Autonomous vehicle software for industrial and commercial enterprises
CAUTIONARY NOTE ON FORWARD-LOOKING STATEMENTS

This presentation of Cygn, Inc. ("the Company") contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act and other securities law. Words such as "expects," "intends," "plans," "believes," "seeks," "estimates," and similar expressions or variations of such words are intended to identify forward-looking statements. For example, the Company is using forward-looking statements when it discusses its vision, the potential of its product, its strategy, market potential for its product(s), its paradigm, commercialization of its product(s), the benefits and use of its product(s), its product roadmap and anticipated adoption of its solutions by customers, anticipated pricing, the development of its solutions and product(s) in the manner and schedule anticipated by management, its ability to generate revenue, its ability to attract and retain customers, competition and its future growth. Forward-looking statements are not historical facts, and are based upon management’s current expectations, beliefs and projections, many of which, by their nature, are inherently uncertain. Such expectations, beliefs and projections are expressed in good faith.

However, there can be no assurance that management’s expectations, beliefs and projections will be achieved, and actual results may differ materially from what is expressed or indicated by the forward-looking statements. Forward-looking statements are subject to risks and uncertainties that could cause actual performance or results to differ materially from those expressed in the forward-looking statements. For a more detailed description of the risks and uncertainties affecting the Company, reference is made to the Company’s reports filed from time to time with the Securities and Exchange Commission (the "SEC"), including, but not limited to, the risks detailed in the Company’s preliminary prospectus dated September 30, 2021, filed with the SEC as part of the Company’s Registration Statement on Form S-1 (File No. 333-259278), and documents incorporated by reference therein. Forward-looking statements speak only as of the date the statements are made. The Company undertakes no obligation to update forward-looking statements to reflect actual results, subsequent events or circumstances, changes in assumptions or changes in other factors affecting forward-looking information except to the extent required by applicable securities laws.
Cygn is an autonomous vehicle technology company focused on addressing industrial uses for autonomous vehicles.

- **Ticker:** NASDAQ: CYN
- **Recent Stock Price:** $1.58 (as of 1/31/2022)
- **Shares Outstanding:** 26.4 million (as of 11/17/2021)
- **Market Cap:** $41.7 million
- **Headquarters:** Menlo Park, Calif.
- **Employees:** 33 (as of 10/21/2021)
- **Website:** www.cygn.com
Our mission is to develop and deploy autonomous driving software, built to serve a broad spectrum of industrial applications, from logistics to mining.

Our solutions will give our customers a competitive advantage in the race to efficiency, safety, and productivity.

Our vision is to be the leading advanced autonomy software solution for industrial and commercial enterprises.

We are applied autonomy.
Cyngn's Enterprise Autonomy Suite (EAS) is a proprietary, full-stack software solution for operating fleets of autonomous vehicles in various industrial applications (Beta stage).

Cyngn’s technology is capable of operating a wide range of vehicle types, creating unique opportunities for productivity and scalability across sites.

I N V E S T M E N T H I G H L I G H T S

Proprietary software for operating industrial autonomous vehicles

- Cyngn’s Enterprise Autonomy Suite (EAS) is a proprietary, full-stack software solution for operating fleets of autonomous vehicles in various industrial applications (Beta stage).

- Cyngn’s technology is capable of operating a wide range of vehicle types, creating unique opportunities for productivity and scalability across sites.

Large market opportunity fueled by the need to increase productivity

- 883,000 units shipped by the top 10 material handling vehicle manufacturers in 2019.¹ The labor cost to drive these vehicles for two shifts per day is >$119B.²

- Cyngn has developed the fundamental building blocks that enable autonomous operation across diverse vehicles, which could open additional market opportunities in the future.

Experienced leadership supported by global partnerships

- The executive team has 20+ years of combined experience in AI/ML and mobility at companies such as Facebook, Baidu, and Maxim Integrated, including leadership roles at startups acquired by Tesla and Facebook.

- Renowned partners include Columbia Vehicle Group, First Transit, Here Maps, Formel D, and more.

¹ ABI Research Whitepaper: "Trends In Supporting And Scaling Modern Automation"
Columbia Vehicle Group announces it is building a fleet of autonomous industrial vehicles that use Cygn’s AV technology (link).

SUCCESSFUL PILOT
Successful deployment of EAS at Global Logistics and Fulfillment’s Las Vegas facility (link).

BUILDING WITH AN OEM

INVENTION OF DRIVEMOD KIT
Cygn files for patent of a sensor module that streamlines deployment of DriveMod’s self-driving technology at scale (link).

EXPANDING TO FORKLIFTS
Greenland Technologies chooses Cygn to provide AV technology to their electric forklifts (link).
People are great at handling unpredictable situations and performing tasks requiring creativity.

But people get bored, tired, and distracted when given tasks that require repetitive accuracy over an extended time.

People make mistakes.

IT'S HUMAN NATURE.

Industrial tasks involve repetitive physical activities that require accuracy at high rates.

This applies to a wide range of industries, including warehouse logistics, manufacturing and assembly, construction, mining, and air/seaports.

Vehicles such as tuggers, stock chasers, forklifts, haulers, and various utility vehicles are the tools used to execute these industrial tasks.

THE PROBLEM: HUMAN ERROR

HUMANS ARE CREATIVE

BUT COMPANIES NEED CONSISTENCY
HIGH COSTS ASSOCIATED WITH HUMAN LABOR

**Massive workforce**
- 900,000 material handlers, stock pickers, and industrial vehicle drivers in the United States.¹
- Estimated **$140 billion** spent on human labor across 20,000 warehouses in the US alone.²

**Widespread labor shortages³**
- Over 50% of supply chain & manufacturing leaders rated hiring and employee retention as their biggest challenge.
- 73% said it takes 30+ days to fill open positions.
- By 2030, the impact of unfilled manufacturing jobs could cost the US economy more than **$1 trillion**.

**Significant losses due to accidents**
- An industrial vehicle accident, on average, costs $42,000 not including cost due to lost production.⁴
- The average American warehouse experiences 9 accidents per year.⁵
- The total cost of preventable workplace injuries in the US in 2019 was **$171 billion**.⁴

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² Statista: “Number of Warehouses in U.S.”
³ MHI Deloitte industry report
THE SOLUTION IS AUTOMATION

FORWARD-LOOKING ENTERPRISES THAT HARNESS AUTOMATION BENEFIT FROM:

INCREASED PRODUCTIVITY
INCREASED SAFETY
LOWER COST OF LABOR
REDUCED DEPENDENCE ON LABOR

Automation enables new forms of competitive advantage
EVOlVE OR BE DISRUPTED
AUTONOMOUS VEHICLES DRIVE ESG IMPACT

SUSTAINABILITY

• Our fleet is comprised of all electric vehicles
• Autonomous vehicles can be programmed to drive with more conservative throttling and braking

PRODUCTIVITY

Centre of economic performance study found:

• Investment in robots contributed 10% of growth in GDP per capita in OECD countries from 1993 to 2016.¹
• The impact of adding robots to industrial productivity is assessed to be higher than introducing steam technology was in the 19th century.²

¹ Information Technology & Innovation Foundation: “Robotics and the Future of Production and Work”
² Center for Economic Performance: “Robots at Work”
**DISRUPTIVE ENTERPRISES ARE SURGING AHEAD**

4,000,000 commercial robots estimated to be working in 50,000 warehouses globally by 2025.¹

Announced plans to replace 1.2M human workforce with 1m robots.²

Reduced human workforce at iPhone 6 plant by 50+% (110k to 50k).³

Foxconn market cap ~$55B, 50%+ higher than 2011. Two closest competitors (Jabil & Flex) each <$10B.

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¹ ABI Research – “50,000 Warehouses to Use Robots by 2025 as Barriers to Entry Fall and AI Innovation Accelerates”
² IEEE Spectrum – “Foxconn To Replace Human Workers With One Million Robots”
³ 9to5Mac – “iPhone maker Foxconn has replaced more than half its workforce with robots since iPhone 6 launch”
$119+ BILLION¹
annual driver labor costs for material handling vehicles

883,000 units shipped in 2019 by the top 10 material handling vehicle manufacturers²

$32 average cost per hour for transportation and material moving employees in the US³

4,174 hours a vehicle is used per year, based on typical two-shift per day operation

"EVERYTHING THAT MOVES WILL BECOME AUTONOMOUS"
– Nvidia CEO, Jensen Huang

¹ ABI Research Whitepaper: “Trends In Supporting And Scaling Modern Automation”
WIDE ADOPTION OF AUTONOMOUS VEHICLES STARTS WITH INDUSTRIAL APPLICATIONS

Compared to Passenger Vehicles, Industrial Vehicles Offer:

- MORE STRUCTURED OPERATION
- LOWER SPEED REQUIREMENTS
- LOWER REGULATORY HURDLES
- PREDICTABLE WORKFLOWS
- LESS COMPLEX ROUTES
- MORE COMMONALITY FROM SITE TO SITE
- CONTROLLED INTERACTIONS WITH TRAINED HUMANS
**CYNGN’S ENTERPRISE AUTOMONY SUITE (EAS)**

**CUSTOMER-FACING PRODUCTS**

**DRIVEMOD**
Full-Stack Autonomous Driving Software System

Successfully tested on 9 different vehicle types

**CYNGN INSIGHT**
Intelligent Control Center

- Fleet management system
- Human-machine interfaces: web, mobile, on-vehicle
- Operational analytics
- Teleoperation
- Real-time diagnostics

**CYNGN EVOLVE**
Data Optimization Tools

- Data pipeline
- Performance analytics
- Simulation
- Machine learning infrastructure

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*EAS is currently available as a private beta release to select customers*
DRIVEMOD

Robotaxi Brain in an Industrial Vehicle

The result is superhuman capability:

• 360° perception around the vehicle
• detect 1,000+ objects/obstacles per second
• 1,000+ candidate paths per second
• navigate optimal detailed path

SEE

• Multi-modal sensor fusion
• AI/ML powered perception
• Existence-based virtual bumper
• High-definition semantic maps
• Laser-accurate localization

DECIDE

• Abstracted behavioral decision framework
• Context-aware prediction
• Thousands of candidate paths proposed per second
• Dynamic routing and motion planning system

ACT

Adaptive, intelligent control that is capable of operating a wide range of vehicle types and sizes.
Fleet monitoring and management to maximize asset utilization: operate, observe, and analyze

Remote Support and Teleoperation
Business and Operational Insight
Fleet Management and Diagnostics
How Cyngn expands its autonomous vehicle capabilities

Hybrid Simulation & Automatic Grading Frameworks

Machine Learning Infrastructure & Data Pipeline

Autonomous Vehicle Performance Analytics
THE COMPETITIVE LANDSCAPE
A FRAGMENTED SOLUTION SPACE

BASIC AUTOMATION

• Single-frame, record and rerun or free-space navigation robotic systems.
• Existence-based obstacle avoidance
• Limited or no situational awareness and prediction.
• Produces slow systems with minimal ability to react to real-time changes.

SINGLE APPLICATION

• Supports a single use case, but industrial customers have diverse vehicle fleets.
• Narrow focus limits opportunity for data collection to advance and expand AI and V2V capabilities.
• Results in duplicate bring up and support cost to the customer.

VERTICALLY INTEGRATED

• Doesn't integrate with existing vehicles. Requires customers to purchase a brand new fleet.
• Carry the burden of both hardware and software development.
• Difficult to compete with incumbent players across cost, reliability, and service.
OUR COMPETITIVE ADVANTAGE

ADVANCED AUTONOMY
• Developed for robotaxi capability by using leading technology like AI, sensor fusion, and abstract decision making.
• Takes advantage of sensor and compute advancements that are driven by high-volume, high-quality automotive industry.

MULTIPLE APPLICATIONS
• DriveMod can be deployed on a wide range of vehicles, creating a unique offering to support multiple applications across sites.
• EAS collects data that can expand capabilities within the application and grow into adjacent applications.

YOUR VEHICLE POWERED BY OUR SOFTWARE
• DriveMod can be retrofitted onto existing vehicles to accelerate adoption, and vehicles can still be driven manually.
• We partner with vehicle manufacturers that are trusted incumbents.
• Customers can take advantage of established distribution and support networks.
Billions of dollars in funding and long years of research have focused on robotaxis, trucking, and highway automation, which are not being built to address industrial needs. We apply best practices and domain knowledge from public road solutions, and bring advanced autonomy to industrial vehicles and applications.
<table>
<thead>
<tr>
<th>NASDAQ Ticker</th>
<th>CYN</th>
<th>TSP</th>
<th>AUR</th>
<th>EMBK</th>
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</thead>
<tbody>
<tr>
<td>Market Cap</td>
<td>$41.7 M</td>
<td>$4.0 B</td>
<td>$5.5 B</td>
<td>$1.4 B</td>
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<tr>
<td>Business</td>
<td>An autonomous vehicle technology company focused on addressing industrial uses for autonomous vehicles</td>
<td>A global autonomous driving technology company developing a commercial-ready, fully autonomous driving solution for long-haul heavy-duty trucks</td>
<td>Develops and delivers self-driving technology, offers a platform that autonomously operates passenger vehicles, commercial vehicles and heavy-duty trucks</td>
<td>An autonomous vehicle company offering cloud-based autonomous fleet management solutions</td>
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<tr>
<td>2020 Revenue</td>
<td>--</td>
<td>$1.8 M</td>
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2016
Began developing AV solutions in complex mixed traffic to overshooot the requirements of industrial sites.

2017
Autonomous electric utility vehicles at an International Container Terminals Services (ICTSI) container port in the Philippines.

2019
Autonomous electric shuttle busses at the Loblaw corporate headquarters in Canada.
COLLABORATIVE GO-TO-MARKET APPROACH

An ecosystem designed to support scaled, high-quality autonomous fleet deployments
CYNGN EAS WILL BE OFFERED AS SAAS VIA ANNUAL LICENSE PER VEHICLE

Pricing Factors:

• Target Vehicle
• Utilization
• End Application
• Number of Vehicles

Remember: the top 10 material handling manufacturers shipped 883,000 units in 2019.
LAND & EXPAND
The path to multi-million dollar accounts

PHASE 1
• 1 Site
• 1 Vehicle Type
• <10 Vehicles

PHASE 2
• Multiple Sites
• 1 Vehicle Type
• 10s of Vehicles

PHASE 3
• Multiple Sites
• Multiple Vehicle Types
• 100s of Vehicles

PHASE 4
• Many Sites
• Many Vehicle Types
• 1,000s of Vehicles

Real-world Example: One of our potential customers, a building solutions company, has 400+ sites that use 20+ different forklift models from 5 different manufacturers, as well as front loaders and yard sweepers.
**Balance Sheet Highlights**

Following the completion of its IPO in October 2021, Cygn is well capitalized with $25.0 million in cash and cash equivalents on the balance sheet.

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<th>12.31.20</th>
<th>9.30.21</th>
<th>9.30.21 Pro Forma</th>
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<tbody>
<tr>
<td><strong>Cash &amp; Cash Equivalents</strong></td>
<td></td>
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<tr>
<td>(including restricted cash)</td>
<td>$6.5m</td>
<td>$1.7m</td>
<td>$25.0m</td>
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<tr>
<td><strong>Working Capital</strong></td>
<td>$6.1m</td>
<td>$1.5m</td>
<td>$24.8m</td>
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<tr>
<td><strong>Total Stockholder's Equity</strong></td>
<td>$5.6m</td>
<td>$0.03m</td>
<td>$23.3m</td>
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</tbody>
</table>
Material Handling Is Just the Beginning

Industrial and commercial autonomous applications share fundamental technological building blocks.

Cygn developed these building blocks and integrate them across diverse autonomous driving solutions.

Our current focus

$119B ¹

annual driver costs for vehicles sold by the top-10 material handling OEMs

In the future, we can expand our offering to public roadway:

Our technology already applies to additional industrial applications

¹ Management estimate from Bureau of Labor Statistics data. See slide 11.
EXECUTIVE TEAM

Lior Tal
CEO SINCE 2016
Previously: Director of international growth and partnerships at Facebook, co-founder and VP of business development at Snaptu (acquired by Facebook), partner at Barzam, Tal, Lerer Attorneys at Law and Patent Attorneys. Held leadership roles at Actimize (acquired by NICE), DiskSites (acquired by EMC), Odigo (acquired by Comverse).

Biao Ma
VP OF ENGINEERING SINCE 2017
Previously: Software architect for autonomous driving and senior software engineer at Baidu, software engineer at Carnegie Mellon University. MS Computer Science at Carnegie Mellon.

Marc Brown
VP OF HR
Previously: Executive Vice President and Chief People Officer at ZOVIO. Head of People, Corporate Communications, and Facilities at Provide Commerce. Key Operational Leadership Roles at Petco, Encore Capital Group, United Healthcare, Best Buy, and Honeywell.

Donald Alvarez
CFO SINCE 2021
Previously: VP of Finance of the International Council of Shopping Centers, VP of Finance of QuVa Pharma, Inc., National managing partner, COO and CFO of Tatum, a Randstad Company. Has held several other senior financial and operational roles in both private and public companies.

Ben Landen
VP OF BUSINESS DEVELOPMENT SINCE 2019
Previously: Company’s Senior Director of Product & Partnerships, Head of Product & BD at DeepScale (acquired by Tesla), managed $100M automotive semiconductor product line as Senior Business Manager of Maxim Integrated. MBA at UC Berkeley’s Haas School of Business, and BS Electrical Engineering at California Polytechnic University SLO.
BOARD OF DIRECTORS

Colleen Cunningham
INDEPENDENT DIRECTOR
Previously: Member of board of AICPA, EVP-Controller of Zoetis, Inc., Global Managing Director-RGP, CEO of Financial Executives International, CFO Havas Advertising, Chief Accounting Officer AT&T. Prior member of FASB Advisory Committee (FASAC) and IASB Advisory Committee (IASC).

Jim McDonnell
INDEPENDENT DIRECTOR
Currently: SVP of Sales & Marketing at Vispero. Previously: VP of sales excellence HSM and Commercial Excellence for HSF at Honeywell, SVP Global Sales & Marketing at Intermec, and held several senior roles at Hewlett-Packard over more than 26 years. Prior member of Astek’s board.

Karen MacLeod
INDEPENDENT DIRECTOR

Mitch Lasky
DIRECTOR
Currently: Partner of Benchmark Capital, co-owner of LA Football Club. Serves on BOD of various companies including: Discord, Manticore Games Inc., Ubiquity6 Inc., thatgamecompany. Previously: EVP, Mobile & Online of Electronic Arts, CEO and chairman of the board of JAMDAT Mobile, Inc. Member of board Snap, Inc., Inc., PlayFab, Inc., Engine Yard, etc.

Lior Tal
DIRECTOR & CHAIRMAN OF THE BOARD
Previously: Director of international growth and partnerships at Facebook, co-founder and VP of business development at Snaptu (acquired by Facebook), partner at Barzam, Tal, Lerer Attorneys at Law and Patent Attorneys. Held leadership roles at Actimize (acquired by NICE), DiskSites (acquired by EMC), Odigo (acquired by Converse).
An opportunity to invest in a company focused on practical applications in the growing automation market that addresses the very real problem of dependence on a human workforce, particularly in an ongoing pandemic environment.

**KEY TAKEAWAYS**

**$119 Billion Market**

An opportunity to invest in a company focused on practical applications in the growing automation market that addresses the very real problem of dependence on a human workforce, particularly in an ongoing pandemic environment.

**Advanced Autonomy**

Proprietary, innovative technologies for operating various industrial vehicles autonomously within a flexible, scalable framework.

**Key Strategic Partnerships**

Product and go-to-market strategies supported by partnerships with reputable global firms in mobility, logistics, and industrial markets.

**Winning Team**

Experienced leadership backed by best-in-class R&D team.