



Liberty Achieves Significant Product Milestone with Active Real-Time 3D Imaging

Vancouver, BC and Atlanta, GA – [Liberty Defense Holdings Ltd.](#) (“Liberty”) (TSXV: SCAN, FRANKFURT: LD2, OTCQB: LDDFF), a leading concealed weapons detection company, is pleased to announce that the company has achieved active real-time 3D imaging functionality with its proprietary threat detection system, HEXWAVE. The real-time 3D imaging represents the latest significant step forward as the company progresses to completion of alpha testing by year-end.

Bill Riker, Liberty’s CEO, commented: “Our team continues to deliver against our aggressive development timeline and the achievement of active real-time 3D imaging is yet another significant accomplishment. We look forward to continuing to deliver against our stated objectives in the coming months.”

How HEXWAVE works:

Figure 1 depicts how HEXWAVE works, emitting a low-power signal, 200 times less than Wi-Fi. It then captures the reflections to create an active real-time 3D image, which is interpreted by AI.



Figure 1: Better Data = Better Detection

On [June 6, 2019](#), Liberty provided an in-depth understanding of HEXWAVE and its four subsystems:



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1. Antenna Array and Transceiver (captures real-time data)
2. 3D Radar Image Generation (converts captured data into 3D radar images)
3. AI and Deep Learning (interprets the data and 3D radar images to detect threats)
4. Smart Interface Functionality (provides connectivity to existing security systems)

Following the [completion of the HEXWAVE prototype](#), which was demonstrated at Liberty's Center of Excellence in Atlanta, GA, on September 26, the company has continued to advance the speed and efficiency of the real-time 3D imaging. The achievement of active real-time 3D imaging, created from 400,000 data points in the Liberty Defense labs using the HEXWAVE prototype, is a significant milestone. Machine learning models are trained using this 3D imaging and data to make its prediction about the weapons or non-threatening objects. The completion of hardware systems (Antenna Array, Transceiver, CPU/GPU) and software for acquiring the data used to create real-time images further de-risks HEXWAVE's program.

Aman Bhardwaj, COO and President of U.S. Operations, commented: "This represents a significant step forward in HEXWAVE's development. The ability to now generate active real-time 3D imaging using the HEXWAVE prototype will enable the team to continue its rapid development of HEXWAVE with the goal of completing the alpha testing by the end of the 2019. After this milestone the focus of development will shift from transferring and developing the technology to training, testing and improving the design for production and commercialization. We are very excited to have been able to achieve this milestone given the significant changes that have occurred to the underlying subsystems since the technology behind HEXWAVE was first developed in MIT Lincoln Lab."

Liberty continues to make strides to meet the initially disclosed aggressive timeline, and is well on its way to the completion of alpha testing by year end, as noted in its [June 24, 2019](#) release.

Liberty has announced 11 high calibre beta test partners to-date, including [Port Tampa Bay](#), the [University of Wisconsin](#), [Pearson International Airport](#), the [Metro Toronto Convention Centre](#), and the [Maryland Stadium Authority](#), and is looking forward to commencing the building of its initial beta units upon completion of the system integration phase of the alpha testing.

HEXWAVE is occupying a new and unique segment in the security market, set apart by nine distinct discriminators that identify it from other security systems on the market. These discriminators include:

- Metallic & non-metallic detection
- Indoor & outdoor installation
- Patented real-time scanning
- Smart functionality & capability to interact/integrate with existing security systems
- Covert & overt installation
- Routine software & AI updates
- High throughput (>1,000 people/hour)
- Operational agility; portable & mobile design
- No privacy concerns; no personally identifiable information is collected

On Behalf of Liberty Defense

Bill Riker
CEO & Director



November 6, 2019

About Liberty Defense

Liberty provides security solutions for concealed weapon detection in high volume foot traffic areas and has secured an exclusive license from Massachusetts Institute of Technology (MIT), as well as a technology transfer agreement, for patents related to active 3D radar imaging technology that are packaged into the HEXWAVE product. The system is designed to provide discrete, modular and scalable protection to provide layered, stand-off detection capability. This is intended to provide a means to proactively counter evolving urban threats. The sensors with active 3D radar imaging and Artificial Intelligence (AI)-enhanced automatic detection are designed to detect metallic and non-metallic firearms, knives, explosives and other threats. Liberty is committed to protecting communities and preserving peace of mind through superior security detection solutions. Learn more: LibertyDefense.com

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