

TuSimple Investor Presentation

An aerial photograph of a large truck depot at sunset. In the foreground, five white TuSimple semi-trucks are parked in a row. Behind them, numerous white TuSimple trailers are stacked in neat rows. The depot is situated in a desert environment with sparse vegetation and mountains in the background. The sky is a mix of orange and blue, indicating the time is either dawn or dusk.

March 2023

Disclaimer

This presentation and any accompanying oral statements (together, this "Presentation") contain forward-looking statements. All statements other than statements of historical fact contained in this letter, including statements as to future results of operations and financial position of TuSimple Holdings Inc. and its subsidiaries (the "Company"), planned products and services by the Company or any of its subsidiaries, business strategy and plans of the Company or any of its subsidiaries, launch dates of products or services in the United States or in any other territory, expected safety benefits of the Company's autonomous semi-trucks, objectives of management for future operations of the Company, market size and growth opportunities in various global territories, competitive position and technological and market trends in various global territories, statements regarding strategies for the Company's Asia business, are forward-looking statements. Forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified. In some cases, you can identify forward-looking statements by terms such as "will", "expect," "plan," "anticipate," "intend," "target," "project," "predict," "potential," "explore" or "continue" or the negative of these terms or other similar words. The Company has based these forward-looking statements largely on its current expectations and assumptions and on information available as of the date of this letter. The Company assumes no obligation to update any forward-looking statements after the date of this letter, except as required by law.

The forward-looking statements contained in this Presentation are subject to known and unknown risks, uncertainties, assumptions and other factors that may cause actual results or outcomes to be materially different from any future results or outcomes expressed or implied by the forward-looking statements. These risks, uncertainties, assumptions and other factors include, but are not limited to, those related to the Company's restructuring plan including potential cost-savings, the company's ability to regain compliance with Nasdaq listing standards, the company's ability to engage an independent auditor, autonomous driving being an emerging technology, the development of the Company's technologies and products, the Company's limited operating history in a new market, the regulations governing autonomous vehicles, changes in the Company's board of directors and senior management, the Company's dependence on its senior management team, reliance on third-party suppliers, potential product liability or warranty claims, the protection of the Company's intellectual property, securities class action litigation, strategic alternatives for the Company's Asia business, and government or regulatory policies, inquiries and actions. Moreover, the Company operates in a competitive and rapidly changing environment, and new risks may emerge from time to time. You should not put undue reliance on any forward-looking statements. Forward-looking statements should not be read as a guarantee of future performance or results and will not necessarily be accurate indications of the times at, or by, which such performance or results will be achieved, if at all. It is not possible for the Company to predict all risks, nor can the Company assess the impact of all factors on its business or the markets in which it operates or the extent to which any factor, or combination of factors, may cause actual results or outcomes to differ materially from those contained in any forward-looking statements the Company may make.

You should carefully consider the foregoing factors and the other risks and uncertainties described under the caption "Risk Factors" in the Quarterly Report on Form 10-Q for the quarter ended June 30, 2022, filed with the Securities and Exchange Commission (the "SEC") on August 8, 2022, and the Company's other filings with the SEC. These SEC filings identify and address other important risks and uncertainties that could cause actual events and results to differ materially from those contained in the forward-looking statements. This Presentation also contains estimates, forecasts and other statistical data relating to market size and growth and other industry data. These data involve several assumptions and limitations, and you are cautioned not to give undue weight to such estimates. The Company has not independently verified the statistical and other industry data generated by independent parties and contained in this Presentation and, accordingly, it cannot guarantee their accuracy or completeness. In addition, assumptions and estimates of the Company's future performance and the future performance of the markets in which the Company competes are necessarily subject to a high degree of uncertainty and risk due to a variety of factors. These and other factors could cause results or outcomes to differ materially from those expressed in the estimates.



01 – TuSimple At A Glance



02 – Investment Highlights

- Investment Thesis for AV Trucking Remains Strong
- TuSimple's Track Record of Technology Leadership
- Enhancing Corporate Governance
- From First Driver Out to First Commercial Launch
- Proprietary Domain Controller Enables Near-Term Monetization Opportunities
- One Holding Company, Two Distinct Businesses



03 – Financials & Forecasts

1



TuSimple: A Better Path Forward

Our mission is to enable the most **safe, fuel-efficient & low-cost freight capacity** by developing the best L4 autonomous technology, hardware and go-to-market strategy



TuSimple Statistics

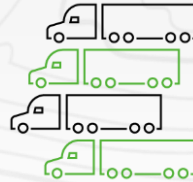
Refined following 4Q22 restructuring to optimize cost structure:



~1,100

TuSimple Employees

- Across three continents
- ~25% global workforce reduction



~60

Active Global Fleet

- **US Fleet:** ~35 Trucks as we focus on automating one lane
- **China Fleet:** ~25 Trucks

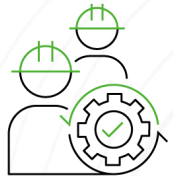


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Terminals

- Reduction driven by strategic focus on automating one lane at a time

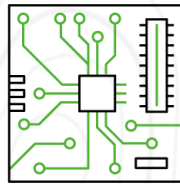
An update on our Statistics:



~80%

R&D Employees

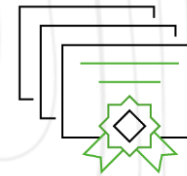
- Investing to advance our industry-leading technology



1st gen.

Proprietary Compute Hardware

- TuSimple Domain Controller (TDC)
- Enables expanded market opportunity
- C Sample expected in Q2 2023
- Production units planned in 2024



500+

Global Patents

- 100+ granted in the last year
- **US Entity Patents:** 150+
- **China Entity Patents:** 350+



10 Mil

Road Miles

- An industry-first milestone

A large, modern autonomous truck is parked inside a spacious industrial warehouse. The truck is dark-colored with 'tu simple' branding on the side of the cab. The warehouse has a high ceiling with exposed steel beams and numerous bright lights. Large windows on the right side of the building offer a view of a clear sky with some clouds. The floor is polished and reflects the lights and the truck.

2

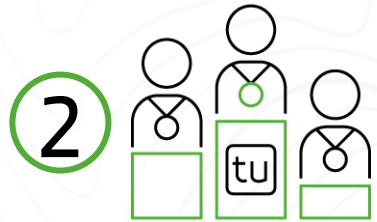
Investment Highlights

TuSimple Investment Highlights



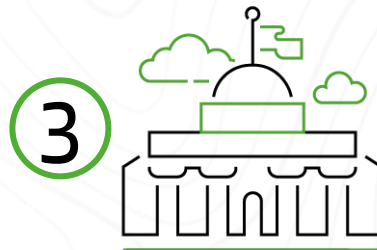
Investment Thesis for AV Trucking Remains Strong

Massive addressable market that benefits from technology adoption



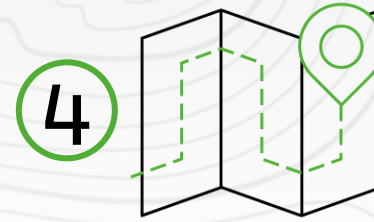
TuSimple's Track Record of Technology Leadership

Proven technology foundation



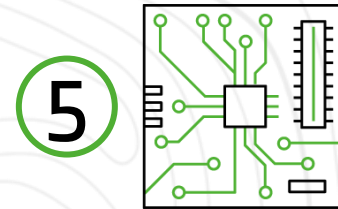
Enhancing Corporate Governance

Moving Past 2022 Corporate Governance Overhang



From First Driver Out to First Commercial Launch

Clear roadmap in achieving historical milestone



Proprietary Domain Controller Unlocks Near-Term Monetization Opportunities

Unlocks integrated hardware and software product opportunities



One Holding Company, Two Distinct Businesses

Two independent operating entities with high intrinsic value

Investment Thesis for AV Trucking Remains Strong

tu simple



Large TAM With Secular Growth Drivers

An opportunity to revolutionize a traditional market with industry leading technology

Global Truck Freight Market (TAM¹)

Global Truck Freight Market: \$4tn

Global E-Commerce: \$3.5tn

Global Automotive: \$2.8tn

Regional Freight Industry TAM¹

United States



\$800bn

China



\$750bn

Europe



\$400bn

The Need for Autonomous Trucking Remains

~3 million Class 8 semi-trucks in the US¹
+70% of all freight in the US transported by trucks²

INCREASED DEMAND FROM E-COMMERCE TRENDS FACED WITH A GROWING SHORTAGE OF DRIVERS & SAFETY ISSUES

Diminishing Supply

- 2022 driver shortage of 78,000 drivers³
- Driver turnover exceeding 100%+ for some carriers⁴

Increasing Demand

- Rising e-commerce penetration
- Same or next-day shipping trends

Safety Impact

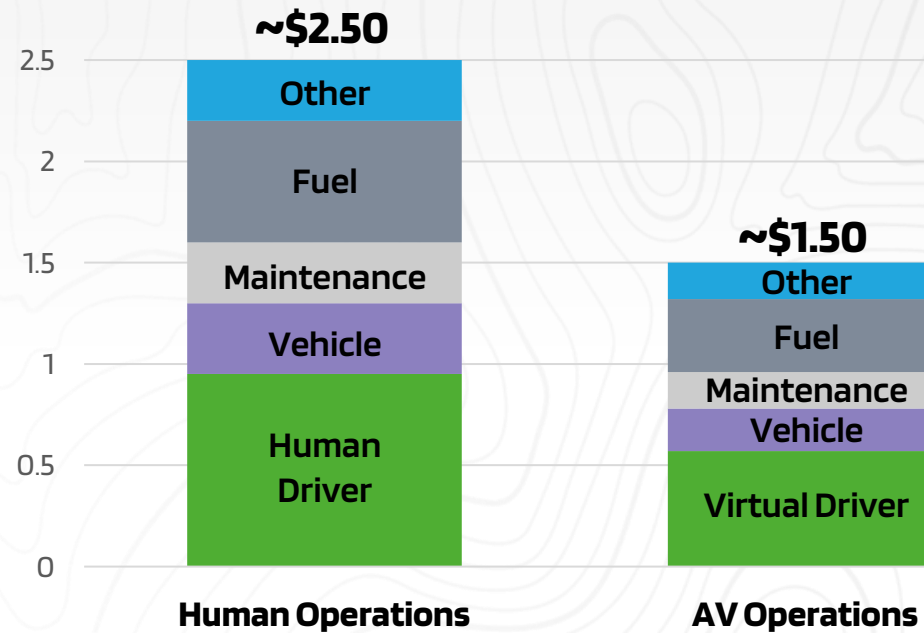
- 94% of all accidents are due to human error⁵
- 47% increase in fatalities involving semi-trucks from 2009–2020⁶

THE TUSIMPLE OPPORTUNITY

- Reduced costs: Labor makes up ~43%⁷ of per mile cost structure
- Middle-mile well-suited for L4 autonomy
- 10% of the nation's trade corridors account for moving nearly 80% of all transported goods

Operating Cost and ROI at Scale

AV Operating Cost Structure Advantage¹



AV Cost Elements²

- Insurance
 - Tolls
 - Permits
- No difference*
- ~10% fuel economy improvement
- Base vehicle maintenance
 - AV hardware maintenance
 - Calibration & AV rescue
- Incremental*
- Base vehicle
 - Sensors, compute, cabling, electrical
- Data transmission and storage
 - Remote monitoring and oversight
 - Mapping maintenance

Favorable ROI for the Customer – Potential Savings for Carriers Per Truck

750K-1.1mm

Lifetime Miles³



~\$2.50

Human Operated
Rate per Mile



\$1.9-2.8mm

Total Cost



\$0.35-0.55

Potential Net
Savings per Mile⁴

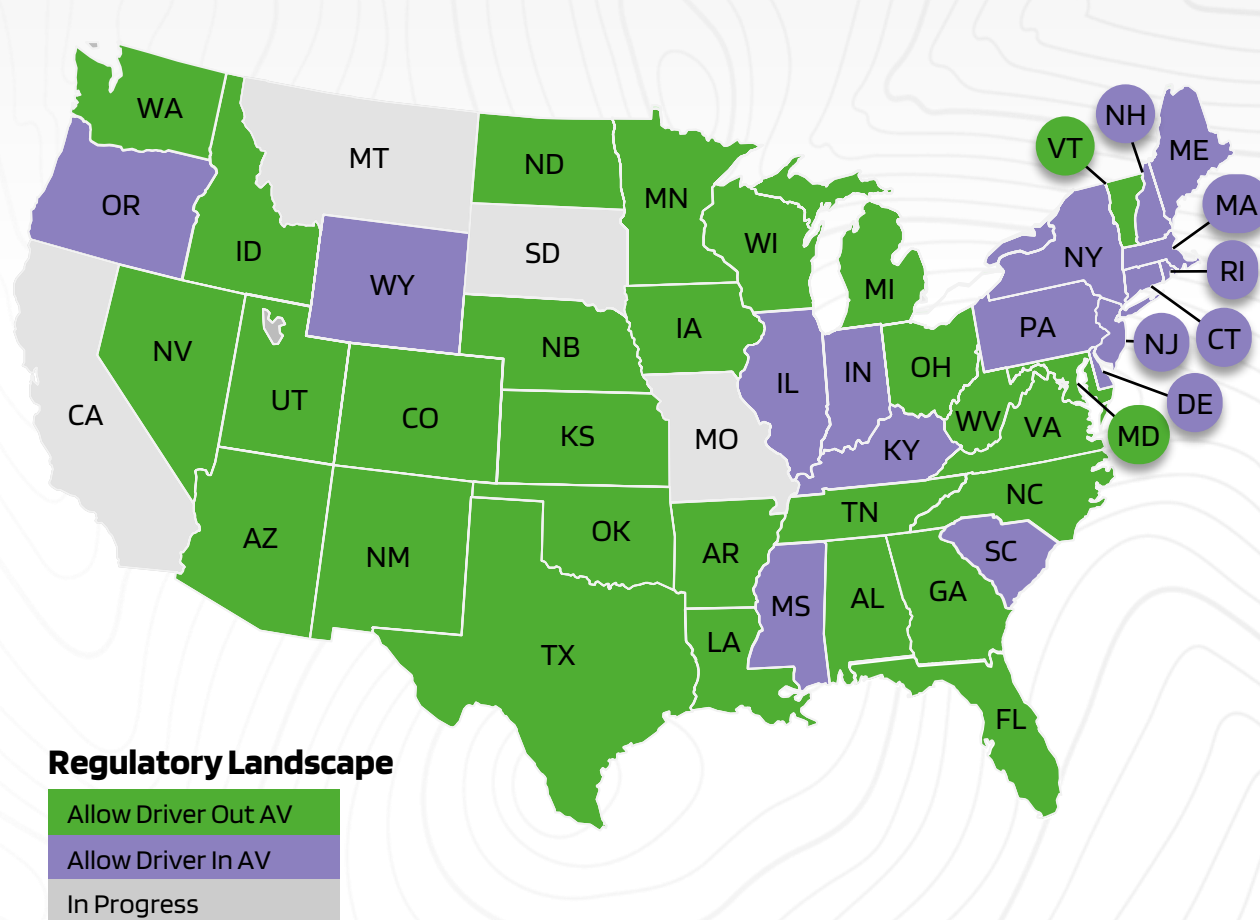


\$262K-619K

Potential Net
Total Savings

28 States Explicitly Allow Driver Out AV Operations

Commercial Vehicle Driver Out Momentum Continues at the State Level



44 states

Allow Driver In AV

28 states

Allow Driver Out AV

Momentum towards allowing for testing and deployment of ADS-equipped commercial trucks:

- **Kansas** (2022) passed legislation
- **West Virginia** (2022) passed legislation
- **Mississippi** (2023) passed identical bills in the House and Senate
- **California** (2023) held an AV workshop to discuss potential regulations

TuSimple's Track Record of Technology Leadership



A History of Industry Firsts

Founded as one of the earliest AV trucking pure plays

2015

2016

Broke 10 world records as computer vision world champions



Received strategic investment from NVIDIA



2017

2018

First to demonstrate fully autonomous truck runs on surface streets and highways

Began autonomous freight operations with UPS and USPS



2019

2020

Launched Autonomous Freight Network

First publicly listed autonomous trucking company. Raised \$1Bn in net proceeds in traditional IPO



Completed over 200,000¹ autonomous miles for UPS²



2021

Autonomous Domain Controller partnership with NVIDIA



2022

2023

First to achieve 10 million road miles

Completion of the Only Fully Driverless Semi-Truck Runs on Open Public Roads

Validating our Technology on the Path Towards Safe, Reliable and Cost-Effective L4 Autonomous Freight Capacity

- ✓ No Human in the Vehicle
- ✓ No Human Intervention
- ✓ Operating Entirely by TuSimple's Autonomous Driving System (ADS)
- ✓ 7 Total Missions
- ✓ 80 Mile Runs Between Tucson & Phoenix per Mission
- ✓ Lasting 1hr and 20min Each
- ✓ In Total Over 550 Miles Driven
- ✓ On Open Public Roads
- ✓ Including Surface Streets, On and Off Ramps and Highways



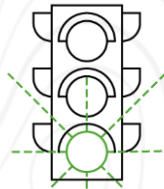
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Disengagements or
Human Intervention



112

Intersections



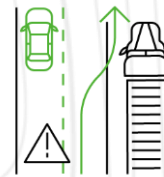
28

Traffic Lights



101

Lane Changes
Executed



34

Emergency Lane
Vehicles Encountered



~7,000

Cars or Trucks
Detected



8

Pedestrians Passed on
Local Surface Streets

TuSimple is the Only Player to Complete Truck Driver Out



	AV Trucking	Robotaxi
Complexity / ODD ¹	 More Complex Vehicle More Defined ODD 40 Ton Average Weight 200 Meter Braking Distance	 Less Complex Vehicle More Expansive ODD 2 Ton Average Weight 100 Meter Braking Distance
Driverless	 No Teleoperations	WAYMO ONE cruise
Safety Driver	Aurora EMBARK kodiak WAYMO VIA	ZOOX Aurora Motional

Note: Based on Company Disclosure

The Technological Advantages of Autonomous Trucks

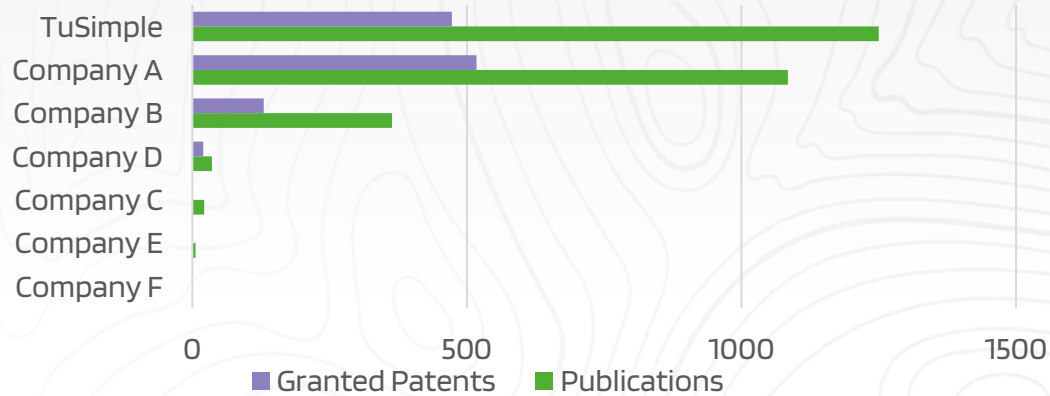
- **Fewer Corner Cases:** Highway focused operations and clearly defined traffic rules
- **No Human in the Vehicle:** No requirement on "comfort level" for passengers
- **Freedom to Customize the Network:** Ability to actively avoid school zones and/or other complex traffic conditions
- **Unparalleled Per-mile Data Density:** High data density (ie. the amount of data accumulated on the same route) eliminates corner cases

The Unique Challenges for Autonomous Trucks

- **Farther perception range by a magnitude:** Range falls outside that of LiDAR sensors
- **Longer planning horizon by a magnitude:** Typical sedan planner is by design not suitable for long planning horizon
- **More precise control accuracy by a magnitude:** Articulated vehicle, heavy, mechanical controls

A Leader in AV Trucking IP

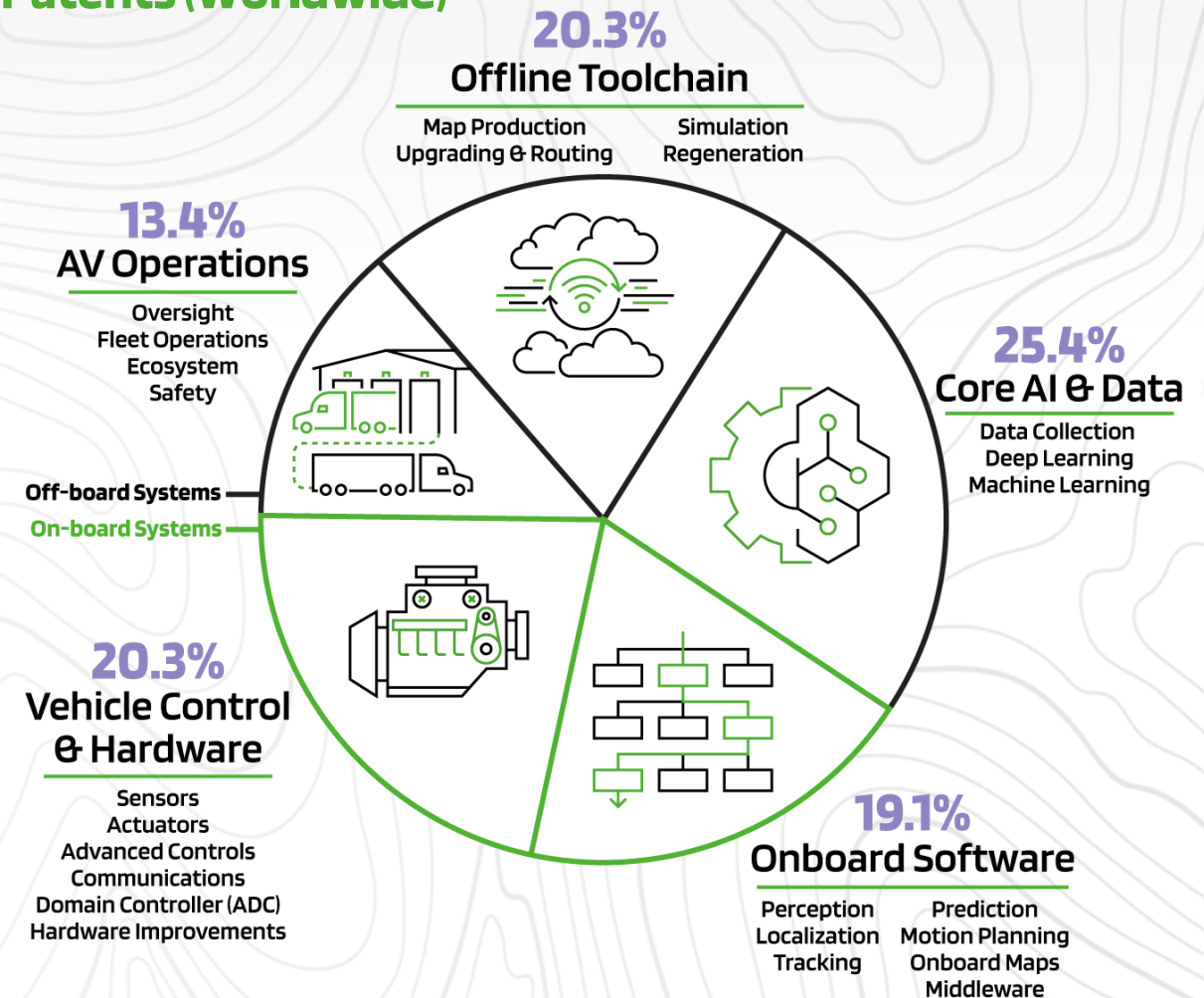
Worldwide Patents and Applications¹



- TuSimple's industry leading patent portfolio of **500+ global patents²** serves as inherent value to shareholders
- TuSimple is the **world's most inventive trucking focused AV company³**
- TuSimple has **IP spanning across the entire Autonomous Trucking ecosystem**

1. As of September 30, 2022: TuSimple research utilizing PatSnap. 2. As of December 31, 2022 3. Measured by global patent asset originated 4. As of January 30, 2023

Approximate Coverage of TuSimple Granted Patents (Worldwide)⁴



Enhancing Corporate Governance

tu simple



Strong Management Team in Place



Cheng Lu
Chief Executive Officer



Eric Tapia
Chief Financial Officer



Shannon DiPietro
Chief Human Resources Officer



Evan Dunn
General Counsel



Lei Wang
SVP, Technology



Jing Zhu
SVP, Software



Graham Taylor
Sr. Director, Hardware Engineering



Robert Rossi
VP, Operations & Maps



Ryan Amerman
VP, Capital Markets & Business Development



Adrian Thompson
VP, Systems & Safety Engineering



Ruilang Zhang
VP, ADS Ecosystem

Active Improvements to Corporate Governance

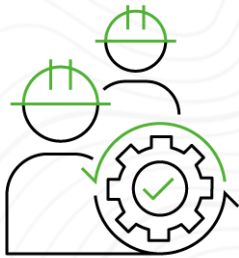
- ✓ Board consist of majority of independent directors (5 out of 7 Board Members)
- ✓ Complementary skillset to help Company in achieving it strategic priorities
- ✓ Since December 2022, reconstituted independent Audit Committee and Government Security Committee

	Financial Expert	Regulatory Experience	Technology Operations	Independent	
Michael Mosier		✓		✓	Former Acting Director of Treasury's Financial Crimes Enforcement Network (FINCEN)
Wendy Hayes	✓			✓	Former Big 4 Accounting Firm Partner, Former PCAOB Inspector
James Lu			✓	✓	Chairman of several technology companies
Tyler McGaughey		✓		✓	Former Deputy Assistant Secretary (DAS) for Investment Security at the U.S. Department of the Treasury
Zhen Tao	✓			✓	Senior Partner at Investment Management Firm, Elected public official

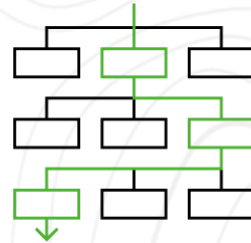
Progress Removing Outstanding Overhangs

FMCSA Closes Investigation into April 2022 Incident

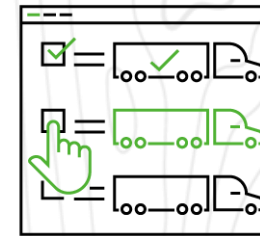
- **Details of the Incident:** A TuSimple truck made contact with a concrete median divider while our autonomous system was being engaged
- **Prompt Action Taken:** Engaged closely with FMCSA in answering questions and listening to feedback
- **Closure of Investigation:** In March 2023, we announced that the FMCSA has closed its investigation into the incident without any penalties brought against the Company
- **Following the external and internal investigations, we identified three main opportunities for improvement:**



Operational
Process



System
Architecture



Verification & Validation
Methodologies

From First Driver Out to First Commercial Launch

tu simple



Driving Towards First to Commercial Launch

Building on prior achievements, a clear and achievable roadmap to be first to launch commercial autonomous freight operations

2022 Driver Out Pilot ▶ Expanded Safety + Increased Reliability + Improved Cost Effective = 2024 Commercial Launch				
Customer-Focused		Commercial launch must meet the rigorous demands of a shipper, including a minimum "level of service" & "freight capacity" reliability threshold & clear line of sight on cost-per-mile that is competitive with human drivers		
1	Initial Driver Out Pilot <i>Proof of Technology</i>	✓ Completion of Driver Out Pilot Safety Case (2021) ✓ Completion of Driver Out Pilot (2022)	✓ One trip per week ✓ Operate in night-time	x Non-scalable AV operations (survey vehicle, chase vehicle, pre-trip & post-trip costs) Feature Complete + Redundancy
2	Initial Commercial Launch <i>Proof of Business Case</i>	❑ Completion of Expanded Driver Out Safety Case ❑ Completion of 3rd Party Audit	❑ Multiple round trips per day ❑ Operate in night-time ❑ Operate in day-time ❑ Operate in construction	❑ Remove survey vehicle ❑ Remove chase vehicle ❑ Reduce miles between returning to MRC ❑ Improve AV Operations Repeatable Ops + Improved Cost Efficiencies

Phased Launch of TuSimple Capacity

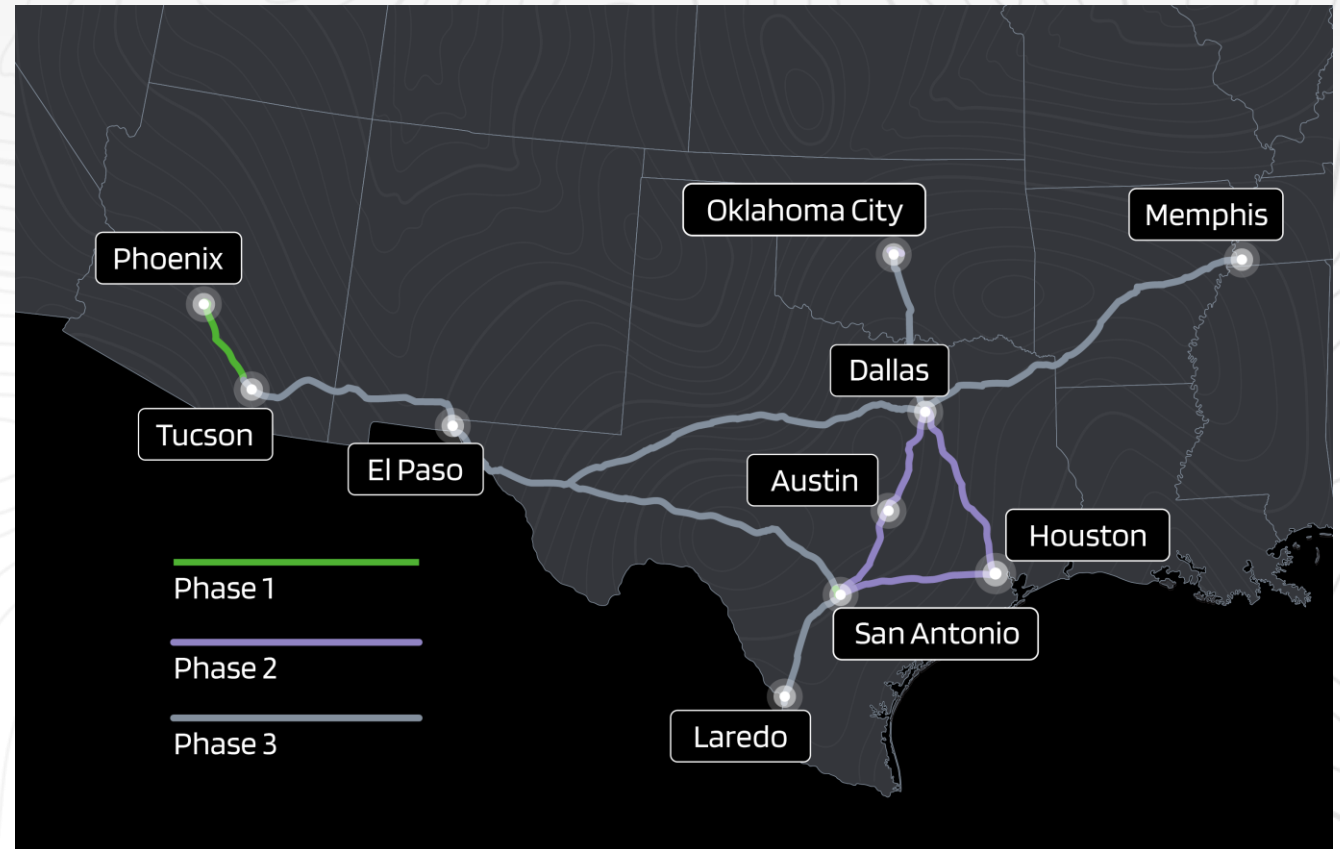
Phased Approach Requires Fewer Resources

- Launching one route is sufficient to **proving commercial viability**
- Operations near Tucson **increases efficiency and reduces costs**
- Optimizing **safety and performance**

Phase 1: Tucson to Phoenix Lane

- Multiple round trips per day, five days per week
- Hauling real freight while consistently delivering at high service levels
- ODD: day and night operations with no support vehicles
- Line of sight to cost per mile parity with human driven trucks

Systematically Adding Routes



Two Development Paths towards Commercialization

Complementary Business Models Remain the Same



TuSimple Capacity

- TuSimple **automates freight routes**
- Strategic route-by-route expansion where TuSimple controls the outcome
- Fastest path to market and critical for industry adoption

\$ / mile Freight Rate

Capital Light Method
Uses Shared Capacity
Leverages Shared AFN Terminals



Carrier-Owned Capacity

- TuSimple enables OEMs to **manufacturer autonomous trucks¹**
- Required to sell to third-party customers
- Dependent on OEM and hardware supply chain timelines

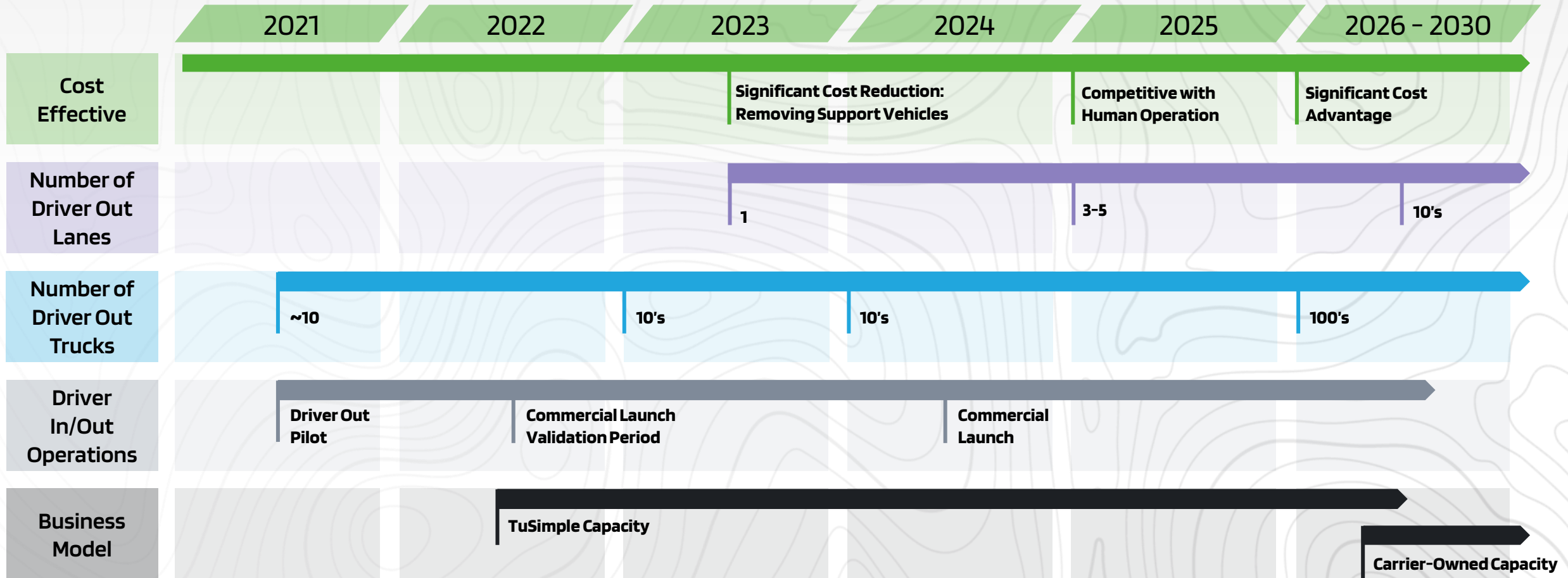
\$ / mile Subscription Fee

Upfront Investment with Payback < 1 year
Controls Own Capacity
Uses Own Terminals

Freight Users

Value Proposition

Long-term TuSimple Roadmap



Proprietary Domain Controller Enables Near-Term Monetization Opportunities

tu simple



TuSimple Domain Controller (TDC) is a Competitive Advantage

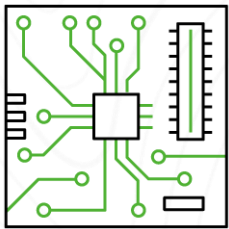


TDC Overview

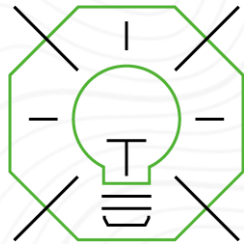
- Partnership between **NVIDIA** and **TuSimple** announced in January 2022
- Ground up hardware design serves as autonomous truck's centralized compute unit
- Enables TSP to provide fully integrated hardware & software autonomy solutions
- Captures larger industry trend of moving from control units at sensor level to a central high-performance computer (HPC)

Benefits of the TDC

- Proprietary designed system includes:



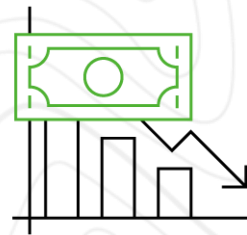
**Better
Integration**



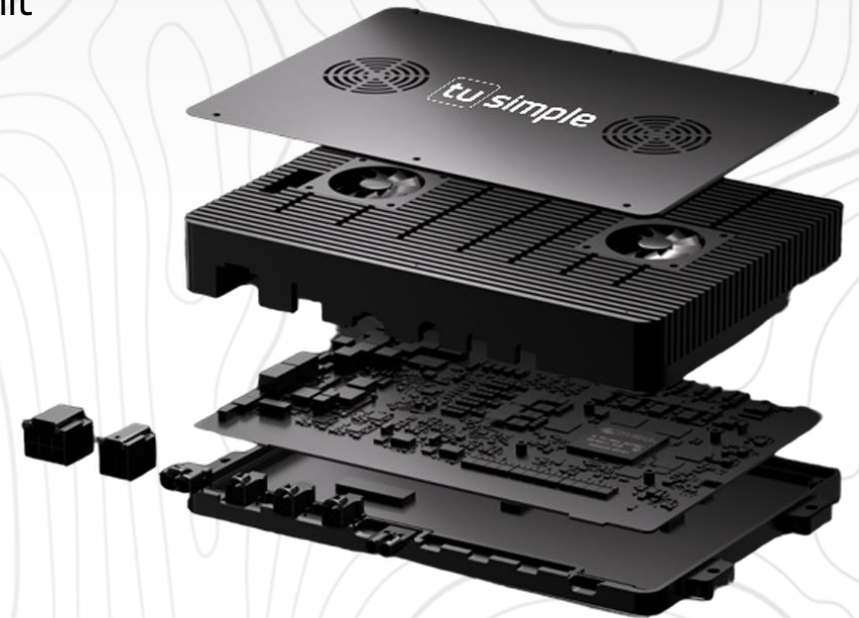
**Low Power
Consumption**



**Shorter
R&D Cycles**



**Lower
End-User Costs**



TDC Unlocks An Array of Commercial Opportunities

Production Timeline:

- **Q2 2023** C-sample units followed by production units in **1H 2024**
- Powered by **NVIDIA DRIVE Orin-X SoC** (system-on-a-chip) with **254 TOPS**

TDC can work seamlessly with different configurations of sensors and application software to enable a range of autonomous solutions

L2+ & L3 ADAS

Fully integrated TSP L2+ and L3 solutions for commercial vehicles starting in Chinese market and expanding to US/European markets

Perception+ Module

High-performance, low-cost perception module fusing together different sensor modalities. Enables OEMs & Tier-1s to develop autonomous systems

L4 Compute

Starting as a redundancy compute unit for additional layer of safety. Next generation TDC to serve as primary compute enabling OEM factory produced AV vehicles

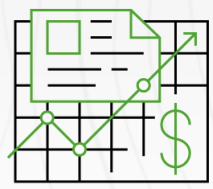
One Holding Company, Two Distinct Businesses

tu simple



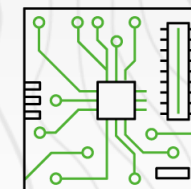
Independent Entities with High Intrinsic Value

TuSimple's US and CN operations are fully-independent entities with only limited corporate function overlap



Shared

Common Reporting
Treasury¹, Compliance Functions



Cost Savings

US utilizes data annotation services and
procures hardware from China Ops

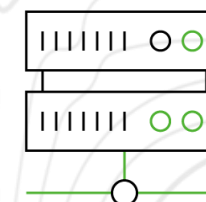


One Holding Company
Two Distinct Businesses



Independent

Separate HR systems, enterprise
applications / communication tools



Independent

Separate end- market use cases,
engineering teams, source code & other
repositories, data storage

China | Opportunity and Achievements

Product Offerings



L2+/L3 Driver In ADAS in Collaboration with NVIDIA

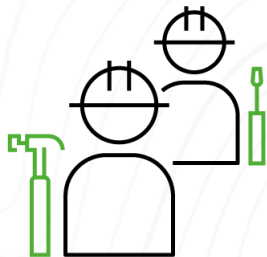
- Building upon partnership with NVIDIA to provide integrated software and hardware for ADAS solutions for the China market



L4 Autonomous Freight Network

- Build Autonomous Freight Network on the most concentrated shipping routes in China and provide autonomous freight capacity as a service

Achievements¹



450+

R&D Professionals



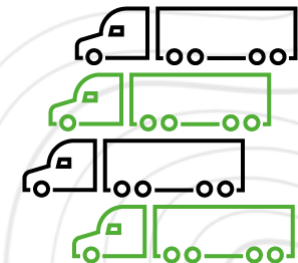
350+

Issued Patents²



~900,000

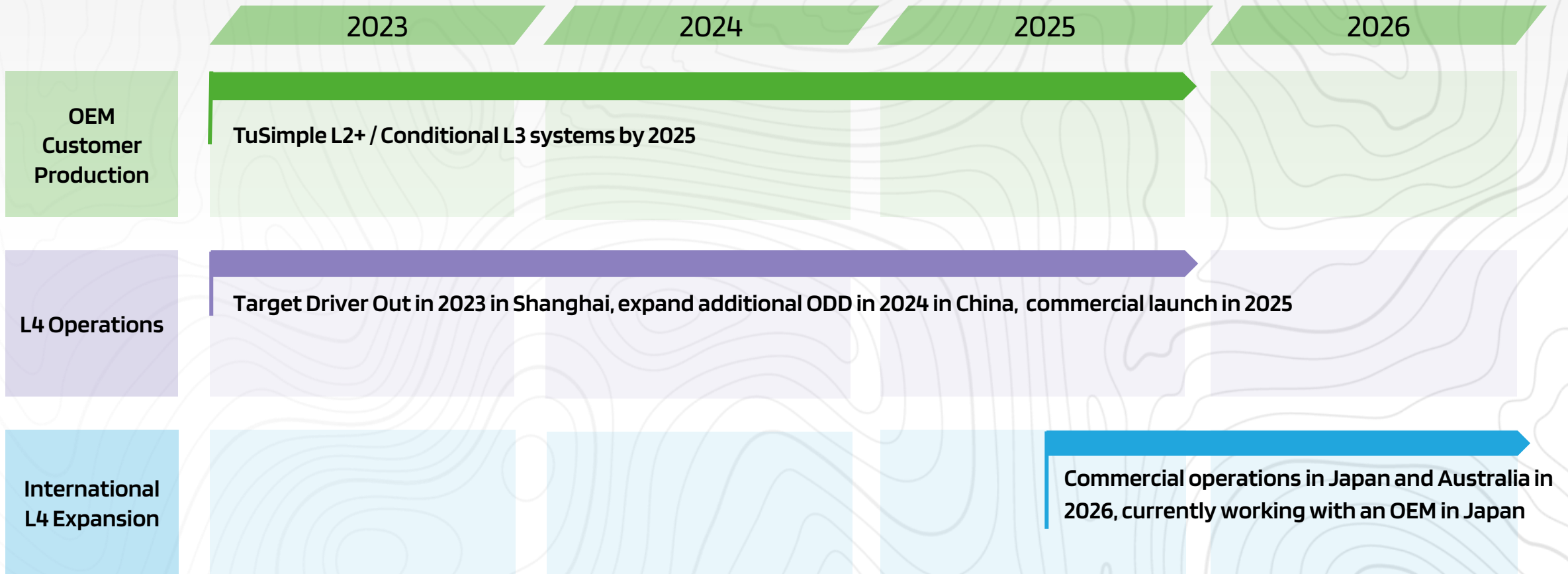
L4 Road Test Miles



~25

Trucks in L4 Fleet

China | Commercial Launch Roadmap



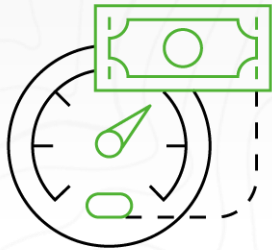
A large, dark-colored autonomous truck is parked inside a spacious industrial warehouse. The truck has "tu simple" written on its side. The warehouse has a high ceiling with many fluorescent lights and large windows on the right side showing a bright sky with clouds. A green horizontal line runs across the middle of the image.

3

Financials and Forecasts

2023 Key Considerations

TuSimple ended 2022 with ~\$1B in Cash and Short-Term Investments¹; Refined 2023 Strategy Reduces Revenue and OpEx While Protecting our Balance Sheet



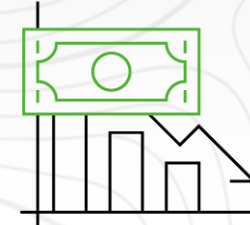
Revenue

- Intentional reduction of loss-making freight capacity
- Reduce geographical footprint to match AV commercial launch roadmap



OpEx

- \$55 mil. – \$65 mil. of cash comp savings expected from Dec. '22 workforce reduction
- Additional OpEx savings expected from company-wide improved efficiency and scale



Capital Expenditure

- Upgrade existing trucks, reduced purchase of new trucks
- No new operational facilities beyond Arizona nor IT hardware investments



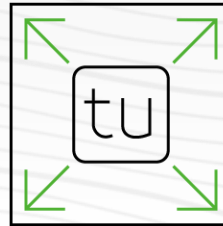
2023 Cash & Short-Term Investments

- OpEx and CapEx savings expected to drive cash spend decrease while still funding commercial launch capabilities
- Improved management and yield generation of idle cash

Substantial Revenue and Network Scaling opportunity has not changed



TuSimple technology remains industry leading and we continue to believe we will capture market share



Initial focus on commercial launch TuSimple Capacity, path to positive cash flow with ~500 trucks



Launch of Carrier Owned Capacity required to scale to tens of thousands of trucks

Timing: Factors impacting timeline provided at 2022 Investor Day

- Dependent on OEM development timeline to launch Carrier Owned Capacity
- Supply chain partners focused on near-term opportunities: EV and L2+ ADAS

In Conclusion

Focusing on What it Takes to Win

Creating shareholder value through building on our technology leadership, creating near-term monetization opportunities, and proactively protecting our balance sheet



**Investment Thesis for AV
Trucking Remains Strong**



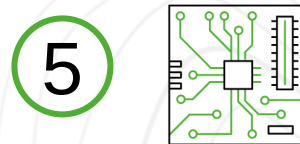
**TuSimple's Track Record
of Technology Leadership**



**Enhancing Corporate
Governance**



**From First Driver Out to
First Commercial Launch**



**TuSimple Domain Controller
Enables Near-Term
Monetization Opportunities**



**One Holding Company,
Two Distinct Businesses**

An aerial photograph of a large truck depot at sunset. The scene is bathed in the warm, golden light of the setting sun, which is visible on the left side of the frame. In the foreground, five white TuSimple semi-trucks are parked in a row, facing towards the left. Behind them, numerous white semi-trailers are stacked in neat rows, some with the 'tu simple' logo visible on their sides. The depot is situated in a desert environment with sparse vegetation and a clear sky. In the background, industrial buildings and distant mountains are visible under the twilight sky.

Thank You