



Russia Integrates Military Capabilities into Civil Communications Infrastructure

OE Watch Commentary: The Russian Federation is reportedly engaging in two different lines of effort to enhance military capabilities by integrating them with civil communications infrastructure. The accompanying articles from Russian sources discuss these initiatives.

The first accompanying article from *Izvestiya* discusses a plan to mount electronic warfare systems (Pole-21) on cell phone towers. The systems are meant to help protect fixed sites and strategic infrastructure by scrambling the signals emitted by GPS, GLONASS, Galileo, or Beidou that are often used for precision targeting. Precision guided weapons may also be equipped with other, less accurate, guidance systems. But as the accompanying graphic demonstrates, increasing the circular error probability of a given cruise missile by even a few meters can significantly degrade its effectiveness against hardened targets such as missile silos.

Although the article implies these systems will be left “on” to continually emit a jamming signal, it is more likely that these systems would only be turned “on” when hostilities are expected, as this jamming would cause significant problems for civil aviation, communications, and many other services that are precision navigation and timing dependent.

The second article from *Izvestiya* discusses the possibility of using Russia’s existing GSM cellular towers as a detection system for unmanned aerial vehicles, cruise missiles and light aircraft. These initiatives coincide with other efforts to prepare Russia for large-scale conventional warfare, such as massive “snap” exercises, reformation of the reserve system, exercising wartime command and control relationships, and testing the nationalization of the industrial base in the event of a transition to a wartime footing. **End OE Watch Commentary (Bartles)**

“Already right now more than 250,000 mobile communications base stations are operating throughout the country and this network is constantly being expanded...The average density of their deployment totals 11 units per square kilometer. This permits us to form a round-the-clock, jam-resistant, multichannel airborne target detection field based upon the signal that is reflected from them with the capability of the transmission of the data to PVO [air defense] and PRO [missile defense] air defense missile complexes.”

— General Director of the
Roselektronika Joint-Stock
Company, Igor Kozlov

Source: Aleksey Ramm and Vladimir Zykov, “The Ministry of Defense Will Jam GPS from Cellphone Communications Towers: A New Radio Jamming System Will Defend Strategic Facilities from Enemy Cruise Missiles,” *Izvestiya Online*, 25 August 2016, <<http://izvestia.ru/news/628766#ixzz4IHrzF0XI>>, accessed 15 September 2016.

The Russian Ministry of Defense has accepted into the inventory the Pole-21 radio suppression system, which defends Russian strategic facilities from enemy cruise missiles, guided bombs, and unmanned aerial vehicles, which use the GPS, GLONASS, Galileo, or Beidou satellite systems for navigation and guidance to the target. The latest jammer, which was developed by Scientific and Technical Center of Electronic Warfare is the R-340RP radio jammer that is integrated with the transmission and reception antennas that are installed on cellular communications towers, which are merged into a single network, which covers entire regions like a dome that is impenetrable for satellite navigation signals.

*“At the present time, the tests of the item have been completed and the system has been accepted into the inventory,” a Russian Ministry of Defense spokesman, who is familiar with the situation, told *Izvestiya*...“The transmission of an elementary signal from a satellite lies at the foundation of all satellite navigation systems. Therefore, the slightest deviation from the designated frequency even for milliseconds will result in a loss of accuracy. “The transmission of a signal occurs in an adequately narrow band, which is also called the ‘reference frequency,’” Independent Military Expert Anton Lavrov, one of the authors of the book “Brother Armed”, said. “State-of-the-art jammers are directed precisely at blocking the reference frequency, which it doesn’t pose any great difficulty to jam, while taking into account its narrowness and the availability of an adequately powerful noise jammer.”*

We must point out that all four satellite navigation systems, the signals of which the Pole-21 must combat, use closely spaced frequencies, which end up in the interval from 1176.45 to 1575.42 MHz. The fact that even a transmitter with an output of a total of 20 watts in order to jam the radio signals in this range in a radius of 80 kilometers attests to the latest Russian system’s capabilities to create an impenetrable jamming dome....

...At the same time, the system has one shortcoming. As is indicated in its description, “The fact that this complex creates jamming both for the enemy, who is using the GPS radio navigation system, and also for domestic consumers of this GPS radio navigation system and also for its Russian GLONASS equivalent”...

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Continued: Russia Integrates Military Capabilities into Civil Communications Infrastructure

Source: Dmitriy Litovkin, Vladimir Zykov, and Aleksey Ramm, “They Will Connect GSM Networks to the Missile Defense System: The Latest Rubezh Development Will Detect Flying Objects Based Upon a Change of a Cellular Network’s Electromagnetic Field,” *Izvestiya Online*, 1 September 2016, <<http://izvestia.ru/news/629906#ixzz4IxmjX5qi>>, accessed 15 September 2016.

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Required numbers of cruise missiles to destroy ICBM launch silos with a 95% probability							
Required number of cruise missiles depending on Circular Error Probability (CEP)							
3 meters		5 meters		8 meters		10 meters	
Per silo	For all silos	Per silo	For all silos	Per silo	For all silos	Per silo	For all silos
5	900	14	2520	35	6300	54	9720

Source: <http://vpk-news.ru/articles/27617>



Source: <http://mtdata.ru/u1/photo7FB8/20604295228-0/original.jpg>