

## NEW U.S. PATENT TO ENHANCE DRONE DEFENCE CAPABILITIES AGAINST SWARMS

Advanced Networking Technology also enables significant increase in data bandwidth

---

### Highlights:

- D13 granted a new patent for advanced networking used in counter drone systems
- U.S. grant of ground-breaking technology enables data bandwidth increase between 5-20 times
- Technology enables significant increase in data bandwidth for Wi-Fi, 3GPP LTE-Advanced standard, 4G, and next generation "5G" wireless networks
- D13 now has nine granted patents and 15 patent applications in its IP portfolio

**Department 13 (ASX:D13) ("D13" or "the Company")** is pleased to announce that under its license agreement with GenghisComm Holdings, the Company has been granted a U.S. patent on technology that will further enhance drone defence capabilities and advanced communication networking. This technology addresses a key component in D13's Counter Drone Defence Solution for dealing with swarms of drones as well as our strategic networking solutions products.

Cooperative Subspace Coding (CSC) is a method of encoding a signal by multiple nodes in a network to produce linear combinations of the original signals. This enhances security and increases data rates by as much as 20-fold. In a drone-defence network, the naturally random environment in which radio signals propagate can be used to produce perfectly random codes for encoding sensor data and network control commands. CSC can be used in all types of wireless and wired communications, as it provides a more efficient way to communicate than current network protocols, and it is particularly useful for streaming video and other multimedia services.

There are also significantly broader applications in Wi-Fi and cellular communications networks that enable increased bandwidth, better coverage, and improved reliability, especially where signals are weak, or when there is a lot of congestion.

The new U.S. Patent 9225471 has been licenced to D13 by GenghisComm Holdings, the IP holding company of D13's Chief Science Officer (CSO), Steve Shattil, under the terms of the existing exclusive Licence with D13, which covers the field of drone defence and a separate field of any use by U.S. or Australian government agencies or departments.

Mr Shattil is the inventor of dozens of U.S. and foreign patents essential to wireless and radio protocols standards, including 3GPP (3G cellular), LTE (4G Cellular), 802.11n (Wi-Fi), 802.16 (WiMax), and 802.20 (Mobile Broadband).

The invention, CSC, will provide an unprecedented increase in data bandwidth via radio networks, as well as having direct application to drone defence technology, by dramatically enabling ad-hoc networks used to detect and communicate with airborne targets. It is related to earlier inventions by Mr Shattil in the field of Cooperative MIMO technology that is also exclusively licensed to D13 in the same fields

CEO Jonathan Hunter said, "Cooperative Subspace Coding technology is a hugely powerful tool that boosts Data Bandwidth up to a 20 times, which is critical for counter drone defence systems. It is an important element of our long-term strategy to remain on the cutting-edge of the development of new strategic networking solutions and technology products."

Mr Hunter added, "Drone defence has been significantly enhanced by CSC technology because, in addition to substantially boosting network data bandwidth, it means multiple software programs can operate in a single network to cooperatively track a swarm of drones. This greatly enhances the ability to detect and counter multiple hostile drones through one integrated system, compared to a collection of independent systems."

"We anticipate significant interest from telecommunications companies in the broader benefits of Cooperative Subspace Coding, especially the ability to increase cellular bandwidth capacity. As demand for bandwidth increases with additional users and content delivery services, our new technology has obvious commercial value and appeal.

#### **For more information, contact**

**Jonathan Hunter**  
CEO, Department 13 LLC  
+1 703 597 6574  
[Jonathan@department13.com](mailto:Jonathan@department13.com)

**Gavin Rezos**  
Viaticus Capital LLC  
+61 412 89 235 or +1 864 908 4115  
[grezos@viaticuscapital.com](mailto:grezos@viaticuscapital.com)

#### **Media Contact**

**Tony Dawe**  
Professional Public Relations  
(+61) 08 9361 4779  
(+61) 405 989 743  
[tony.dawe@ppr.com.au](mailto:tony.dawe@ppr.com.au)

#### **About D13**

D13 was founded in Virginia in 2010 by a team of former military operators, scientists and engineers who develop and commercialise innovative proprietary technology products.

D13 is developing and has patented a number of cutting edge products that have the potential to transform the data networking and telecommunication industries as well as new applications in drone defense, mobile phone IT security and data encryption.

D13 has 9 patents and 15 patent applications in the development of wireless protocol manipulation and communication networking software with applications in:

- Drone defense;
- Local area and wide area cellular communications and networking;
- Enhanced data bandwidth for all digital communications
- Cyber security for mobile devices;
- Sophisticated applications in the RF environment (Radiometrics).
- 

Department 13 is listed on the Australian Stock Exchange under the ASX ticker code D13.