



# Iris Automation

Safely Enabling Autonomous Flight with Perception Technology

RANGE: 600 m  
SPEED: 112 kts  
P(NMAC): 51.1%  
MANEUVER: DESCEND  
TYPE: CESSNA 172

Dan O'Shea  
Director of Global Sales & Customer Success

[date]

# CASSIA<sup>®</sup> G



HELICOPTER  
1063 (M)



SMALL PLANE  
1237 (M)





# Detection, Classification, Position

- Multiple mounting options
- Detection: 1.7km Av, 2.3km max
- Unlimited range with mesh network



[Helicopter, 1436m]



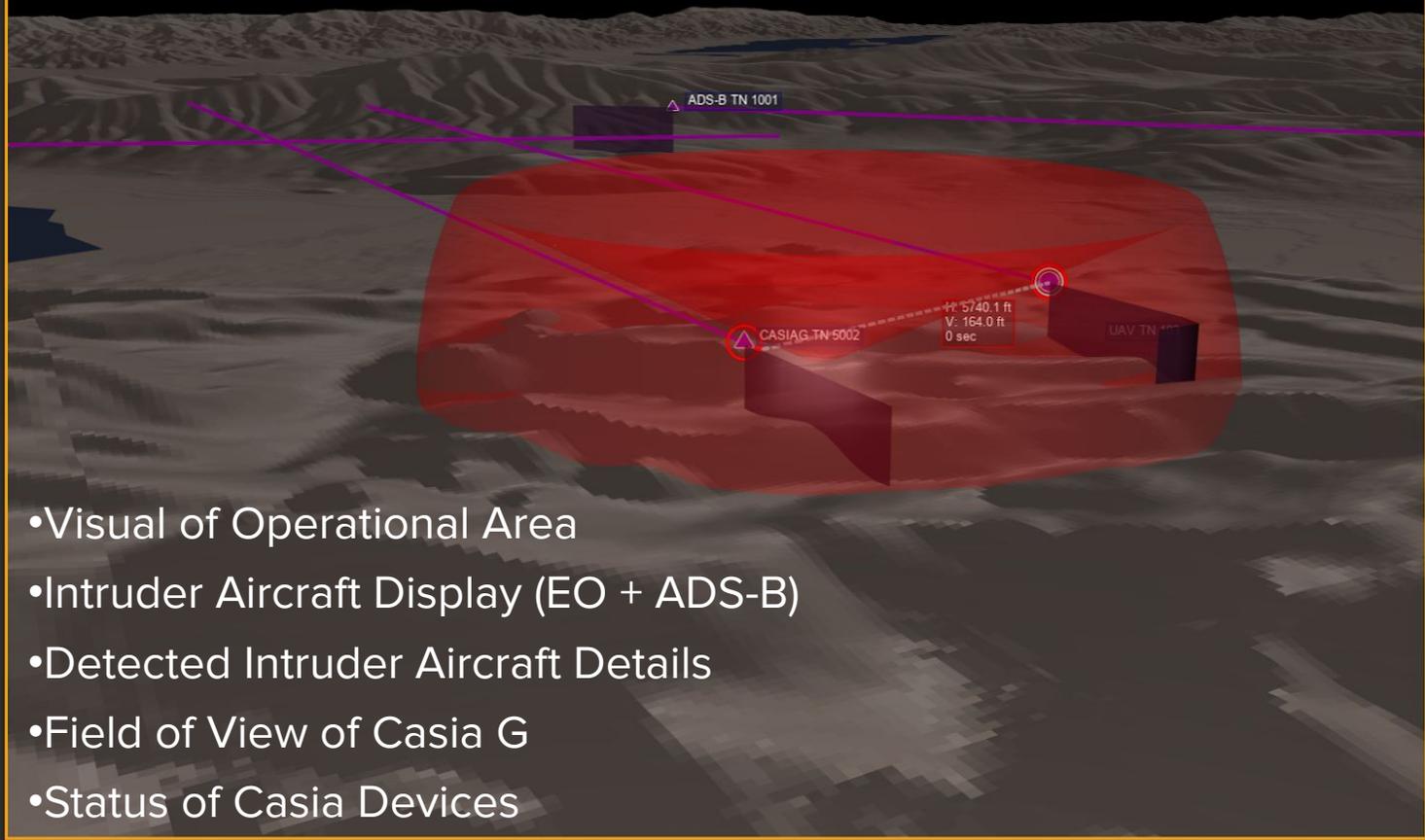
C A S I A  G

Ground-based detect and alert

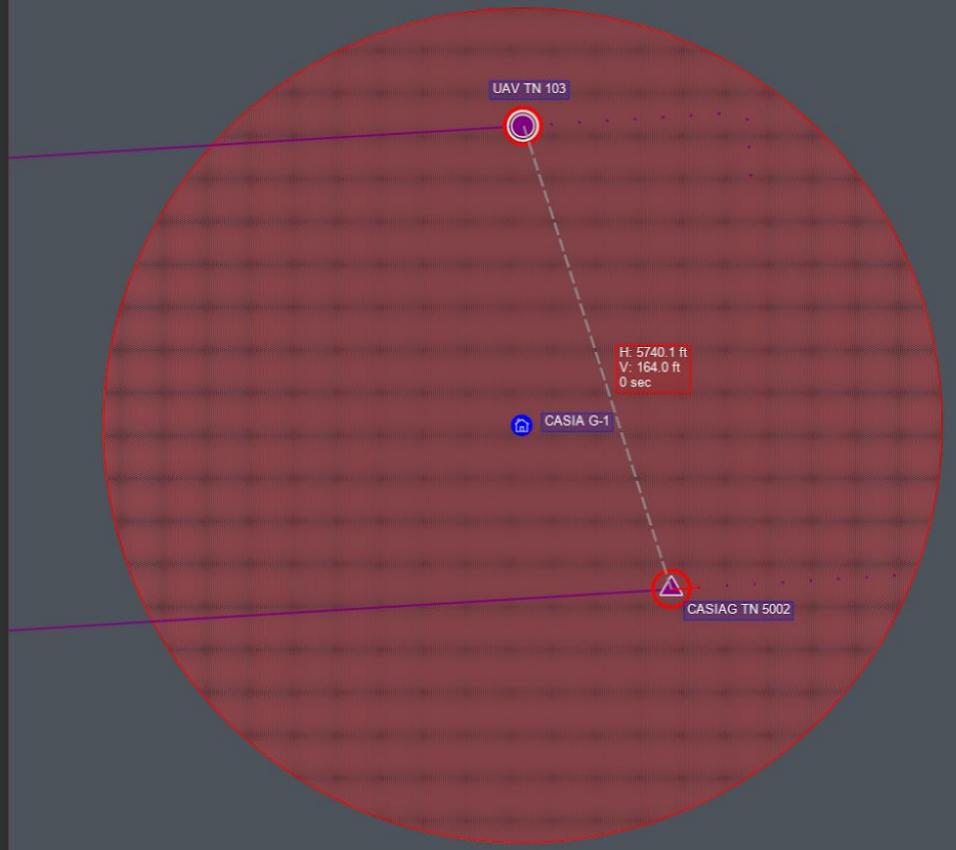
### Key features & Benefits

- Sanitize airspace for UAS operational environment
- Leverages the same computer vision/AI technology pioneered in onboard systems
- Ability to extend for unlimited range using multiple nodes
- Does not get bored, tired or distracted like human visual observers (VOs)
- Reserves UAS power and payload
- Unlike radar, does not require FCC approvals and excels at low level detections

# Airspace Awareness Display



- Visual of Operational Area
- Intruder Aircraft Display (EO + ADS-B)
- Detected Intruder Aircraft Details
- Field of View of Casia G
- Status of Casia Devices



# Airspace Awareness Display



- Subscribe to Casia Device
- Map of Operational Area
- Status of Casia Devices
- Detected Intruder Aircraft Details
- Field of View of Casia G
- Intruder Aircraft Display (EO + ADS-B)

The screenshot displays the Iris Ground Station interface. On the left, there is a control panel with the following sections:

- MQTT Connection:** Hostname: broker.irisonboard.com, Port: 8883, Username: iris, Password: [redacted]. Buttons: Disconnect, Subscribe, Unsubscribe.
- Casia Devices:** A table showing the status of various devices.
- Detected Intruders:** A table for listing intruder aircraft.

The main area is a satellite map of a mountainous region with two overlapping circular fields of view (FOV) centered on red markers. A small inset window shows a dark, blurry image, likely an EO (Electro-Optical) view of an aircraft.

Device	Status
▶ HCLM-0200-000006	Connected
▶ HCAM-0200-000161	Connected
▶ HCAM-0200-000063	Connected
▶ HCAM-0200-000056	Connected
▶ HCAM-0200-000164	Connected
▶ HCLM-0200-000003	Connected
▶ HCLM-0200-000008	Connected
▶ HCLM-0201-000053	Connected

ID	Callsign
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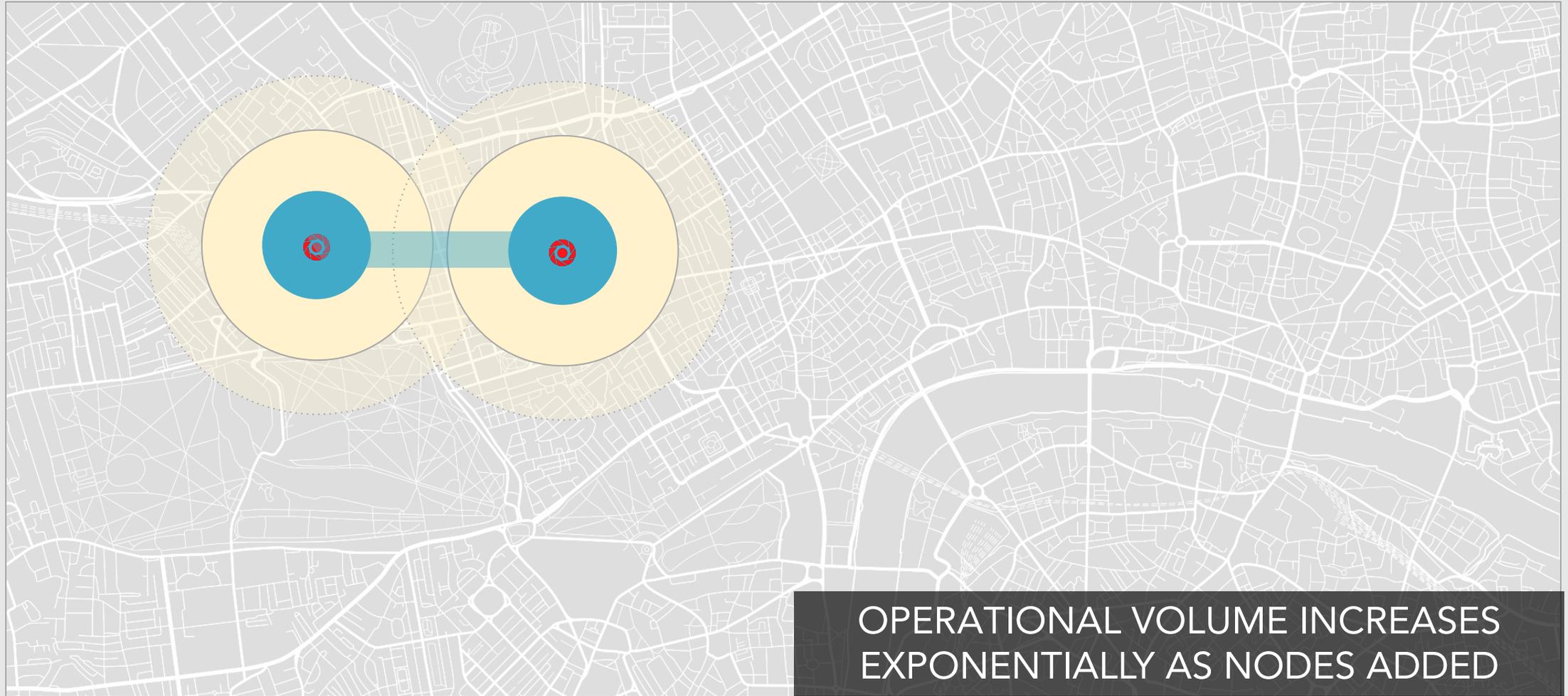
🔊 "Intruder", "Disconnected", "Connected"

Status of Casia Devices

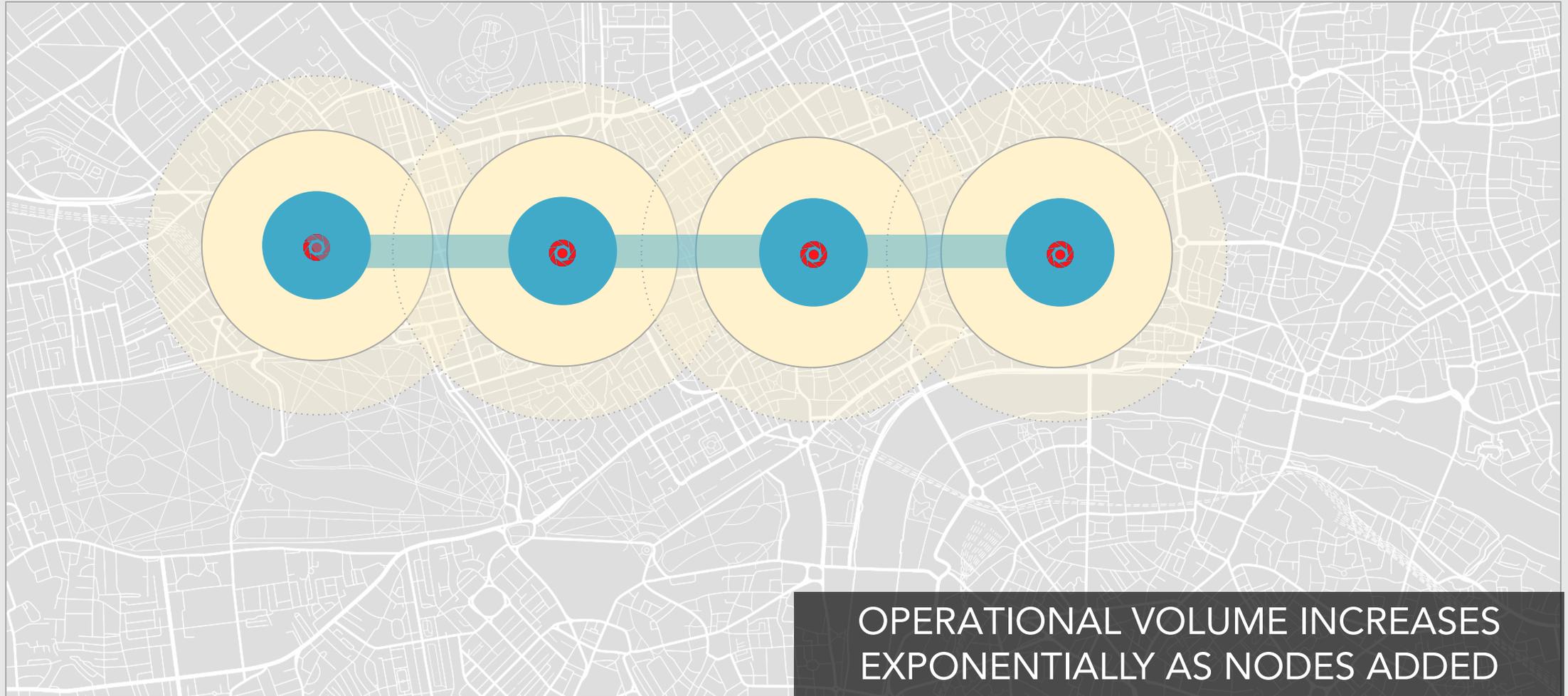
# Placement: Operational vs Surveillance Volume



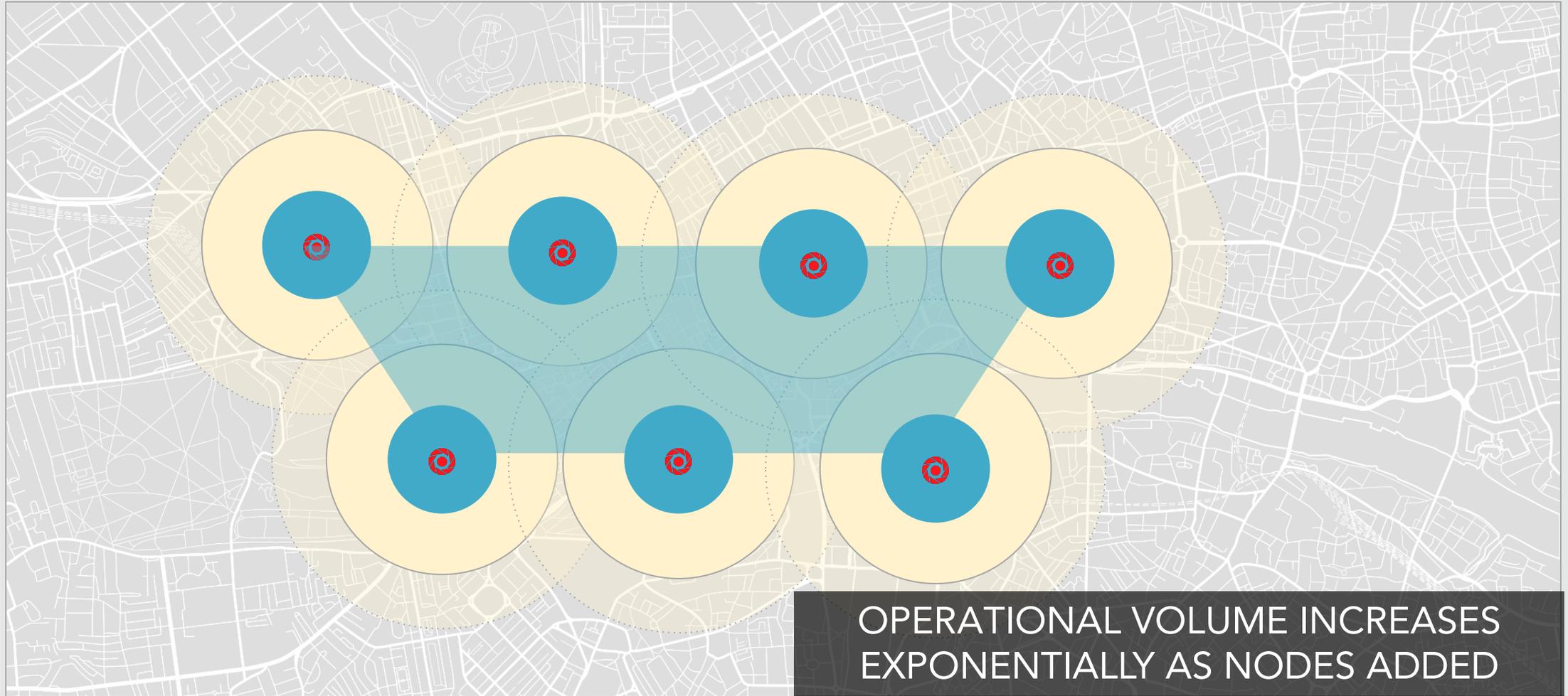
# Corridor



# Long Linear



# Multiple Nodes for Unlimited Coverage



# Integration with Situational Awareness Tools

- API integration
- Intruder aircraft alert and image
- Intruder classification, altitude, velocity, heading, lat, lon
- System status and health alerts

# Validation and Testing



- Continuous in-field testing, 20+ hours per week in Reno, Nevada
- UAS-GA and UAS-UAS; varied airframes and aircraft for data diversity
- Additional validation and deep learning testing takes place on a custom in-house simulators



16,000+  
TESTED REAL-WORLD  
ENCOUNTERS

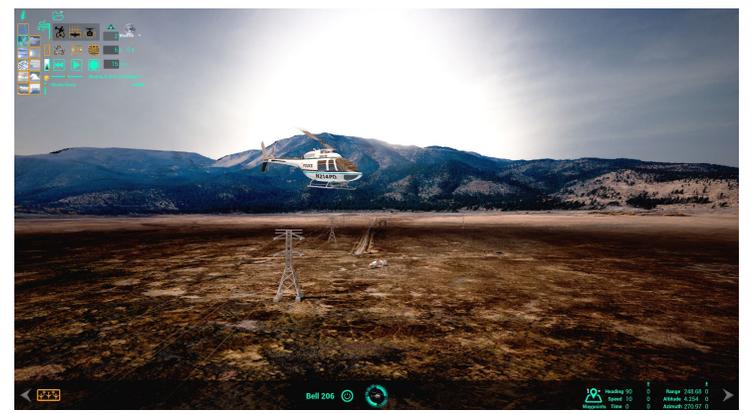
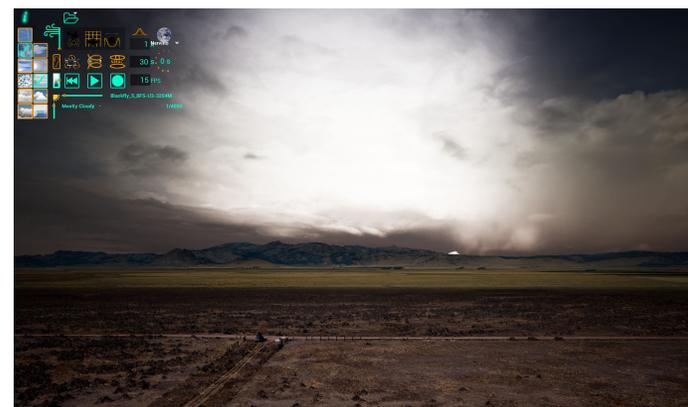
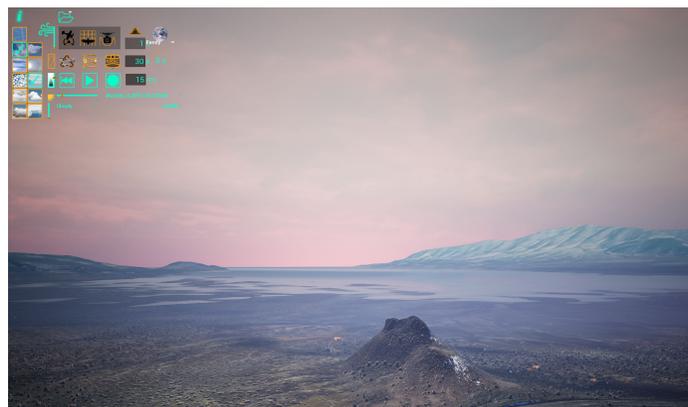
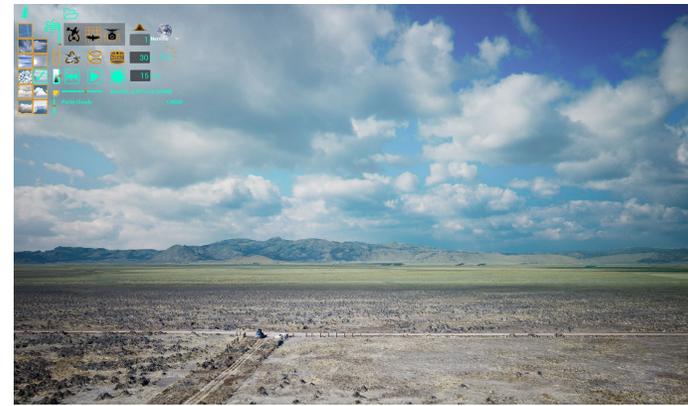
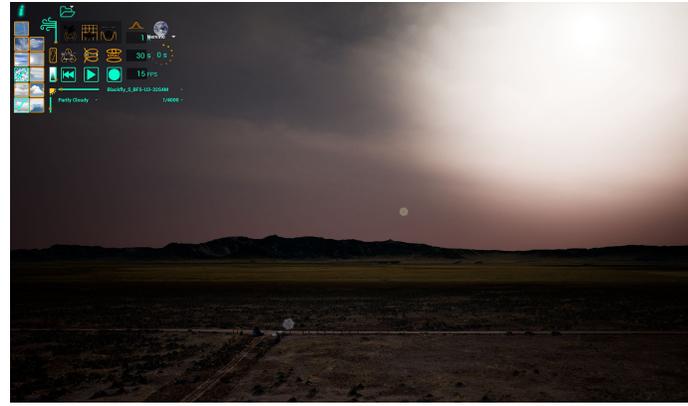


600TB  
RECORDED  
FLIGHT DATA



250,000+  
SIMULATED ENCOUNTERS  
ACROSS VARYING SCENARIOS

# Simulator Variables



# Regulatory Successes



U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION <b>CERTIFICATE OF WAIVER</b>	
ISSUED TO	<b>Iris Automation Responsible Person: Cheryl Contreras Waiver Number: 107W-2022-00323</b>
ADDRESS--	<b>450 Sinclair St Reno, NV 89501</b>
This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the provisions contained in this certificate.	
OPERATIONS AUTHORIZED	Small unmanned aircraft system (sUAS) operations beyond the visual line of sight of the remote pilot in command (PIC).
LIST OF WAIVED REGULATIONS BY SECTION AND TITLE	<b>14 CFR § 107.31—Visual line of sight aircraft operation</b>
<b>STANDARD PROVISIONS</b>	
<ol style="list-style-type: none"><li>1. A copy of the application made for this certificate shall be attached to and become a part hereof.</li><li>2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.</li><li>3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.</li><li>4. This certificate is nontransferable.</li></ol>	
NOTE—This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.	
<b>SPECIAL PROVISIONS</b>	
Special Provisions Nos. 1 to 26, inclusive, are set forth on the attached pages.	
This Certificate of Waiver is effective from March 29, 2022, to March 31, 2026, and is subject to cancellation at any time upon notice by the Administrator or an authorized representative.	
<b>BY DIRECTION OF THE ADMINISTRATOR</b> <b>DEREK W HUFTY</b> Digitally signed by DEREK W HUFTY Date: 2022.03.29 10:53:54 -04'00' <b>General Aviation and Commercial Division, AFS-800</b>	

# Approvals (Sample)



THANK  
YOU



IRIS AUTOMATION™

