

UKRAINE WAR

A Test Bed For New Weapons Technologies*

By Dave Webb

Keep Space for Peace 2024, 4-10 October, included a webinar on *Space as an aid to war and genocide*, in which Peter Burt, Drone Wars UK, and I spoke about military activities in space. It is clear that Ukraine and Gaza are being used as test sites and as a shop window for new weapons technologies. The use of satellites, drones, cyberwarfare, AI systems, GPS and EMF (electromagnetic fields) blocking and spoofing are among the most commonly used techniques employed by all sides.

No war has seen both sides of a conflict use space and counterspace systems as much as in Ukraine. Satellites are deeply integrated into conventional warfare, and enable precision strikes, drone operations and missile warnings.

The primary military functions of satellites are Intelligence, Surveillance, and Reconnaissance (ISR); Communication; and Positioning, Navigation, and Timing (PNT).

A new dimension has been the reliance on commercial satellite providers. For the first time information that previously was only available from government sources has been supplied by commercial companies. Ukraine has obtained satellite imagery and communications services from American, Canadian, and European companies. In the first 2 weeks of the war, Ukraine downloaded more than 40 million square kms' worth of geospatial imagery.

Ukraine has obtained satellite imagery and communications services from American, Canadian, and European companies who have provided optical images, synthetic-aperture radar images that see through cloud cover and at night, and radio-frequency data for detecting electronic emissions like GPS jamming and to locate and track Russian forces.

Ukraine is also being helped to defend against cyberattacks by the likes of Microsoft, Amazon, and Google and they have used commercial satellite communications services such as Starlink which is free for the Ukrainian military. Starlink has been

used to carry out drone strikes and other military operations and has served as the backbone of the command-and-control software that Ukraine uses to share data, coordinate military operations, and communicate with US and NATO advisers outside the country.

However, Starlink satellite internet dishes use GPS which Russia has been able to successfully jam and Russia is also using Starlink terminals obtained from third parties, despite sanctions.

Starlink services are also being used in Gaza to assist Israel's horrific ongoing genocidal invasion. Some of the tactics and technologies used in Ukraine have also been seen and developed in Gaza, especially the use of drones.

The US and UK have flown surveillance flights over Gaza and information will undoubtedly have been passed on to the IDF. Similarly spy satellites will be used to monitor electronic communications and downlinked to Menwith Hill in North Yorkshire from where they will be passed on to the Israeli forces. This information could then be used by AI-enabled decision-making systems used in Gaza known as "Gospel", "Lavender" and "Where's Daddy?". These systems are trained to recognise features that characterise people associated with the military arm of Hamas. Features such as membership of the same WhatsApp group as known supporters, changing cell phones or addresses frequently.

The US and UK work closely on military space developments and a number of UK launch sites (mainly in Scotland) are being prepared which will be used by the military. The US also wants to station huge radar sites in Texas, Australia and Pembrokeshire as part of the AUKUS deal, to enable them to track satellites, target them and control space. Indications are that the UK will carry on helping them wherever and whenever possible.

** Dave Webb's is a former Chair of CND and the Convenor of the Global Network Against Weapons and Nuclear Power in Space's Board of Directors. This paper is taken from his report to CND Winter Council 2024 on Keep Space for Peace week 2024.*