



#### WEIGHT

10000 kg



#### DIMENSIONS

5980 X 2360 X 2320 mm



#### CREW

2 + 3

## ARMORED VEHICLES

### KRAZ SHREK

ARMORED VEHICLE 4x4



**ENGINE**

Diesel, turbocharged  
300-400 hp



**MINE PROTECTION**

STANAG 4569 Level 2a, 2b



**BALLISTIC PROTECTION**

STANAG 4569 Level 2



**MAX SPEED**

105 km/h



**WEIGHT**

17,5 t



**CREW**

2 + 10



### KRAZ HULK

ARMORED VEHICLE 4x4



**ENGINE**

Diesel, turbocharged  
300-400 hp



**BALLISTIC PROTECTION**

STANAG 4569 Level 2



**FUEL TANK**

2 x 165 l



**MAX SPEED**

80 km/h



**WEIGHT**

16 t



**CREW**

2 + 10

### KRAZ HURRICANE

ARMORED VEHICLE 8x8



**ENGINE**

Diesel, turbocharged  
232 hp



**BALLISTIC PROTECTION**

STANAG 4569 Level 4



**FUEL TANK**

2 x 250 l



**WEIGHT**

24 t



**CREW**

2 + 10







## MILITARY PURPOSE CHASSIS

### KRAZ-7634HE

MILITARY PURPOSE CHASSIS 8x8



**ENGINE**

Diesel, turbocharged  
400-420 hp



**MAX SPEED**

100 km/h



**CARGO CAPACITY**

18,8 t



**WEIGHT**

32,2 t



**FUEL TANK**

2 x 350 l



### KRAZ-6322

MILITARY PURPOSE CHASSIS 6x4



**ENGINE**

Diesel, turbocharged  
300-400 hp



**MAX SPEED**

100 km/h



**CARGO CAPACITY**

11,4-20,6 t



**WEIGHT**

10,9-11,6 t

### KRAZ-6511H4

MILITARY PURPOSE CHASSIS 6x4



**ENGINE**

Diesel, turbocharged  
300-375 hp



**WEIGHT**

9,8 t



**CARGO CAPACITY**

23,4 t



**FUEL TANK**

250 (350) l

### KRAZ-5233HE

MILITARY PURPOSE CHASSIS 4x4



**ENGINE**

Diesel, turbocharged  
300-400 hp



**MAX SPEED**

120 km/h



**CARGO CAPACITY**

7 t



**WEIGHT**

10,1 t

### KRAZ-5401H2

MILITARY PURPOSE CHASSIS 4x2



**ENGINE**

Diesel, turbocharged  
160-300 hp



**WEIGHT**

5,6-7 t



**CARGO CAPACITY**

7-14 t



**FUEL TANK**

165 (250) l

## KASTET

### REMOTE CONTROLLED WEAPON STATION

Kastet combat module is an in-depth modernization of the Shkval combat module. The combat module is designed for arming the newly created and modernization of the existing armored vehicles of light and medium weight class, as well as for installation on riverboats and sea-going ships, fortifications, etc

#### ARMAMENT

Automatic gun	ZTM-1, 30 mm
Firing rate	330 rds/min
Machine gun	KT 7.62 mm
Firing rate	250 rds/min
Automatic grenade launcher	KBA-117, 30 mm
Firing rate	50-400 rds/min
Anti-tank guided missile	Barrier
Firing range min / max	100 m/5000 m
Guidance system	Semi-automatic by laser beam



## DUPLET

### REMOTE CONTROLLED WEAPON STATION

The Duplet RCWS is optimized for use on the BMP-2 family of combat vehicles. In addition to an increased amount of firepower, an important characteristic of the Duplet RCWS is its autonomy

The module helps achieve multichannel weaponry (i.e. ability of its simultaneous usage for different purposes)

#### ARMAMENT

Machine gun 1	2 x ZTM-2, 30 mm
Sighting range	with APTr and APITr shells — 2000 m with HETr and HEI shells — 4000 m range for air targets — 2000 m Blank range/Range of direct shot — 1100 m
Fire rate	550 rounds per minute
Machine gun 2	2 PKT, 7.62 mm
Sighting range	1700 m
ATGM	4 launcher of Barrier ATGM
Effective range	5000 m





## OTHER TYPES OF RCWS AVAILABLE



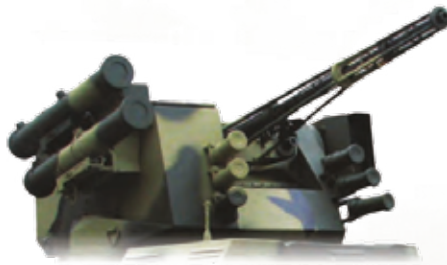
**BLIK-2M**



**IVA**



**SHTURM-M**



**PARUS**



**SARMAT-300**



**STILET**  
RCWS



# NEPTUNE

## ANTI-SHIP MISSILE SYSTEM

NEPTUNE is a land-based anti-ship missile system. It is intended to defeat warships such as cruisers, destroyers, frigates, corvettes, tank landing ships and vehicles, which operate both independently and as part of the ship groups and amphibious groups, as well as coastal radio-contrast targets in visual and adverse meteorological conditions, under an active fire and electronic countermeasures by an enemy



**FIRING RANGE**  
up to 280 km



**QUANTITY IN SALVO**  
16 pcs



**TIME OF DEPLOYMENT**  
up to 15 min



**MAX AMMUNITION RESERVE**  
72 pcs



**MAXIMUM SPEED**  
70 km/h – on highway  
20 km/h – on off-road



**FIRING INTERVAL IN SALVO**  
from 3 to 5 s

# R-360 CRUISE MISSILE



**CONTAINER WEIGHT**  
up to 870 kg



**WARHEAD WEIGHT**  
150 kg



**DIAMETER**  
420 mm





## THE SYSTEM CONSISTS OF:



**MOBILE COMMAND POST**  
1 EA



**RK-360**  
4 EA in 1 launcher



**UNIFIED SELF-PROPELLED LAUNCHER**  
1-4 EA



**TRANSPORT-LOADING VEHICLE**  
1-4 EA



**TRANSPORT VEHICLE**  
1-4 EA



**SET OF GROUND EQUIPMENT**  
1 SET



# VILKHA

## MULTIPLE LAUNCH ROCKET SYSTEM

VILKHA (MLRS) is designed to destroy armored, lightly armored and unarmored vehicles, enemy manpower, command posts, communication centers, military-industrial facilities, aboveground facilities for storage and other purposes at long distances



**FIRING RANGE**  
up to 130 km



**DURATION OF FULL SALVO**  
not more than 40 s



**TIME OF ROCKET CONTROL**  
not more than 3 min



**QUANTITY OF ROCKETS IN MULTIPLE LAUNCHING POD**  
12 pcs



**GUIDANCE SYSTEM**  
INS+GPS



**OPERATION TEMPERATURE RANGE**  
from -40 to +55 °C

# GUIDED ROCKET

The peculiarity is that at the initial part of the flight path, a rocket flight correction is provided with the help of pulse engines that reduce to minimum rocket fly deviation from the preset course. In the final part, the rocket is aimed at the target by an inertial and satellite navigation system using aerodynamic control surfaces. The VILKHA MLRS ensures forming of individual flight task for each rocket unit that makes possible to defeat several targets by one salvo



### VILKHA



**CALIBER**  
300 mm



**RANGE**  
70 km



**WEIGHT**  
923 kg



**WARHEAD WEIGHT**  
250 kg



**CIRCULAR ERROR PROBABLE**  
10 m

### VILKHA-M



**CALIBER**  
300 mm



**RANGE**  
130 km



**WEIGHT**  
820 kg



**WARHEAD WEIGHT**  
170 kg



**CIRCULAR ERROR PROBABLE**  
30 m







## THE SYSTEM CONSISTS OF:



**LAUNCHER**  
1-4



**MOBILE COMMAND POST**  
1 EA



**TRANSPORT-LOADING VEHICLE**  
1-4



**GUIDED ROCKET**  
8-12 EA in 1 CV



**SET OF GROUND EDPT**  
1 SET



## HRIM-2

### OPERATIONAL-TACTICAL MISSILE SYSTEM

HRIM-2 is designed to defeat single and group stationary targets at a distance from 50 to 500 kilometers

The warhead of a single-stage ballistic missile is 480 kg

The warhead is accomplished by a monoblock or cassette circuit

The cassette warhead is equipped with fragmented-high-explosive military elements. The monoblock scheme is equipped with a fragmentation-explosive or penetrating fragmentation-explosive shell



#### THE ESTIMATED OPERATIONAL AREA

Fragmentation unit	10 000 m <sup>2</sup>
Cassette unit	25 000 m <sup>2</sup>



**MOBILE LAUNCHER**  
10x10 wheeled chassis



**OPERATING TEMPERATURE**  
from -40°C to +50°C



**STRUCTURE**  
2-3 rocket launchers in battery



**SALVO DURATION**  
2-20 min



**THE MASS OF THE EQUIPPED ROCKET LAUNCHER**  
21000 kg



**DEPLOYMENT**  
mobile, land-based

## HRIM-2 MISSILE

#### MULTIPLE-WARHEAD BALLISTIC MISSILE

missile with a warhead of monoblock and cassette types



**LAUNCH WEIGHT**  
3500 kg



**FIRING RANGE**  
max – 280-500 km  
min – 50 km

#### ANTI-AIRCRAFT MISSILE WARHEAD

penetrating high-explosive fragmentation shell



**LAUNCH WEIGHT**  
1100 kg



**FIRING RANGE**  
max – 150 km  
min – 10 km

#### ANTI-SHIP MISSILES

medium-range anti-ship missile



**LAUNCH WEIGHT**  
2100 kg



**FIRING RANGE**  
max – 90 km  
min – 5 km



**PROBABILITY OF HITTING A TARGET WITH ONE MISSILE — 87%**  
**TYPE OF MISSILE LAUNCH — BALLISTIC FROM A TRANSPORT AND LAUNCH CONTAINER**





## THE SYSTEM CONSISTS OF:



### SELF-PROPELLED LAUNCHER

autonomous, automated,  
equipped with missiles



### MISSILE WITH THREE TYPES OF WARHEADS:

- single-stage ballistic with non-nuclear warhead
- long-range anti-aircraft missile
- medium-range anti-ship missile



### COMMAND CONTROL VEHICLES (CCV)

HRIM-2 MISSILE SYSTEM CAN ALSO INCLUDE TRANSPORTATION-AND-LOAD VEHICLE,  
TRANSPORTATION VEHICLE, AUTOMATED CONTROL-AND-MEASURING VEHICLE,  
MAINTENANCE AND REPAIR VEHICLE



## BM-21U VERBA

### MULTIPLE LAUNCH ROCKET SYSTEM (122 mm)

BM-21U combat vehicle is designed for the destruction of:

- unprotected and sheltered enemy manpower and equipment
- armored personnel carriers, tanks, and other military equipment in areas of concentration
- artillery and mortar batteries, tactical missile batteries, helicopters on landing areas
- command posts, storage with fuel and ammunition
- other purposes



## BM-21UM BEREST

### MULTIPLE LAUNCH ROCKET SYSTEM (122 mm)

The combat machine consists of an artillery unit and a KrAZ-5401 NE chassis

#### THE COMBAT MACHINE HAS:

- electronic control unit for firing channels
- navigation system
- fire control system
- digital communication and reception and transmission of information

The BM-21UM Berest combat machine is designed for:

- destruction and suppression of the enemy's life and military equipment in the areas of their concentration
- destruction and suppression of artillery and mortar batteries
- destruction of fortifications, support points, and enemy resistance points



## 2S22 BOHDANA

### SELF-PROPELLED HOWITZER (155 mm)

The 2S22 Bohdana is developed in Ukraine. It is based on the 6x6 chassis of the KrAZ-6322. It has an armored cabin and enough storage for around 20 shells. The howitzer has a minimum range of 780 meters and a maximum range of 40 km with HE/AP ammunition or 50 km with a rocket-assisted projectile. It has an average rate of fire of six shells per minute



## ARTILLERY PROJECTILES



## KVITNYK

### HIGH PRECISION GUIDED ARTILLERY PROJECTILE WITH LASER SEMI-ACTIVE HOMING GUIDANCE

The Kvitnyk projectile is designed for a high-precision strike on various targets. The missile fires from an artillery system as a part of a system of guided artillery arms

The Kvitnyk is designed for effective defeating of tanks, IFVs, armored vehicles, multiple rocket launchers, self-propelled artillery systems, artillery pieces, both on the move and stationary, located open air or in pits, command, control, communications centers, bridges, crossings, defense fortifications, surface targets (combat, landing or transport ships), etc with a high probability of the first-shot hit


**COMBAT PART TYPE**

high-explosive fragmenting


**FIRING RANGE**

20000 m


**CALIBER**

152 (155) mm


**OPERATING TEMPERATURE RANGE**

from -40 to +50 °C


**WEIGHT OF EXPLOSIVES**

not more than 8 kg


**WEIGHT OF PROJECTILE**

not more than 52 kg


**LENGTH**

11250 mm

## KARASUK

### GUIDED ARTILLERY PROJECTILE WITH LASER SEMI-ACTIVE SELF-GUIDANCE TYPE

**KARASUK IS EFFECTIVE AGAINST:**

- Tanks
- Armored infantry vehicles
- Armored vehicles
- Missile launchers
- Self-propelled artillery systems
- Artillery pieces, stationary and moving, located openly or in shelters
- Command, control centers, communications, computer and intelligence centers
- Bridges, crossings, defensive fortifications
- Surface targets (combat, landing or transport vessels, etc) with a high probability of the first-shot hit


**COMBAT PART TYPE**

high-explosive fragmenting


**FIRING RANGE**

12000 m


**CALIBER**

122 mm


**WEIGHT OF EXPLOSIVES**

not less than 5 kg


**WEIGHT OF PROJECTILE**

not more than 28 kg


**OPERATING TEMPERATURE RANGE**

from -40 to +50 °C

## R-27

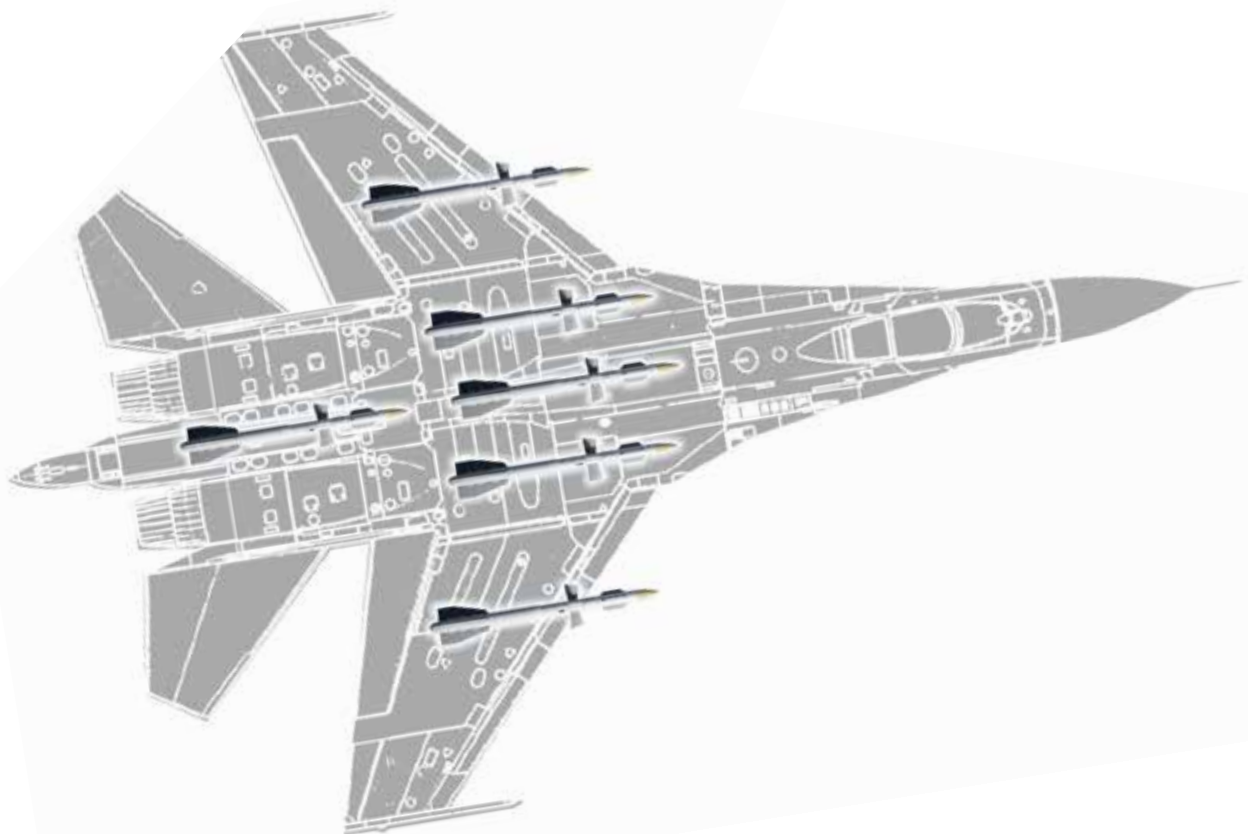
### AIR-TO-AIR MISSILES

The R-27 is a medium-range, guided air-to-air missile. It is designed to intercept and destroy hostile piloted aircraft, drone targets, and cruise missiles in long-range and close-in maneuverable air fights. It features a modular three-part construction – the equipment and guidance section with a homing head, warhead, and solid-propellant rocket motor

The missile has three mounting points to the aircraft. It is compatible with the MiG and Su aircraft weapon systems



Type of missile	<b>R-27ER1</b>	<b>R-27R1</b>	<b>R-27ET1</b>	<b>R-27T1</b>	<b>R-27EP1</b>	<b>R-27P1</b>
Launch weight	350 kg	253 kg	343 kg	245 kg	346 kg	248 kg
Launch altitude	to 27 km	to 25 km	to 27 km	to 25 km	to 20 km	to 20 km
Maximum launch range, km head-on aspect / tail aspect	93 / 26	60 / 18	84 / 20	50 / 15	110 / –	78 / –
Guidance	Semi-active radar seeker with command updates		IR seeker		Passive guidance on radar and jammer	







## RS-80

### UNGUIDED AIRCRAFT ROCKETS

Unguided aircraft rocket RS-80 with shaped-charge fragmentation warhead represents an upgraded version of the unguided aircraft rocket S-8KOM. This rocket is designed to destroy hostile armored, lightly-armored, non-armored combat equipment and enemy fighters. It is used with Su and MiG fighter aircraft types, Mi and Ka helicopters type. It is designed to be launched from B8 launching pods and their modifications (analog)



**CALIBER**  
80 mm



**ARMOR PENETRATION DEPTH  
(30° TO NORMAL)**  
Up to 430 mm



**ROCKET LAUNCHING MASS**  
12,8 kg



**LAUNCH RANGE**  
1000-5000 m



**MAXIMUM ROCKET VELOCITY**  
625 m/s



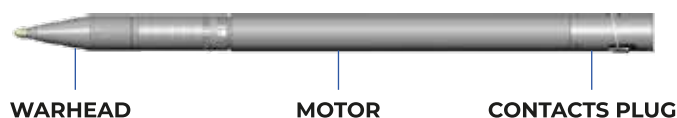
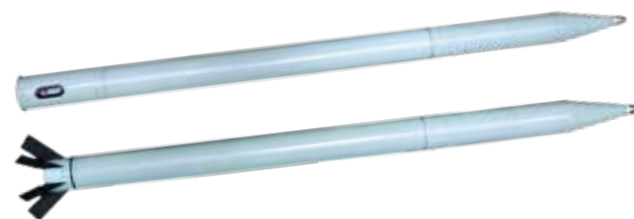
**EXPLOSIVE MASS**  
1,1 kg



**LENGTH**  
1595 mm



**WARHEAD MASS**  
4,6 kg







## ANTI-TANK MISSILE SYSTEMS





### SKIF

#### MAN-PORTABLE ANTI-TANK MISSILE SYSTEM

The SKIF man-portable anti-tank missile system is designed to destroy stationary and moving modern armored targets with combined, spaced or monolithic armor, including ERA (explosive reactive armor), and also pinpoint targets like permanent fire positions, tanks in trenches, light-armored objects, and helicopters





-  **FIRING RANGE AT DAY TIME**  
100-5500 m
-  **FIRING RANGE AT NIGHT**  
100-3000 m
-  **OPERATING TEMPERATURE RANGE**  
from -40 to +60°C
-  **GUIDANCE SYSTEM**  
semi-automatic by laser beam  
with target tracking



-  **WEIGHT OF LAUNCHER**  
38,2 kg
-  **WEIGHT OF GUIDANCE DEVICE**  
15 kg
-  **WEIGHT OF THERMAL IMAGER**  
4,1 kg
-  **DIMENSIONS**  
1370 X 1160 X 860 mm

### RK-2S







-  **CALIBER**  
130 mm
-  **FLIGHT TIME AT MAX RANGE**  
29,5 s
-  **ARMOR PENETRATION**  
Tandem hollow-charge behind ERA  
Not less than 800 mm  
  
High-explosive fragmentation with EFP  
Not less than 60 mm
-  **MISSILE WEIGHT**  
Not more than 30 kg



RK-2S

### RK-2M



-  **CALIBER**  
152 mm
-  **FLIGHT TIME AT MAX RANGE**  
38 s
-  **ARMOR PENETRATION**  
Tandem hollow-charge behind ERA  
Not less than 1100 mm  
  
High-explosive fragmentation with EFP  
Not less than 120 mm
-  **MISSILE WEIGHT**  
Not more than 37 kg



RK-2M



## CORSAR

### LIGHT PORTABLE MISSILE SYSTEM

The CORSAR light-weight portable missile system is designed to destroy stationary and moving modern armored targets and other objects with combined, spaced or monolithic armor, including ERA (explosive reactive armor), as well as pinpoint targets such as weapon emplacements, light-armored objects and helicopters. Firing can be carried out from the mount as well as from the parapet



**FIRING RANGE**  
100-2500 m



**ARMOR PENETRATION**  
Tandem hollow-charge behind ERA  
Not less than 550 mm

High-explosive fragmentation with EFP  
Not less than 50 mm



**GUIDANCE SYSTEM**  
semi-automatic by laser beam



**OPERATING TEMPERATURE RANGE**  
from -40 to +60°C



**WEIGHT OF MISSILE IN CONTAINER**  
15,5 kg



**WEIGHT OF LAUNCHER**  
12 kg



**WEIGHT OF MOUNT**  
8,3 kg





## ANTI-TANK MISSILE SYSTEMS

### BAR'ER

#### VEHICLE-CARRIED ANTI-TANK MISSILE SYSTEM

The BAR'ER vehicle-carried anti-tank missile system, mounted on a turret of a combat vehicle (like ICV or APC), is intended to destroy stationary and moving modern armored targets with combined, spaced or monolithic armor, including ERA (explosive reactive armor), as well as pinpoint targets such as permanent fire positions, tanks in trenches, light-armored objects and helicopters



**MAXIMUM FIRING RANGE**  
5000 m



**CALIBER**  
130 mm



**FLIGHT TIME AT MAX RANGE**  
23 s



**WEIGHT OF MISSILE**  
29,5 kg (in container)



**CONTAINER LENGTH**  
1360 mm



**CONTAINER OUTER**  
140 mm (diameter)



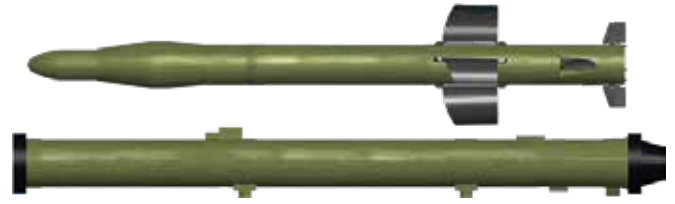




## BAR'ER-V

### HELICOPTER ANTI-TANK MISSILE SYSTEM

The BAR'ER-V helicopter anti-tank missile system is used in the MI-8/17, MI-24/25/35 modernization, and other helicopters types. It consists of an anti-tank guided missile (in a transport and launching container) and a laser control channel in an optical-sighting station. The BARRIER-V is designed for the destruction of stationary and moving hard targets with combined, spaced, or monolithic armor, including ERA (explosive reactive armor) as well as pinpoint targets such as fortified emplacements, tanks in trenches, light-armored objects, and helicopters



**COMBAT PART TYPE**  
tandem hollow-charge



**MAXIMUM FIRING RANGE**  
7500 m



**MISSILE CALIBRE**  
130 mm



**GUIDANCE SYSTEM**  
by laser beam with target tracking in automatic mode



**OPERATING TEMPERATURE RANGE**  
from -40 to +60 °C



**WEIGHT OF MISSILE**  
47 kg (in container)



**CONTAINER LENGTH**  
1917 mm



**CONTAINER OUTER**  
140 mm (diameter)



## ANTI-TANK GUIDED MISSILES

### KONUS

#### ROUND COMPRISING ANTI-TANK GUIDED MISSILE

Round comprising antitank guided missile is designed to destroy stationary and moving modern armored targets with combined, carried, or monolithic armor, including ERA (explosive reactive armor), and also against pinpoint light-armored objects and helicopters



**COMBAT PART TYPE**  
tandem hollow-charge



**FIRING RANGE**  
5000 m



**CALIBER**  
120 mm



**OPERATING TEMPERATURE RANGE**  
from -40 to +60°C



**ROUND WEIGHT**  
28 kg



**ARMOR PENETRATION**  
not less than 700 mm



**LENGTH**  
1074 mm



**FLIGHT TIME AT MAXIMUM RANGE**  
16,3 s

### KOMBAT

#### ANTI-TANK GUIDED MISSILE

Anti-tank laser beam missiles are designed to ensure effective fire from tanks against stationary or mobile armor hardened targets with explosive reactive armor (ERA), as well as against small-size or light-armor targets like a pillbox, reinforced pillbox, trenched tanks, hovering helicopters, and similar type of targets. It is possible to produce training rounds "KOMBAT -621UT" intended for T-72 tank crew training related to the on-site handling and work with the item: loading to and withdrawal from the ammo rack as well as connection and detachment of head and tail sections of missiles



**COMBAT PART TYPE**  
tandem hollow-charge



**FIRING RANGE**  
5000 m



**CALIBER**  
100 / 120 / 125 mm



**OPERATING TEMPERATURE RANGE**  
from -40 to +60°C



**ROUND WEIGHT**  
not more than 30,45 kg



**ARMOR PENETRATION**  
not less than 750 mm



**LENGTH**  
1196 mm



**FLIGHT TIME AT MAXIMUM RANGE**  
16,3 s



## GURT-M SYSTEM

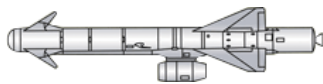
### AUTOMATIC CONTROL AND DIAGNOSTICS SYSTEMS OF GUIDED HIGH-PRECISION WEAPON

#### THE MODERNIZED GURT-M SYSTEM ENSURES

- check and testing for the application of more than 50 various modifications of air missiles and corrected air bombs
- specialized equipment, in addition to the AKPA, may also include diagnostic equipment sets (KDO) that allows pinpointing failures in missiles for their repairing. The missiles for which the KDO are designed, are marked with red
- missile outgoing inspection at manufacturing plants
- failure diagnosis while missiles repairing
- forecast of missiles technical state while prolonging their service life



#### SUPPORTED AIR MISSILES AND BOMBS



KH-59, KH-59M,  
KH-59ME



R-73K, R-73L,  
R-73E, U-73



KAB-500L  
KAB-500L-K  
KAB-500OD  
KAB-500KR  
KAB-500KR-U  
KAB-1500L-F  
KAB-1500L-PR  
KAB-1500KR



R-27R1, R-27ER1, R27T1,  
R-27ET1, R-27P, R-27EP,  
470UT-RT, 470UT-ERT



KH-29T, IKH-29T,  
KH-29TD, IKH-29TD,  
KH-29L, IKH-29L,  
S-25L, S-25LD



KH-31A, KH-31A-UD



R-60M, R-60K, R-60MK



KH-31P (WITH L-111)  
KH-31P (WITH L-112)  
KH-31P (WITH L-113)  
KH-31P-UL(WITH L-111)  
KH-31P-UL (WITH L-112)  
KH-31P-UL (WITH L-113)



KH-25MP (WITH LO77M)  
KH-25MP (WITH LO15M1)  
KH-25ML (WITH 24N1)  
KH-25MR (WITH V500)  
KH-25MU (WITH LO77M)  
KH-25MU (WITH LO15M1)  
KH-25MU (WITH 24N1)



R-40T, UR-40T



R-40TD, R-40RD,  
R-40TD1, R-40RD1,  
UR-40TD, UR-40RD



R-33



R-33S



## 90K6E

### MOBILE 3D SURVEILLANCE RADAR

The mobile 3D air surveillance radar with a solid-state transceiver, intended for low, medium and high altitude flying targets detection. It is designed to be used:

- as target designation system in anti-aircraft missile troops
- as an information link in AD and AF units

The radar can be transported by C-130 Hercules aircraft



### MAIN SPECIFICATIONS

Maximum radar operation limits:		Transmitter peak power	32 kW
in range	500 km	Clutter suppression	50 dB
in azimuth	360°	Jamming cancelling	20 dB
in elevation	0°–70°	Track throughput	more than 500
Detection range of target flight altitude 10-30 km	450 km	IFF equipment	built-in
		Transmitter type	Solid State







## 1L221E

### ARTILLERY TRACKING RADAR

The radar allows determining the coordinates of mortar firing positions, cannon artillery, rocket launcher systems, tactical missile launch positions at the first shot (launch). The radar provides coordinates of enemy positions and adjusts the firing of own weapons by automatic fire control systems

#### FEATURES

- Target detection and adjusting of artillery shooting
- Verification of firing system types: mortars, artillery, tactic missiles
- Using as an element of reconnaissance strike complex
- Operations in difficult climatic or jamming conditions

#### MAIN SPECIFICATIONS

Detection range:	
artillery	23-28 / 28-29 km
mortars	20-24 / 25 km
MLRS	38-39 / 55-59 km
tactical missiles	55 / 58 km
Electronic scanning detector:	
in azimuth	60° (± 30°)
in elevation	40° (+25° ... -15°)



#### FREQUENCY BAND

S



#### FIRE POSITIONS

60 min



#### ACCURACY

0,35% from range



#### DEPLOYMENT / CLOSING DOWN

20 / 15 min

## MINERAL-ME

### MULTIFUNCTIONAL TARGET DESIGNATION RADAR SYSTEM

The Mineral-ME complexes of marine and coastal basis are the integrated multifunction information-and-control systems that are based on the usage of different information sensors (of active, passive, mobile surveillance posts) within one information field, provide the over-the-horizon detection of surface targets and deliver target designation data for full firing range of missile weapons



#### MAIN SPECIFICATIONS OF SUBSYSTEMS

Radar type		Active	Passive	MEI-MOR
Frequency band		I	I, G, E/F, D	I
Scanning zone	through azimuth through range	360° 35 (100-250) km	360° up to 450 km	360° up to 30 km

## P-18 TYPE

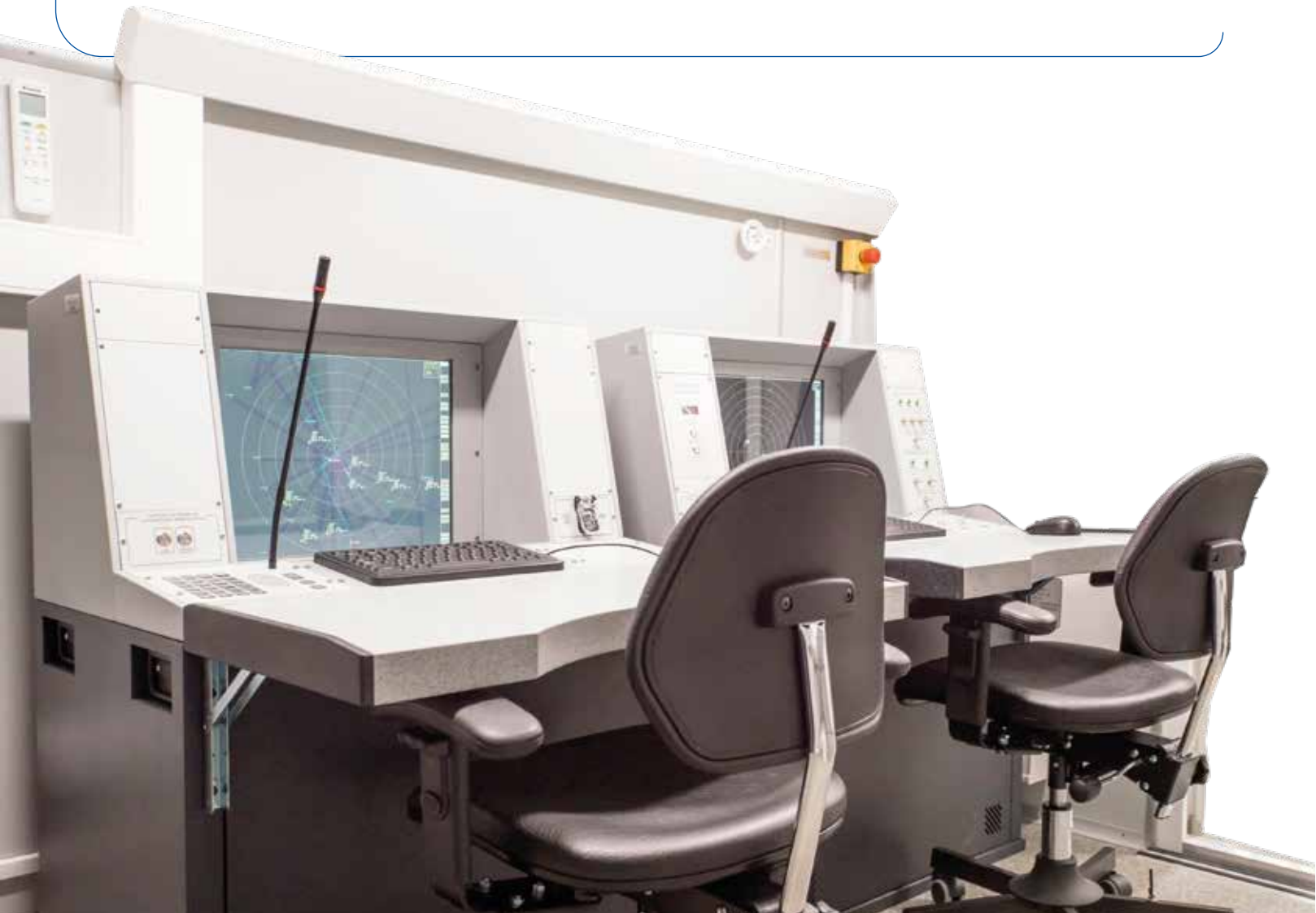
### SOLID STATE VHF RADAR

#### POSSIBILITIES AND ADVANTAGES:

- High detection range, accuracy, jamming immunity, numbers of plots and tracks, reliability
- High dynamic range (up to 100 dB) resulting in high jamming immunity and suppression of clutter and weather formations
- Implemented functions of a radar extractor for post-detection signal processing (detection, location measuring, plots generation, clutter map, scan-to-scan processing, stabilization of false target generation, processing of identification signals, data distribution to consumers)
- A large number of probing signals, ability to choose the best one depending on the air situation, jamming and combat conditions
- Reconfigurable (via program or random) parameters of probing signal — working frequency, modulation type, waveform
- Efficient algorithms for clutter suppression with a wind speed compensation the automatic combining of amplitude and coherent channels that decrease signal loss and increase detection range and accuracy implementation of an automatic built-in diagnostic system



Frequency band	140-180 MHz
Radar coverage zone, max zone	up to 500 km
Location accuracy:	
range	200 m
azimuth	0,4°
Resolution:	
range	1200 m
azimuth	8°





## 36D6-M2

### HIGH-MOBILITY SURVEILLANCE RADAR

The high-mobility surveillance radar is intended for detection and target identification at the low and high height at the influence of active and passive jamming with the coordinate and tracks data output



#### OPERATION BAND

S



#### INSTRUMENTED RANGE

90, 180, 360 km



#### ANTENNA TYPE

DPAR



#### NUMBER OF TRANSPORT UNITS

2



#### DEPLOYMENT / CLOSING TIME

<30 min



Detection range for low flying targets	RCS = 1-2 m <sup>2</sup>	Track capability	>256
at flight altitude 100 m	42 km	Accuracy, range	100 m
at flight altitude 1000 m	110 -115 km	Accuracy, azimuth	10 – 15 angular min
Azimuth coverage	360°	Accuracy, altitude	400 m AT < 70 km range
Elevation coverage	0,5° – 30° in 2 rev.	MTBF	800 hours
RPM	>48 dB		

## KOLCHUGA RDF 360

### LONG RANGE PASSIVE RADAR (ELINT SYSTEM)

A system for the identification of emission sources that belong to radio engineering, control, and surveillance systems of emission sources of various classes and systems with pulsed and continuous emission mounted on ground, surface, and air objects



#### FREQUENCY BAND

0,13-12 GHz



#### DETECTION RANGE (OTH)

up to 700 km



#### FREQUENCY RANGE

0,3-18 GHz



#### TRACKING CAPACITY

200 real time tracks



#### TYPES OF TARGETS

air, land and surface



Coverage sector	360°
Target library capacity	100000
Tracking capability	3D
Target detection and tracking	up to 450 km
Processes all types of radars	SSR/IFF (mode 1, 2, 3 (A,C), 4, S, TACAN
Simultaneous bandwidth	· 0,5 GHz within a 0,75-8 GHz band; · 3,5 GHz within a 8-12 GHz, 8-18 GHz band



# PRV-16MA

## HEIGHT FINDER UPGRADE

Mobile Height Finder PRV-16MA is a mobile jam-protected centimetric pulse radar

Designated for detection, coordinate determination (azimuth, range, height), when operated independently or through Extractor AI000-H, ensures automatic and semi-automatic height measurement for targets with a coordinate designation from P-140MA, P-180Y, P-190Y radars

Data exchange between Radar and PRV is conducted via PS-232C Interface

PRV-16MA is protected from the interference of various obstacles:

- Against local object clutter and passive jamming – MTI System
- Active jamming (noise, pulse) and non-synchronous jamming – frequency tuning capability



**OPERATION FREQUENCY RANGE**  
Centimetric



**AVERAGE POWER**  
300 W



**MAXIMUM RANGE**  
300 km



**SWITCH-ON TIME**  
5 min



**CONSUMED POWER**  
no more than 30 kW

### DETECTION RANGE

for Targets with SCS = 1 m<sup>2</sup> and with P=0.5

HTARGET (500 m)	no less than 65 km
HTARGET (4000 m)	no less than 220 km
HTARGET (6000 m)	no less than 250 km

### OPERATIONAL CONDITIONS

Relative Humidity  
98% at t = 25°C

Maximum Altitude  
above Sea Level

### RESOLUTION

Range	75 m
Azimuth and Elevation	0.5°
Clutter Suppression Ratio	7X





## BISKVIT-KB

### COUNTER-BATTERY RADAR

The Biskvit-KB radar is designed for radar reconnoitering of positions of mortars, multiple launch rocket systems, large-caliber artillery and provides automated transmission of radar data via communication channels to perspective Automated Systems and Automated Command Centers

The radar is performed based on a digital beam-forming (DBF) phased array.

Constructive solutions allow installing the radar on LAVs, conventional vehicles, or stationary objects



**FREQUENCY BAND**  
L-BAND



**ELEVATION RANGE**  
up to 40°



**DETECTION RANGE**  
up to 20 km



**AZIMUTH RANGE**  
360°



**WEIGHT**  
80 kg

#### DETECTION RANGE

120 mm mortar ammunition	7-8 km
81 mm mortar ammunition	4-5 km
MLRS ammunition	10-15 km
Howitzer	10 km

## DELTA

### MOBILE SOLID-STATE ALL-ROUND OBSERVATION 2D RADAR FOR NAVAL APPLICATIONS

The DELTA radar is a modern mobile two-dimensional pulse coherent solid-state radar for surface and air surveillance with low probability interception of its electromagnetic radiation. It delivers in a fully automatic way the current coordinates of any target located within its area of detection. This mobile radar could be installed on transport vehicles (automobiles, armored personnel carriers, infantry combat vehicles, etc) which allows arranging its operation in uplands to ensure necessary viewing conditions



#### DETECTION RANGE

Antenna rotation	3, 6, 12 s
Power supply	220 W, 50 Hz
Power consumption	not more than 500 W
Equipment weight	150 kg
Maximum target detection range:	
small size air type	8-20 km
ground-based	16-20 km
surface type	radio horizon range



**FREQUENCY BAND**  
X



**NUMBER OF TARGETS TRACKED**  
up to 50



**BANDWIDTH**  
150 MHz



**RANGE SCALE**  
12, 24, 48, 96 km



# ASR-23L

## AERODROME RADAR

ASR-23L Airport surveillance radar is designed to survey and control the airspace in the airfield area

The ASR-23L combines primary and secondary channels as well as a side-lobe suppression channel to improve detection performance. The primary channel of ASR-23L operates in the L band (ICAO), the secondary channel uses standard RBS frequencies



### OPERATING FREQUENCIES RANGE

**PSR:** 1250-1350 MHz

**SSR:** 1030 MHz (interrogation)  
1090 MHz (response RBS)



### TRANSMITTER PULSE POWER

**PSR:** 4kW

**SSR:** 1kW



### DETECTION RANGE OF THE TARGET WITH RCS=2,5 M<sup>2</sup>, P=0,5

MIN RANGE

**PSR:** 1000 m  
**SSR:** 2.5 km

MAX RANGE

**PSR:** 100 km  
**SSR:** 220 km



### RESOLUTION

BY RANGE

**PSR:** 250 m  
**SSR:** 150 m

BY AZIMUTH

**PSR:** 5°  
**SSR:** 5°



### POWER CONSUMPTION

< 10KW

### CAPABILITY

- The radar implements automatic tracking of the trajectories of airborne objects. ASR-23L provides data receipt from other radars, exchange of radar information occurs via the provided data exchange channels in the agreed exchange protocol
- Only solid-state components are used in the transmitting and receiving equipment of the radar. The transmitter is built on a modular basis and provides a passive failure - failure of a separate module leads only to partial longitudinal decalage of the radar parameters
- The radar is designed for round-the-clock operation and is equipped with an uninterruptible power supply that ensures the operation of the radar for up to 10 minutes in the event of a power failure
- The air situation is automatically documented, providing the ability to reproduce the documented data in passive and interactive modes
- The ASR-23L has credible protection against impulse and active noise interference. The interference situation is presented on the operator's screen







## KHORTYTSIA-M

### MOBILE COMINT COMPLEX

Mobile comint complex is designed for automated detection, demodulation, decoding, recording, storage, and analysis of complex signals in the operating frequency range, direction finding, real-time transmission of radio signals, including with FHSS signals. Able to work autonomously or control the operation of other comint facilities as part of comint network



**MAXIMUM ANALYSIS BANDWIDTH**  
80 MHz



**OPERATING FREQUENCY RANGE**  
25-6000 MHz



**NUMBER OF INDEPENDENT CHANNELS**  
5



**SINGLE FREQUENCY DYNAMIC RANGE**  
≥ 80 dB



**SCANNING SPEED**  
60 GHz/sec



**APPROX. DISTANCE RANGE**  
45 km



**FHSS SIGNALS**  
Search, direction finding, demodulation

Number of radio networks for processing in scan mode

up to 4096

Scanning speed of the frequency bank in scan mode (except networks with fhss)

over 100 frequencies/sec

## PLASTUN-RP3000

### MOBILE TACTICAL DIRECTION FINDING SYSTEM

#### DESIGNED FOR:

- direction finding of communication systems, detection of signals, including FHSS signals
- determining the location and displaying the coordinates of the radio emission source in real-time to create and update the electronic environment map
- real-time data exchange about the location of radio sources and their characteristics to form the electronic environment map



**OPERATING FREQUENCY RANGE**  
25-3000 MHz



**FREQUENCY RESOLUTION IN OVERVIEW MODE**  
12,5 kHz



**REAL-TIME BANDWIDTH**  
20 MHz



**DYNAMIC RANGE**  
over 80 dB



**MANPACK SET WEIGHT**  
max 39 kg



**MINIMUM DF TIME**  
less than 15 ms



**SCANNING SPEED**  
over 2 GHz/sec



**FHSS SIGNALS INTERCEPTION**  
yes



**AUTONOMOUS WORK**  
up to 8 hours



#### AVERAGE INSTRUMENTAL DF ERROR

within 25-90 MHz	-15 + 2 dB
within 90-525 MHz	-5 + 1 dB
within 525-3000 MHz	-3 + 2 dB

# BUKOVEL-AD

## ELECTRONIC WARFARE AND TACTICAL JAMMERS

Bukovel-AD is an effective electronic warfare system to counter a wide range of UAVs

It has real combat experience with several hundred successful missions. Each technical solution of the system is the result of the accumulated experience while in warfare with a high-tech enemy. The system has high mobility and completes a set of tasks performed from detecting, tracking targets to suppressing satellite navigation channels and communication channels between UAVs and GCS



**OBSERVATION ANGLE**  
59-2,3°



**OPTICAL ZOOM**  
36x



**IR SENSOR**  
36 mm, 640X512, frame-repetition rate 25 Hz



Azimuth / vertical plane	360°/120°
Speed	6° per sec
Frequency band	390-6200 MHz
Output power	6*20 W
Beamwidth	35*65°
Antennas gain	9.5 dBi
Management interface	Ethernet 100/BaseT
GPS/GLONASS blocker operation modes	blocking of RF channel, UAV route displacement, static shifting

### PRX-AD-SC MANAGEMENT MODULE MAIN PARAMETERS

- Software:
- Radar information presentation module
  - Optical detectors module
  - SIGINT module (optional)
  - Blocking synthesizers management module





## NOTA

### ELECTRONIC WARFARE SYSTEM

The NOTA system is designed to neutralize UAVs, disrupt mobile networks (GSM, UMTS, LTE, CDMA, Wi-Fi, VHF), countering signal and radar intelligence systems. The NOTA system provides direction finding sources of radio emission and radio jamming wireless communication, channels of satellite navigation, remote control, telemetry, and technical intelligence means

The NOTA system is designed for military and civil applications. It can be adjusted to customer requirements (frequency band, emission pattern, power, etc.)

The operation Console of the system has a unified WEB interface (thin client) and allows the simultaneous work of several operators. The system can be used at airports, while certain frequencies for airborne radio communication or frequencies required for the safe landing of aircraft may not be muted. The required parameters are specified by the software

#### RANGE OF THE NOTA SYSTEM:

Ku frequency band	300-6200 MHz
Radio Intelligence Sector	Circular 360
Frequency range using directional and omnidirectional antennas	350-6150 MHz
Output power counteracting communication networks	450 W
Range using directional antennas	15 km
Range using omnidirectional antennas	5 km (counteraction to control channels), 15 km (GPS counter)
UAV counter-power output	385 W



#### DETECTION

not less than 20 km



#### CREW

2



#### COUNTERMEASURES TO THE UAV

not less than 20 km



#### WEIGHT

not more than 250 kg



#### DEPLOYMENT TIME

up to 20 minutes



#### DURING OPERATION OF THE SYSTEM NOTA DOES THE FOLLOWING:

- Detection of the UAV's operation
- Determination of UAV bearings
- Deactivation of satellite navigation channels in the frequency range NAVSTAR, GLONASS, GALILEO, GPS, BEIDOO
- Deactivation of remote control channels in the frequency range up to 6 GHz





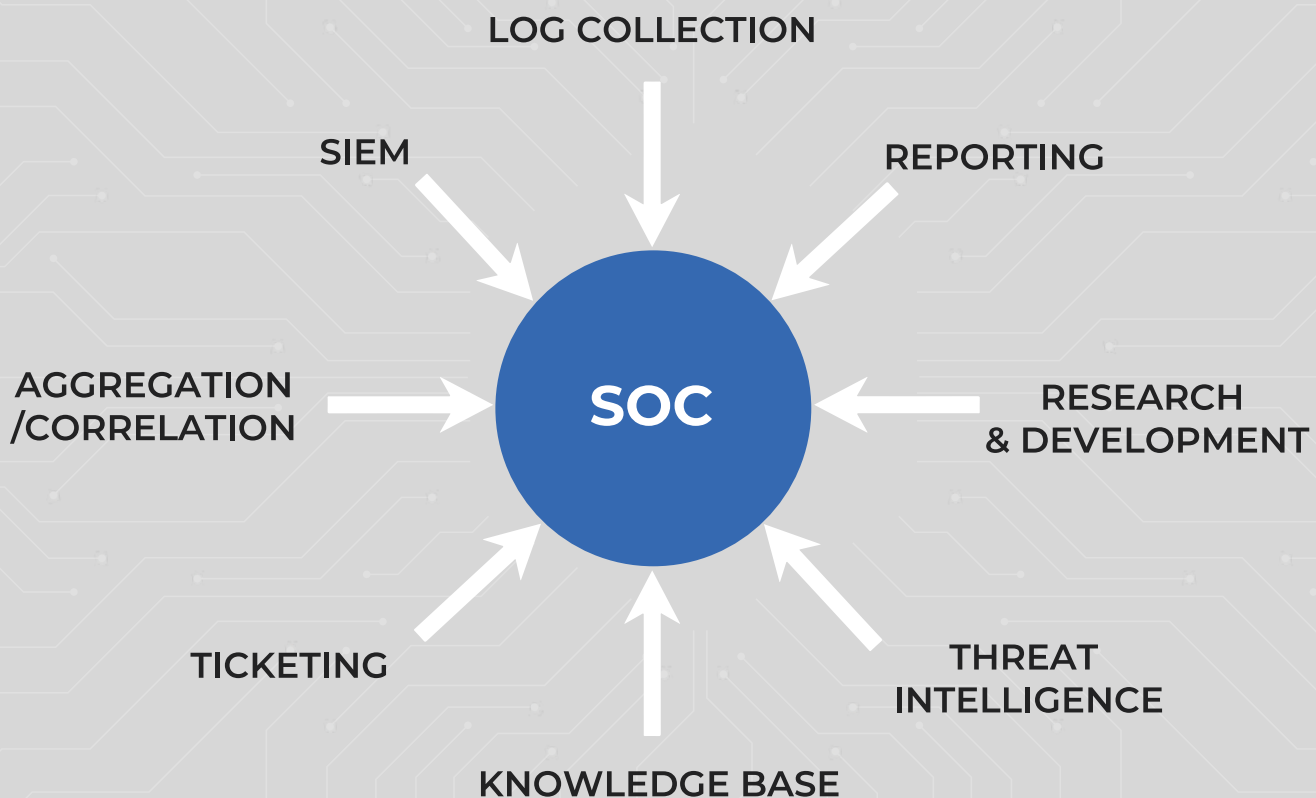
## RED TEAMS

- Imitation of actions of intruders concerning the purpose
- Violation of the security of target system or process through physical or digital penetration
- To remain undetected, as long as possible for Blue Team
- Setting up a max possible number of channels for unloading information and managing the target system
- Continuous use of the best and non-standard practices to compromise the system

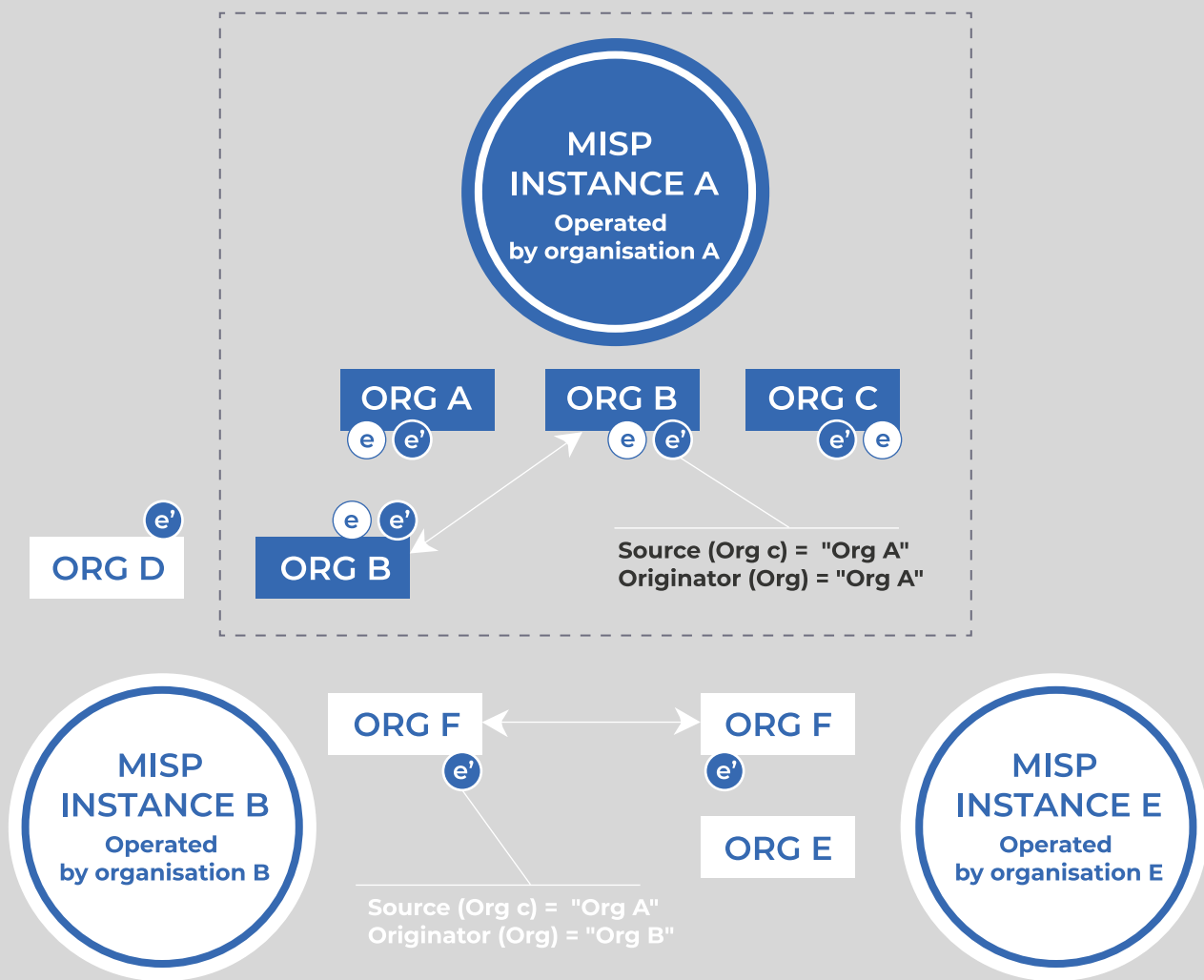
## COORDINATING CENTERS AND SOCS

- Understanding each phase of the incident and adequate response
- Detection of suspicious traffic anomalies and detection of signs of compromise of the system
- Preparation of the incident report, adjustment of response algorithms to the incident
- Detection of command and control servers of Red Team/Attackers (C&C or C2) and blocking their connection to the target
- Analysis and forensic expertise in systems of each sector

## SOC BUILDING FOR EACH SECTOR



# SECTORS COMMUNITY



## LEGEND

	Community A
	Org X Organisation inside the community A
	Org X Organisation outside of the community A
	e MISP event shared to the community A only
	e` MISP event created by Org A and shared as "Connected communities"
	Synchronisation between two MISP instances

## ZSU-23-4 SHILKA MODERNIZATION

### SELF-PROPELLED AIR DEFENSE SYSTEM

#### THE DEEP MODERNIZATION INCLUDES:

- Replacement of the 1RL33M radar with a multifunctional radar with a digital antenna array
- New optical location system and missile channel
- Replacement of the computing device with a digital computer system
- Integration of new combat weapon control algorithms
- Replacement of the gas turbine unit with a more economical power supply unit
- Replacement of other units



The core update is the Rokach AS digital array radar. It can work in round-the-clock mode, search and provide auto attendance. The radar confidently detects and accompanies even UAVs with an effective scattering surface of about 0.01 square meters at distances up to 7 kilometers

The new radar station with a digital array antenna can quickly identify targets both independently and according to external targets. Also, it allows to accompany several goals simultaneously that are within the range of the focus, and in the case of a single target attack, it is almost instantaneous to proceed with the preparation of firing the next target

## 2K22 TUNGUSKA MODERNIZATION

### SELF-PROPELLED AIR DEFENSE SYSTEM

Ukraine offers an upgrade for the Soviet-designed 2K22 Tunguska self-propelled air defense system. The upgrade includes life extension overhaul and replacement of the key subsystems and assemblies, including the cannon, missile launcher, and carrying chassis

A comprehensive package additionally addresses upgrades to the electronics set, ergonomics, and operator workstations, the electronic-optical system with a video processing capability







## 2K12 KVADRAT MODERNIZATON

### SAM SYSTEM

Engagement Radar Vehicle (SURN) 1S91-2L  
The Upgraded 2K12M1-2L Surface-To-Air (SAM) System (Kvadrat-2L) features improved performance and extended functional capabilities due to new algorithms of data processing and display, digital signal processing with software-based MTI, and automatic data read-out and processing. 2K12M1-2L is offered as the upgraded follow-on to 2K12M1



## S-125 PECHORA MODERNIZATION

### SAM SYSTEM

The modernized S-125M-E1 AAMS is designed to destroy modern and advanced air assault means

### OTHER ANTI-AIRCRAFT MODERNIZATION OPTIONS:

- 2K12 KUB
- 9K33 OSA
- 9K37 BUK
- S-300 Family
- S-60
- S-75
- S-125
- IGLA-1M
- KOLIBRI



2K12 KUB



9K33 OSA



9K37 BUK



IGLA-1M

# AN-178

## MEDIUM TRANSPORT MULTIPURPOSE AIRCRAFT

The AN -178 is medium transport multipurpose aircraft of the family AN-148/158

It was designed to replace AN-12 and C-130. AN-178 with a cargo door and a ramp in the tail section is intended for delivery of personnel, weaponry, and light military vehicles, for transportation of material assets, mail, and other cargoes in bulk, containerized, and palletized freights. The maximum payload is 18 tons. In emergencies, AN-178 can evacuate civilians from disaster areas, casualties at standard stretchers, and airdrop paratrooper rescue teams



**ENGINES**  
2 X D436-148FM

**CRUISING SPEED**  
825 km/h

**CRUISING ALTITUDE**  
12200 m

**MAX CARGO LOAD**  
18 t

**CABIN VOLUME**  
167 m<sup>3</sup>

**CREW**  
2 + 1

**WINGSPAN**  
30,57 m

**WOUNDED AT THE STRETCHERS + AT SEATS**  
40 + 15 persons

**TROOPERS**  
100 persons

**PARATROOPERS**  
84 persons

**CARGO COMPARTMENT**  
13,21 (16,54) m X 2,73 m X 2,73 m

**LENGTH**  
32,23 m

**HEIGHT**  
9,65 m

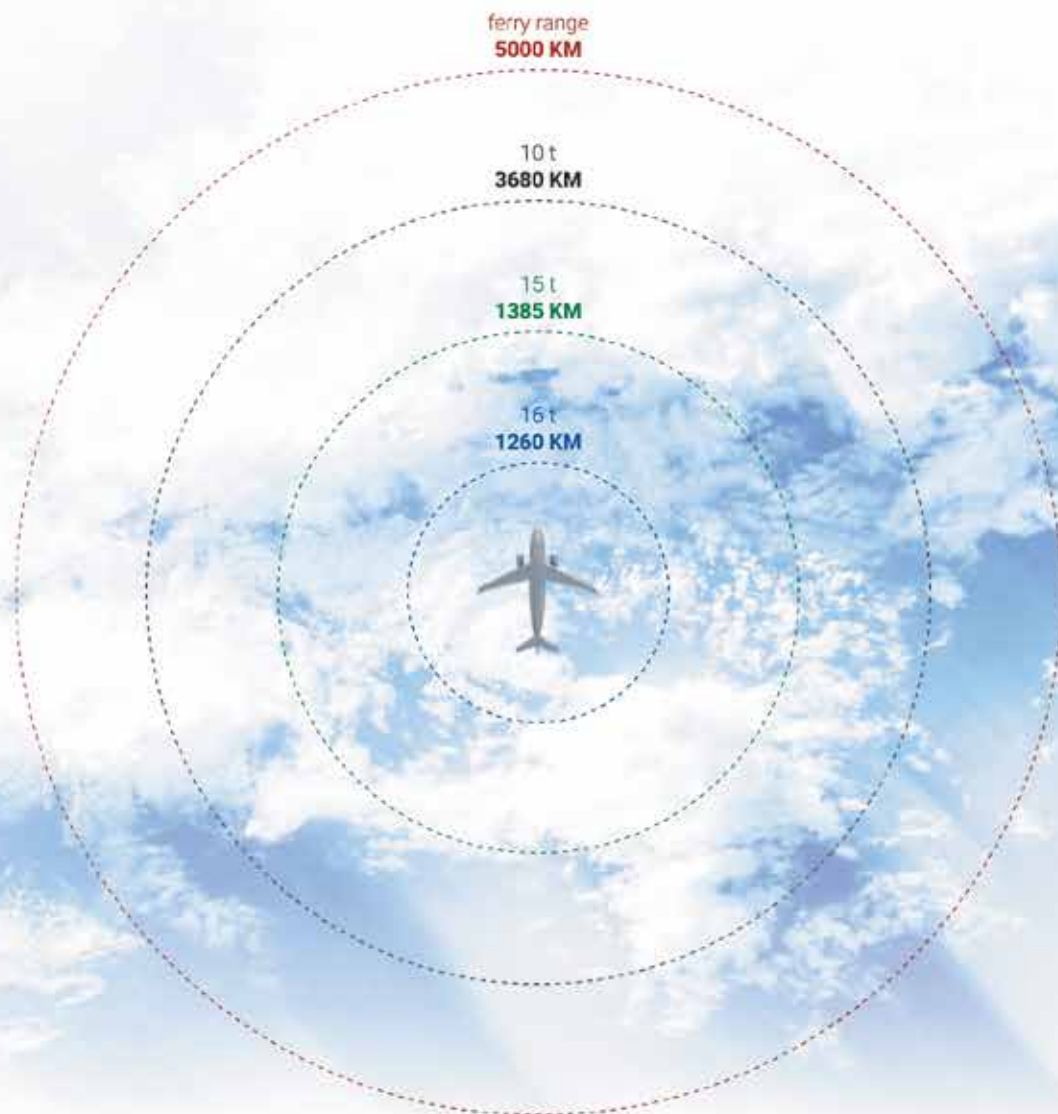
### AN-178 – CARGO COMPARTMENT CAPABILITIES

CARRIAGE	ITEMS
Containers, inch (m):	
• M1 96"x96"x125" (2,438x2,438x3,175)	4
• M2 96"x96"x238,5" (2,438x2,438x6,058)	2
• M3 88"x96"x117,8" (2,438x2,438x2,991)	4
• 1D 96"x96"x117,8" (2,438x2,438x2,991)	2
• 1C 96"x96" x238,5" (2,438x2,438x6,058)	2
Pallets, inch (m):	
• 88"x108" (2,235x2,743)	5
• 88"x125" (2,235x3,175)	4
• 96"x125" (2,438x3,175)	4
• 96" x238,5" (2,438x6,058)	5





## AIRCRAFT



**ONBOARD MAINTENANCE CONTROL SYSTEM**  
for optimization of the maintenance process

**LANDING GEAR**  
for operations on unpaved runways

**WINGLETS**  
Fuel consumption reduction

**PRACTICAL RAMP**  
with a kneeling system



**PRESSURIZED CARGO CABIN**  
for completion of standard military and civil missions



**APU**  
autonomous operations



**EMBEDDED DOOR**  
with integrated stairs



**EMERGENCY HATCH**  
Evacuation of personnel at emergency conditions



## AN-74TK-200A

### MILITARY TRANSPORT AIRCRAFT

It is designed for transportation of cargo in containers or on pallets. The aircraft can be converted to carry out the following missions:

- Transportation of personnel (67 people)
- Paratroops (42 people)
- Air-drop up to 3.5 t



#### ENGINES

2 x D-36, series 3A double-flow turbojet



#### MAX CARGO LOAD

10 t



#### CARGO COMPARTMENT

25,74 m X 3,10 m



#### CRUISING SPEED

650 km/h



#### CRUISING ALTITUDE

10100 m



#### CREW

3

## AN-140

### TURBOPROP REGIONAL AIRLINER

Antonov AN-140 is a turboprop regional airliner, designed by the Antonov Company as a successor to the Antonov An-24, with extended cargo capacity and the ability to use unprepared airfields



**POWERPLANT:** 2 x Motor-Sich TV3-117VMA-SB - 1 turboprop engines, 1,838 kW (2,465 hp) each

**ALTERNATIVE ENGINES:** 2x Pratt & Whitney Canada PW127A turboprops driving Hamilton Sundstrand 247F propellers



#### POWER/MASS

0,19194 kW/kg



#### SERVICE CEILING

7600 m



#### LENGTH

22,61 m



#### CRUISING SPEED

575 km/h at 7,200–7,500 m



#### MAX CARGO LOAD

6000 kg



#### HEIGHT

8,23 m



#### WINGSPAN

25,50 m



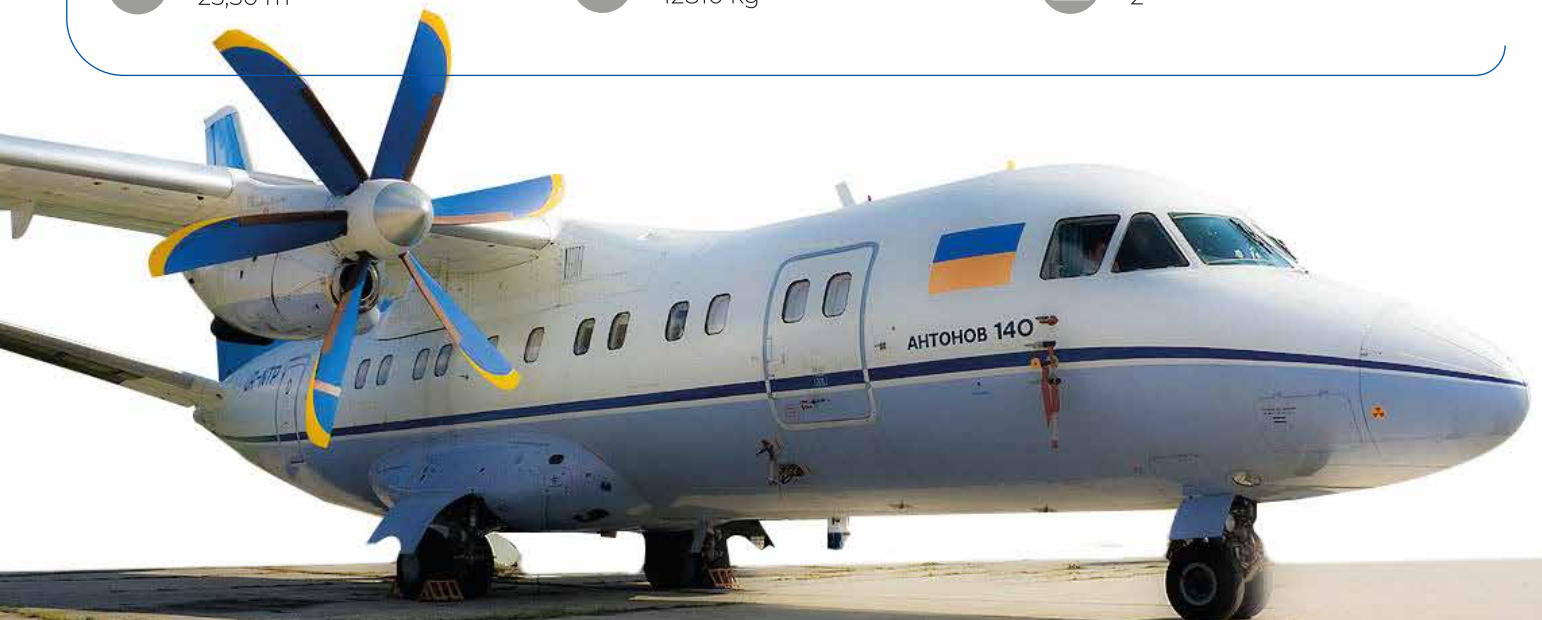
#### EMPTY WEIGHT

12810 kg



#### CREW

2





## AIRCRAFT

## AN-148

### REGIONAL PASSENGER JET

The AN-148-201 is a regional passenger jet that meets all the modern world requirements, safety, and ecological standards. AN-148-201 has 95% commonality with AN-158-100, in particular, they have common main systems, engines, equipment in the cockpit, flight control system, procedures of the crews training. AN-148-201 is intended to carry 92 passengers over a distance of up to 3500 km

The AN-148-201 is powered by D-436-148 engines. The engine is equipped with automatic control and monitoring systems that optimize the operation of the engines at all the flight stages, increase their reliability, decrease fuel consumption and direct operating costs



#### MODIFICATIONS

AN-148 201A

AN-148 201B

AN-148 201E



#### ENGINES

2 x D-436-148



#### CRUISING ALTITUDE

12200 m



#### LENGTH

29,13 m



#### CRUISING SPEED

870 km/h



#### MAX PASSENGER CAPACITY

92



#### HEIGHT

8,19 m



#### WINGSPAN

28,91 m



#### MTOW

37,8 t

## AN-158

### REGIONAL PASSENGER JET

The AN-158-100 regional passenger jet, developed based on the AN-148, meets all modern world requirements, safety, and ecological standards. AN-158-100 has 95% commonality with its predecessor, particularly, they have common main systems, engines, equipment in the cockpit, flight control system, procedures of the crew's training

The AN-158-100 is intended to carry up to 102 passengers over a distance of up to 2600 km. AN-158-100 is powered by D-436-148 engines. The engine is equipped with automatic control and monitoring systems that optimize the operation of the engines at all the flight stages, increase their reliability, decrease fuel consumption and direct operating costs



#### ENGINES

2 x D-436-148



#### CRUISING ALTITUDE

12200 m



#### LENGTH

31,63 m



#### CRUISING SPEED

870 km/h



#### MAX PASSENGER CAPACITY

102



#### HEIGHT

8,60 m



#### WINGSPAN

28,91 m



#### MTOW

43,7 t

## MI-2 MSB-1

### LIGHT HELICOPTER

The Mi-2MSB-1 model meets the advanced technological development of aviation and has high-performance characteristics and maneuverability. The application of the newest flight and navigation complex guarantees the safety of passengers, crew, and flights. The helicopter is designed to perform the following types of work:

- VIP transportation
- Passenger transportation
- Tourist services
- Surveillance on land (including in the mountains) and at sea - on-request option
- Rescue on land (including in the mountains) and at sea - on-request option
- Medicine - on-request option
- Fire extinguishing - on-request option
- Other (special application) - on-request option



**ENGINE**  
2 x Ai-450B



**MAX TAKEOFF WEIGHT**  
3 550 kg



**FUEL TANK**  
1076 l



**PRACTICAL ALTITUDE**  
4 000 m



**MAX SPEED**  
220 km/h



**CREW**  
1-2



**STATIC ALTITUDE**  
1620 m



**CRUISING SPEED**  
180 km/h



**PASSENGERS**  
6

## MSB-8

### MULTIPURPOSE HELICOPTER

The MSB-8 multipurpose commercial helicopter has been designed according to a single-rotor (classic) configuration with an av tail rotor.

#### PURPOSE:

Depending on the configuration of purpose-designed equipment, the helicopter can solve a wide range of commercial tasks as follows:

- Transportation of passengers;
- Transportation of cargo inside cargo/passenger compartment and utilizing external load sling system;
- Search and evacuation of casualties due to emergency;
- Emergency transportation of patients to medical providers;
- Heliborne administering medical aid;
- Fire extinguishing;
- Very important person transportation



**ENGINE**  
2 x TV3-117VMA-SBMIV



**SERVICE CEILING**  
7500 m



**CRUISING SPEED**  
270 km/h



**EMPTY WEIGHT**  
7500 kg



**OPERATING RANGE**  
1030 km



**CREW**  
2-3



**MAX TAKEOFF WEIGHT**  
15000 kg





## HELICOPTERS

### AEROCOPTER AK1-3










#### LIGHT HELICOPTER

The AEROCOPTER AK1-3 is a multipurpose utility helicopter. It is supplied as a complete ready-to-fly-aircraft

The AK1-3 was designed to comply with the Ukrainian AP-27 rules, which are similar to the European Aviation Safety Agency CS-27 standard

The aircraft features a single main rotor with a tail rotor, a two-seats-in side-by-side configuration enclosed cockpit, skid-type landing gear, and a four-cylinder, air-cooled, four-stroke, 156 hp (116 kW) Subaru EJ25 automotive engine



 <b>ENGINE</b> 1 × Subaru EJ25, water-cooled, 116 kW (156 hp)	 <b>CRUISING SPEED</b> 160 km/h (99 mph, 86 kn)	 <b>EMPTY WEIGHT</b> 380 kg (838 lb)
 <b>ROTOR DIAMETER</b> 6.84 m (22 ft 5 in)	 <b>MAX SPEED</b> 180 km/h (110 mph, 97 kn)	 <b>GROSS WEIGHT</b> 650 kg (1,433 lb)
 <b>FUEL CAPACITY</b> 75 litres	 <b>RATE OF CLIMB</b> 8 m/s (1,600 ft/min)	 <b>SEATS</b> 1 pilot + 1 pass.










### SL-231 SCOUT

#### LIGHT MULTIPURPOSE HELICOPTER

The SL-231 SCOUT Helicopter is a Ukrainian multipurpose light three-seater helicopter of a classic design. The helicopter is designed under AP-27 standards

The SL-231 is powered by the supercharged 225 hp (168 kW) Lycoming IO-379 engine and flies at a comfortable cruising speed of 101 kt (187 km/h) and a maximum speed of 113 kt (209 km/h). It has an airframe constructed of riveted duralumin alloy, and energy-absorbing landing gears and seats. The digital cockpit is provided by two Nesis displays produced by the Slovenian company Kanardia, which specializes in the design and manufacture of avionics for ultralight aircraft and gyrocopters



 <b>ENGINE</b> Lycoming IO-379 225 hp (168 kW)	 <b>SPEED</b> cruising – 187 km/h max – 209 km/h	 <b>GROSS WEIGHT</b> 882 kg
 <b>FLIGHT RANGE</b> 600 km	 <b>LENGTH</b> 9.0 m	 <b>EMPTY WEIGHT</b> 450 kg
 <b>FLIGHT DURATION</b> 3.2 hours	 <b>CEILING WITHOUT GROUND EFFECT</b> 2400 m	 <b>SEATS</b> 1 pilot + 2 pass.

## AIRCRAFT AND HELICOPTERS MODERNIZATION

### AN-26 OVERHAUL AND MODERNIZATION

#### MEDIUM MILITARY TRANSPORT AIRCRAFT

Medium military transport aircraft is equipped with a big cargo door, lowering cargo ramp, mechanization facilities for handling and is intended to transport cargoes, military equipment, personnel, injured and ill persons, as well as for air landing of personnel and military equipment



### AN-32 OVERHAUL AND MODERNIZATION

#### MILITARY TRANSPORT AIRCRAFT

Light military transport multi-purpose aircraft can be operated in various climate conditions, including hot climate (up to +50°C) and from the mountain airfields. The main aircraft's purpose is to transport cargoes over short and medium-range air routes. It can be used for carrying military personnel, aerial delivery of paratroopers, and palletized and non-palletized cargoes. Its ambulance version can be used in missions of the State Emergency Service



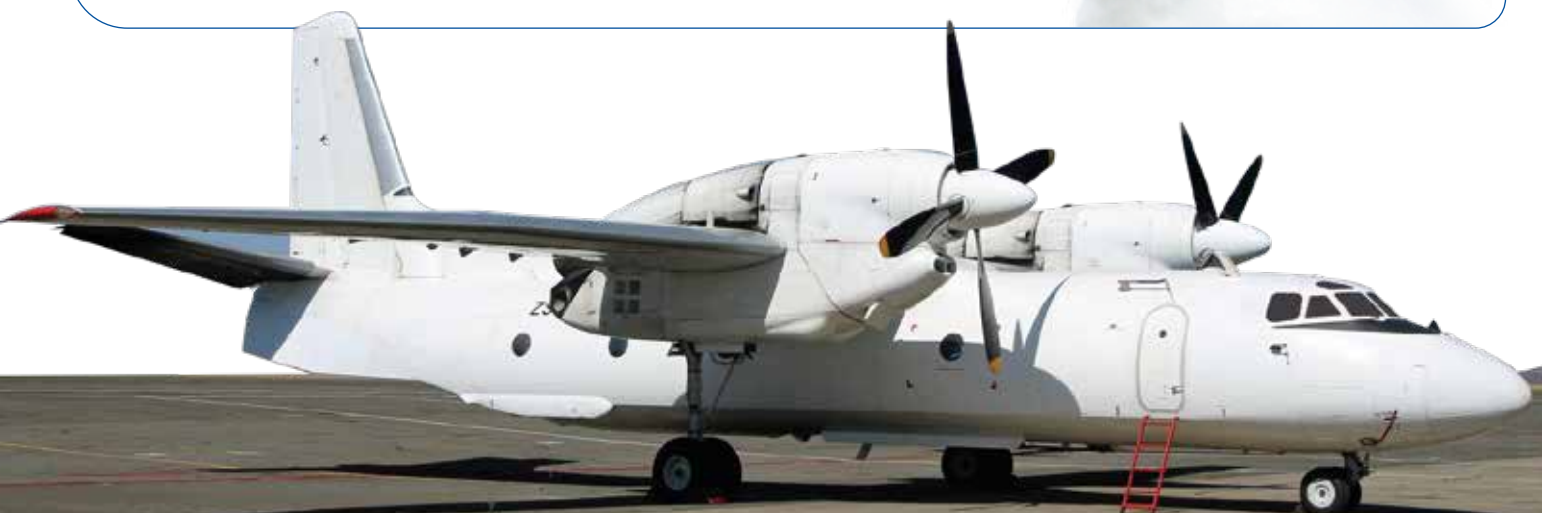
The aircraft has high maneuverability for flights to mountain-based airfields with difficult approach conditions

### AN-32P MODERNIZATION

#### FIRE-FIGHTING AIRCRAFT

The aircraft is designed for firefighting by draining-off the extinguishing liquids. It is also capable of delivering and airdropping the smokejumpers and special equipment, fire-extinguishing means to the fire sites

When dropping 8 t of extinguishing liquid out of two tanks from an altitude up to 50 m at speed of 260 km/h, a water spot of 120-160 m long and 10-35 m wide is formed on the ground





## MI-8, MI-17, MI-171, MI-24, MI-35 MODERNIZATION

- Replacement of pilot's analog sighting complex with a digital sight ASP-17VPM, which significantly enhances the accuracy of application of the airborne weapons
- Installation of a Laser Reticule Shaping System, ensuring the application of unguided weapons at nighttime using Night Vision Goggles (NVG). Using of electro-optical system, sight ASP-17VPM and Laser Reticule Shaping System in complex ensures the around-the-clock application of all helicopter weapons
- Adaptation of the internal and external lights for NVG compatibility to ensure helicopter round-the-clock application
- Equipping of pilot's and operator's cockpits with GPSMAP 695/696 global positioning system, intended for determination and display of navigation parameters, helicopter current position, which ensures en-route flights taking into account the terrain digital model
- Fitting of pilot's cockpit with an optional VHF radio to ensure two-way communication between the helicopter and ground stations and other helicopters within the band of 118.000-136.975 MHz and frequency space 8.33/25 kHz
- Equipping of the helicopter with a portable ELT (emergency locator transmitter), capable to transmit SOS signals on emergency frequencies: 406,028 MHz, 121,5 MHz and 243,0 MHz
- High-level active protection of helicopter from IR guided missiles of different types (Stinger, Igla, Igla-1, R-60, R-60M, R-73, Sidewinder) is achieved by means of fitting of the optronic suppression station Adros KT-01AB as well as the chaff and flare dispenser Adros KUV 26-50 (26 mm and 50 mm in caliber)



MI-8



MI-17



MI-24



MI-35

## AIRCRAFT MODERNIZATION



SU-24



SU-25

### OTHER AIRCRAFT MODERNIZATION OPTIONS

AN-24

MIG-29

IL-78

IL-76

SU-27

AN-32

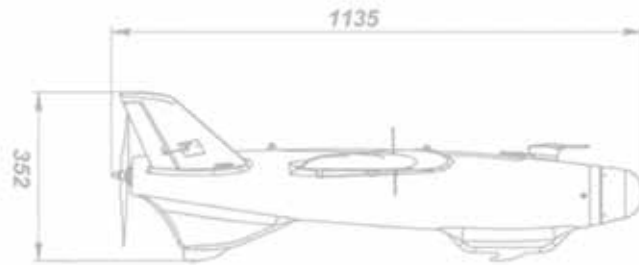




# CICONIA

## UAV COMPLEX

CICONIA is a complex of autonomous remote-controlled UAVs, designed for various tasks such as aerial reconnaissance, patrolling, area mapping with the possibility of online information transfer, and obtaining accurate geographical coordinates in real-time mode. Included autonomous flight. Operation in difficult weather conditions



### AREA OF APPLICATION:

- Aerial reconnaissance
- Adjustment of artillery fire
- Border surveillance
- Automation and troop control
- Mapping



**POWER UNIT**  
electric



**TEMPERATURE RANGE**  
from -20 to +55 °C



**TAKEOFF WEIGHT**  
5,5 ± 0,3 kg



**CRUISE SPEED**  
60-70 km/h



**WIND RESISTANCE**  
up to 20 m/s



**FLIGHT TIME**  
2-2,5 h



**MAX FLIGHT ALTITUDE**  
1500 m



**OPERATING RANGE**  
100 km



**DIMENSIONS**  
1980 X 352 X 1135 mm





## RAM II

### UNMANNED AERIAL SYSTEM

RAM II UAS is high-precision combat loitering unmanned aerial system. It is designed to execute precise effective strikes on enemy forces and to minimize collateral damage when used in the urban area. The drone is equipped with a gyro-stabilized Full HD camera with 10x optical zoom for easy target identification. The main feature is an active visual target tracking system, that allows to lock on the target using real-time video from the onboard video camera and follow the target until the impact. RAM II UAV is powered by a quiet electric engine and has a low noise signature, anti-jamming features and encrypted data link to maximize the security of the mission. Fully loaded combat UAV with 4 kg warhead can operate in a range of 30 km from the launch point and complete both surveillance and combat missions



**ENGINE**  
electric



**OPERATING TEMPERATURE**  
from -20 to +40°C



**LENGTH**  
1450 mm



**CRUISING SPEED**  
70 km/h



**MAX TAKEOFF WEIGHT**  
9,8 kg



**HEIGHT**  
349 mm



**OPERATING RANGE**  
60 km



**PAYLOAD WEIGHT**  
3 kg



**WINGSPAN**  
2584 mm



**RADIO RANGE**  
30 km



**MAX FLIGHT TIME**  
40 min



## PD-2

### UNMANNED AERIAL SYSTEM

PD-2 is a multipurpose modular fixed-wing UAS with a wide range of options and payloads to fit any mission and operational environment. PD-2 is a conceptually new product obtained through a large list of innovations and upgrades based on the long-term operation history (more than 10,000 flight hours) of the previous flagship UAS PD-1

Almost all components and modes of the unmanned aerial system were modernized



**ENGINE**

Gasoline 4-stroke



**CRUISE SPEED**

100 km/h



**LAUNCH METHOD**

runway, catapult, vertical



**MAX TAKEOFF WEIGHT**

55 kg



**FLIGHT TIME**

up to 10 h



**METHOD OF LANDING**

runway, parachute, vertical



**OPERATING RANGE**

100+ km



**MAX FLIGHT ALTITUDE**

up to 5500 m



**WINGSPAN**

5 m

## SPARROW LE

### UNMANNED AERIAL SYSTEM

Has a glide aerodynamic classical shape with V-tail, which ensures long flight time and cost-effectiveness during the combat tasks performing. Equipped with gyro-stabilized and controllable on two axes and focus camera and a thermal imager. If required, it is equipped with specific sensors: a photo camera, a relay, a dosimeter, and other sensors. The frame is produced from specific composite materials, which makes it less visible for radars and thermal imagers. Vehicle dimensions and silence make it almost invisible at cruise altitude



**ENGINE**

electric



**CRUISE SPEED**

60-110 km/hour



**LAUNCH METHOD**

by hand



**MAX TAKEOFF WEIGHT**

7 kg



**FLIGHT TIME**

3 – 4 hours



**METHOD OF LANDING**

on a parachute / by air



**OPERATING RANGE**

250 km



**MAX FLIGHT ALTITUDE**

5000 m



**WINGSPAN**

3 m





## SOKIL-300

### UAV COMPLEX

SOKIL-300 is designed for reconnaissance, target identification issuing, and striking at operational and tactical depth. It can also be used for sea patrol

#### SYSTEM COMPOSITION:

- UAV
- Mobile command post
- Guided missiles in TLC (RK-2P, RK-2M, RK-10)
- Kit of spare parts and special equipment for the system preparation and maintenance



#### ENGINE

Rotax 914UL  
(AI-450 T2)



#### PAYLOAD

up to 300 kg



#### FLIGHT TIME

up to 26 h



#### CRUISE SPEED

150–300 km/h



#### TAKEOFF WEIGHT

1130 kg



#### WINGSPAN

14 m



#### MAX FLIGHT ALTITUDE

9100 m



#### MAX FLIGHT RANGE

3300 km



#### LENGHT

8,57 m

## RAYBIRD 3

### UNMANNED AERIAL SYSTEM

Small unmanned aerial system for different long-range missions, ISTAR solutions, and SAR applications.

Man-portable (one-box) system ready to be deployed in minutes. The modular flying platform allows the changing of various function modules easily. Payload packages can alternatively include radio relays and electric warfare/countermeasure equipment.

Vertically integrated design and production processes allow us to manufacture systems to the client's needs. This also provides top-notch maintenance during UAS exploitation and enables modifications as client's needs evolve



#### TAKEOFF WEIGHT

21 kg



#### CRUISE SPEED

120 km/hour



#### LAUNCH METHOD

from the catapult



#### MAX FLIGHT ALTITUDE

3000 m



#### OPERATING TEMPERATURE

from -20°C up to +45°C



#### METHOD OF LANDING

on a parachute



#### FLIGHT TIME

more than 24 hours



#### OPERATING RANGE

video link — up to 140 km  
in aut. mode — 2500 km



#### WINGSPAN

2,9 m

## KENTAVR

### FAST ASSAULT CRAFT

The purpose of the craft is fast and secret delivery of marines or special forces, fire support of land flank under engagement in littoral and inland waters (estuaries, rivers and water-storage basins) at the range from the safe port up to 100 miles

#### SENSORS AND COMMUNICATION

- Navigation radar
- Optoelectronic monitoring system
- Detection sensors of laser emission

#### WEAPONS

- 2 combat modules:
- 2,7 mm machine gun
  - 40 mm grenade launcher (NATO standard)



 **PROPULSION**  
2 diesel engines

 **MAX SPEED**  
not less than 35 kts


 **RANGE (AT 11 KTS)**  
not less 500 nm

 **DISPLACEMENT, FULL LOAD**  
47 t

 **ENDURANCE**  
5 days

 **LANDING FORCE CAPACITY**  
26-28 commandos

 **LENGTH, OVERALL**  
24,3 m

 **BEAM, OVERALL**  
4,8 m

 **DRAUGHT, MAX**  
1,0 m

## GURZA-M

### SMALL ARMORED BOAT

#### SENSORS AND COMMUNICATION

- Navigation radar
- Optoelectronic monitoring system
- Detection sensors of laser emission
- Integrated bridge system

#### WEAPONS

- 2 combat modules of Katran-M type:
- 30 mm gun
  - 30 mm grenade launcher
  - 7.62 mm machine gun
  - ATGM "Barrier" type
  - Portable SAM
  - Mining facility



 **PROPULSION**  
2 diesel engines

 **MAX SPEED**  
not less than 25 kts


 **RANGE (AT 12 KTS)**  
not less than 900 nm

 **DISPLACEMENT, FULL LOAD**  
54 t

 **ENDURANCE**  
5 days

 **COMPLEMENT**  
5

 **LENGTH, OVERALL**  
23,0 m

 **BEAM, OVERALL**  
4,8 m

 **DRAUGHT, MAX**  
1,0 m



## DOZOR

### OFFSHORE PATROL VESSEL

Designed to secure the state borders and the state sovereign rights in the Exclusive (Sea) Economic Zone

#### SENSORS AND COMMUNICATION

- Surveillance radar
- Navigation radar
- Optoelectronic fire control system
- Integrated bridge system

#### WEAPONS

- 76 mm gun
- 30 mm gun
- Fast interceptor boat



**PROPULSION**  
2 diesel engines



**DISPLACEMENT, FULL LOAD**  
960 t



**DRAUGHT, MAX**  
3,5 m



**RANGE (AT 12 KTS)**  
3800 nm



**LENGTH, OVERALL**  
73,7 m



**ENDURANCE**  
15 days



**BEAM, OVERALL**  
10,98 m



## GAYDUK-M

### MULTIPURPOSE CORVETTE

The corvette searches and detects surface and underwater targets, as well as provides air, surface and underwater countermeasures

#### SENSORS AND COMMUNICATION

- SMART Mk2 3D Air/Surface surveillance radar
- Over the Horizon Surface Targeting radar
- Sting EO Optical-Radar Fire Control System
- Optoelectronic Fire Control System
- TACTICOS CMS
- ESM and Chaff decoy launcher
- OESM
- Hull mounted sonar
- Intruder detection sonar
- Navigation radar
- Integrated bridge system

#### WEAPONS

- 2x4 MM40 Block3 SSM
- 8 MICA VL SAM system
- 76 mm OTO Melara gun
- 35 mm Millennium gun
- 2x12,7 mm machine guns
- 2x2 — 324 mm torpedo launchers
- 2 ASW Rocket
- Launchers (option)
- Helicopter up to 6 t



**MAX SPEED**  
not less than 28-32 kts



**COMPLEMENT**  
52



**PROPULSION**  
15 days



**LENGTH, OVERALL**  
85,75 m



**BEAM, OVERALL**  
10,2 m



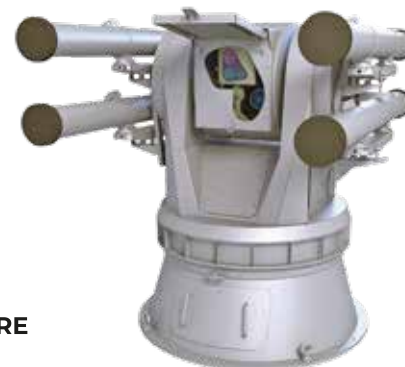
**DRAUGHT, ON DESIGN WL**  
3,1 m



## BAR'ER-VK

### NAVAL MISSILE GUIDED WEAPON SYSTEM

BAR'ER-VK Naval Missile Guided Weapon System is designed to destroy ships as well as coastal moving and stationary modern armored targets with missiles RK-2V



**MAXIMUM FIRING RANGE**  
not less than 7000 m



**OPERATING TEMPERATURE**  
from -40°C up to +60°C



**TARGET DETECTION RANGE**  
10 — day, 7 — night



**WEIGHT OF SYSTEM**  
1100 kg



**FLIGHT TIME TO MAX RANGE**  
62,00 m



**WEIGHT OF MISSILE**  
47,2 kg

## ARBALET-K

### NAVAL SHORT RANGE AIR DEFENSE SYSTEM

ARBALET-K naval short-range air-defense missile system is designed to destroy jet, propjet, and propeller-driven aircraft and helicopters at head-on and pursuit courses, under conditions of a target direct visibility using surface-to-air missile of Igla type



**TARGET DESTRUCTION RANGE**  
500-5000 m



**OPERATING TEMPERATURE**  
from -40°C up to +60°C



**TARGET DETECTION RANGE**  
10 — day, 7 — night



**OVERALL DIMENSIONS**  
1700 X 1856 X 1876 mm



**WEIGHT OF SYSTEM**  
1020 kg







## NAVAL WEAPON SYSTEMS

### NAM-30

#### ARTILLERY SYSTEM



#### WEAPON

30 mm gun  
Firing speed — 350-400 shot/min



#### WEAPONS CONTROL

Traverse: 360°  
Elevation: -15° to +60°



#### SPEED OF TARGETING

Traverse: 0,05°/sec ÷36°/sec  
Vertical: -0,05°/sec ÷36°/sec

### NAM-30M

#### ARTILLERY SYSTEM



#### WEAPON

30 mm gun ZTM-1  
7,62 mm machine gun  
300 mm grenade launcher AGS-17  
ATGM-P-2V



#### WEAPONS CONTROL

Traverse: 360°  
Elevation: -15° to +60°



#### SPEED OF TARGETING

Traverse: 0,05°/sec ÷36°/sec  
Vertical: -0,05°/sec ÷36°/sec  
Stabilization system

### AK-306

#### ARTILLERY SYSTEM



#### AUTOMATIC GUN AO-18L CALIBER 30 mm

Rate of fire, rounds per min: 600-1000  
Initial velocity m/sec: 880



#### AMMUNITION CAPACITY

Main, cartridges: 500



#### RANGE OF FIRE

Air targets: 4000 m  
Surface targets: 5000 m



#### WEIGHT OF SYSTEM

1100 kg

### AK-630M

#### ARTILLERY SYSTEM



#### GUN MARK AO-18 CALIBER 30 mm

Rate of fire, rounds per min: 4000-5000



#### AMMUNITION CAPACITY

Main, cartridges: 2000  
Additional stock, cartridges: 1000



#### RANGE OF FIRE

Air targets: 4000 m  
Surface targets: 5000 m



#### TOTAL WEIGHT OF SYSTEM

(without ammunition and SPTA):  
1850 kg

## SENS-2

### OPTICAL ELECTRONIC SYSTEM

It is designed for surface visual monitoring, target detection and fire control



**MEASURED RANGE**  
from 100 to 7000 m



**MAXIMUM SPEED OF TRACKED TARGETS AT ZERO PARAMETERS**  
aerial — 0-700 m/s, marine — 0-60 units



#### RADAR AND NAVIGATION EQUIPMENT AVAILABLE:

- Naval automated tactical data system
- Multibeam active array surveillance radar station
- Optical electronic system of the provision of helicopter take-off, homing, and SAGA ship landing
- Sarmat marine optoelectronic fire-control system of small and middle artillery caliber
- Sarmat-2 optoelectronic fire control system
- Mineral-ME multifunctional target designation radar system
- Sonar Station MG – 361 ("Centaur")
- Delta naval 2D surveillance solid-state radar
- Meganom shipborne over-the-horizon passive radar system
- Naval surveillance multi-beam active phased array radar MAARS
- Burevestnik-1M radar unit
- Positiv-E ship three-coordinate radar
- Stilet-2 fire control system with active array radar
- Kaskad integrated self-defense system for small ships
- Farad naval multifunctional active-phased array radar
- KASHTAN-3M combined laser ESM/ECM system
- SELENA-X infrared search and track system
- STILET shipboard combined optical and radar tracking system



SELENA-X



FARAD



MAARS



STILET



## SONAR COMPLEXES AND SYSTEMS

### TRONKA-MK

#### HYDROACOUSTIC STATION FOR SEARCHING OF SABOTEUR UNDERWATER SWIMMERS

The hydroacoustic station is designed for searching and detection of saboteur underwater swimmers and protects from:

- Ships of different purpose on moorage at the high sea, on the move, in stationing site
- Hydrotechnical objects in ports, harbors
- Objects of oil-producing industry located in sea basins



**DETECTION RANGE**  
up to 1000 m



**ANGULAR FIELD OF VIEW**  
30°, 360° — horizontal



**RANGE ACCURACY**  
1,0%



**AUTO TARGET TRACKING**  
up to 20



**AZIMUTH ACCURACY**  
0,8°



**ANTENNA IMMERSION DEPTH**  
up to 50 m

### OLYMP-3K

#### POSITIONAL HYDROACOUSTIC STATION

Positional cable sonars are designed for lighting purposes at depths of 40-200 m for intrusion detection in territorial waters or areas where critical facilities are situated. Such sonars operate in noise detecting mode allowing them to stay undetected



**DETECTION RANGE**  
4 km



**TARGET CLASSIFICATION**  
automatic



**DEEPENING**  
40-200 m



**OBSERVATION SECTOR**  
omnidirectional



**THE AVERAGE ERROR IN THE DETERMINATION OF BEARING**  
5°



**THE SERVICE LIFE**  
24 month



**WEIGHT**  
40 kg

## LOAD-CARRYING CAPACITY OF 400 TO 30 000 T

400 T  
4,500 T  
8,500 T  
16,500 T  
25,000 T  
30,000 T

- Classification – IACS
- Non-self-propelled
- Self-contained regarding power supply (option)
- Composite (reinforced concrete pontoon, steel sidewalls)
- Is intended for all kinds of repairs of vessels and floating craft







## FLOATING DOCKS

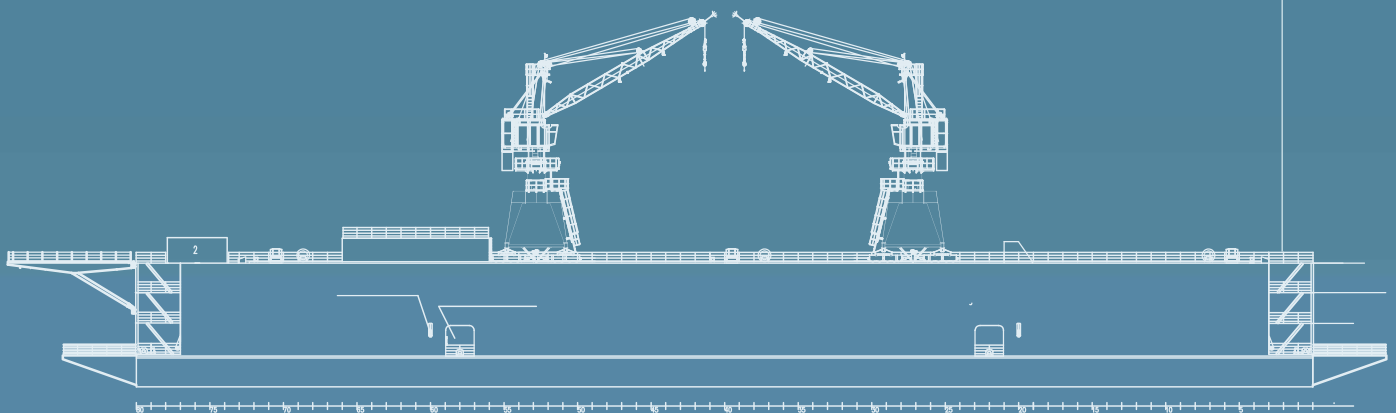
The marine constructions designed for shipbuilding and ship repair in the sea (ocean) and harbor conditions

**DOCK TYPES:** metal and composite

A hallmark of composite docks is that their pontoon parts are made of reinforced concrete and wing-walls are metallic, which is dictated by the maximum effectiveness of this construction

The use of unique non-caisson technology of the longitudinal transversal jointing a float of separate parts of reinforced concrete pontoons gives the possibility to construct the docks of unlimited dimensions

Mechanical, electromechanical, and paint shops are placed in metal towers which permit to carry of ships and vessels repair in autonomous mode. The floating docks are characterized by high safety factors and can be towed to any part of the world by sea



## KM-7.62

### MACHINE GUN MAJAK

The KM-7.62 machine gun is made for 7.62 x 54R cartridges. The machine gun is designed for regular military and special forces units



**FIRING RANGE**  
2000 m



**FEED SYSTEM**  
belt with 100, 200 and 250 cartridges



**RATE OF FIRE**  
650 rounds/min



**MUZZLE VELOCITY**  
855 m/s



**CARTRIDGES**  
7,62x54 mm



**RIFLING**  
4 grooves (right)



**BARREL LENGTH**  
722 mm



**WEIGHT**  
8 kg



**LENGTH**  
1098 mm

## KTM-7.62

### TANK MACHINE GUN MAJAK

The KTM-7.62 tank machine gun has Picatinny rail, firing trigger and mechanical rifle scope instead of electronic trigger

Purpose: as an auxiliary tank weapon on aircraft and other military equipment



**FIRING RANGE**  
2000 m



**FEED SYSTEM**  
belt with 100, 200 and 250 cartridges



**MUZZLE VELOCITY**  
800 m/s



**CARTRIDGES**  
7,62x54 mm



**RIFLING**  
4 grooves (right)



**WEIGHT OF BOX WITH BELT**  
8 kg



**WEIGHT WITHOUT CARTRIDGES**  
10,5 kg



**BARREL WEIGHT**  
3,23 kg



**LENGTH**  
1098 mm



**BARREL LENGTH**  
722 mm



## NSVT 12.7

### HEAVY MACHINE GUN

A 12.7 mm NSVT is a vehicle-mounted heavy machine gun, which is equipped with an electrical trigger. The special tank mount has a buffered cradle, traverse and elevation mechanisms and special collimating sight.



**CALIBER**  
130 mm



**WEIGHT**  
25 kg (gun only)



**RATE OF FIRE**  
700-800 rounds/min



**OVERALL LENGTH**  
1560 mm



## UAR-10

### HIGH-PRECISION TACTICAL RIFLE

The sniper rifle has a convenient design: it can be disassembled into two parts, which reduces its dimensions and provides compactness during transportation.

The rifle's barrel is console-shaped, which achieves the stability of the firing. On the upper part of the receiver and the cranks, Piccadilly-type guides are designed for sighting gadgets and other accessories.

A rifle can be fitted with a muffler to reduce the sound and flash during a shooting. It is provided with a MagPul PRS with an adjustable cheek and a retractable collar. The design feature of the UAR-10 is the permanent connection of the grip handle with the shutter frame. It allows both to pull a stuck round and to make a manual link.



**CALIBER**  
7.62x51 mm NATO



**OVERALL LENGTH**  
940 – 1045 mm



**BARREL LENGTH**  
16" – 20" / 406 – 508 mm



**WEIGHT**  
3,8 – 5 kg

## UAR-15

### HIGH-PRECISION TACTICAL RIFLE

The platform shows high reliability and simple maintenance in all climate zones including extremely hot/cold and humid environments.

The easy and reliable installation of sights, lasers, tactical lights, and other accessories makes this rifle adaptive for many tasks or purposes as well for the individual user preferences or requirements.



**CALIBER**  
7.62x51 mm NATO



**OVERALL LENGTH**  
940 – 1045 mm



**BARREL LENGTH**  
16" – 20" / 406 – 508 mm



**WEIGHT**  
3,8 – 5 kg

## 7.62x51 LMG

### LMG-ASSAULT-MARKSMAN RIFLE SYSTEM

- fully mechanical system (no thermostats)
- always under manual control of operator
- AR weight, ergonomics, and manipulation
- integrated into DI AR mechanics (adjustability and bolt service life preservation)
- automatic safety integration
- no external components
- little to no impact on system weight and balance
- multi-role weapon system MG/light assault weapon/DMR
- optic, laser, accessory are included



**FIRING RANGE**  
2000 m



**WEAPON WEIGHT**  
8 kg



**FIRE MODE**  
Semi (closed bolt)/ full auto



**AMMO CAPACITY**  
10/20/25 box mag,  
100 drum mag



**WEAPON LENGTH**  
1098 mm



**BARREL LENGTH**  
722 mm

## NIGHT PREDATOR

### PRECISION RIFLE

The Night Predator sniper rifle has a caliber of 14.5 mm for the standard machine-gun cartridge 14.5x114. The maximum range of an aimed shot is 4000 meters; the accuracy of the shot is from 1 to 1.5 arc minutes

The rifle is equipped with a new generation sound-moderator, which, in addition to a small sound of a shot, ensures a smooth transition of the ball from the conditions of internal to external ballistics. The recoil is less than of a 7.62 mm rifle and therefore minimally affects the quality of the shot. Standard bullets, thanks to a barrel length of 1330 mm, have an initial velocity of 1050 m/s piercing easily armored personnel carriers, infantry fighting vehicles, armored vehicles, engineering fortifications and armored helicopters



**CALIBER**  
14.5 × 114



**WEIGHT**  
32.96 kg



**MUZZLE VELOCITY**  
1050 m/s



**LENGTH**  
2470 mm



**RATE OF FIRE**  
6 shots/min



**BARREL LENGTH**  
1350 mm



**FIRING RANGE**  
4000 m



**BARREL CUTTING**  
8 rifling, right-hand







## VULCAN (MALYUK)

### ASSAULT RIFLE

Due to its small dimensions, the Malyuk rifle can be used in SMG tactical niche. In this role, a special type of 5.45 mm ammunition is used. This type of ammo has 500 m/s speed and can be supplied with or without a steel penetrative core

#### Advantages of Malyuk weapon-ammo complex:

- Absence of ricochets, usual for standard 5.45 mm
- Absence of over-penetration through target body or obstacle
- Substantial decrease of felt recoil, superb weapon controllability
- Ballistics match standard on actual SMG deployment ranges (50-100 m) Behind the effective range bullet becomes safe fast
- Advanced functionality with the same weight is much more effective than simply adding new heavy components
- Ergonomically designed elements were made with speed and secure deployment in mind



**FIRING RANGE**  
500 m



**AMMO CAPACITY**  
30 / 45 rounds



**AMMUNITION TYPE**  
5.45, 5.56, 7.62



**WEIGHT**  
3,2 kg



**MUZZLE VELOCITY (5.45/5.56/7.62)**  
900 / 940 / 715 shots/sec



**LENGTH**  
710 mm



**RATE OF FIRE**  
660 rd/min



**BARREL LENGTH**  
722 mm

## Z-008 GEN III PRECISION

### HIGH PRECISION TACTICAL RIFLE

The Z-008 gen III Precision provides maximum ways of adjustments and installation of tactical equipment. Foregrip allows to install the elongated Picatinny base for mounting night sight, lights, etc. Picatinny base can stand in foregrip at an angle of 45 degrees. Bipods can be placed far ahead. Designed for use with a day sight and backup collimator simultaneously. Sniper Magpul stock has a wide range of adjustments

The folding stock is comfortable to carry. The shooter will no doubt be pleased with the pistol grip, with emphasis. Typical accuracy sub 1/3 MOA



#### 3 BARREL LENGTH TYPE

(Lothar Walther or Shilen barrels)

up to 27"	Overall up to 50"
up to 30"	Overall up to 52"
up to 32"	Overall up to 54"



**FLUTED BARREL**  
Muzzle thread cap



**FULLY ADJUSTABLE JEWELL TRIGGER**  
Suppressor



**ADDITIONAL PICATINNY RAIL**  
Folding stock



**WEIGHT**  
appr. 6.5 kg



**SINGLE SHORT RECEIVER**  
Additional barrel

## M-60

### 60 MM CALIBER MORTAR

The mortar is designed to defeat manpower and enemy's facilities, especially those located outside the shelter: in trenches, gullies and at reverse hill slopes. The M-60 is employed with high-explosive bombs, bombs with aerodynamic configuration, including NATO standards



**CALIBER**  
60 mm



**WEIGHT**  
20 kg



**FIRING RANGE**  
50 - 3500 m



**LAYING ANGLES**  
+45° — +85°



## KBA-48M

### 82 MM CALIBER MORTAR

Designed to defeat manpower and enemy's facilities, especially those located outside the shelter: in trenches, gullies and at reverse hill slopes, to destroy fortifications. It is used in quick-reaction special units and infantry units of Land Forces



**CALIBER**  
82 mm



**RATE OF FIRE**  
10-15 shots/min



**WEIGHT**  
70 kg



## M120-15

### 120 MM CALIBER MORTAR

The mortar M120-15 is a smoothbore rigid system, charging is carried out from muzzle which is intended to defeat manpower and enemy's facilities. The fuse from double charging and rear sight MUM 706 M is installed on the muzzle part



**FIRING RANGE**  
7100 m



**RATE OF FIRE**  
15 rounds/min



**WEIGHT**  
210 kg

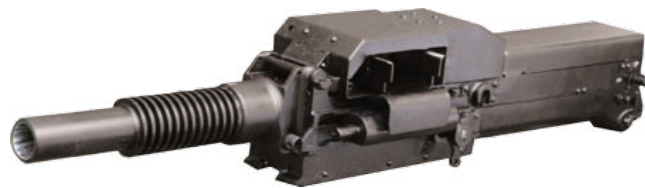




## KBA-117

### AUTOMATIC GRENADE LAUNCHER

It is designed to defeat an enemy's manpower and fire weapons located in the open terrain or entrenched. It is used in a combat module mounted on lightly armored vehicles (ICVs, APCs, etc.)



**CALIBER**  
30 mm



**GRENADE MUZZLE VELOCITY**  
185 m/s



**RATE OF FIRE**  
not less than  
400 shots/min



**LENGTH**  
840 mm



**WEIGHT**  
31 kg

## UAG-40

### AUTOMATIC GRENADE LAUNCHER

Automatic grenade launcher with 40 mm bore shoots for a distance of over 2200 meters. It is intended for firing at enemy's infantry, light-armored vehicles, and protected shelters



**CALIBER**  
40 mm



**HEIGHT**  
210 mm



**RATE OF FIRE**  
370-400 shots/min



**LENGTH**  
960 mm



**FIRING RANGE**  
40 – 1500 m



**WEIGHT (WITHOUT GRENADE)**  
17 kg

## GP-25

### UNDERBARREL GRENADE LAUNCHER

GP-25 has been adopted for usage with both 7.62 mm AKM and 5.45 mm AK-74 Kalashnikov assault rifles. GP-25 uses the 40 mm fragmentation grenades VOG-25, VOG-25P, and a less-lethal 'Gvozd' (Nail) canister round with tear gas. On the GP-25, sight is mounted on the left side of the launcher and has an additional indirect firescale for firing at longer ranges (up to 400 meters). The grenade launcher has the rubber recoil pad installed



The barrel of the single-shot launcher is rifled. Grenades are loaded from the muzzle and are held in the barrel by a spring catch

## BTR-3E1

INTEGRATED CREW TRAINING SIMULATOR



## BTR-4

INTEGRATED CREW TRAINING SIMULATOR



## BTR-80

INTEGRATED CREW TRAINING SIMULATOR



## BMP-1

INTEGRATED CREW TRAINING SIMULATOR





## SIMULATORS

**AVIATION**

INTEGRATED CREW TRAINING SIMULATOR

**ATGM**

INTEGRATED CREW TRAINING SIMULATOR

















## HOW TO USE:

1. Install an App **AlbumAR** from your apps market



2. Point App camera at QR-code



3. Wait for full downloading of the album and point a camera at the photo with a mark





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