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JSC «VNII «Vega»

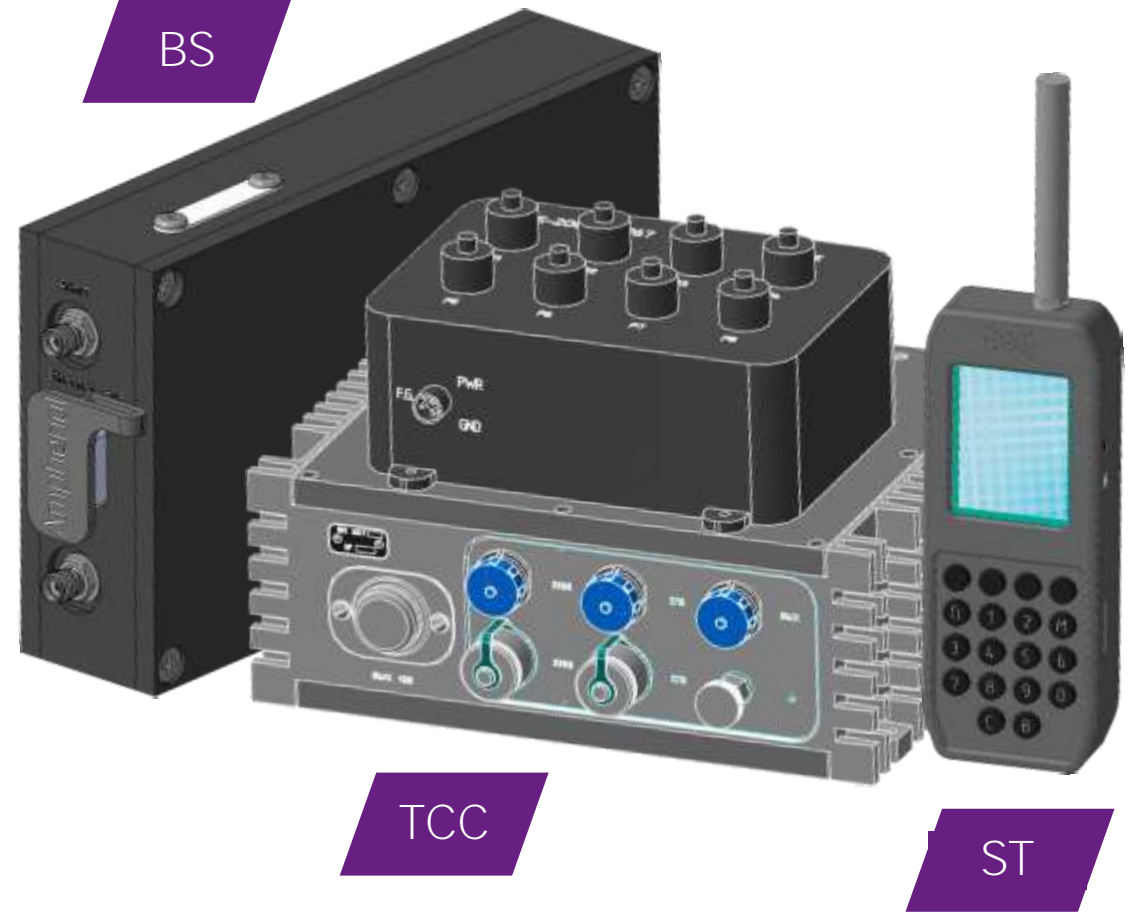
*Trunking system
of mobile subscribers
based on the jam-resistant
communication channel links*

Trunking system of mobile subscribers

Main constituents

*System consists of the devices of three types:
subscriber's terminal (ST),
base wireless station (BS),
trunking controller-commutator (TCC).*

*Capability of access to
public network (PAN)
via BS according to TCP/IP protocol.*



Trunking system of mobile subscribers

Allocation

The system is intended for provisioning of subscriber's access for the exchange with voice information and the data.

Trunking system of mobile subscribers is intended for providing of voice information exchange and data (files) between subscribers terminals (ST) in the direct connection mode or connection via base stations (BS).

System can be applied within the frameworks of outdoor and exit measures in order to organize ground communications between the mobile objects within such agencies as Russian home guard, Federal Security Guard, Ministry of Internal Affairs as well as in mining industry and some other Industries.



Trunking system of mobile subscribers

Main characteristics

- *Operating frequency range: from 135 to 470 MHz*
- *Information rate: 4 - 64 kbit/s*
- *Number of ST: up to 128*
- *Number of BS: up to 8*
- *Signal-to-noise ratio at the receiver input **a** for the error probability of 10^{-3} : from -6 to -21 dB (in a dependence of the information rate)*
- *Adaptively controlled output transmittance power of BS and ST from 10 mW to 0,5 W*

Main Technical Specifications



Trunking system of mobile subscribers

Main characteristics

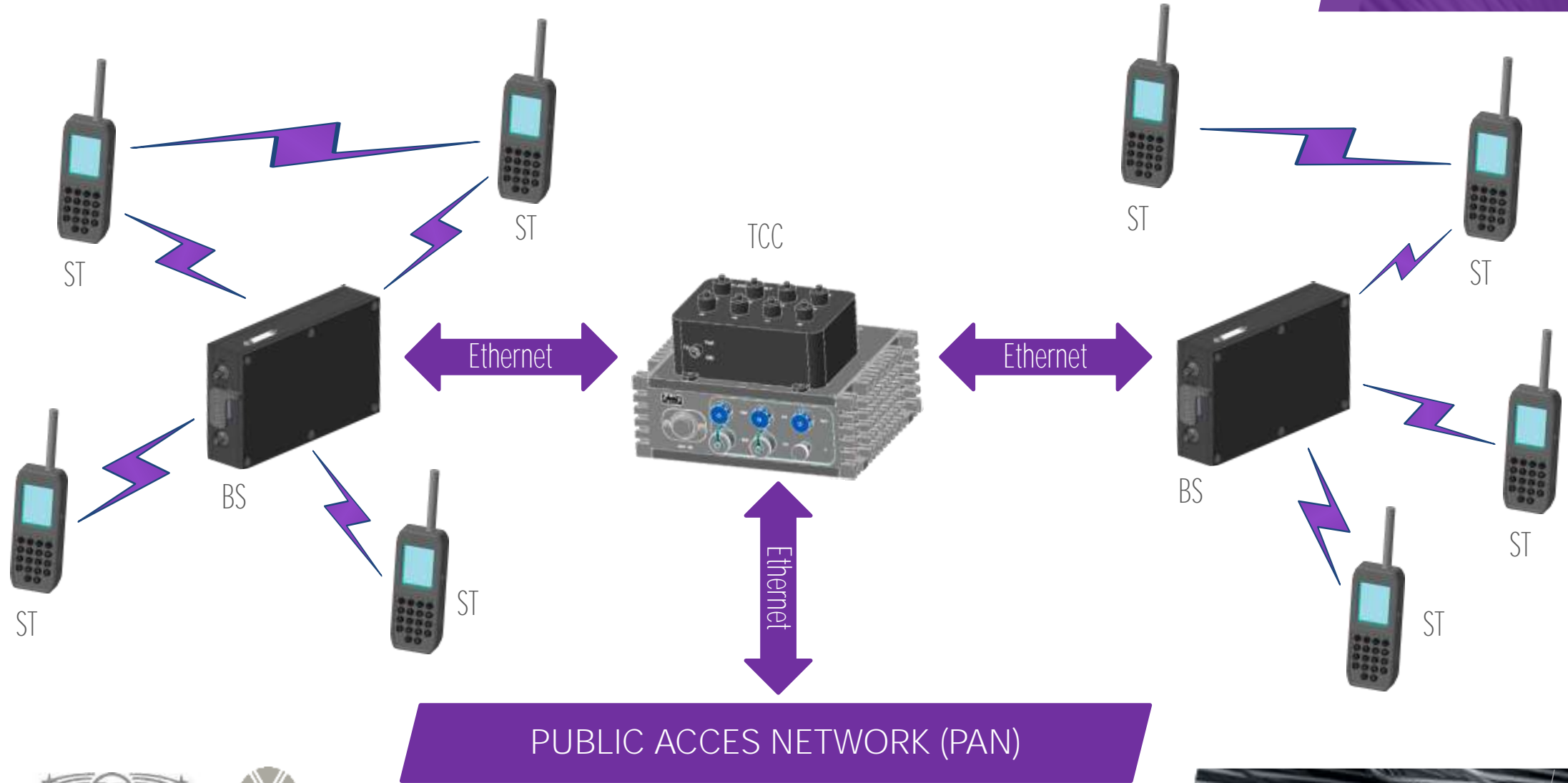
- *Power supply of BS is realized from TCC with the use of “Power Ethernet” technology.*
- *Power supply of ST is realized from the embedded power supply device with a nominal voltage of 3,6 V (3200 mA·hr).*
- *Power supply of TCC is performed either from an AC with 50 Hz frequency and nominal voltage of 220 V, or from the DC on-board network with the nominal voltage of 27 V.*
- *Operational time of ST without recharging for the ratio of “at the call/talks” mode = 4/1, no less than 8 hours.*

Main
Technical
Specifications



Trunking system of mobile subscribers

Scheme of mobile communication system design



Trunking system of mobile subscribers

Main advantages

- *Jam-resistant radio traffic, complicating direction-finding of signal source and definition of the fact of radio communication as well*
- *Re-transmission of a signal via ST*
- *Spectrum spreading of the operating signals*
- *Jam-resistant coding*
- *Setting of priority (hierarchy) for subscribers to provide priority of the call*
- *Adjustment of maximum acceptable duration of connection*

Main
advantages



Trunking system of mobile subscribers

Main advantages

- *Function of duplex reception with the use of space diversity antennas.*
- *Authentication **A**of subscribers in order to avoid unauthorized access to the system*
- *Selective interception and eavesdropping*
- *Identification of subscriber's number*

Main
advantages





Current status of the project

- complete set of technical documentation for mass production
- possibility of adaptation under conditions of a Consumer

Actuality of the project

- more often different emergency situations result in the need of the operative deployment of the trunking communication networks in the areas of work of rescue services and safety agencies

Main consumers:

- law enforcement agencies, fuel and energy complex, industrial sector

JSC «VNII «Vega» Manufacturing features



Development and production are accomplished in the common cycle

100% inspection test of the constituents is provided.

Quality management system at the enterprise is certified in compliance with GOST R ISO 9001-2015.

JSC «VNII «Vega» is a member of the "UNION OF RUSSIAN MACHINE BUILDERS"



АО «ВНИИ «Вега»



JSC «VNIИ «Vega» is a modern enterprise with a high scientific and technical potential, having developed infrastructure and a complete scientific-production cycle. It is a repeated winner of the contests «Best industrial enterprise of Voronezh region»



Contacts:

Moskovsky prospect, 7-b, Voronezh, Russia

Tel.: +7 (473) 262-27-07 E-mail: vega150@vniivega.ru <http://vniivega.ru>





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