

Blue Danube Systems Enables First Broadband Access with Phased Arrays from the Stratosphere on High Altitude Platform Stations (HAPS)

SANTA CLARA, Calif. – November 8, 2021 – [Blue Danube Systems](#), a provider of intelligent wireless access solutions that help mobile operators address the challenge of explosive data growth, is announcing today that its 3D beamforming radio systems have been used to provide the first broadband communications from the stratosphere to cellular users on the ground. Blue Danube's BeamCraft™ 500 was launched and operated on an unmanned stratospheric platform as part of a project in New Mexico led by Sceye, a material science company and HAPS manufacturer, on Saturday, October 30.

The test launch was part of Sceye's plan to demonstrate the feasibility of extending high-speed internet services over a wide area from the stratosphere. Blue Danube and Sceye had previously demonstrated communications connectivity from the active array at 140 km range.

Blue Danube's radio unit (RU) systems are the optimum choice for providing communications from any airborne platform. The underlying cost-effective phased array technology can be applied to any frequency band. The RU has been tested and hardened for low temperature, low pressure (stratosphere) conditions and performed flawlessly at over 60,000 ft. altitude.

Using the Blue Danube adaptive beamforming RU operating in mid-band frequencies, exceptionally accurate beams were demonstrated with dynamic sidelobe control and 23dBi antenna gain. RF signals were dynamically controlled and coordinated through 3D-beam shaping, tilting, and power distribution in real-time, responding to HAPS movements and environmental conditions. This is the first time such a commercial system has been deployed in the stratosphere. Mid-band operation in the 2 GHz frequency range allows the same large bandwidth and throughput as terrestrial 4G/5G networks. Future form factors provide higher antenna gains and optimized size, weight, and power for airborne and satellite platforms.

Mark Pinto, CEO of Blue Danube said, "Blue Danube has demonstrated another significant use case for our 3D beamforming technology to provide high-speed broadband service over a wide area from an airborne platform. This builds on our unique ability to cost-effectively produce precise, RF coherency-based 3D beams to achieve significant 5G capacity increases. With this successful trial from the stratosphere, we enable an operator to provide extended coverage and service, where and when they want it."

About Blue Danube Systems

Blue Danube Systems designs next generation wireless solutions for mobile networks and other applications. Our Coherent Massive MIMO solution brings 5G beamforming to today's networks dramatically increasing network capacity and end user experience. Together with cloud-based software suite utilizing machine learning techniques, our technology enables up to a 10X capacity increase in cellular networks with today's smartphones. Blue Danube Systems is a



BLUE DANUBE™

privately held US-based start-up backed by Sequoia Capital and Silver Lake along with other investors including AT&T. For more information, please visit www.bluedanube.com

Media Contact for Blue Danube Systems:

Dave Poticny

Blue Danube

650.316.5010

dpoticny@bluedanube.com

Media Contact for Sceye:

Anastasia Grinberg

anastasia@grasshopperglobal.com

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