

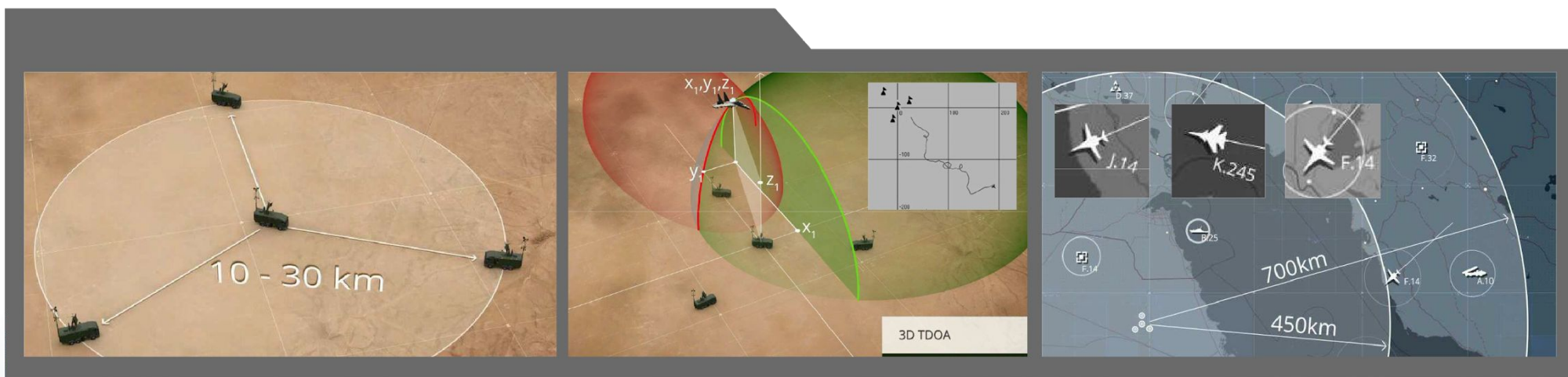


SPETS
TECHNO
EXPORT

KOLCHUGA SDT-M360

SHIP-BORNE / LAND-BASED MOVABLE PASSIVE
SURVEILLANCE AND AIR TARGETS TRACKING SYSTEM



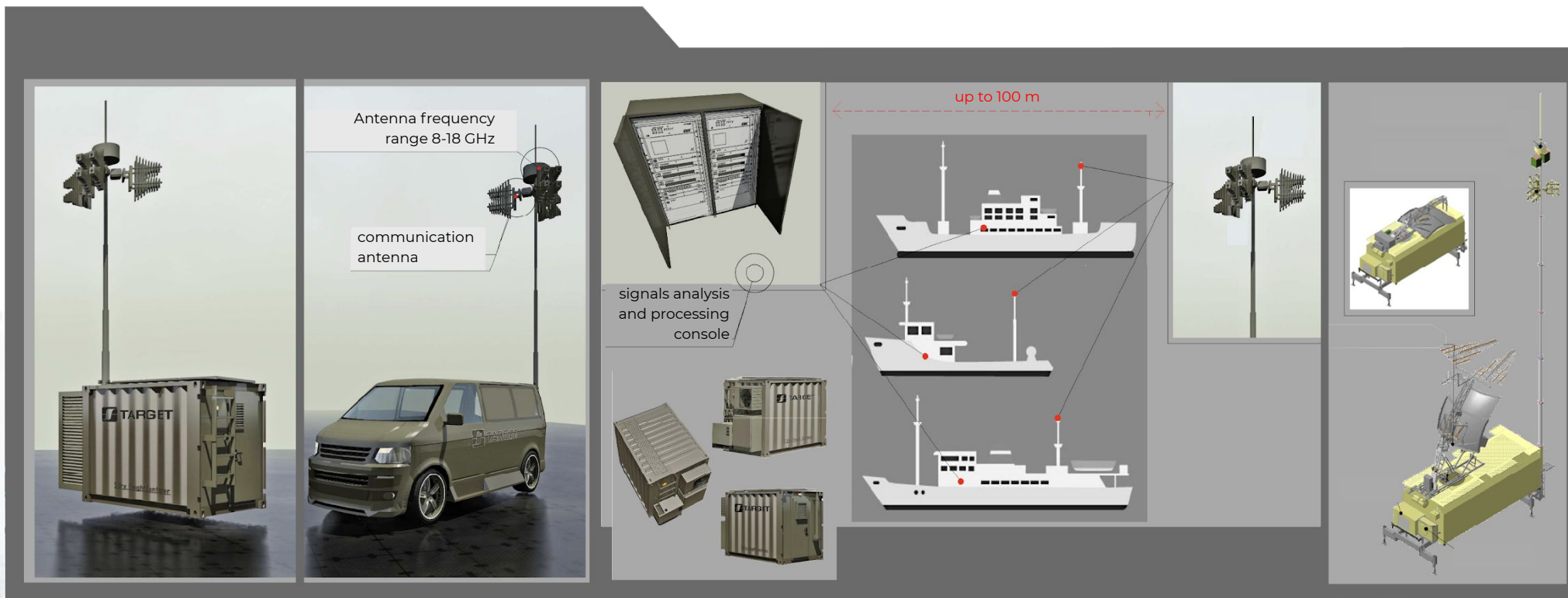


THE KOLCHUGA-RDF360 PASSIVE SURVEILLANCE SYSTEM comprises 4 units aimed for the detection of signal emitters. Each station features a whole suite of the necessary data analysis and processing equipment. The system is designed for the detection, classification, identification, and measurement of stationary ground-based coordinates, surface, and air targets, as well as for tracking of air and moving surface targets via the reception of signals emitted by onboard electronic equipment

The KOLCHUGA-RDF360 passive surveillance system which, unlike active radars, only receives signals emitted by targets is vastly superior to any active radar in terms of "survivability". The basic principle of the passive location technique implemented in the system eliminates any own electromagnetic emission. This system cannot be detected by the enemy's ESM/ELINT stations and other reconnaissance systems

An unquestionable advantage of the KOLCHUGA-RDF360 system is an ability to simultaneously conduct long-range surveillance of air, ground, and surface targets at ranges of up to 700 km and at the same time provide tracking of air targets at ranges of up to 450 km (LOS) in the frequency range 8-18 GHz in real time scale. At the option of the Customer, a lower band edge of the operational frequency range can be lowered to a VHF band

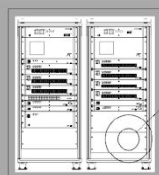
CARRIER PLATFORMS



The KOLCHUGA SDT-M360 passive surveillance and air targets tracking system mounted on mobile surface/ground carrier platforms of different classes is a further development of the KOLCHUGA-RDF360 system. It has an innovative design that has no complete analogs in the world. A network-based architecture and almost entire interchangeability of all components of the system ensure high stability and resistance against possible attempts to disrupt its performance and small dimensions and weight of the equipment suite make it possible to place the entire set of the required equipment and antenna systems on a wide range of mobile surface platforms of small and medium tonnage as well as ground moving platforms of light and middle class

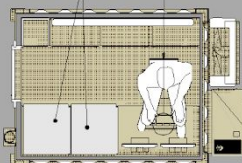
CARRIER PLATFORMS

SYSTEM CONFIGURATIONS

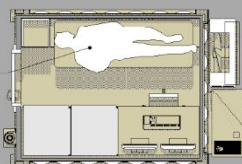


signals analysis and
processing console

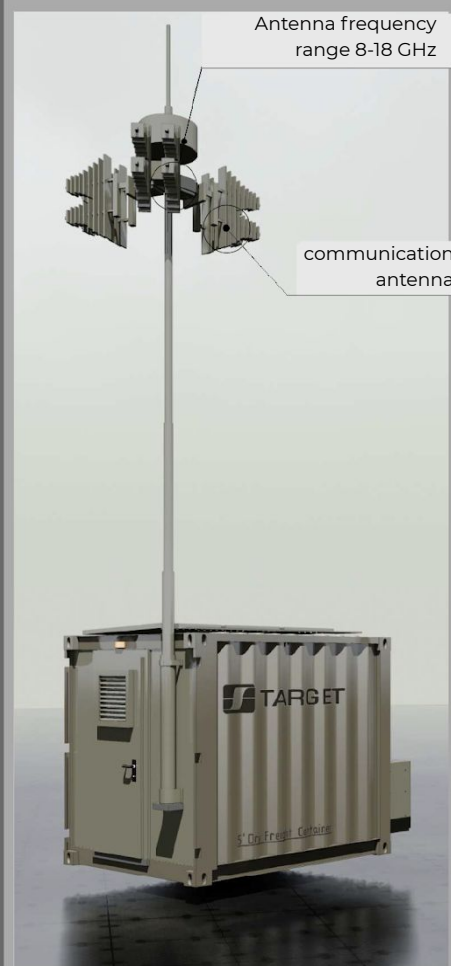
operator's workstation



sleeping
berth



MANNED VARIANT



Antenna frequency
range 8-18 GHz

communication
antenna

diesel
power
plant

air
conditioner

antenna mast

2970

2510

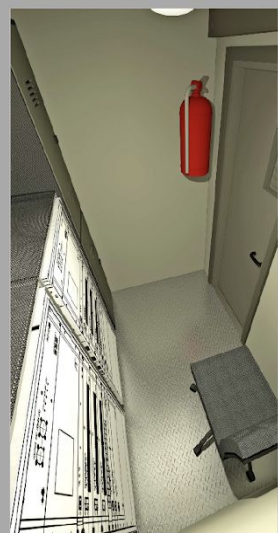
1950



5 Dry Freight Container 2510x1950

CARRIER PLATFORMS

SYSTEM CONFIGURATIONS

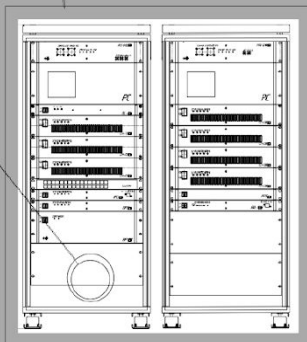


air conditioner

power plant

antenna mast

signals analysis
and processing
console

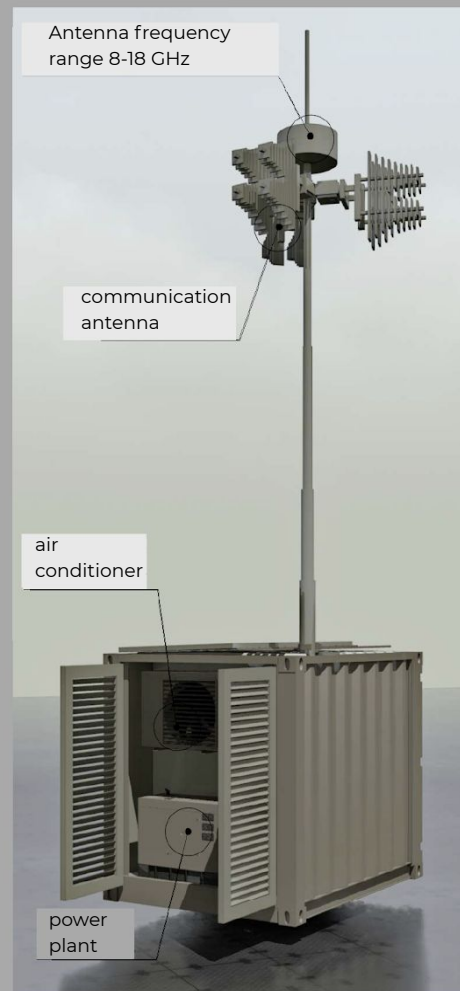


Antenna frequency
range 8-18 GHz

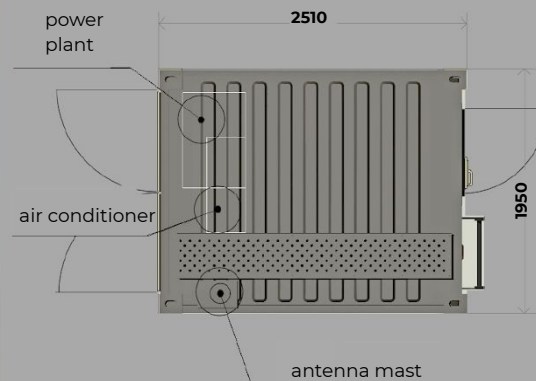
communication
antenna

air
conditioner

power
plant



UNMANNED VARIANT



5 Dry Freight Container 2510x1950

CARRIER PLATFORMS

SYSTEM CONFIGURATIONS

VARIANT 2



air conditioner

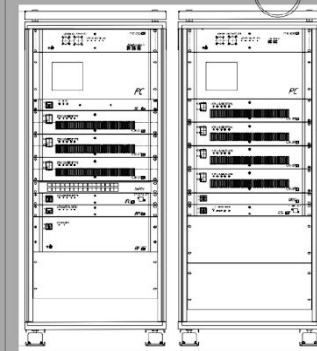
power plant

operator's
workstation 1

operator's
workstation 2

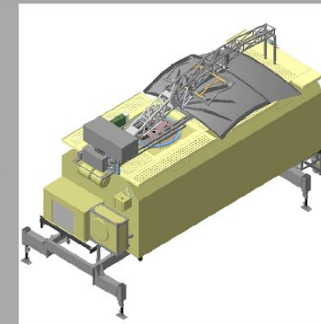
antenna mast

signals analysis
and processing
console



Antenna frequency range
8-18 GHz

communication
antenna



Large antenna and
log-periodic antennas
frequency range:
130MHz-8000MHz

air conditioner

power plant

shelter-based stationary variant

CARRIER PLATFORMS

SYSTEM CONFIGURATIONS

VARIANT 2



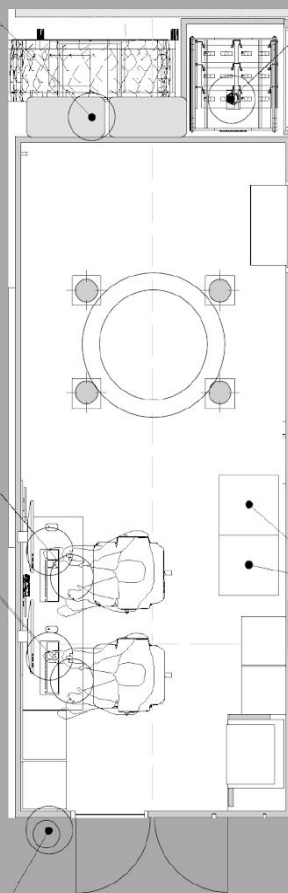
air conditioner

power plant

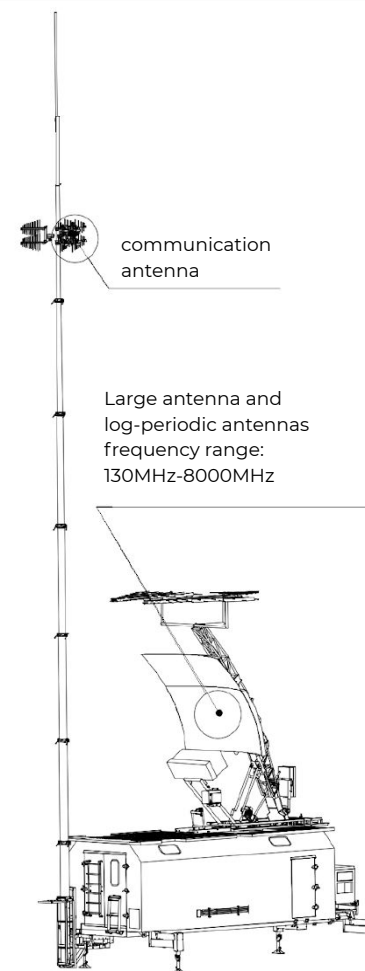
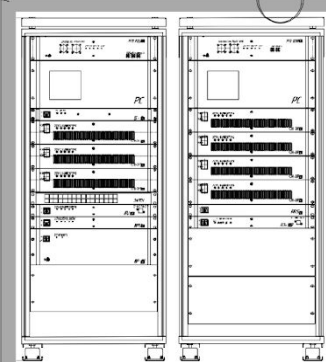
operator's
workstation 1

operator's
workstation 2

antenna mast



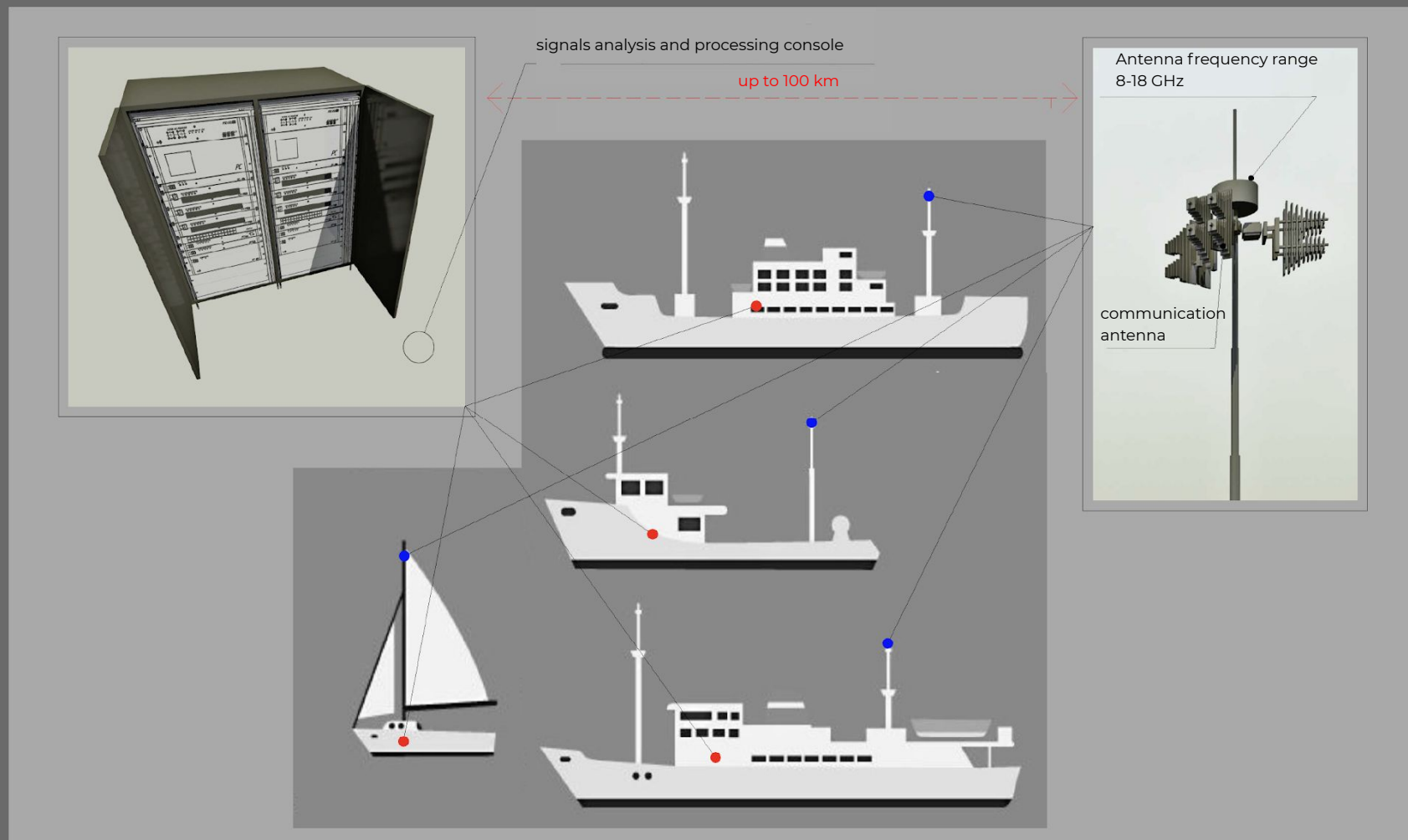
signals analysis
and processing
console



shelter-based stationary variant

CARRIER PLATFORMS

SYSTEM CONFIGURATIONS



SHIP-BORNE PSS/PET SYSTEM

CARRIER PLATFORMS

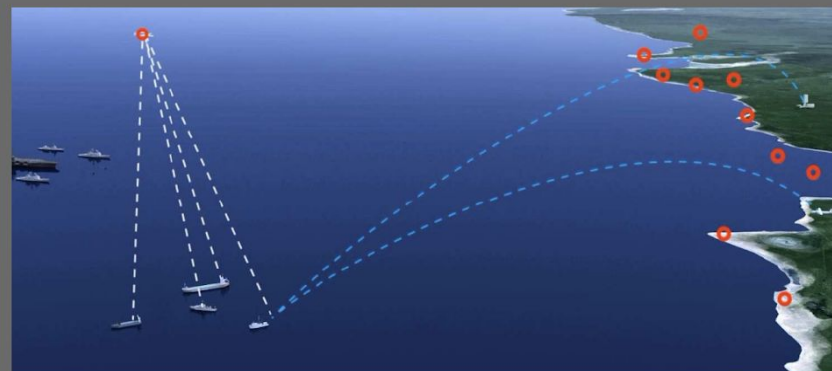
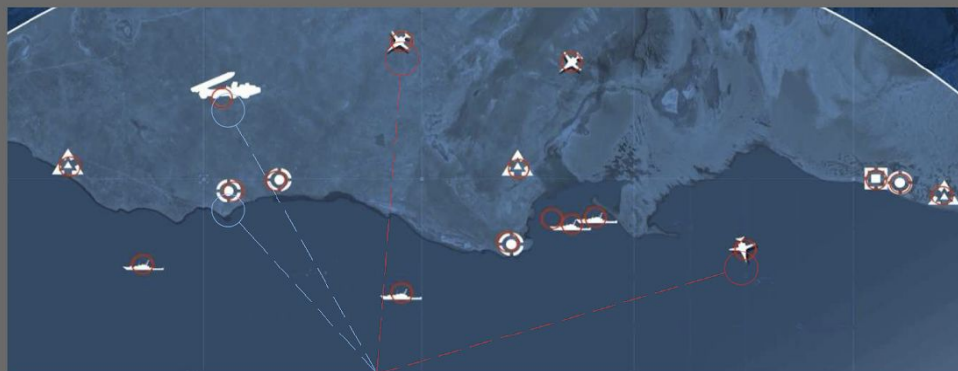
SYSTEM CONFIGURATIONS



VEHICLE-BASED MOBILE
VARIANT

PASSIVE SURVEILLANCE AND AIR TARGETS TRACKING SYSTEM

EMITTERS DETECTION



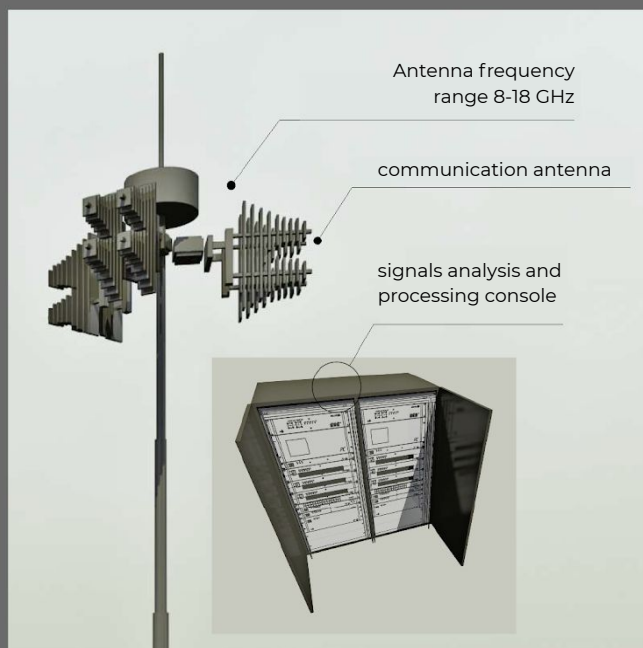
LOCATION OF TARGETS AND DISSEMINATION OF RECONNAISSANCE DATA

The passive system's sensitive receivers detect electromagnetic emissions in a wide operating frequency range and send the received data to analysis equipment and the central computer for processing and display on a monitor, thus, creating for an operator as well as for various end-users an integral picture of the situational awareness within the system's reach

The KOLCHUGA SDT-M360 passive surveillance and air targets tracking system mounted on mobile surface/ground carrier platforms of various types have the following functions:

- detection of pulsed radar signals emitted by targets, both airborne (up to 450 km), and surface and stationary ground-based targets (50-70km) as well as signals emitted by SSR transponders of friend-or-foe identification system (IFF) and TACAN tactical navigation system
- recognition of radar types and determination of signal parameters
- tracking of detected airborne objects via the reception of signals emitted by onboard radars
- dissemination of the received data to higher-level automated command centers as well as to SAM units that are an integral part of an integrated air defense system

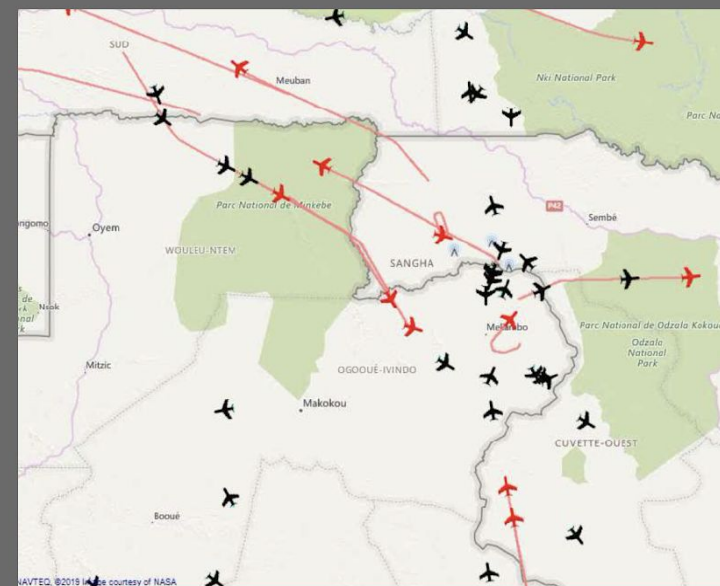
PASSIVE SURVEILLANCE AND AIR TARGETS TRACKING SYSTEM



IDENTIFICATION OF AIR TARGETS



200
air targets

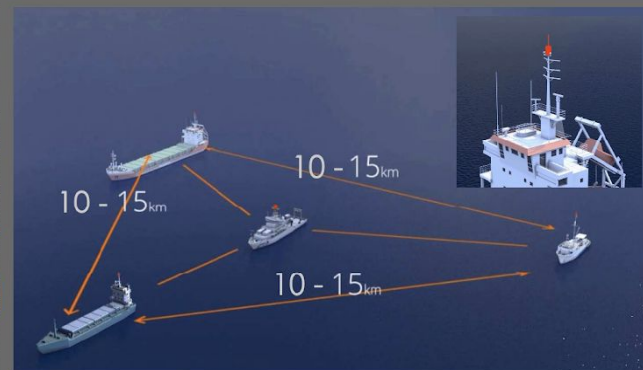


TRACKING OF AIR TARGETS

THE KOLCHUGA SDT-M360 PASSIVE SURVEILLANCE SYSTEM detects and tracks up to 200 air targets at a distance of up to 450 kilometers (LOS) and the tracking accuracy of airborne objects will nearly match one of the active radars. The system features advanced and sophisticated high-performance mathematical proprietary algorithms ("know-how") that make it possible to achieve a high identification probability rate of air targets types and to carry out stable path tracking within the radius of the system with an accuracy of 2% of targets detection range

KEY BENEFITS

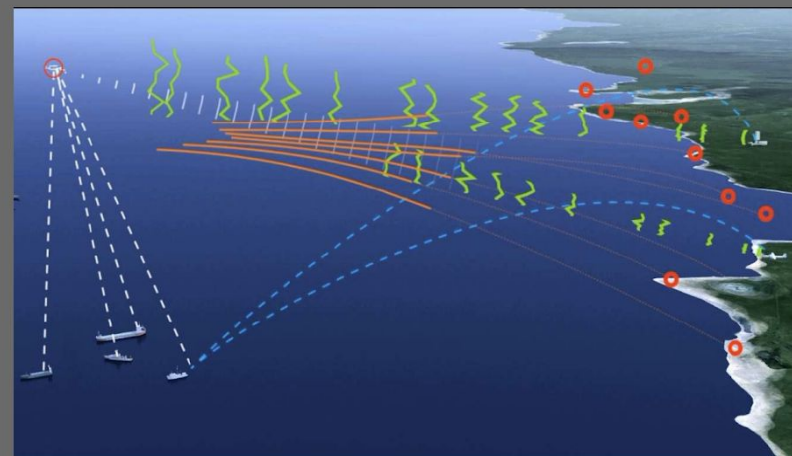
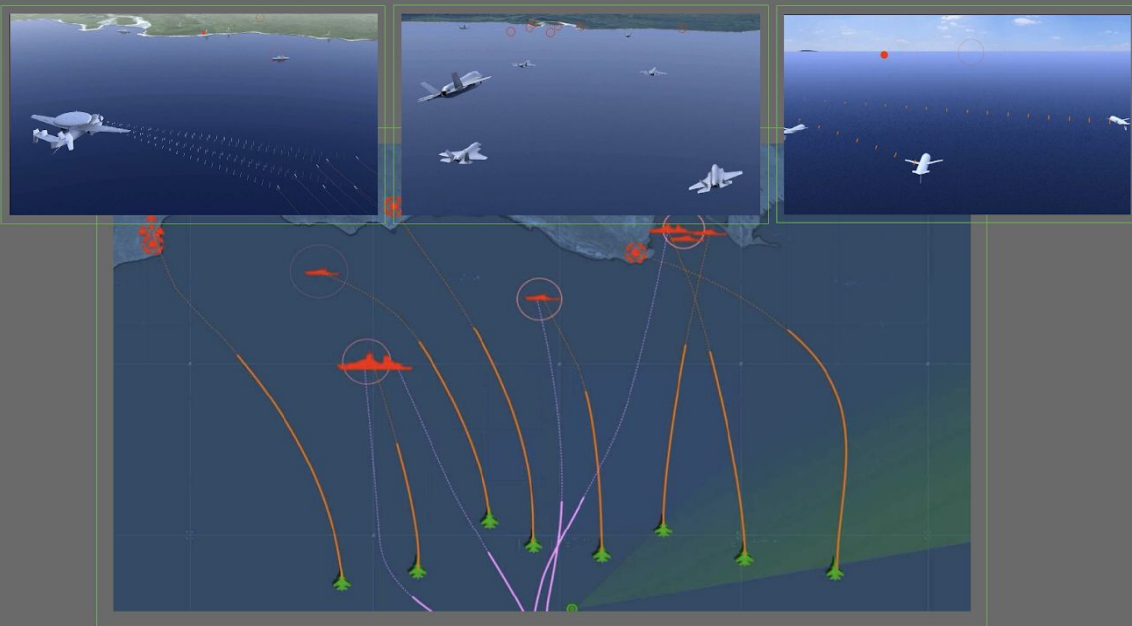
COVERT SURVEILLANCE



- By being mounted on a surface/sea platform for civilian purposes (commercial, research vessel, fishing boat, etc.) the passive system can carry out covert surveillance of a water area of interest in a discreet manner. This system secretly gathers data on electromagnetic emitters such as a potential adversary's ship groups conducting exercises or maneuvers in an area of interest. Since the system has no own emission it cannot be detected by ESM/ELINT systems of a potential enemy and, therefore, it cannot be destroyed by anti-radar missiles
- Such a configuration when all components of the mobile passive surveillance system are mounted on moving surface platforms makes it possible, due to long stay in neutral waters, to achieve virtually global coverage, allowing covert surveillance of a coastal area of any state that has an access to the sea to detect emitters located at coastal military bases, ports, airfields, headquarters and other facilities of critical infrastructure

KEY BENEFITS

DETECTION OF HIGH PRIORITY TARGETS



JAMMING DATA LINKS OF AEW COMMAND AND CONTROL CENTER

Timely detection of such high-priority targets resulting in employing preventive countermeasures such as suppression/jamming either by ground-based or airborne EW systems of targeting data dissemination links or onboard radars used for guidance of long-range anti-ship missile and other high-precision weapons will make it possible to disrupt the enemy's offensive operation and prevent the destruction of ships, airfields, military bases, headquarters and other objects of critical military infrastructure

MAIN SPECIFICATIONS

| | | |
|--|---|---|
| OPERATIONAL FREQUENCY RANGE sub-bands | IV (X) V (Ku) VI (Ku) | 8000÷12000 Mhz 12000÷15000 Mhz 15000÷18000 Mhz |
| TRUE SENSITIVITY wide band/narrow band/field | IV sub-band V sub-band VI sub-band | 110 / 125 / 135 (-db/W) 110 / 125 / 135 (-db/W) 110 / 125 / 135 (-db/W) |
| INSTRUMENTAL ERROR (RMS) | IV sub-band V, VI sub-band | 0,3° 0,6° |
| INSTANTANEOUS DYNAMIC RANGE | | not less than 60 dB |
| ADJUSTABLE DYNAMIC RANGE | | 120 dB (option) |
| SURVEILLANCE BAND (8 - 18 GHz) | | available |
| ANALYSIS BAND | min basic option | 500 MHz 2,5GHz 10GHz |
| FINE ANALYSIS BAND (0,5 - 50 MHz) | | available |
| INSTANTANEOUS BAND | | 2,5GHz option 10GHz |
| REGISTRATION, STORAGE AND DISPLAY OF DETECTION, MEASUREMENT AND TARGETS IDENTIFICATION DATA | | available |
| PULSE WIDTH MEASUREMENT RANGE | | 70ns - 10ms |

MAIN SPECIFICATIONS

PRI MEASUREMENT RANGE (T)

from 10 to 167000 μ

PW, PRI MEASUREMENT INCREMENT

5 ns

CARRIER FREQUENCY MEASUREMENT INCREMENT

1,0 MHz

BITE

(analysis, processing, frequency measurement equipment)

available

24/7 CONTINUOUS OPERATION

available

DISPLAY OF DEPENDENCY OF FREQUENCY, PW AND PRI VALUES ON PULSE NUMBER

available

DISPLAY OF DEPENDENCY OF PULSES INTENSITY OR PULSE AMPLITUDE ON AZIMUTH

available

DATA STORAGE IN CASE OF EMERGENCY POWER-OFF

30 minutes

EMBEDDED DIGITAL LOCATION MAP - GOOGLE MAP MEDIUM

available

COMPLETENESS OF ARTICLE

as perform

POWER SUPPLY

- supply voltage of radio path and analysis equipment

220V; ± 50 Hz
27V $\pm 10\%$

COORDINATES MEASUREMENT TECHNIQUE (SYSTEM)

- TDOA

available

MAIN SPECIFICATIONS

CONSUMED POWER

5 kW

24/7 MANNING (SHIFT WORK)

2 persons

EACH STATION COMES EQUIPPED WITH OPERATIONAL SPA KIT

EACH STATION COMES WITH A SUITE OF OPERATIONAL DOCUMENTATION

**EACH STATION IS OUTFITTED WITH AIR-CONDITIONING,
VENTILATION AND HEATING SYSTEMS
AMBIENT TEMPERATURES RANGE**

- 30° C + 50 °C

OWN COORDINATES ARE MEASURED WITH A GPS RECEIVE



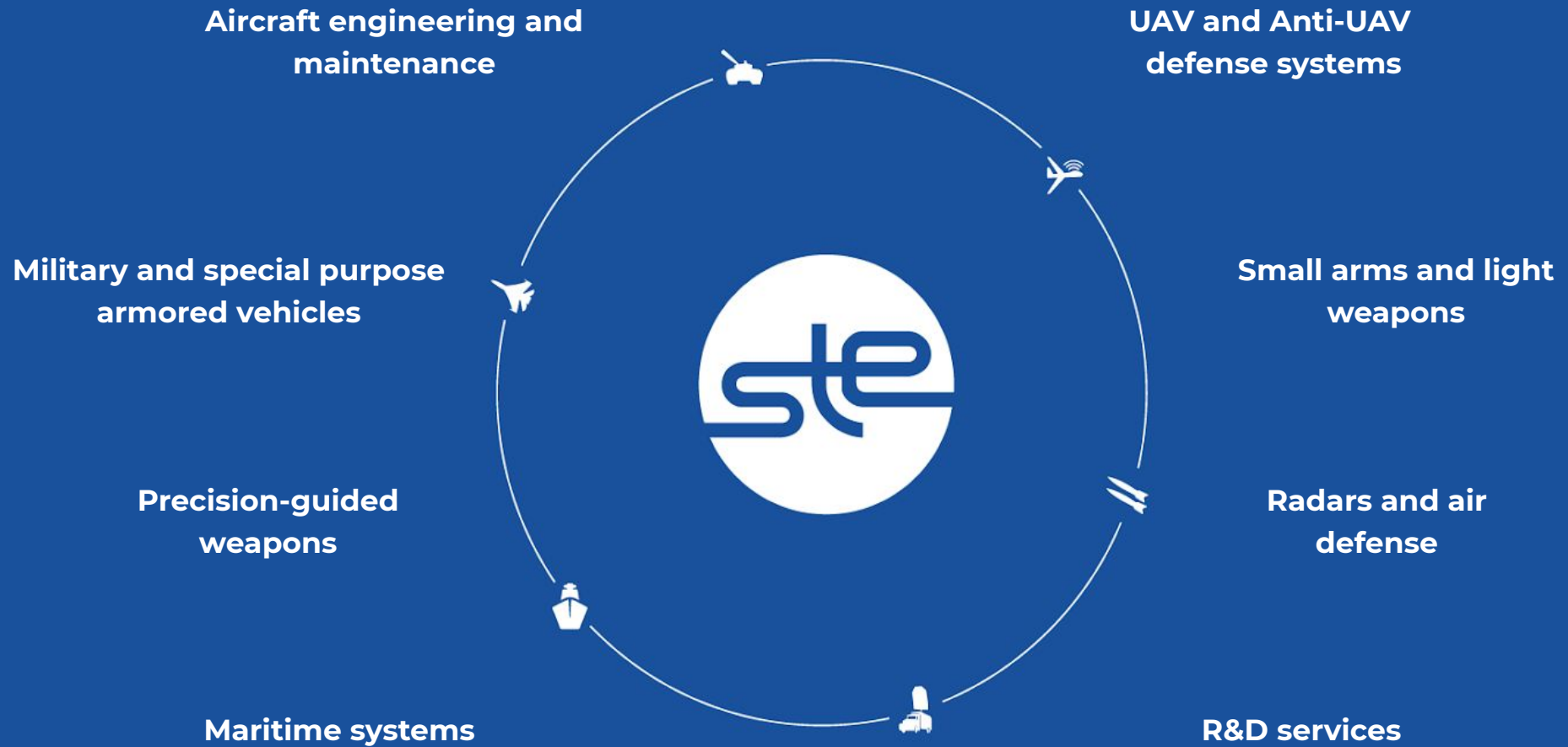
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| _____ | | OVER | _____ |
| 20 | 30 | 170 | 30 |
| years of experience | partner countries | state and private producers | research centers and design bureaus |

OUR EXPERTISE





**STATE TRADE FOREIGN ENTERPRISE
SPETSTECHNOEXPORT**

7, Stepana Bandery Avenue, Kyiv, 04073, Ukraine

Tel.: +38 (044) 568 50 70

Fax: +38 (044) 568 53 48

E-mail: office@ste.kiev.ua

www.spetstechnoexport.com