

## Ciconia and RelmaTech partner to deliver onboard V2V C&CAS

**15 December 2019** – Ciconia and RelmaTech are working together to deliver a unique onboard Control & Collision Avoidance System (C&CAS) that uses proven Vehicle-to-Vehicle (V2V) radio technologies to enable proximate aircraft to avoid mid-air collisions by being able to ‘see’ and communicate with each other.

The companies have entered into an agreement to collaborate in the development and marketing of products to provide aerial management, control, tracking, collision avoidance and density control for manned aircraft and Unmanned Aircraft Systems (UAS). The companies agree that the emerging and fast-growing world-wide market need for high-end technology to enable high volume airborne vehicle operations could be met with a suitable solution provided by the synergy of both company’s products and marketing efforts.

*“A decentralized, onboard collision avoidance capability is a key element if the UAV industry is to achieve its full business potential,” says Moshe Cohen, Ciconia’s Founder and CEO. “We believe that conflict management and collision avoidance capabilities at the vehicle level are essential elements of an efficient ATM/UTM/UAS-NAS concept. Decentralized collision avoidance, based on shared data by all aerial vehicles in a given airspace (ID and location) via radio, is the only means to enable safety of flight together with extensive use of the airspace.”*

Ciconia specializes in decentralized conflict management and collision avoidance systems for aerial platforms. Ciconia’s innovative C&CAS has been successfully evaluated through both simulations and live flight tests.

RelmaTech specializes in secure global solutions for real-time vehicle/device identification, tracking and situational awareness across multiple applications. Enabled by a small light weight, low power, low cost, module that can be easily installed on all types of UAS, RelmaTech’s innovative Secure Integrated Airspace Management (SIAM) system is unique in that it provides Remote ID and tracking capabilities with minimum latency in both networked and non-networked environments. All UAS flown in the recent NASA UTM TCL4 program in Reno, Nevada were fitted with a SIAM module.

*“Robust V2V communications, over which all aerial platforms operating in a given airspace can share traffic information, is an enabler for evolving future technologies and business applications,” adds Philip Hall, RelmaTech’s Co-Founder and CEO, and President of RelmaTech Inc. “In the Nevada NASA TCL4 trials we not only successfully demonstrated to NASA and the FAA how SIAM provides network and broadcast Remote ID and live tracking of UAS, but also how the same radio technology on the SIAM module facilitates direct V2V communications.”*

Safety and Security are the two critical considerations for the development of the UAV industry. The characteristics of the two are similar, though not identical. Security has received priority attention to date due to an increasing number of high-profile incidents, resulting in considerable effort being invested by ASTM F38 in setting a standard for the radio transmission of Remote ID. Safety requires

similar urgent attention; the potential for midair collisions between aerial platforms in congested urban traffic is a major concern, and will remain so even when new sophisticated new ATM/UTM systems are in place.

*“While planes and helicopters are easy to see, many drones have small signatures and operate in electrically noisy environments, which make their detection quite difficult. It is not practical to achieve the high rate of detection required to secure safe air traffic by means of DAA (Detect and Avoid),” explains Cohen. “Thus, the only method to achieve a high rate of detection that is stable and predictable in real time – which is also critical for security – is via radio transmission whereby each platform transmits its ID and location and each platform receives the transmissions from its surrounding platforms.”*

The companies agree that, to ensure the safe integration of UAS into the National Airspace, each platform has to have a C&CAS: an algorithm shared by all to resolve a conflict and avoid midair collision, a robust V2V communication capability, a human interface to display the flight steering cues to pilots, remote and onboard, and in the case of UASs, an autopilot interface. Ideally, regulators and industry need to set the regulations and standards for Remote ID in such a way that the Remote ID radio would fit the requirements of collision avoidance as well. If treated separately, new standards for Remote ID radios may not cover the application of a collision avoidance radio, potentially requiring drone manufacturers to install two radios on their drones instead of one.

*“By considering the objectives of Remote ID and collision avoidance simultaneously, we believe we have a solution where one radio can serve both,” say Cohen and Hall. “That RelmaTech has a V2V solution that supports Ciconia’s collision avoidance software and is embedded within its SIAM Remote ID and tracking capability is a huge step forward, especially when RelmaTech’s technology pre-empts the soon-to-be-published ASTM F38 standard for UAS Remote ID.”*

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**About Ciconia:** *Ciconia specializes in collision avoidance systems for aerial platforms. Ciconia has developed unique algorithm capabilities that enable near zero positive and negative false alarm rates for collision avoidance systems it produces. Headquartered in Ness Ziona, Israel with representation in the United States (Ciconia US Inc.), Ciconia services and capabilities include development of integrated solutions comprising Ciconia and third party products, applications, resources and services.*



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**About RelmaTech:** *RelmaTech is a private technology development company specializing in secure integrated spatial management solutions for autonomous and semi-autonomous vehicles and mobile device operations in any environment. Global solutions handle real-time and historic location data for the purpose of vehicle/device identification, live tracking, situational awareness and evidence management across multiple applications. Headquartered in London, UK with representation in the United States (RelmaTech Inc.) and Australia, RelmaTech's solutions have proven successful in applications that include commercial drone flight operations in collaboration with both civil and military air-traffic control.*



For more information, visit us at [www.relmatech.com](http://www.relmatech.com) or contact us at [enquiries@relmatech.com](mailto:enquiries@relmatech.com)



UAS fitted with a RelmaTech SIAM module (small white box), NIAS-NASA UTM TCL4 Operations, Reno Plaza, Downtown Reno, NV – May 2019