



Oppenheimer  
5G Summit

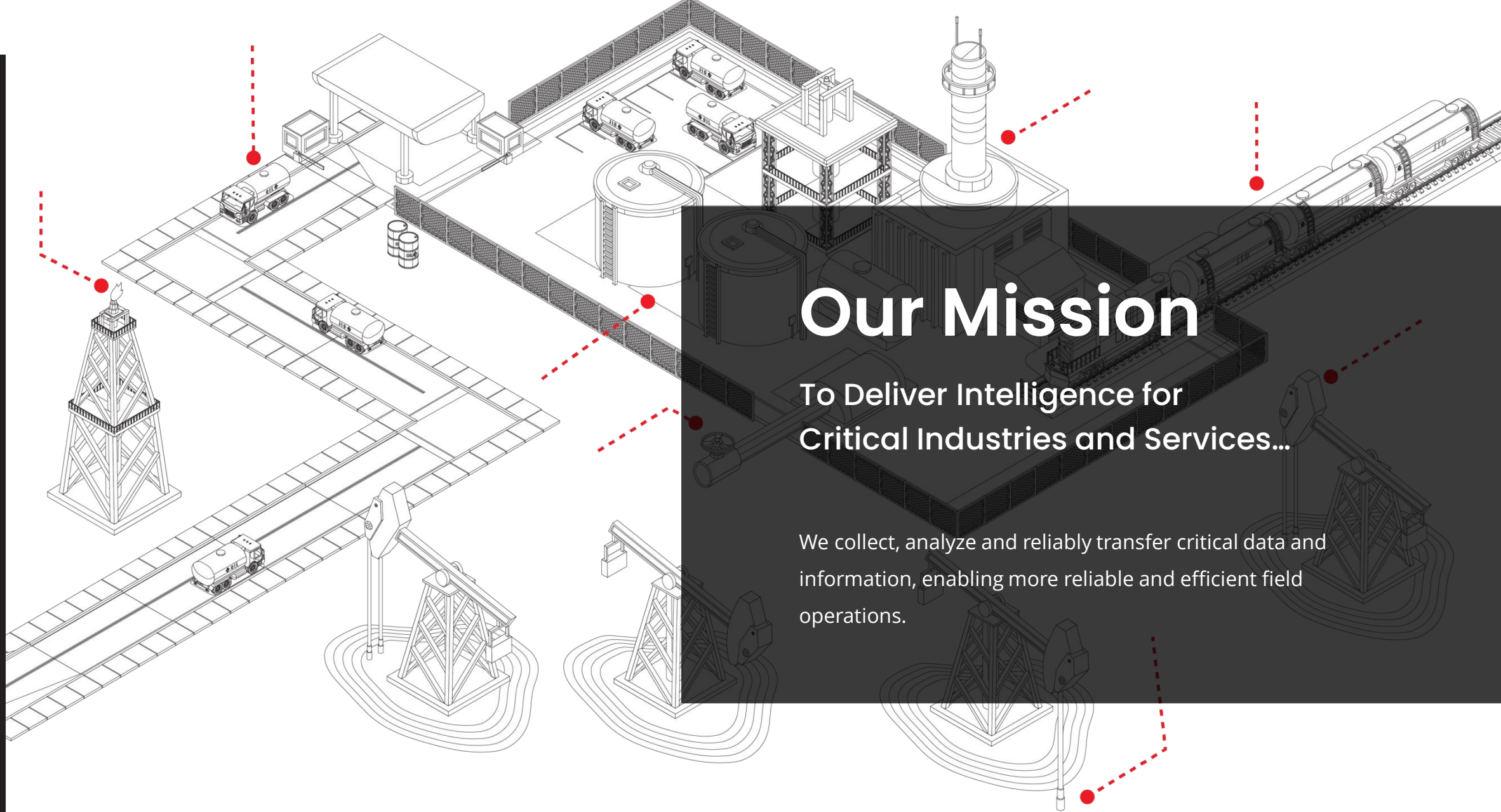
# ONDAS

HOLDINGS INC.

MISSION-CRITICAL DATA and SERVICES

# Disclaimer

This presentation may contain "forward-looking statements" as that term is defined under the Private Securities Litigation Reform Act of 1995 (PSLRA), which statements may be identified by words such as "expects," "projects," "will," "may," "anticipates," "believes," "should," "intends," "estimates," and other words of similar meaning. Ondas Holdings Inc. ("Ondas" or the "Company") cautions readers that forward-looking statements are predictions based on its current expectations about future events. These forward-looking statements are not guarantees of future performance and are subject to risks, uncertainties and assumptions that are difficult to predict. The Company's actual results, performance, or achievements could differ materially from those expressed or implied by the forward-looking statements as a result of a number of factors, including, the risks discussed under the heading "Risk Factors" in the Company's most recent Annual Report on Form 10-K filed with the U.S. Securities and Exchange Commission ("SEC"), in the Company's Quarterly Reports on Form 10-Q filed with the SEC, and in the Company's other filings with the SEC. The Company undertakes no obligation to publicly update or revise any forward- looking statements, whether as a result of new information, future events or otherwise that occur after that date, except as required by law.



# Our Mission

To Deliver Intelligence for  
Critical Industries and Services...

We collect, analyze and reliably transfer critical data and  
information, enabling more reliable and efficient field  
operations.



# A Powerful Technology Platform

Platform technologies enabling an intelligent, data-centric ecosystem

ONDAS  
NETWORKS

**DATA TRANSFER**

Private, mission-critical  
wireless industrial networks

AR  
AMERICAN  
ROBOTICS

**DATA CAPTURE  
AND PROCESS**

UAS-driven industrial  
data solutions

## Critical Industrial Markets

Enabling mission-critical operations and services

## End-To-End Solutions

Integrated, complex technology platforms

## "As-A-Service" Business Models

Data-centric solutions

## HEADQUARTERS

Waltham, MA  
Sunnyvale, CA

## LISTED

Nasdaq: ONDS

Private, mission-critical wireless

## EMPLOYEES

113

## INVESTED CAPITAL

>\$135 Million

# Large Industrial Data Markets

## INDUSTRIAL WIRELESS MARKETS

Upgrade cycles driven by automation demand



### Electric Utility

\$15bn global market by 2021 <sup>(1)</sup>



### Land Radio Module

\$32bn global market by 2027 <sup>(2)</sup>



### Oil and Gas

\$15bn global market by 2022 <sup>(3)</sup>



### Railroads

Estimated PTC spend > \$10bn <sup>(4)</sup>



### Drones

\$100bn in projected commercial spend <sup>(5)</sup>

Large, Established Markets

## COMMERCIAL DRONE MARKETS

Data solutions drive over \$100+ Billion<sup>(5)</sup> TAM

**\$68.1  
BILLION**

### INDUSTRIAL MARKET

**Sub-Markets:** Oil & Gas, Solar, Nuclear, Hydro, Coal, Utilities, Construction, Ports, Railways, Prisons, Warehouses, Factories, Stockpile Yards, Mining, Delivery

**\$25.6  
BILLION**

### AGRICULTURE MARKET

**Sub-Markets:** Corn, Soybeans, Vineyards, Cranberries, Vegetables, Tree Fruits, Tree Nuts, Nurseries, Corporate Research, Seed Farms, Golf Courses, Hemp, Livestock

**\$20.2  
BILLION**

### DEFENSE MARKETS

**Markets:** Border Security, Base Security, FOB Security, Embassy Security, Vehicle Security

# Growth Model to Define MC-IoT Markets

Mandate to define next-generation industrial data markets

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Holdings Inc.

- Partner or acquire in MC-IoT ecosystem
- Facilitate required end-to-end solutions

ONDAS  
NETWORKS

- Large system sales; partner strategy
- Create installed base; recurring SaaS model
- Expand to other critical markets

AR  
AMERICAN  
ROBOTICS

- Robot-as-a-Service (RaaS)
- Fleet strategy drives installed base / scale
- Recurring revenue; High ROI

## Investment Thesis

- Target large, global markets
- Industrial data is valuable
- Complex ecosystem requires end-to-end solutions
- Leverage large industrial vendor partners
- Capital access is competitive edge in emerging sector



# Landmark Acquisition

Entered definitive merger agreement to acquire AIROBÖTICS

## Creating the Global Commercial UAS Leader

- Adding world-class technology and talent
- Offers technical, regulatory and go-to-market synergy; extends competitive advantages
- Significant financial benefits including new revenue opportunities with active customer pipeline and reduced redundant development costs



Customers, Talent and Capital will migrate to the leaders in a winner take most market





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NETWORKS



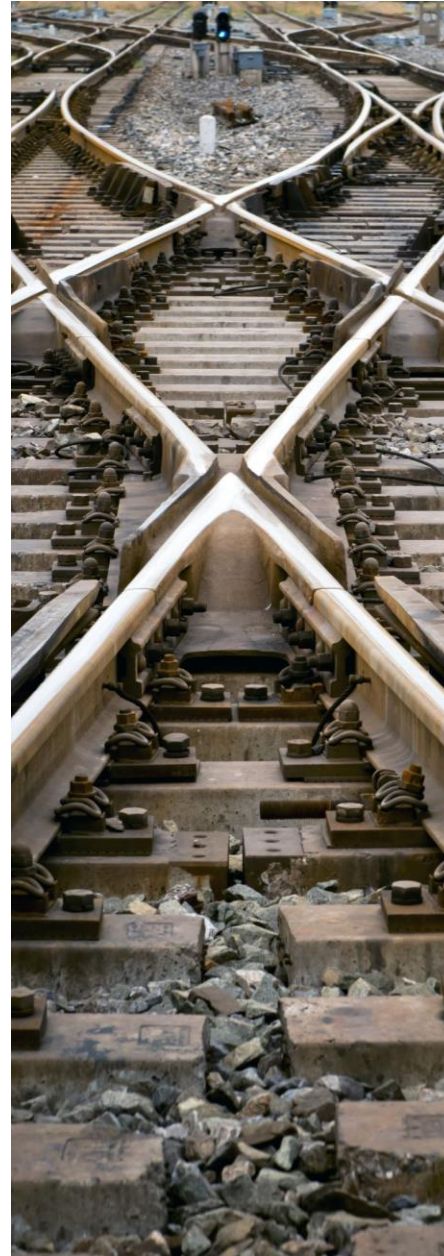
AMERICAN  
ROBOTICS



AIRBOTICS

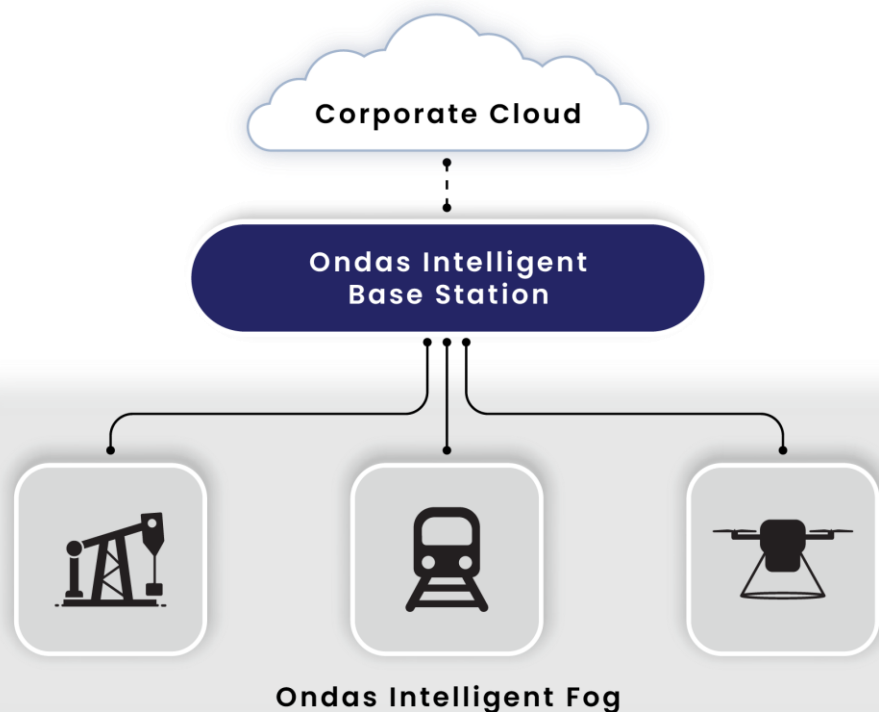






# Turning Yesterday's Narrowband Into Tomorrow's Broadband

ONDAS  
NETWORKS



# ONDAS Networks Overview

Next-Gen, MC-IoT Industrial software-defined wireless broadband platform



## FullMAX™ Connectivity

- IEEE 802.16 standards
- Enhanced capacity / flexibility
- Maximize low-band spectrum
- 7 patents (16 pending)

## Large, Global Markets

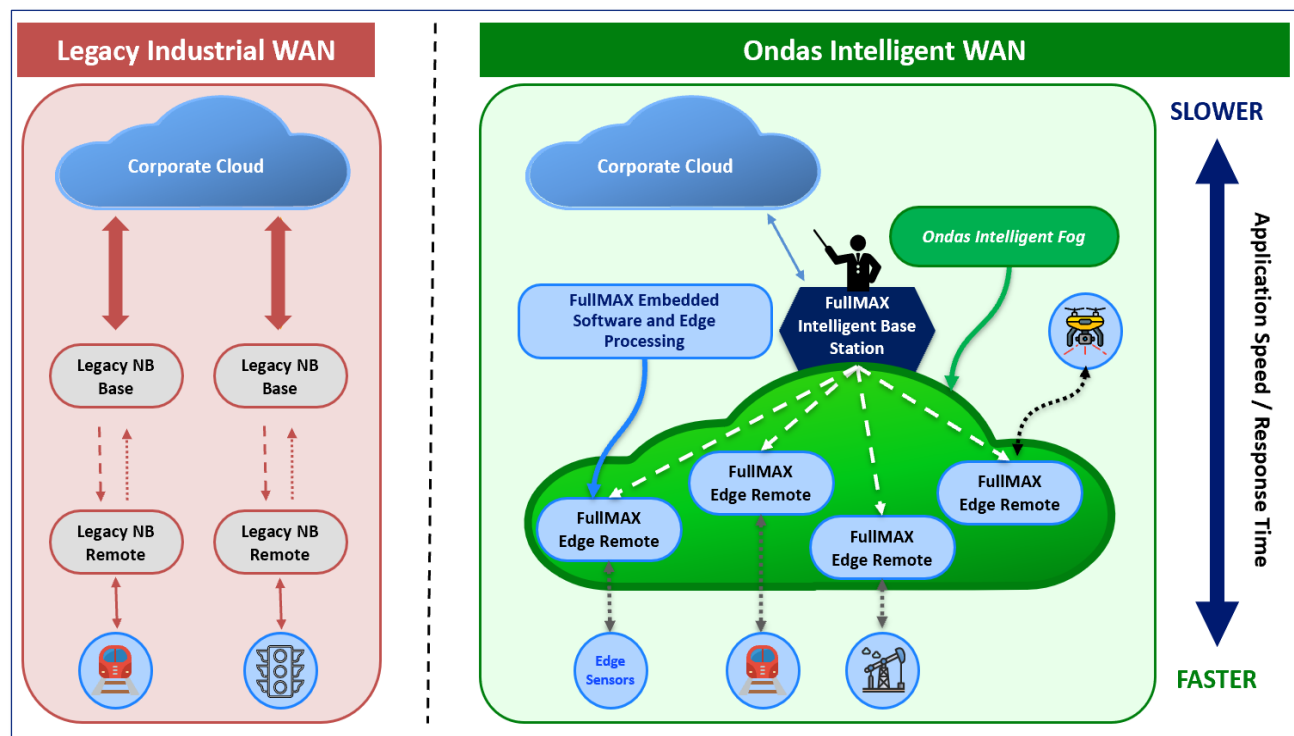
- Critical infrastructure & public safety
- Massive private network upgrade cycle
- TAM in billions
- Capital-light financial model

## Industrial Data Ecosystem

- Deploying intelligent systems across field area operations
- Edge compute applications
- Automation systems
- Sensor technologies

# A New Industrial Wireless Infrastructure

FullMAX™ software defined connectivity enables deployment of intelligent data applications in industrial markets



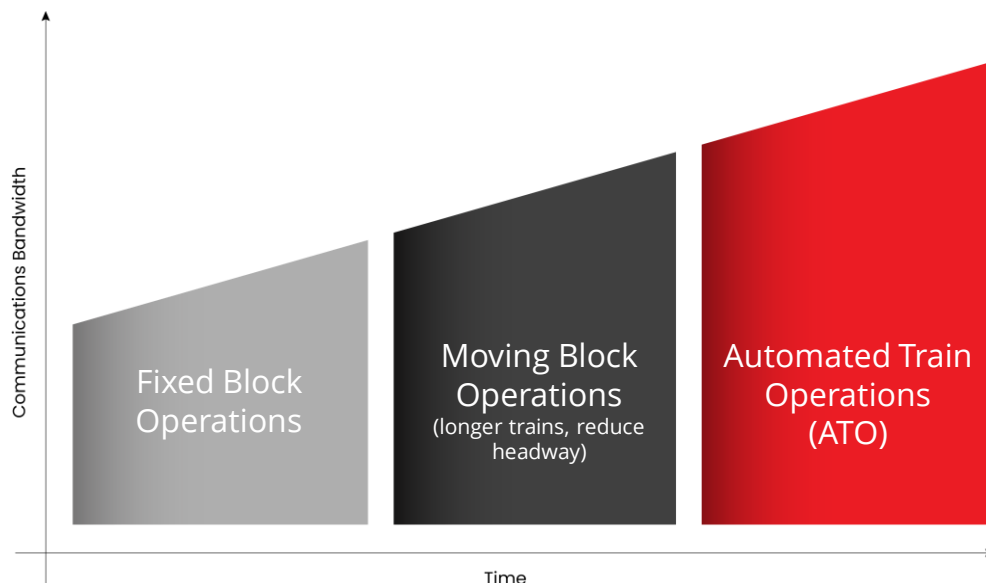
## ONDAS FOG

- End-to-end platform
- Maximize data capacity
- Efficiently allocate precious bandwidth
- Prioritize mission-critical applications
- Enable low latency
- Edge-compute



# Automation Technologies, Siemens Partnership

FullMAX™ wireless platform enables  
evolution to autonomous trains



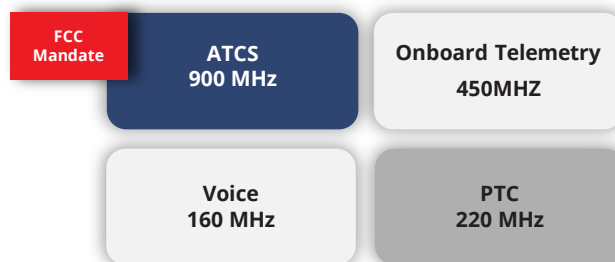
## Landmark **dot16** Partnership

- Marketing agreement
  - Focused on Class I North America
  - Expanding to Europe & Asia
  - Adding Passenger & Transit markets
- FullMAX™ product integration enhances value of network and **dot16** ecosystem
  - ATCS 900 MHz
  - HOT 450 MHz North America & Asia
  - European locomotive program

**MULTIPLE JOINT-DEVELOPMENT  
PROGRAMS ON ROADMAP**

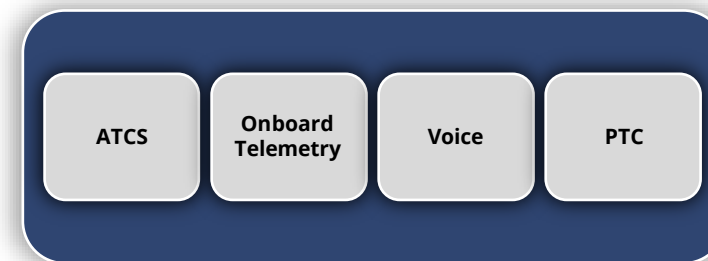
# Multiple Class I Rail Networks To Be Upgraded

## LEGACY NETWORKS



- Single-purpose networks
- Narrowband capacity
- Not upgradable
- Legacy applications
- End of life systems

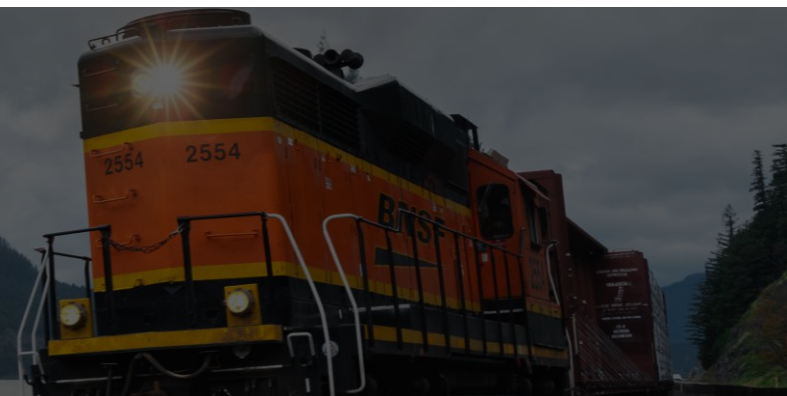
## ONE **dot16** PLATFORM



- Multi-band platform
- Broadband capacity
- Future-proof, upgradeable Edge
- New, MC-IoT applications
- Efficient network operations

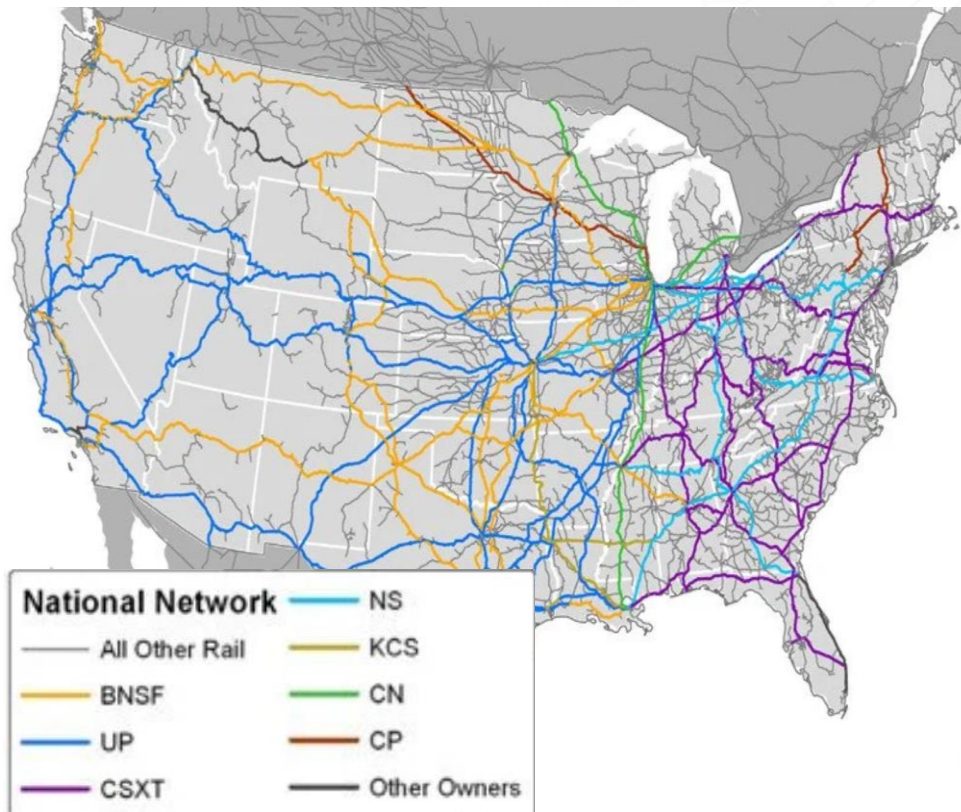


Class I Rails have begun the **dot16** upgrade cycle with **900 MHz band**



# Class I Freight Rail— Huge Footprint

## FullMAX™ Connects Rail Infrastructure



## Key Class I Rail Statistics

- Common networks across all 7 Class 1 Rails
- 140,000 Miles of Track
- 40,000 Waysides // 65,000 Rail Crossings
- 25,000+ locomotives // 1.6 million rail cars
- 900 MHz / 160 MHz total addressable market of >\$800 million

**~5% Productivity increase drives ~\$4.5 billion of Additional Revenue for Railroads**





# First and Only FAA-Approved Autonomous UAS System

# American Robotics

## FAA Approves First Fully Automated Commercial Drone Flights

- Fully automated, end-to-end industrial-grade drone system
- Exclusive set of FAA approvals to operate autonomously without humans on-site
- Unique, full stack IP portfolio critical to real-world autonomy
- Deep customer pipeline in O&G, Mining, and Rail markets

### Leading Talent

Carnegie Mellon, Stanford, MIT, Amazon, GE, IBM, iRobot, AeroVironment, Google, and others

### Blue Ocean

Huge commercial drone market in excess of \$100 Billion<sup>(1)</sup> according to PwC offers high growth potential

### RaaS Model

Robot-as-a-Service (RaaS) model is a turnkey data solution for customers offering high margins and recurring revenue

*"American Robotics will lay the groundwork for other advances and accelerated growth of the industry"*



ANNOUNCED  
CUSTOMERS



# American Robotics Has **Won** The Initial Race



## END-TO-END

A full-stack, end-to-end data capture, process, and analyze solution to assure customer ROI.



## AUTONOMOUS

True autonomy via AI-powered done-in-a-box. No pilot or visual observer required on-site ever.



## FAA-APPROVED

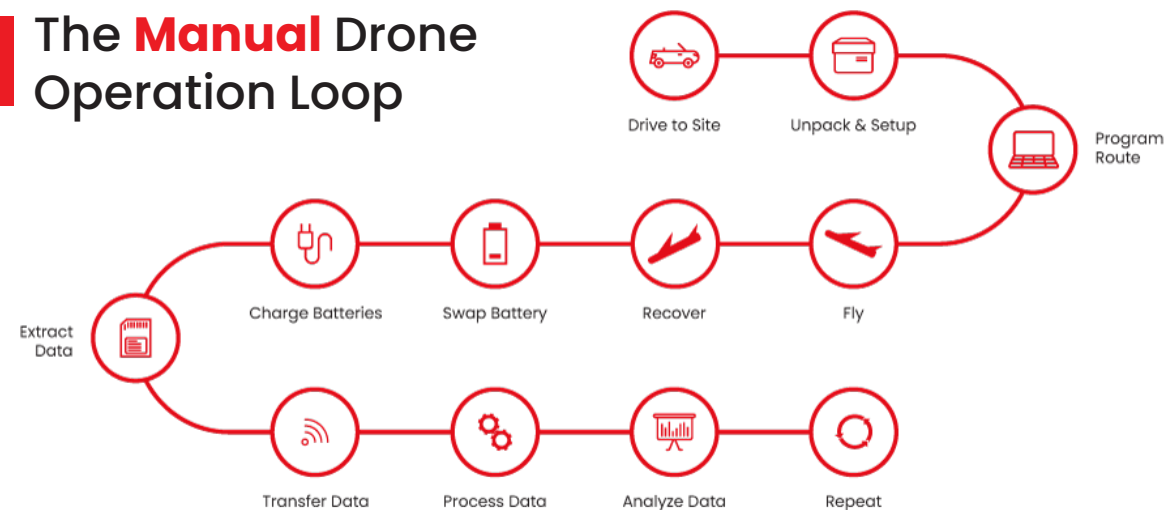
First company approved by FAA to operate automated drones. The critical requirement to scale.





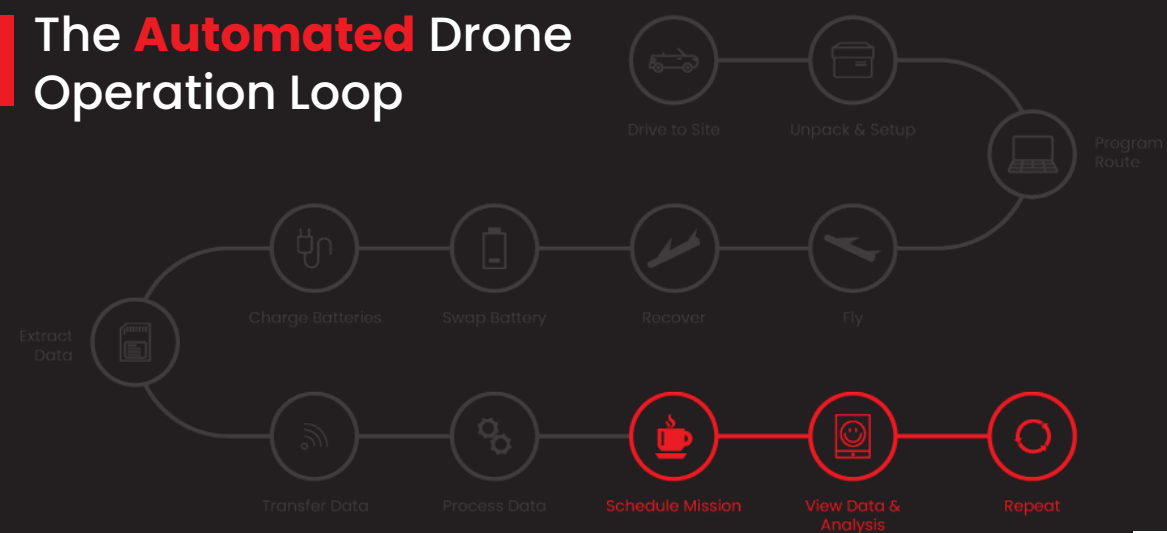
# The Key Commercial Drone Problem Solved.

## The **Manual** Drone Operation Loop



# Simplified Solution.

## The **Automated** Drone Operation Loop



# The Scout System™

## Fully-Automated, AI-Powered Drone Platform



### ScoutView™ Customer

Secure customer web interface, mission scheduler, data viewer, analytics software, & API

### Critical Scout System Features



Imaging



Mission  
Planning



Data  
Processing



Charging



Scheduling



Data  
Transmission



Storage



Obstacle  
Avoidance



System  
Diagnostics



### Scout™ Drone

Fully-autonomous, AI-powered drone with visual, multispectral, and thermal sensor payloads



### ScoutBase™

Weatherproof storage, docking, charging, data processing, and data transfer station



### ScoutOps™

Weatherproof storage, docking, charging, data processing, and data transfer station



### TASA™

Advanced ground-based air traffic detection sensor

## Advantages For Customers

Annual subscription for service

Real-time automated operation

Low upfront capital costs

No long-term risk

No maintenance responsibilities

No customer pilot training

# Robot As A Service (RaaS)

True Automation Allows For a **Complete Solution** and **Attractive Business Model**

Bundled hardware, software, operations, and maintenance:

- Lowers the annual cost of data acquisition by 90%.
- Provides AR with recurring software-like margins.

Allows for:

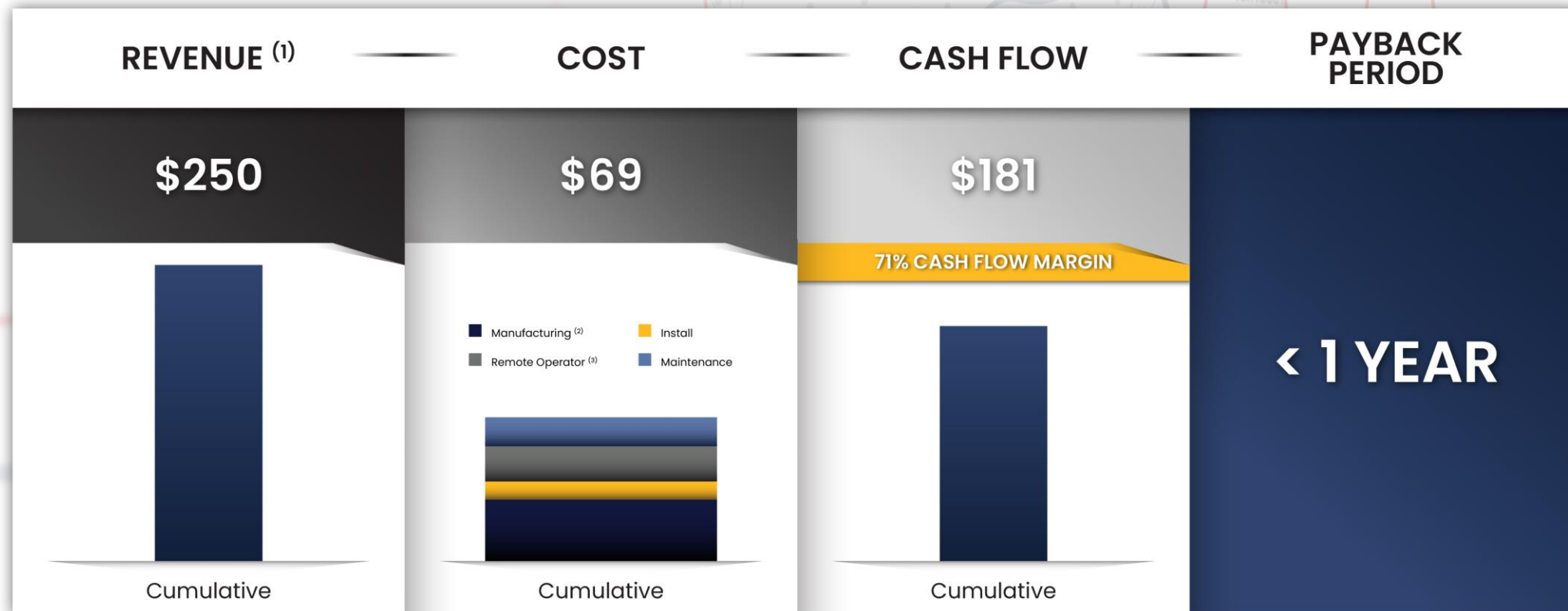
- Software upgrades, and new features monetizable through tiered pricing and app store-like concept.
- Continuous improvements in user experience and potential for increased revenue per unit over time.



# Scout System

## Unit Economics

(\$ IN THOUSANDS)



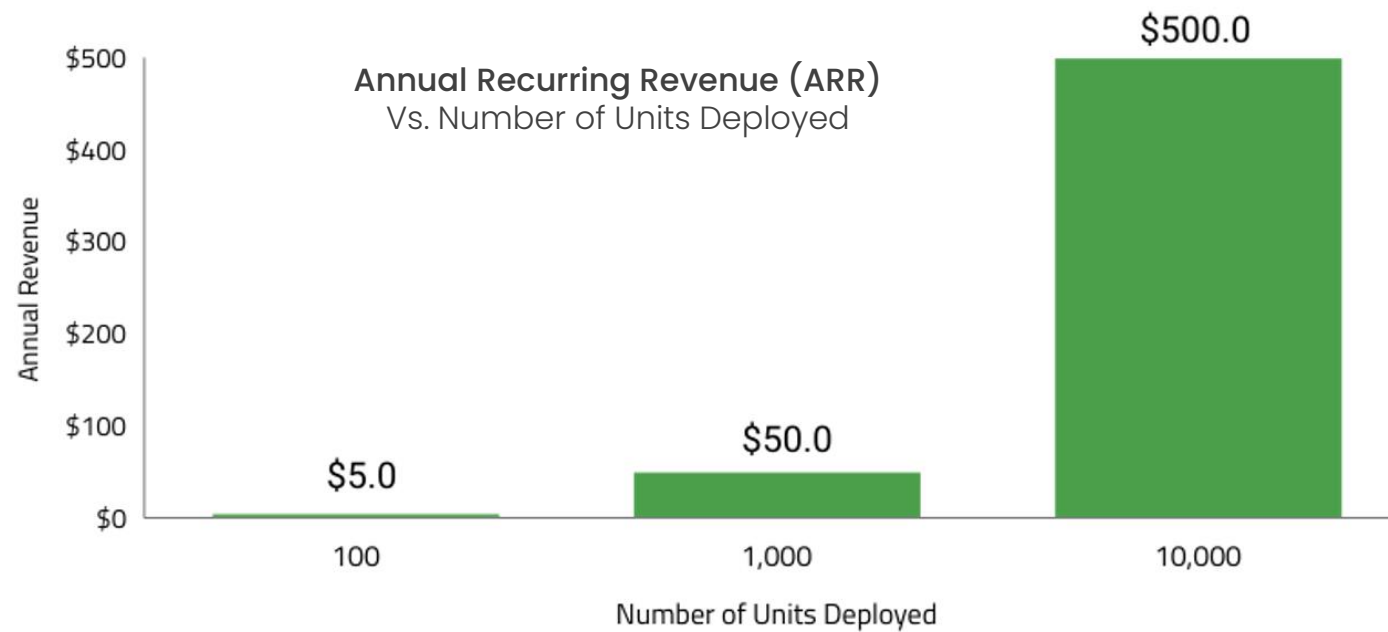
<sup>1</sup> Annual revenue number is estimate of average annual subscription rate, collected over an estimated service life of 5 years. Actual rates will vary based on system configuration and other factors.

<sup>2</sup> Manufacturing costs are estimated based on projected increases in volume and manufacturing efficiencies as of 2023

<sup>3</sup> Remote Operator costs project a ratio of 1 remote operator per 20 drones as of 2023

<sup>4</sup> Note: Non-GAAP analysis, focused on cash returns; for GAAP purposes, the RAAS model results in initial deferred revenue and capitalized costs which are recognized over the life of a contract. The Scout System™ sale is capitalized as an asset on the balance sheet and depreciated over the life of the contract

# Potential ARR



**TAM%**

Number of units as % of  
estimated Global TAM





# What is Happening Behind the Scenes?

Laying foundation for exponential growth via early adopter partnerships. Focus on increasing product stickiness through co-design, workflow integration, and customer service.

- New payload integration
- New analytics development
- UI / UX optimization
- Safety evaluations
- Cyber security evaluations
- Legal evaluations
- Data collection
- API integration
- Workflow integration
- Customer training



# CUSTOMER PILOT PROGRAMS

## PHASE 1



### PROOF OF CONCEPT

- Deep engagement with Innovation Teams
- Demonstrate autonomous data collection and processing
- Identify preferred, high-value use cases

## PHASE 2



### PAYLOADS & ANALYTICS

- Integrate customer-requested payloads
- Integrate analytics to match high-value use cases
- Demonstrate repeatable customer ROI

## PHASE 3



### FLEET OPERATIONS

- Duplicate success across all applicable asset sites
- Tight integration into operations workflow
- Continuing evolving system to include new features & use cases

ANNOUNCED  
CUSTOMERS



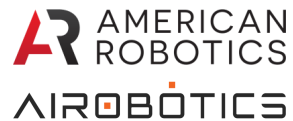
# Recognized Industry Leadership



Board Members

White House  
AAM Summit

# Leading UAS Platforms Are Valuable



Markets	Industrial, Agriculture, Security, and Defense	Consumer, Infrastructure, Public Safety, and Defense	Package Delivery	Defense	Urban Air Mobility
Barriers to Entry	HIGH	MEDIUM	MEDIUM	MEDIUM	HIGH
Estimated Market Size <sup>(1)</sup>	\$114B	\$64B	\$47B	\$20B	\$115B
Valuation <sup>(2)</sup>	~ \$160M	> \$1.0B	\$2.75B	\$4.6B	~ \$2.8B
Notable Investors		  	  	  	  

(1) Source: Estimates of total addressable market (TAM) based on various industry studies

(2) Source: CapitalIQ; Based upon last available public report as of November 11, 2022



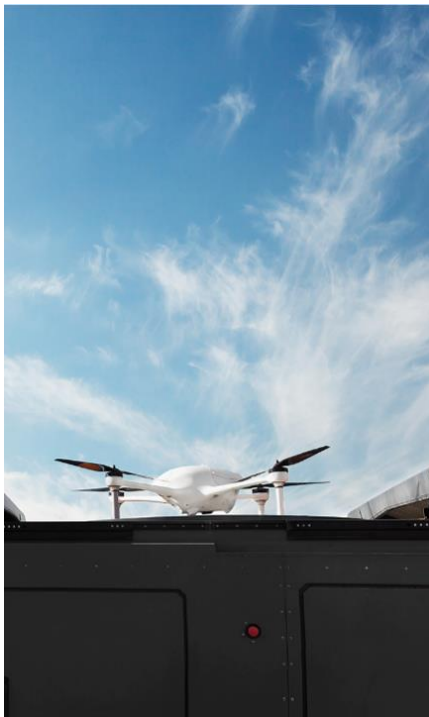
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Estimated Market Size <sup>(1)</sup>	\$114B	\$64B	\$47B	\$20B	\$115B
Valuation <sup>(2)</sup>	~ \$145M	> \$1.0B	\$2.75B	\$4.6B	~ \$2.5B
Notable Investors	ONDAS Holdings Inc.	andreessen. horowitz Accel next 47	andreessen. horowitz Fidelity BAILLIE GIFFORD	andreessen. horowitz 1 D1 CAPITAL PARTNERS GENERAL CATALYST	Fidelity INVESTMENTS BAILLIE GIFFORD THE BAUPOST GROUP

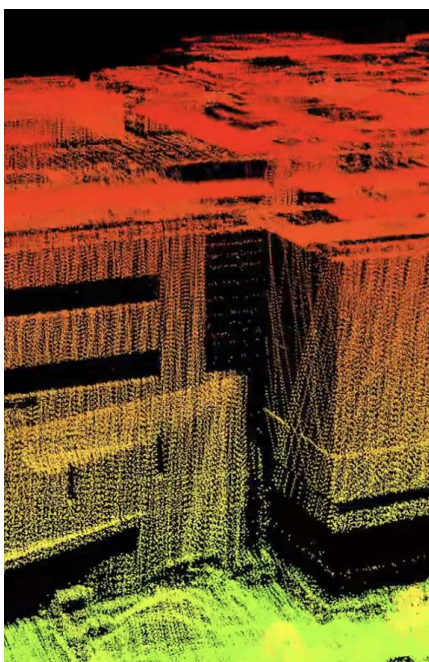
(1) Source: Estimates of total addressable market (TAM) based on various industry studies

(2) Source: CapitalIQ; Based upon last available public report as of October 17, 2022



# The Airobotics Acquisition

An Overview of Airobotics,  
Transaction Terms and Strategic  
Rationale



## Landmark Acquisition

# Entered Definitive Merger Agreement to Acquire AIRBÖTICS

### CREATING THE GLOBAL COMMERCIAL UAS LEADER...

- Adding world-class technology and talent
- Offers technical, regulatory and go-to-market synergy; extends competitive advantages
- Significant financial benefits including new revenue opportunities with active customer pipeline and reduced redundant development costs

**Demonstrates Ondas' unique ability to lead the scaling of Automated Commercial UAS Solutions**



# Acquisition – Key Terms

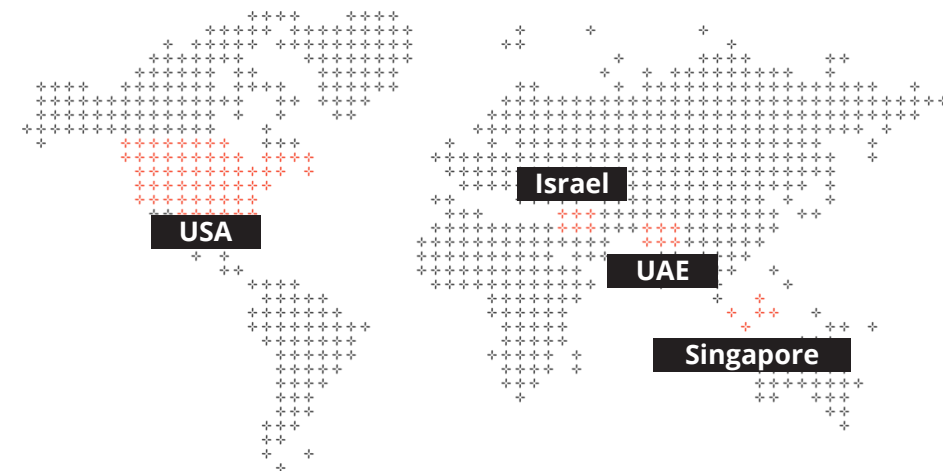
- All share transaction; Exchange ratio = 0.16806
- Equivalent to ~ 2.8 million Ondas shares; valued at ~ \$15.2 million <sup>(1)</sup>
- Ondas agreed to provide a Senior Secured \$1.5 million loan (loan was provided in October 2022)
- Close expected in January 2023<sup>(2)</sup>



# Introducing Airobotics

Airobotics is a world leading provider of end-to-end automated aerial data systems and services

Airobotics is providing high-value data services to customers in **Smart City, Public Safety, Homeland Security, Construction and Defense markets**



**FOUNDED**  
2014

**HEADQUARTERS**  
Israel

**SYSTEM VERIFICATION**  
FAA Type Certification  
(in process)

**EMPLOYEES**  
40

**REVENUE | ASSET SALES <sup>(1)</sup>**  
\$3.3M | \$1.0M <sup>(2)</sup>

**INVESTED CAPITAL**  
> \$130M

**LISTED: (TEL AVIV  
STOCK EXCHANGE)**  
TASE : AIRO

**BUSINESS MODEL**  
Data as a Service  
Direct Sales

**SELECT INVESTORS**



# Strategic Rationale –

## Scale For Customer And Investors



### Extend Technology Leadership

- Combines best-in-class platforms under single roof
- Autonomy, payloads, AI-powered data analytics
- Battery swapping, payload swapping, base hopping
- FullMAX C2, safety systems, DAA



### Global Regulatory Success

- AR with market-leading Automated BVLOS approvals
- Airobotics on path for FAA Type Certification
- Commercial Drone Alliance (CDA) board member
- BVLOS Aviation Rule-making Committee members



### Financial Benefits

- Customer pipeline offers immediate revenue; enhanced growth profile
- Engineering investments leveraged over multiple products and platforms
- Eliminate duplicative development and administrative costs
- Expect scale to result in a lower cost of capital



### Leading UAS and Robotics Talent

- Experienced management teams with long histories in industry
- Hardware, software, and AI expertise
- Regulatory and policy expertise
- Engineering scale offers product roadmap dominance



### Global Marketing & Services Platform

- Broader portfolio of customer solutions
- Expanded markets and use cases
- Geographic reach for both Scout System™ and Optimus System™



# Airobotics Technology Platform

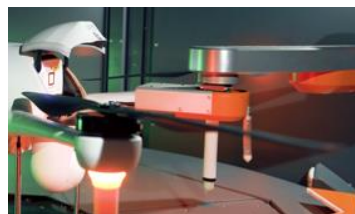
Fully automated data capturing and analysis infrastructure for continuous 24/7 drone operations without human intervention



Battery Cabinet



Payload Cabinet



Robotic Arm



Data Capture & Delivery Payloads



Real-Time User Interface



Data Platform



## ROBUSTNESS

Rugged exterior and climate-controlled  
Drone shelter for harsh weather and  
industrial environments

## COVERAGE AREA

80 sq/km coverage area  
(31 square miles)

## FULL AUTOMATION 24/7 MULTIPLE DATA COLLECTION

Allowing routine data capture without  
human intervention

# Business Model

## Versatile Drone Platform Offers Multiple Monetization Strategies

### **DATA AS A SERVICE (DAAS)**

- Systems is owned by Airobotics; customer pays subscription fees
- Multiple customers utilize same system in a shared service model such as municipal entities, emergency response departments and industrial facilities

### **DIRECT SALE**

- Sale of Optimus System plus an annual maintenance package
- Typically for defense and homeland security (HLS) sectors



### **SMART CITY APPLICATION**

- Deploy base station infrastructure
- Provide security and public safety applications
- Installed base enables adjacent customer applications

# Regulatory Leadership

Extending Our Moat

- Dramatically increases TAM
- Establishes head start – extends competitive advantage
- Significant cost savings and time to market advantages

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NETWORKS



AMERICAN ROBOTICS

## BVLOS

Approvals for UAS operation  
with no human intervention

Critical acoustics-  
based DAA

CONOPS established



AIROBOTICS

## TYPE CERTIFICATION

Rigorous process to obtain  
certification (pending)

Air worthiness designation  
allows for flight operations  
over people and in urban  
areas



# Autonomous Platform Leadership

## Complementary Technology Platforms

- Expanded opportunities in new markets
- Accelerated offerings in existing markets

**AR** AMERICAN  
ROBOTICS

**AIROBÖTICS**

<b>FOCUS END MARKETS</b>	Oil & Gas, Rail, Bulk Materials, Mining, Agriculture	Security, Public Safety, Defense, Construction, Smart Cities
<b>REGULATORY</b>	Automated BVLOS	Type Certification (In Process)
<b>UNIQUE FUNCTIONALITY</b>	Autonomous Ops, Detect-and-Avoid (DAA), AI-Powered Analytics, High-Res Imaging, Gas Detection	Continuous Ops, Battery Swapping, Payload Swapping, Live Video, LIDAR
<b>PRESENCE</b>	United States	Israel, Singapore, UAE

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Mandate to define next-generation industrial data markets

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NETWORKS

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AR  
AMERICAN  
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- Fleet strategy drives installed base / scale
- Recurring revenue; High ROI

## Investment Thesis

- Target large, global markets
- Industrial data is valuable
- Complex ecosystem requires end-to-end solutions
- Leverage large industrial vendor partners
- Capital access is competitive edge in emerging sector

# Closing Remarks



Business development on track at Ondas Networks and American Robotics

American Robotics demonstrating industry leadership for customers

Delivering on 900 MHz Network and expanded platform opportunities

Ondas is investing to win with its partners and ecosystem



# Investor Q&A





# ONDAS

HOLDINGS INC.

NASDAQ: ONDS

## Thank You for Listening

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[www.linkedin.com/company/american-robotics-inc/](http://www.linkedin.com/company/american-robotics-inc/)