



Open the Skies

For safe and dense usage

Company Presentation | April 2025

Executive summary



Ciconia and the C&CAS (Coordination & Collision Avoidance System)

- Most of the sky reserved for safety buffers
 - Supply of airspace falls short of the demand
 - Aircraft collide
- Only the C&CAS is capable of both:
 - Safely increase air traffic density
 - Reduce rate of midair collisions

} Others tried and failed

Ciconia's C&CAS enjoys a significant competitive advantage
- Potential global market size: over \$2 billion
- Identified, ready and large, entry market: aerial firefighters
- Dedicated, experienced, multi disciplinary team
- First users and pilot programs
- Sales in 2026 – first responders
- Brief history
 - Founded in 2016 with focus on the defense market
 - 2016 & 2021 Successful C&CAS flight tests onboard IAF (Israeli Air Force) Blackhawks
 - Since 2022, focused on commercial and first responders' markets
 - 2022 – 2024 – BIRD foundation program (\$0.5m grant)
 - December 2024 Texas, C&CAS real flight demo onboard crewed & uncrewed
 - 2024 strategic cooperation with Qualcomm
 - 2025:
 - San Bernardino County Fire Authority (SBCFA) and Ciconia agreed to conduct a C&CAS pilot program onboard SBCFA's aerial firefighters
 - Successful flight test of the C&CAS onboard an Israeli fire fighters' squadron's Air Tractor (operated by Elbit) and a drone
 - Elbit selected the C&CAS to be installed onboard all their Air Tractors.
 - IAF initiate a process to equip its helicopters' fleet with the C&CAS

Ciconia is raising funds for sales and installations in 2026

Agenda

Executive summary

Ciconia's Vision

The Problem

Ciconia's Solution

C&CAS

Acquiring data & AI anlysis

C&CAS Aircraft Integration

The Unique Patented Algorithm

Benefits for C&CAS users

Alternative solutions

C&CAS vs ACAS sXu

The Market

Market entry strategy

The Team

Testimonials

Model Assumptions



Dec 2024, C&CAS flight test, Tx

Ciconia's Vision

Opening **low altitude skies** for dense aerial operations
Crewed and uncrewed aircraft operating safely and simultaneously



Drones, helicopters and fixed wings are not authorized to operate together, close to each other, in a confined airspace, day and night



This multi-billion dollar new aviation industry will be profitable only if drones, helicopters, fixed wings and future air-taxis can operate safely and freely close to each other

The problem (cont.)



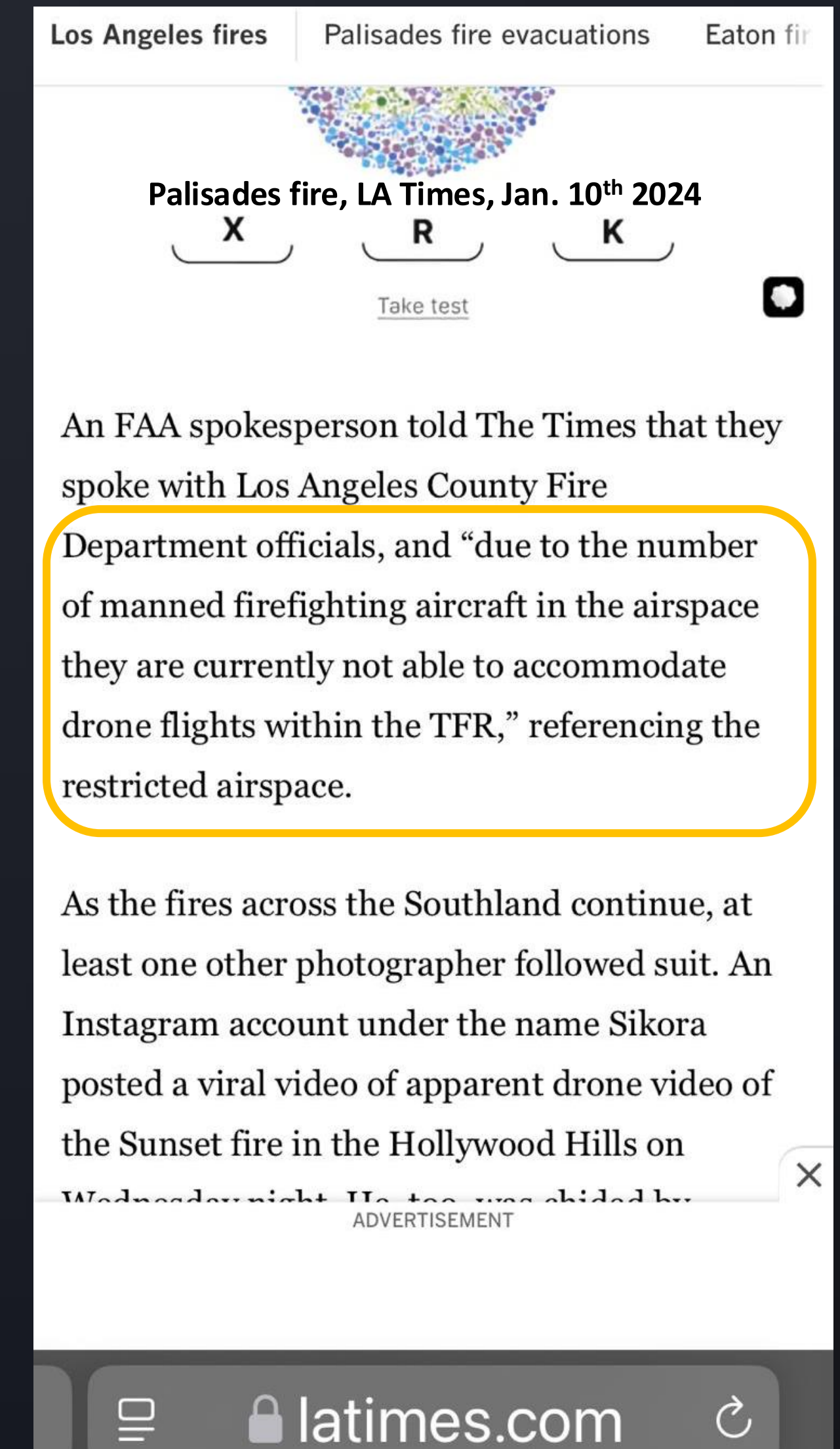
The commercial use of drones is limited:

- Most airspace is reserved for safety margins
- Drone delivery centers cannot benefit from economies of scale

The problem (cont.)

Due to concerns about midair collisions:

- Only limited number of aircraft can be launched at a fire site at the initial attack phase and after
- Fire fighters can't use drones and crewed aircraft at the same scene



Los Angeles fires | Palisades fire evacuations | Eaton fir

Palisades fire, LA Times, Jan. 10th 2024

X R K

Take test

An FAA spokesperson told The Times that they spoke with Los Angeles County Fire Department officials, and “due to the number of manned firefighting aircraft in the airspace they are currently not able to accommodate drone flights within the TFR,” referencing the restricted airspace.

As the fires across the Southland continue, at least one other photographer followed suit. An Instagram account under the name Sikora posted a viral video of apparent drone video of the Sunset fire in the Hollywood Hills on Wednesday night. He too was chided by

ADVERTISEMENT

latimes.com

The problem (cont.)

Aircraft collide

A drone and a helicopter collided in Kerr County Texas on July 7 2025, at the flooding rescue operation

SAN ANTONIO NEWS | TEXAS HILL COUNTRY

'Entirely preventable': Drone collides with emergency helicopter in Kerr County

The helicopter was forced to make an emergency landing, officials say.

By [Melanie Salazar](#), Digital Trending Reporter
July 8, 2025

Palisades fire, LA Jan. 2025, a drone penetrated the wing of the 'Super Scooper' aircraft

≡ **CNN US** Crime + Justice

Canadian 'Super Scooper' plane grounded after hitting civilian drone over Los Angeles wildfires

  By [Pete Muntean](#), [Kelly McCleary](#) and [James Legge](#), CNN
🕒 4 minute read · Updated 9:21 PM EST, Sat January 11, 2025



 WATCH LIVE **California, Aug. 2023, 2 firefighters helicopters collided**

3 victims identified after firefighting helicopters collide midair in Riverside County

By [Jaysha Patel](#), [Rob McMillan](#), [Leanne Suter](#), and ABC7.com staff 

Thursday, August 10, 2023



Ciconia's Solution



With Ciconia's C&CAS (Coordination & Collision Avoidance System), aircraft operate safely and freely, close to each other



Jan 18th 2023, C&CAS flight test, Israel The helicopter & the drone are 300 feet apart

The C&CAS was successfully flight tested by the IAF FTC (Israeli Air Force Flight Test Center) onboard helicopters and drones

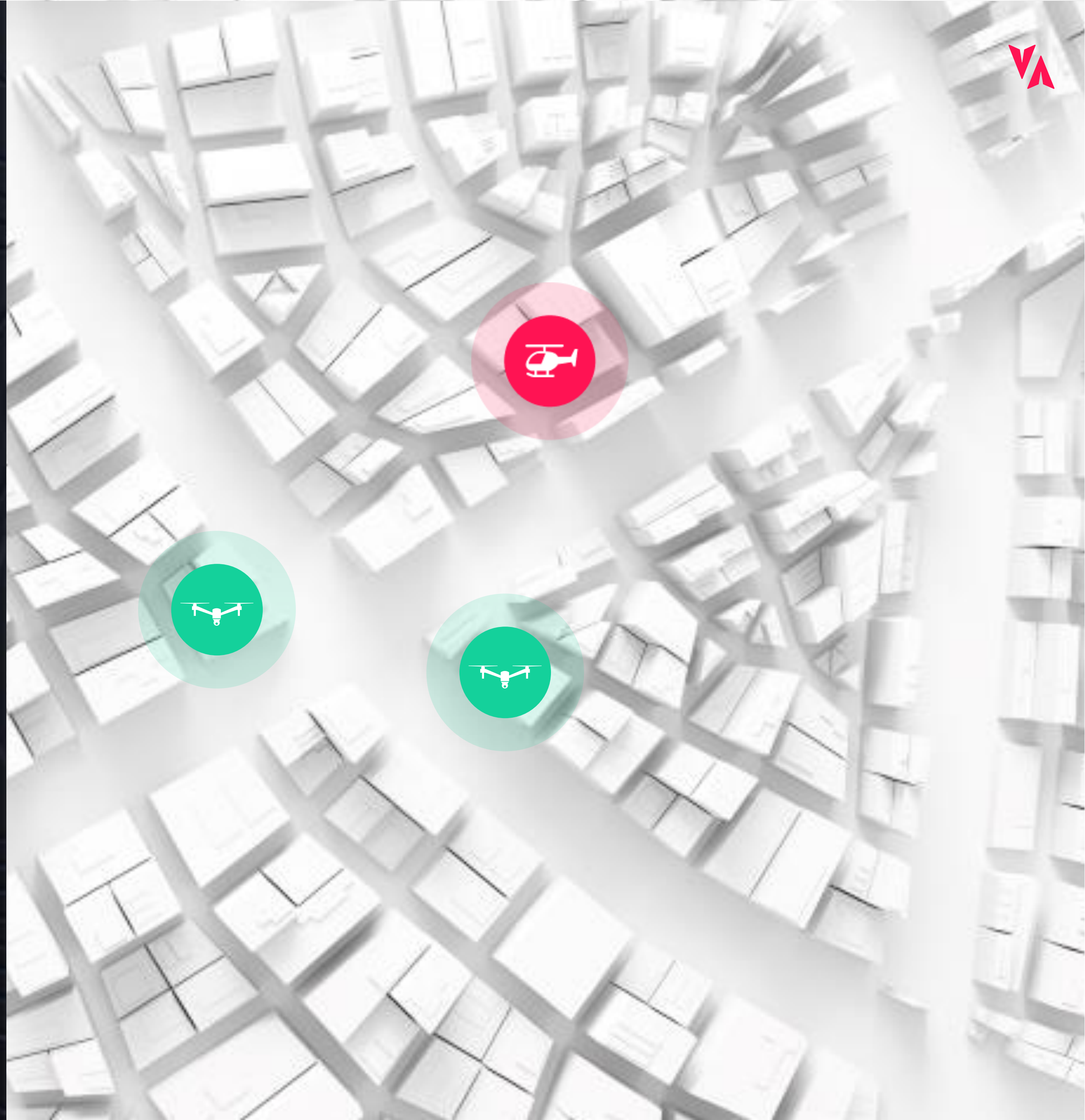
Ciconia's Solution

The decentralized C&CAS (Coordination & Collision Avoidance System)

- Safely increasing numbers of airspace users by more than tenfold
- Successfully tested onboard drones and helicopters
- Reduces the risk of midair collisions
- Designed for military and civilian operational characteristics

Involvements

- UTM, AAM activities
- Member of ASTM, RTCA, industry partners



Ciconia's Solution



The C&CAS is the only CAS (Collision Avoidance System) that is capable of resolving midair conflicts between all aerial platforms operating in the low altitude, even when flying in dense, dynamic and unpredictable aerial traffic such as aerial firefighting!

The C&CAS resolves conflicts between:



Crewed & Uncrewed
aerial vehicles



Uncrewed & Uncrewed
aerial vehicles



Crewed & Crewed aerial
vehicles



C&CAS aircraft & non-C&CAS
– ADS b out aircraft



C&CAS drone & non-C&CAS
– ADS b out aircraft

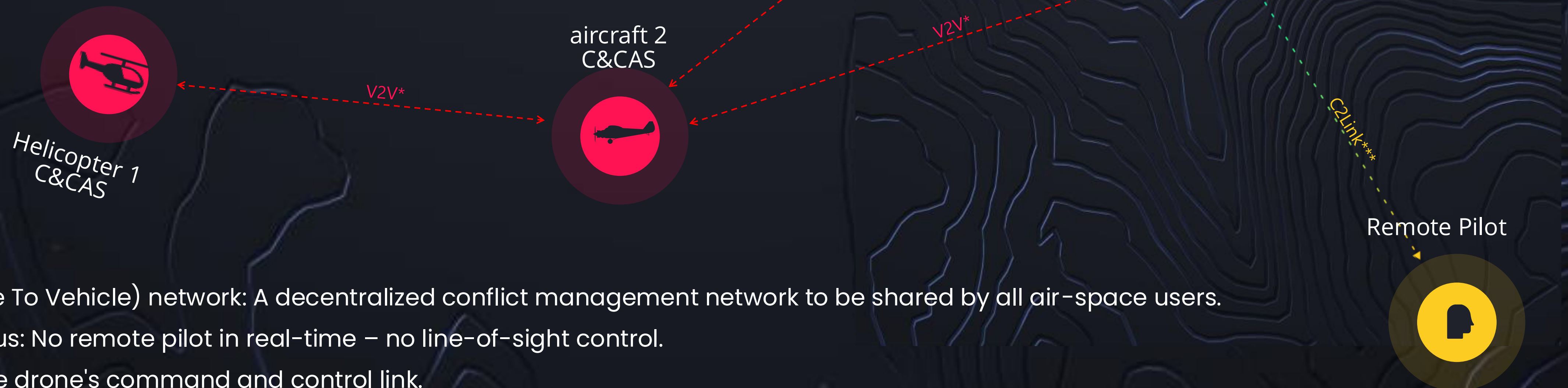


C&CAS aircraft & non-C&CAS
– RID drone

A C&CAS aircraft won't collide with another aircraft, non-C&CAS or C&CAS

C&CAS – a Decentralized Coordination & Collision Avoidance System

- Receives neighboring vehicles' ID, coordinates and vectors via V2V* and other sources
- Analyzes the risk for a midair conflict / collision
- Produces steering commands for ownship
- Introduces the steering commands to ownship's pilot, remote and onboard
- 'No pilot on board' - Injects the steering commands into ownship's autopilot and notifies the remote pilot

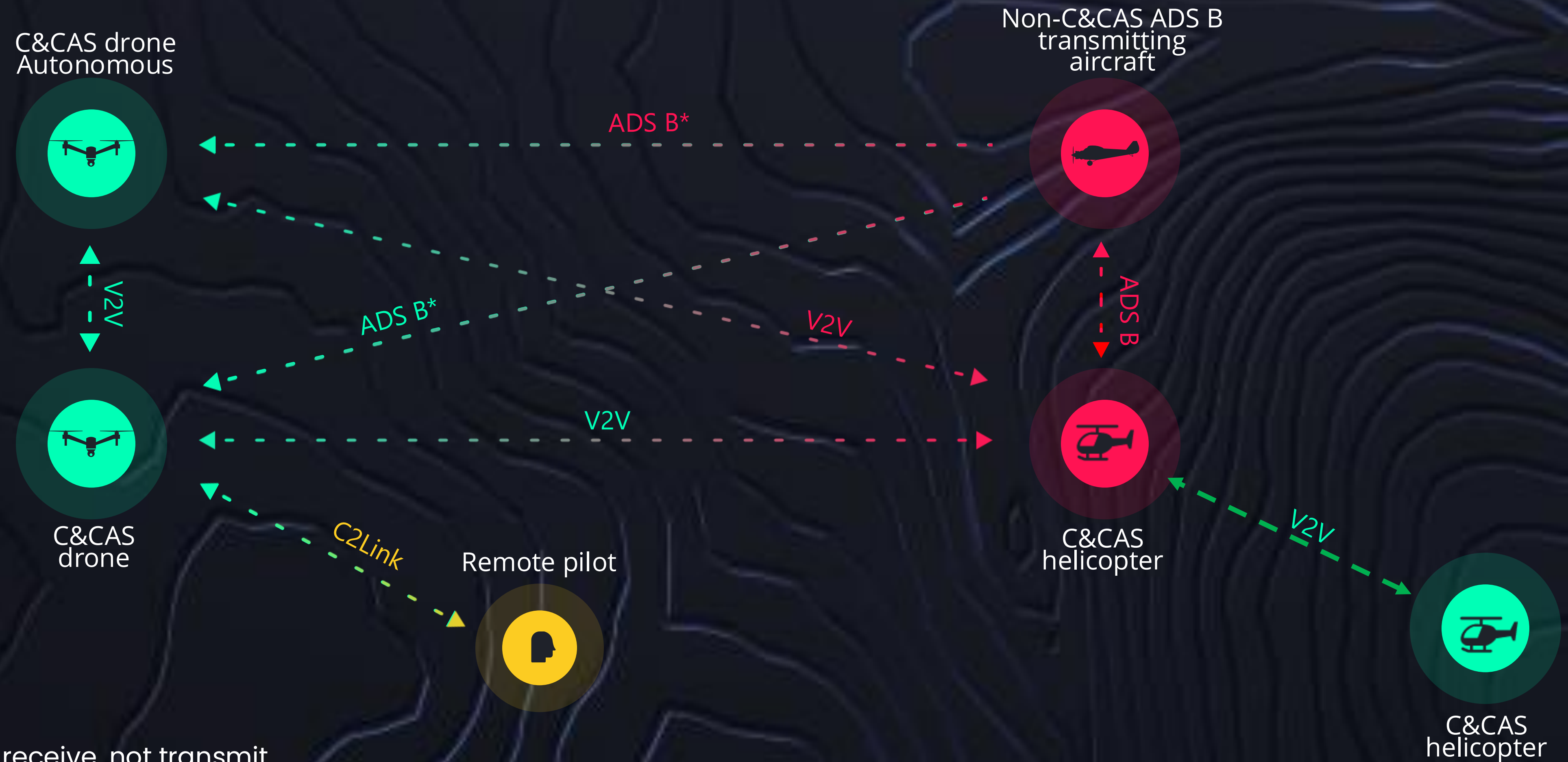


*V2V (Vehicle To Vehicle) network: A decentralized conflict management network to be shared by all air-space users.

**Autonomous: No remote pilot in real-time – no line-of-sight control.

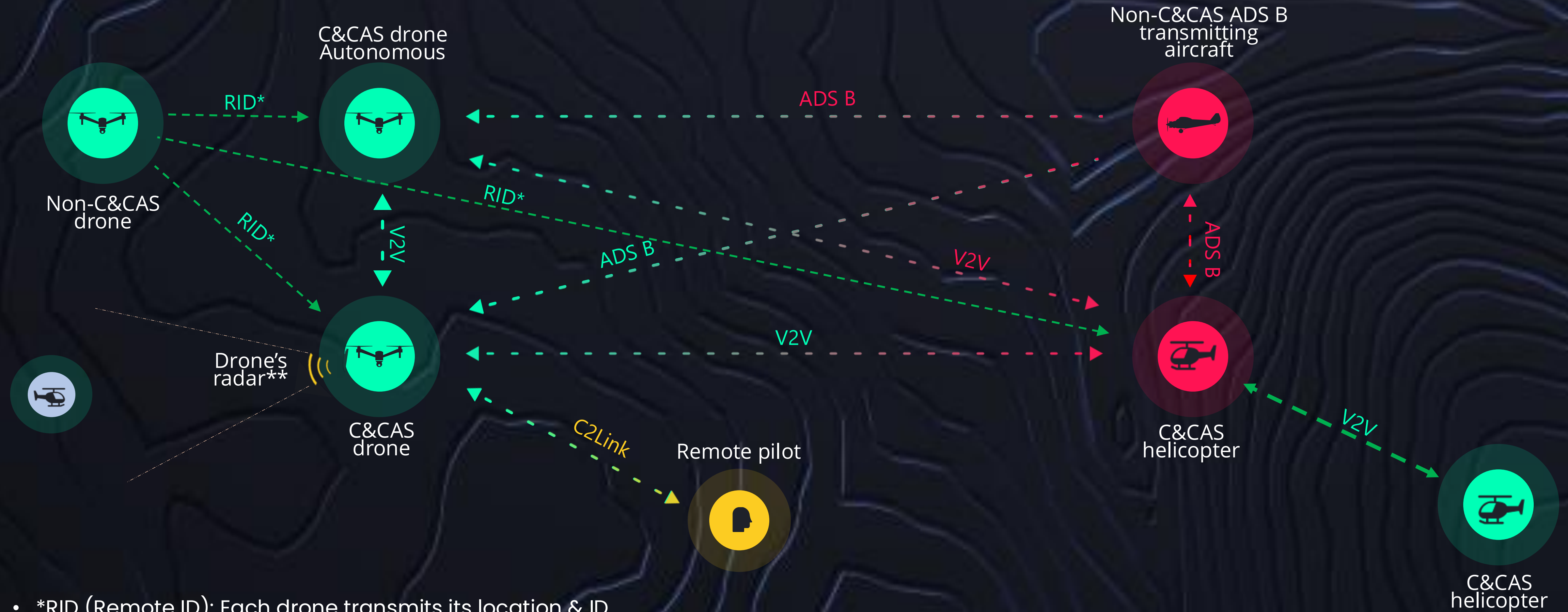
***C2Link: The drone's command and control link.

C&CAS receives data from other sensors: ADS-b out



*ADS B: small UAVs can only receive, not transmit

C&CAS receives data from other sensors: ADS-b out, RID, RADAR



- *RID (Remote ID): Each drone transmits its location & ID
- **incase the drone is equipped with a radar
- ***Optional, Off-line, C&CA verification and upgrades

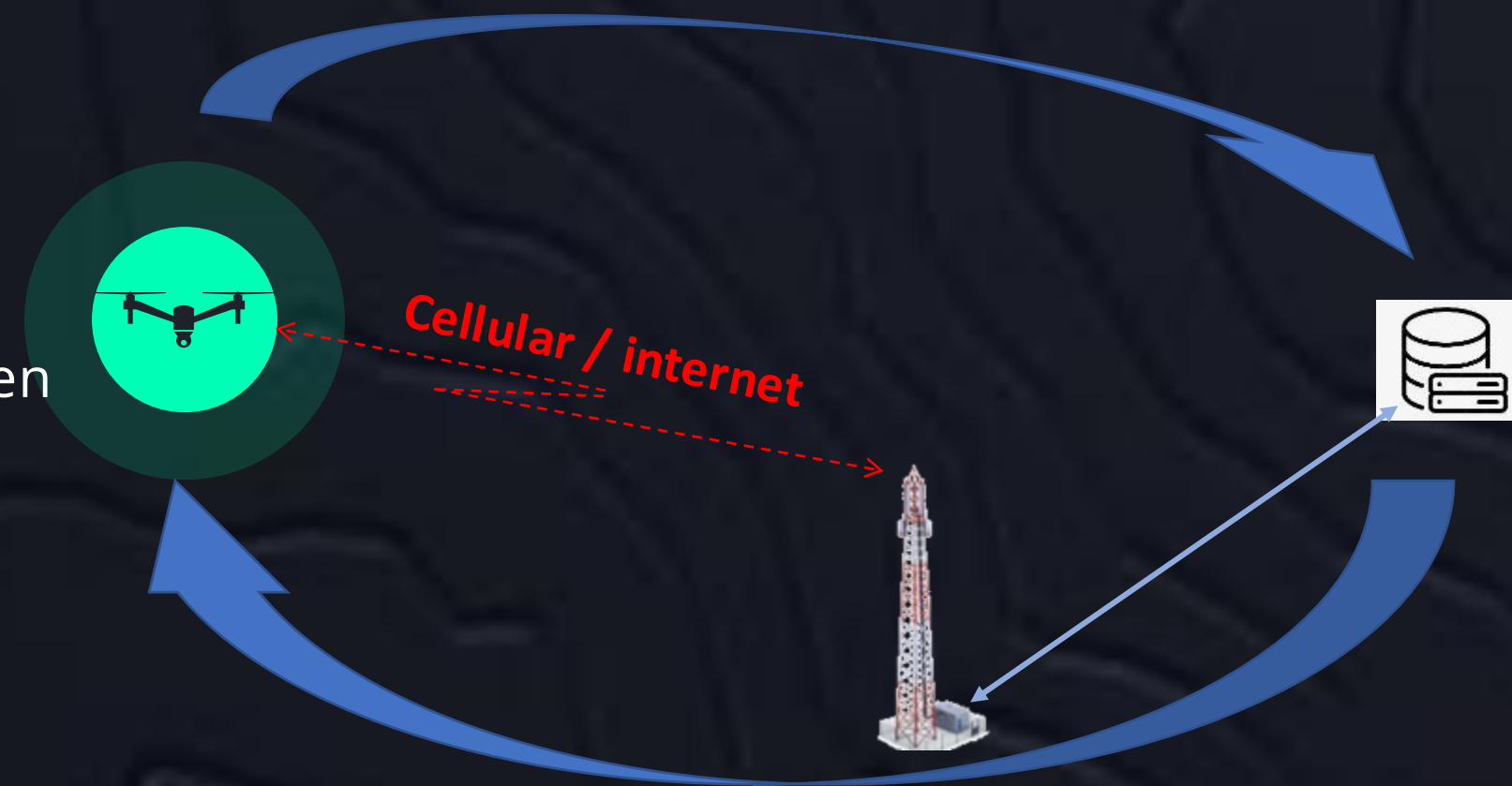
The C&CAS competitive advantages:



- Low rate of false alarms
 - Pilots won't tolerate false alarms
 - False alarms come at a high cost (add complexity, consume flight time, wasting energy)
- Designed for, and tested in, dense, dynamic and unpredictable aerial traffic

Unique valuable data & AI / ML analysis:

C&CAS units onboard aerial platforms will log their flight data and download it automatically, when possible, to a C&CAS server



AI / ML analysis will produce:

- Libraries of encounters
- C&CAS improvement options
- Local community members' lists

C&CAS application will lower operation costs:

- Less flight time spent on midair conflict resolution
- Less mis-handling mission by delivery drones
- More air vehicles at a given time in a given space

C&CAS Aircraft Integration

- Multiple options for aircraft/system integration from software only to a self-contained system
- Smart, user friendly, interface to allow for parameters change to fit inter fleet usage



The Unique Patented Algorithm

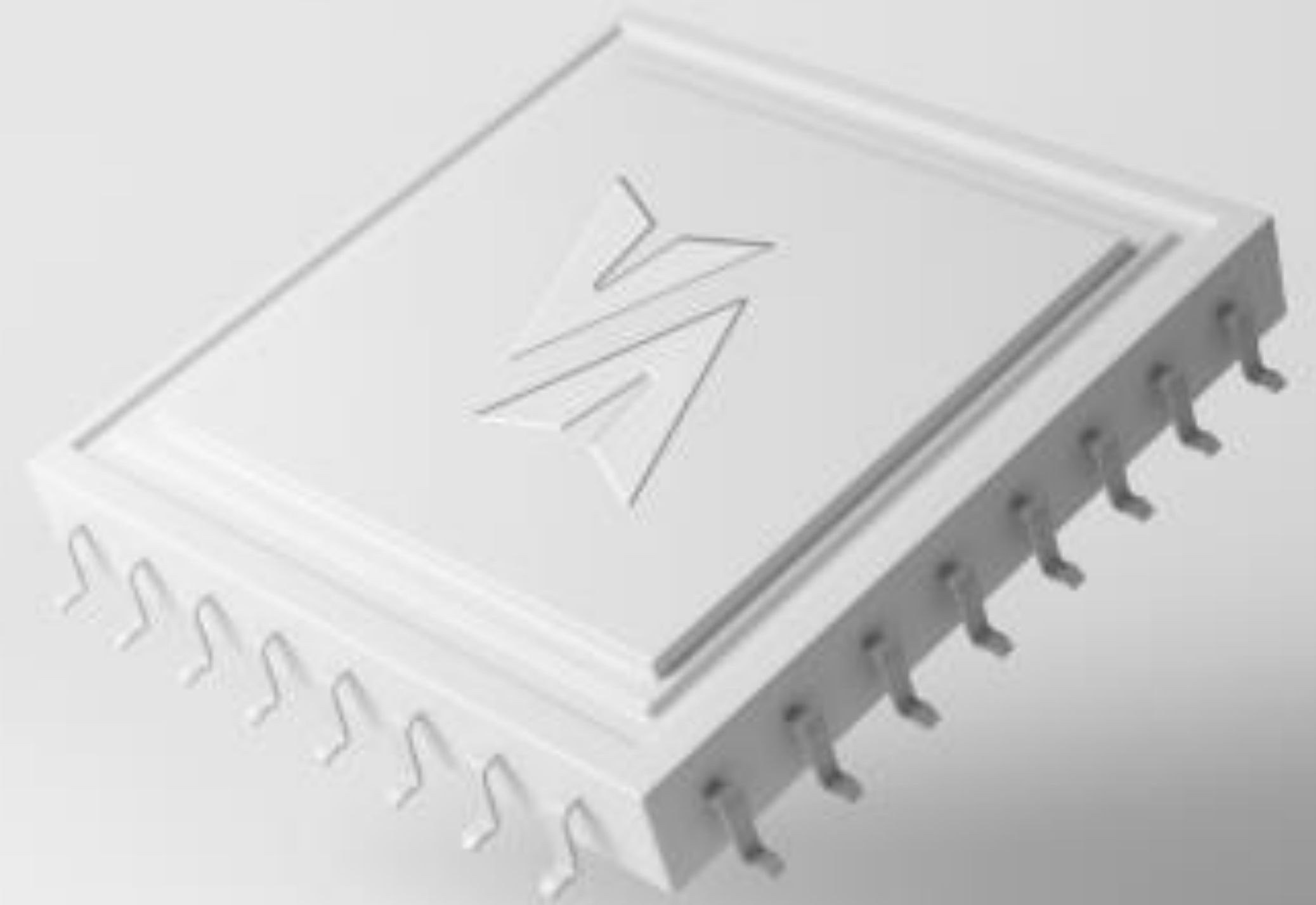
- At the 'heart' of the C&CAS is its unique, patented algorithms that prevent collisions
- Efficient even in dense and complex traffic conditions
- Success where all other systems failed

C&CAS past tests & evaluation:

- Simulations
- Off line tests
- Test flights onboard helicopters and drones

Patents:

One registered in Israel and the US, second is confirmed in the US and pending in Israel.



Benefits For C&CAS Users

- Very low probability of midair collision with unmanned & manned aerial vehicles
- Can execute its mission with minimum interference, even in dense air traffic scenarios
- Low cost, low power consumption, no / little additional weight
- First responders can safely operate all their aerial fleet, manned and unmanned, simultaneously at the same dense site to fight fire and save firefighter's lives
- Delivery drone's operators can operate a large number of drones from a single fulfillment center
- Smart prediction mechanism allows for early minor inputs to evade midair conflicts
- Fire fighters will:
 - be able to extinguish many more fires at the initial attack phase
 - operate crewed and uncrewed, of all types, safely and effectively at the same site
- Drone delivery centers will operate many more drones to deliver many more goods to customers



Only a decentralized DAA based on a direct V2V radio network is capable of securing safe and dense aerial operations by all: crewed, uncrewed, small, and large aerial vehicles



Alternative solutions:

Regulation: "keep them apart"	Uneconomical requires large safety buffers of time and space
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Onboard sensors (Radar, EO**)	Not compatible for sUAS due to SWPP* and rate of detection
----------------------------------	--

Centralised DAA	Uneconomical requires large safety buffers of time and space
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Ciconia is the market leader in decentralized V2V based DAA

*SWPP : Size, Weight, Power, Price

**EO: Electro-Optical



C&CAS vs ACAS sXu



- Short latency
- Allows for dense operations by a mixed fleet (crewed & uncrewed aircraft), 2 ways coordination
- Prevents midair collisions between formation flying firefighters' aircraft

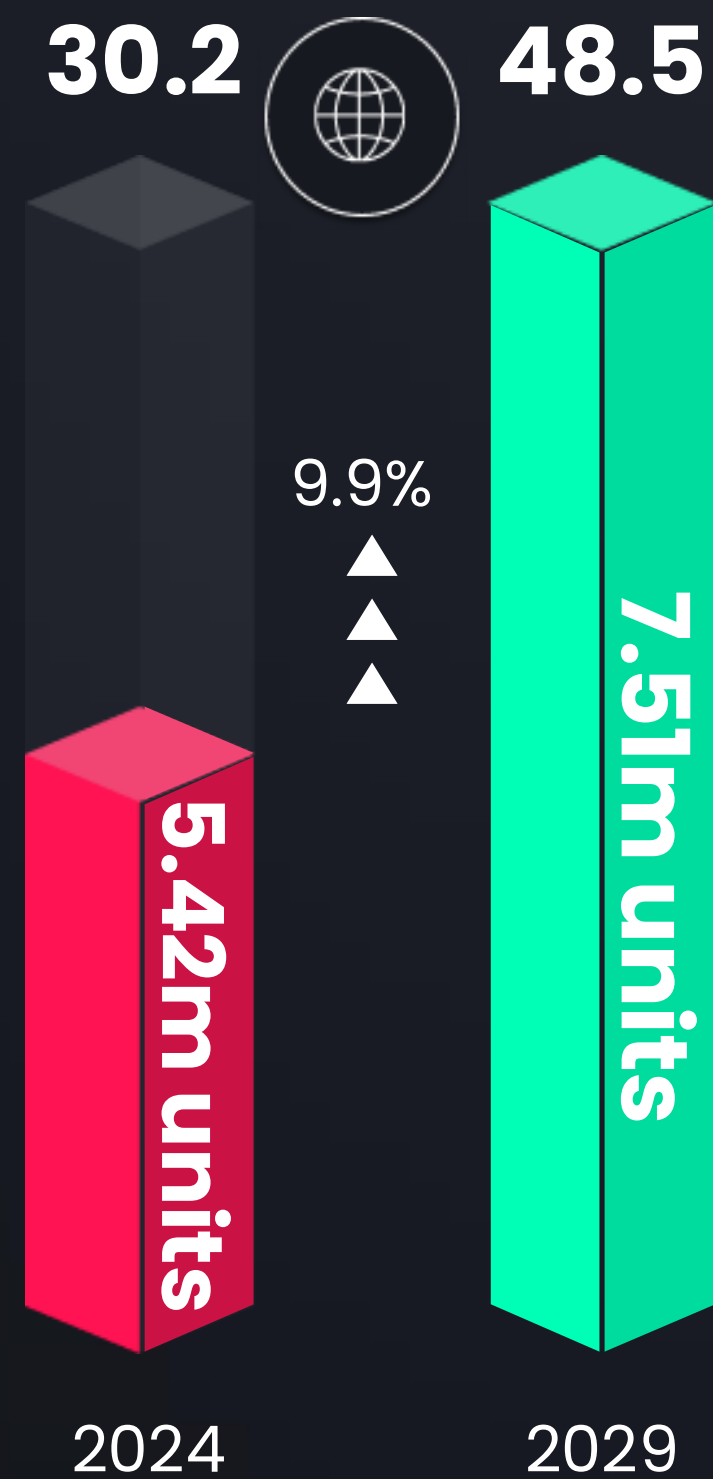
C&CAS application will lower operation costs:

- Less flight time spent on midair conflict resolution
- Less mis-handling mission by delivery drones
- More air vehicles at a given time in a given space for commercial & 1st responders' scenarios

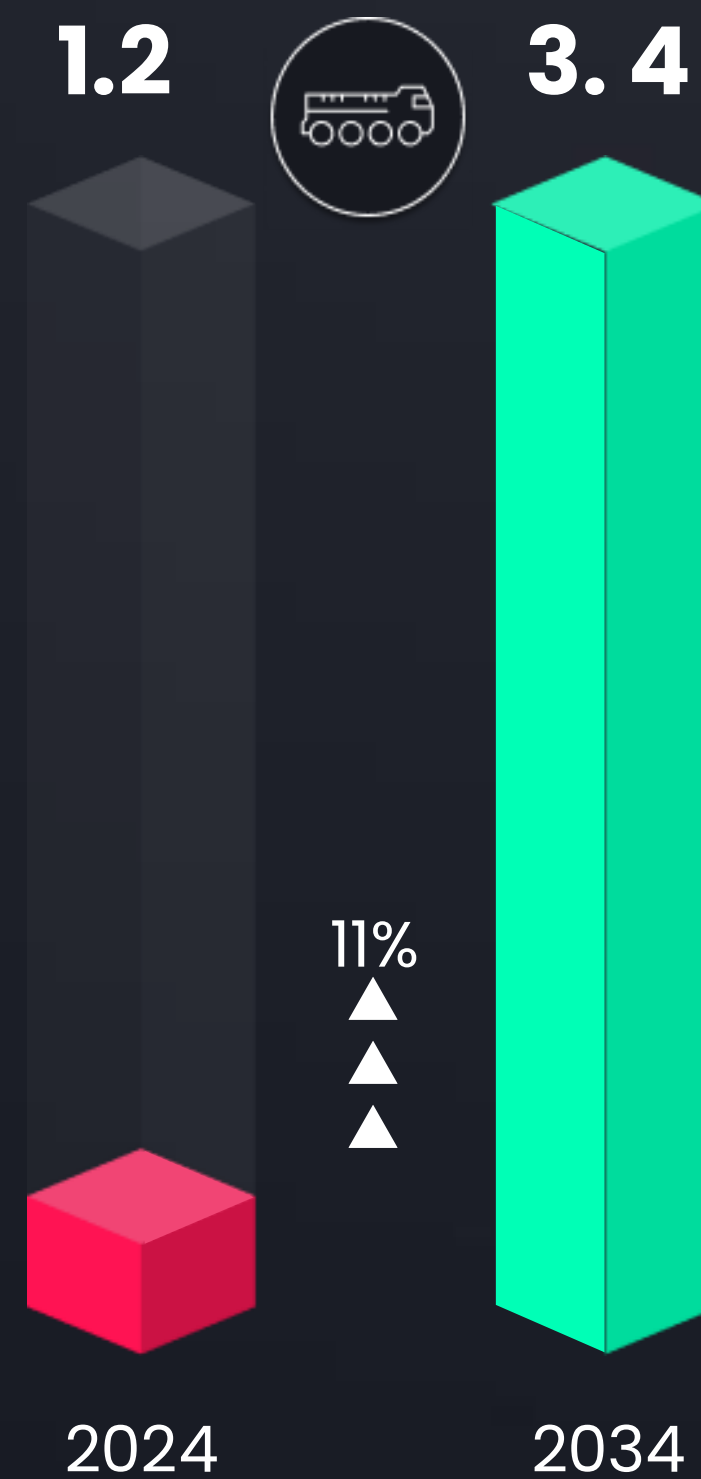
The UAV* Market**



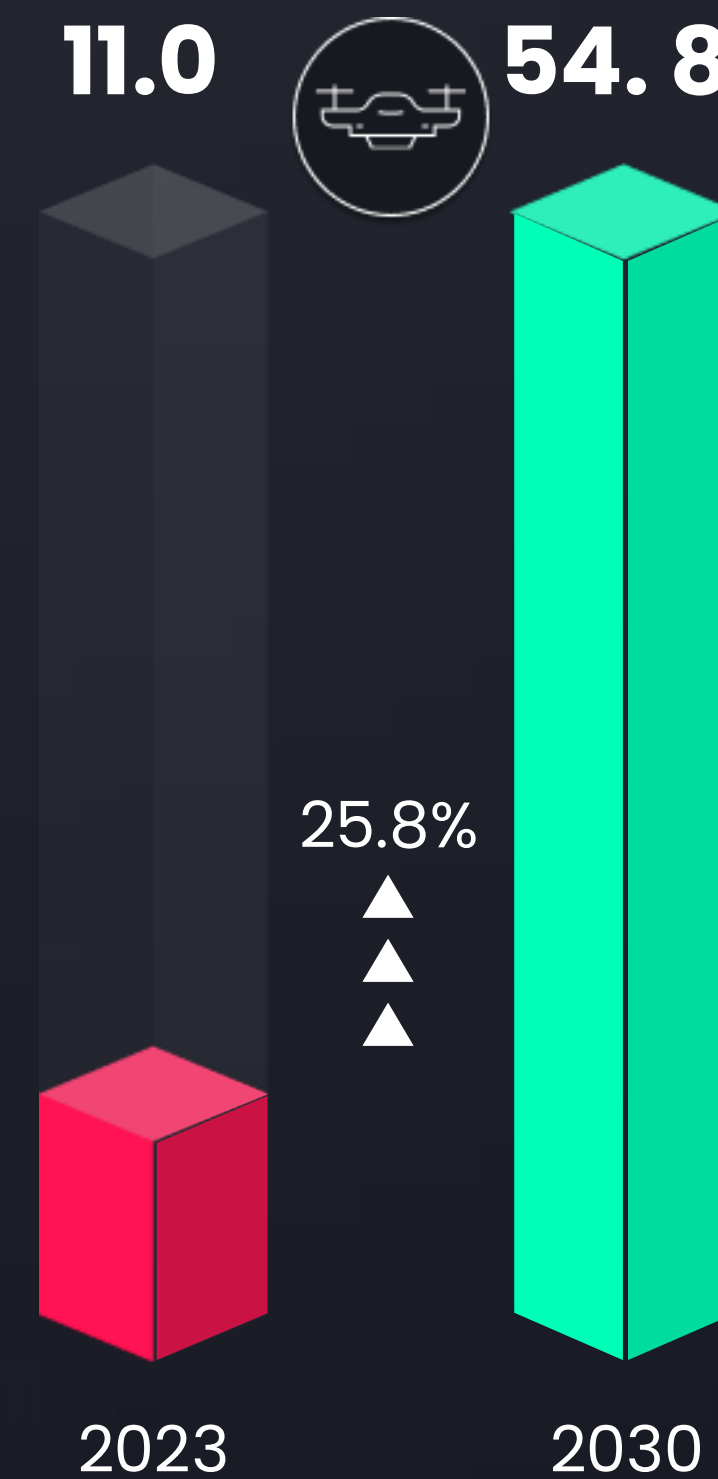
UAV Global Market***



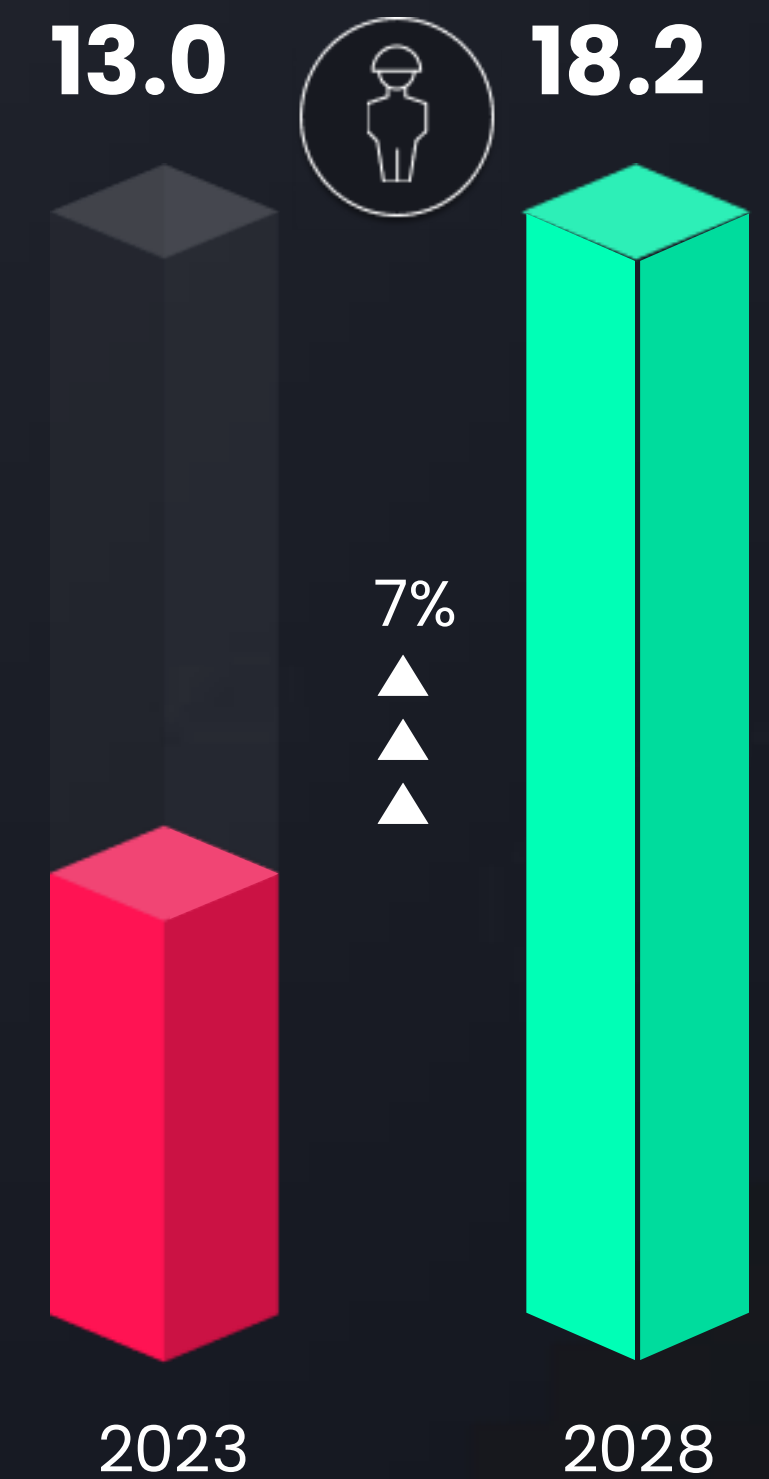
Public Safety Drone Market



Commercial Drone Market



Military Drone Market



Source



*UAV – Unmanned Aerial Vehicle (drone)

**In billions USD

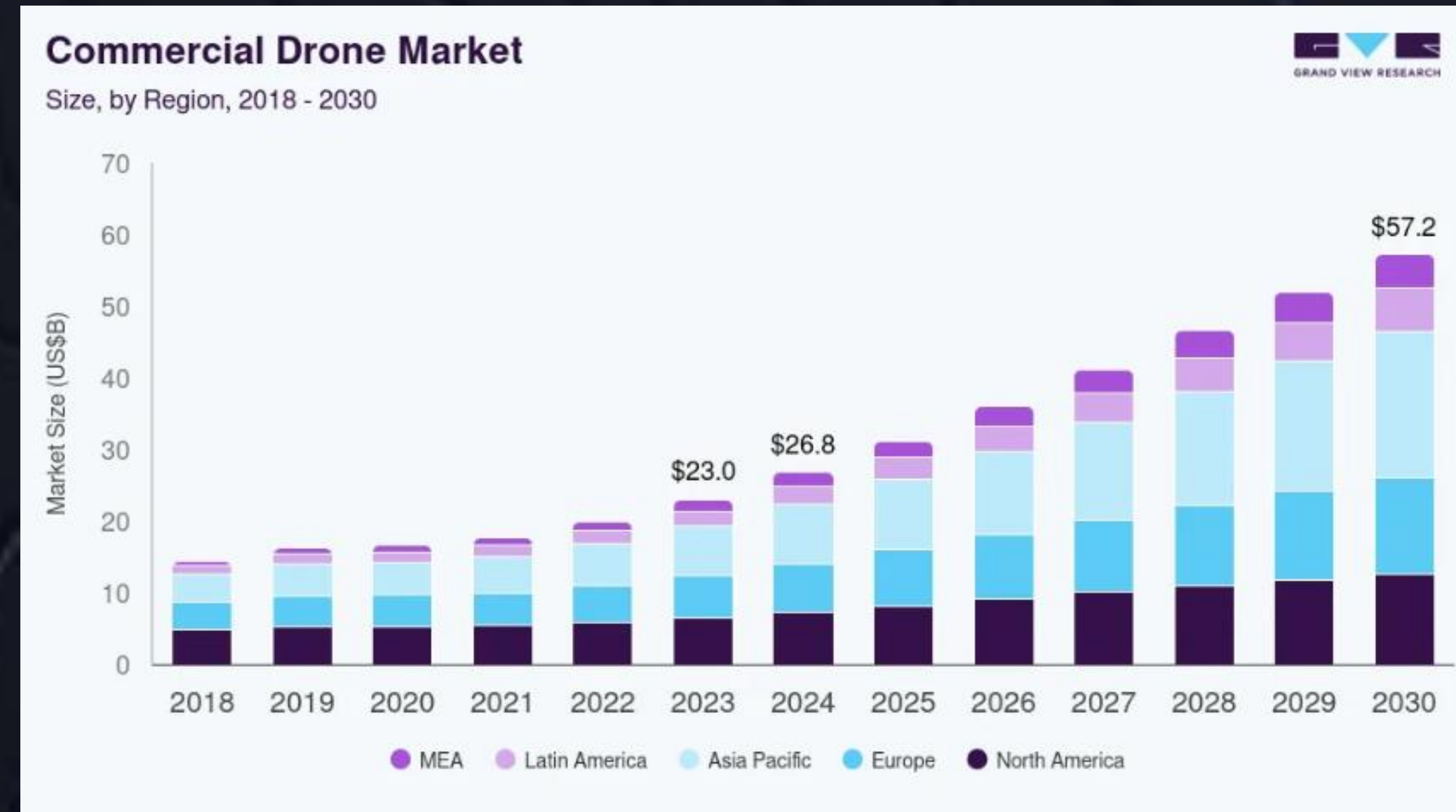
***Excluding military

The UAV Market: another view



Grand view research

Forecast period: 2025 - 2030



ChatGPT Sep. 2025:

Global Market of UAV, in 2031, excluding military:

- Commercial: 24,000,000 drones
- First responders (public safety): 1,000,000

The C&CAS Market



The C&CAS revenue strategy

- A combination of
 1. Subscription Model – monthly recurring fee for access to the C&CAS software, updates and related services
 2. Usage – Based Model: charge based on amount of usage
 3. One time fee
- For simplicity, we use the subscription model for the next slides



C&CAS demo, Firefighters use case. The helicopter and the drone are 350 feet apart .

Feb. 26th 2023, INDI (Israel National Drone Initiative) Israel

The C&CAS Market size*



The C&CAS's global drones' market size* 2031: \$2.886B



➤ Assumptions:

1. More than 12 million UAV in 2031
2. 4 million drones will have to have a collision avoidance system in 2031
3. \$60 a month licensing fee per drone

➤ C&CAS market size in 2031*: $4m \times 60 \times 12 = \$2.88B$

The C&CAS's fire fighters' drones' market size, 2031: \$0.74B

➤ In the US 30,000 fire departments

➤ Assumptions:

1. Each fire department will use 12 drones in 2031
2. \$60 a month licensing fee per drone
3. The US aerial fire firefighting market is 35% of the global

➤ C&CAS global fire fighting market size in 2031: $30k \times 12 \times 60 \times 12 / 0.35 = \$0.74B$

*Excluding C&CAS for crewed aircraft and excluding the military market

Market entry strategy



“Drones are One of Five Key Innovations to Protect Forests from Increasing Wildfire...”

Dronelife July 25th 2024



Aerial Firefighting - the entry market segment

- With C&CAS onboard firefighters' aircraft:
 1. More aerial vehicles can safely operate simultaneous especially at the initial attack phase
 2. Crewed & uncrewed can safely operate together
 3. Aircraft will not collide
- NASA identified the C&CAS as one of the key technologies to enhance aerial firefighting safety, efficiency and effectivity (NASA ConOps)

The Aerial Firefighting market segment is ready for the C&CAS

Market entry strategy



NASA ConOps (Concept Of Operations), wildland aerial firefighting March 2024

Ciconia's C&CAS concept was adopted by NASA:

<https://ntrs.nasa.gov/citations/20240002399>

Paragraph 5.9.3.7, P/ 63 of the ConOps: *"Similarly, V2V2I equipment could be mandated for all wildland firefighting aircraft. In the desired future state, development of the C&CAS capability supported by the V2V2I communications system would include providing recommended course and/or altitude changes to operators of two aircraft approaching an advisory level proximity gate and within certain collision warning parameters, automatically initiating those actions to mitigate a collision."*

https://ntrs.nasa.gov/api/citations/20240002399/downloads/20240002399_Wildland%20ACERO%20ConOps.pdf

NASA is leading a national effort to develop the US aerial firefighting. The integration of crewed / uncrewed, for aerial firefighting, is identified by NASA as a key element to improve aerial fire fighting safety, effectivity and efficiency. **The C&CAS, according to NASA ConOps, would allow such an integration.**

After being used by fire fighters, the C&CAS entry barrier will be lowered

Market entry strategy



Q4 2025	Q2 2026	Q1 2027	Q2 2028
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➤ C&CAS pilots at firefighters (San Bernardino and else)

➤ C&CAS sales to aerial firefighters

➤ Commercial

Infrastructure inspection (powerlines, oil lines, railways)

Maps, photogrammetry

Drones' delivery

➤ Military

Israeli Air Force

US Army

➤ AAM (Advanced Air Mobility, Air Taxis)

Market entry strategy



C&CAS promotion

- A US partner: Sagetech Avionics, avionics equipment provider
- Strategic cooperations
- FAA, CAA (Civil Aviation Administration), NASA
- Demos and flight tests and evaluations at customers' sites (San Bernardino County Fire District, Helistream, Alamo, LA County Fire Department, Cal Fire, Israel Fire Fighters' Squadron)
- Strategic agreements with drones' providers
- Strategic agreements with avionic providers



The drones, steered by the C&CAS, is giving the way to the helicopter. Texas Public Safety Drone Expo. Dec. 12th 2024

Leadership



Moshe Cohen, CEO

Col. (ret) former Israeli Air Force
Cobra & Apache squadrons
commander, 20 years of industry
management and BD



Ilan Zohar, CTO

PhD-Unmanned Air Systems Control,
LtColonel (ret) former IDF elite
technology unit, electrical engineer
and drones expert



Gil Yannai, VP BD

LtCol. (ret) former IAF Flight Test
Center Commander, Experimental
Test Pilot, varied and extensive
industry developmental and
managing roles



Doug Coates, Director US operations

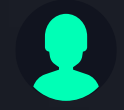
Product Launch Specialist. A veteran
of multiple start-ups launching
products in the aerospace,
automotive and commercial/military
satellite communications industries.

The Team



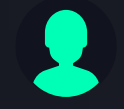
Misha Poyarkov

Senior software architecture engineer



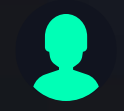
Eran Bar-on

Test pilot, flight tests manager,
algorithms engineer



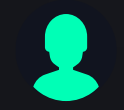
Ronen Stoffman

IAF Flight Test Engineer & system
engineer



Nick Shrayner

Senior software engineer



Eran Nir

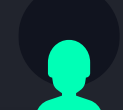
Algorithm specialist

Advisory Board



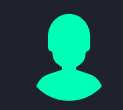
Charles Werner

Drone responders founder. A leader and advocate on public safety UAS. A veteran of public safety as a firefighter, fire chief, emergency manager with leadership experience at local, state, and national levels. An international speaker and author with over 300 public safety, UAS related articles.



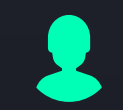
Doron Appelboim

A leading expert in UAS: platforms, applications, and logistics. Worked for high-profile companies in the UAV industry, including Amazon (7 years) in the UAV program and IAI.



Ran Buck

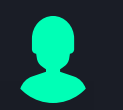
Taboola CRO, over 25 years of BD and management in leading high-tech and traditional industries, DC AA certified, IAF Alumni with 30 years flight experience



Yehuda Yuval

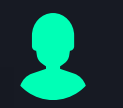
Many years of successful entrepreneurship, CFO of large corporations, experienced businessman.

Senior Consultants



Mark Bathrick

Retired Navy Captain, Navy fighter pilot, experimental test pilot, managed the DOI aviation operations nation wide, (66,000 flight hours, 20,000 employees, 1,200 crewed and 850 uncrewed aircraft, a senior consultant at NASA, a distinguished speaker and author of professional articles



Dan Reese

20 years of leadership experience in aerial wildfire and aviation program management to include managing the operational integration of the 747 Supertanker and CAL FIRE Deputy Chief of Tactical Air Operations





Ciconia's team during flight test with IDF officers' presence

Testimonials



Pilot testimonial:

“The C&CAS remains silent throughout the flight - even during extreme maneuvers, terrain-following, and unpredictable flight. It intervenes only in high-risk scenarios, displaying evasive steering commands.”

Elan Frank
Chief Pilot



Dec 2024, C&CAS flight test, Tx

April 2024 press release

April 23, 2024

Press release: Ciconia's C&CAS is operating onboard Aerolane's aircraft

Ness Ziona, Israel.

On March 2024, two of Ciconia's C&CAS (Coordination & Collision Avoidance System) were integrated into Aerolane's aircraft. The C&CAS monitored the flight paths of the aircraft. The systems performed very well during several flight tests conducted in March. The C&CAS indications were exactly as planned, no false alarms, positive or negative were indicated.

Ciconia (<https://www.ciconia.flights/>) specializes in autonomous, decentralized midair conflict management. Ciconia developed the C&CAS, a low latency, decentralized CAS (Collision Avoidance System), to allow safe and dense aerial operations by all types of aircraft.

With C&CAS onboard, crewed and uncrewed of different types of aircraft can operate freely in a dense airborne environment. The C&CAS will resolve all midair conflicts. In case of crewed aircraft, the C&CAS will introduce evading steering commands to the pilots. In case of uncrewed aircraft, the C&CAS will either introduce to the operator steering commands or inject the evading steering commands directly to the autopilot. C&CAS's prototypes were successfully flight-tested onboard helicopters and drones.

Doron Appelboim, Aerolane's CTO said that the C&CAS functioned just as expected. "The C&CAS onboard Aerolane's aircraft is another safety layer independent of all other existing safety features. The C&CAS integration into our aircraft was a straight forward job. We didn't need much help from Ciconia's supportive team. We are looking forward to use the C&CAS in our next flights in the coming months".

Gil Yannai, co-founder and Ciconia's VP BD, an experimental test pilot and a Boeing 787 Captain, said that Ciconia's vision is to open the airspace for safe and free usage by all. "With C&CAS onboard, crewed and uncrewed, drones of all types, helicopters and fixed wing could safely operate together, in a confined area, even in limited visibility. The C&CAS will resolve all midair conflicts," he explained.

Ilan Zohar, PhD, co-founder and CTO said that the C&CAS is the only system capable of preventing midair collisions in complex and dense environments. "We are excited to cooperate with Aerolane and let Aerolane use our C&CAS".



C&CAS onboard 2 helicopters, the rear helicopter's steering command: 'turn left & climb'.
Flight test, Dec. 2023, Israel

Ciconia Ltd. Feldman 7/7 Ness Ziona Israel 7405807

<https://www.ciconia.flights/>
info@ciconia.flights +972 54 6510 908

A Press Release Regarding August 2021 Flight Tests

Brigadier General Matan Adin of the IAF:
the C&CAS has met the expectation

May 10, 2022

The IAF Flight Test Center (FTC) tested Ciconia's C&CAS onboard an IAF Blackhawk helicopter and a drone.

In July and August 2021, the IAF (Israeli Air Force) FTC (Flight Test Center) has tested the Ciconia C&CAS (Coordination & Collision Avoidance System) in real life scenarios.

An IAF Blackhawk and a drone, both equipped with the C&CAS onboard, were intentionally flown in conflicting routes.

The C&CAS managed the conflicts:

Provided relevant and timely indications to the operators (remote and onboard pilots).

Had the drone operators failed to react on time, the C&CAS would take control over the drone and steer it away and provide accurate and timely steering commands to the helicopter pilot in order to escape a midair collision.

According to Brigadier General Matan Adin of the IAF, the C&CAS has met the expectation, the system performed as planned and the concept proved to be feasible. "The unique, first of its kind flight test, was planned and executed very well by the IAF FTC and Ciconia's team. We will further study the results with our partners in the other branches and will soon decide of the measure to be taken to allow safe and efficient usage of the battlefield skies," said BG Adin.

Lieutenant Colonel Idan Chen of MAFAT (The Israeli Ministry of Defense R&D Center), who led the joint effort of MAFAT, the Air Force and Ground forces, mentioned that the purpose of the project was to prove the "Hybrid Concept": autonomous and man-in-the-loop system. The concept, brought by Ciconia, allows to enjoy both the judgment of the operators of the airborne fleet and the reliability of an automatic system. "When operators fail to secure the safety of flight the C&CAS intervenes and the midair collision is avoided," said LTC Chen.

Moshe Cohen, CEO of Ciconia, mentioned that the C&CAS allows for many more airborne vehicles to operate simultaneously in a given airspace while improving safety of flight. "The C&CAS is applicable to both military and civil aviation markets. In parallel to working with the IDF, Following the award of the BIRD foundation HLS grant, we have approached the first responder's market. In this joint Israel-US project, Ciconia Ltd. and Sagetech Avionics Inc. are in the process of installing C&CAS on first responder's airborne fleets: helicopters, airplanes and drones. Thus, drones and fire fighters' helicopters and planes will be able to operate together, safely, in a confined air space," said Cohen

“When operators fail to secure the safety of flight the C&CAS intervenes and the midair collision is avoided”



C&CAS flight test onboard an Israeli Air Force Blackhawk & a drone, July 2021 flight test

IAF Testimonial Post C&CAS Flight Tests



Israeli Air Force
October 30 2017



C&CAS System Performance Acknowledgement

This letter is to acknowledge that Ciconia's C&CAS (Control & Collision Avoidance System) has been successfully tested by the IAF (Israeli Air Force) and has undergone several stages of performance verification per the IAF's requirements.

The IAF tested the first generation C&CAS system from November 2014 through March 2015 in the IAF Requirements Branch simulator. Two helicopters flying under varying flight conditions were flown in numerous inflight scenarios including formation flights, cross track and head on encounters. Each of the scenarios demonstrated the potential of an inflight collision. Several highly experienced operational and experimental test pilots flew the simulated missions and reported flawless performance throughout. No collision warnings were missed and no false warnings were generated during the simulated sorties. Further, the collision avoidance flight directives (Piloting Cues) given to the pilots were logical. Building upon the lessons learned from the first generation C&CAS, the Ciconia team pressed on with system development. The second generation C&CAS was ready for testing and evaluation in the fall of 2016. In October, this Gen 2 C&CAS underwent flight testing to verify system robustness and performance in challenging, real life scenarios. For these flight tests, the IAF utilized two UH 60 Blackhawks, each mounted with a prototype of the C&CAS Gen 2 and exercised the system in a series of challenging flight scenarios. The C&CAS has successfully met the two major criteria of a Collision Avoidance System:

1. Distinguish between risky and non-risky in-flight scenarios with no false-positive or missed alarms.
2. Introduce the pilot with timely and logical Piloting Cues allowing enough reaction time to avoid a collision.

Additional operational evaluation testing is planned for early next year, to test a sophisticated proof of concept of the C&CAS capability, to operate in an environment where manned and unmanned air vehicles are operating together. This letter does not grade the C&CAS relative to other systems and it does not commit the Israeli MOD and / or the IAF by no means to any commercial and / or technical obligation.



The C&CAS has successfully met the two major criteria of a Collision Avoidance System:

1. Distinguish between risky and non-risky in-flight scenarios with no false- positive or missed alarms.
2. Introduce the pilot with timely and logical Piloting Cues allowing enough reaction time to avoid a collision.





Thank You

