Duos Technologies Group, Inc.

Initiating Coverage with BUY and $5.00 Target

Large market opportunities for its RIP (Railcar Inspection Portal). We believe continued strong growth over the next year to drive stock higher.

United States
Technology

January 18, 2023

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COVERAGE INITIATION

Rating: BUY

Ticker: DUOT

Price: $2.67

Target: $5.00

Initiating with BUY: We are initiating coverage of Duos Technologies Group with a BUY rating and a 12-month price target of $5.00. Duos develops and operates intelligent vision based inspection technology solutions for rail, logistics, intermodal, and government customers.

Focused on RIP (Railcar Inspection Portal): The company has developed the Railcar Inspection Portal (RIP) that provides both freight and transit railroad customers and select government agencies the ability to conduct fully automated inspections of trains while they are in transit.

RIP system and benefits: The RIP system, which incorporates a variety of sophisticated optical technologies, illumination and other sensors, scans each passing railcar to create an extremely high-resolution image set from a variety of angles including the undercarriage. These images are then processed through various methods of artificial intelligence ("AI") algorithms to identify specific defects and/or areas of interest on each railcar.

7 million scans in 2022: Duos believes the market opportunity for its Rail Inspection Portal (RIP) business is substantial. In 2022, the company estimated that it performed over seven million comprehensive railcar scans. Of this, it estimated that 573,000 were unique railcars, representing ~35% of the total freight car population in North America. While this may seem a lot, there are a lot of rules and regulations requiring rail car inspections such that there are still a lot of market growth opportunities.

Rail inspection requirements: Federal regulations require each railcar/train to be inspected for mechanical defects prior to leaving a rail yard. Under current practice, inspections are conducted manually, a very labor intensive and inefficient process that only covers a select number of inspection points and can take several hours per train.

Market opportunities: There are an estimated 1.6 million railcars, 140,000 track miles, and over 500 rail yards in North America. There is a big push by federal regulators and railroad companies to move towards advanced technology and automation to reduce costs, increase efficiency, and improve safety.

Continued strong growth can be catalyst: The company has provided 2022 revenue guidance of $16.5 – 18.0 million, representing an increase of 99% to 117% from 2021. The company has provided general qualitative goals (not formal financial guidance) for 2023 revenues of $20 – 24 million and to be break even profitability.

However, challenges exist: Duos operates in a highly competitive environment and competes against a wide range of other technologies. There is the chance that competing technologies may challenge Duos technologies or that existing "low tech" inspection methods remains the industry standard.

Positive high risks versus high rewards: Overall, concerns outweighed by growth prospects and valuation. Duo's main RIP product still has long commercialization challenges ahead, but we believe the ~billion dollars market potential presents high rewards for the risks.

Current valuation attractive: We calculate a 12-month price target for shares of Duos to be $5.00 based on a NPV analysis, representing significant upside from the current share price. We believe this valuation appropriately balances out the company's high risks with its high growth prospects and large upside opportunities.

Company Description

Duos Technologies Group, based in Jacksonville, FL develops and operates intelligent vision based inspection technology solutions for rail, logistics, intermodal, and government customers.

Stock Data

Exchange:	NasdaqCM
52-week Range:	1.80 – 6.24
Shares Outstanding (million):	7.1
Market cap ($million):	$19
EV ($million):	$14
Debt ($million):	$0
Cash ($million):	$5
Avg. Daily Trading Vol. ($million):	$0.1
Float (million shares):	3
Short Interest (million shares):	0.1
Dividend, annual (yield):	$0 (NA%)

Revenues (US$ million)

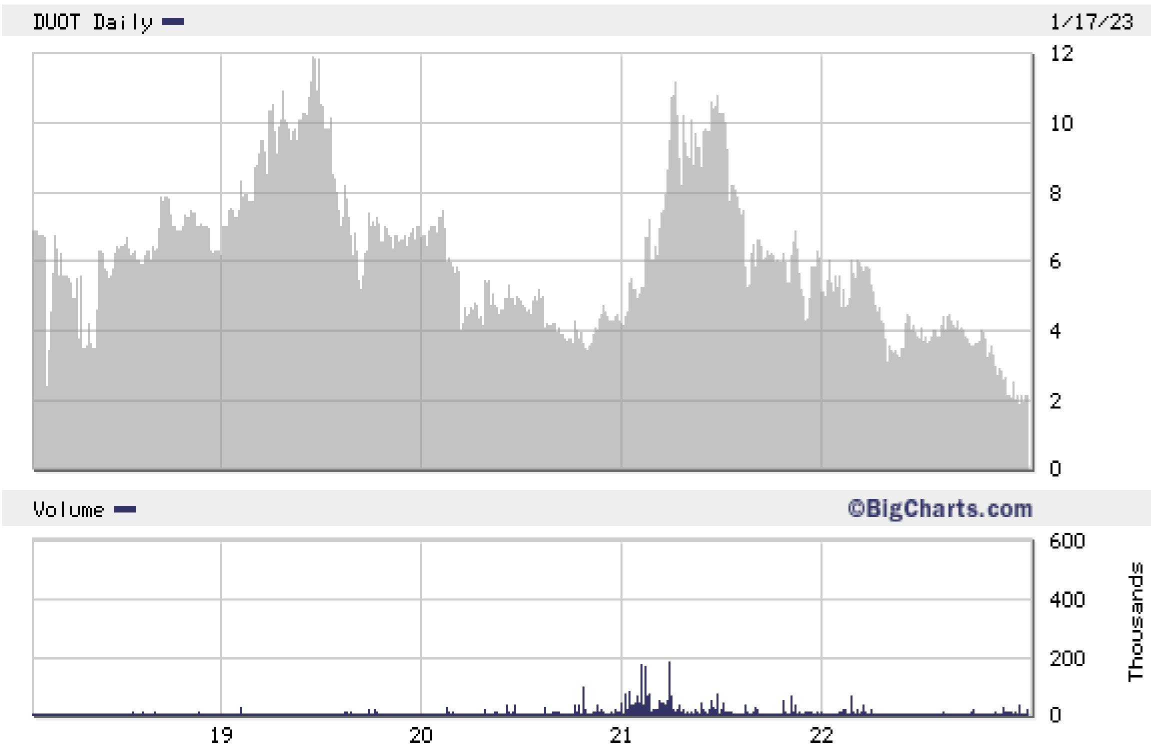
	2021A (Cur.)	2022E (Cur.)	2023E (Cur.)
Q1 Mar	2.2A	1.4A	2.5E
Q2 Jun	0.6A	3.6A	3.8E
Q3 Sep	1.7A	4.0A	4.2E
Q4 Dec	3.7A	7.6E	7.7E
Total	**8.3A**	**16.7E**	**18.3E**
EV/Revs	1.7x	0.8x	0.8x

Earnings per Share (pro forma)

	2021A (Cur.)	2022E (Cur.)	2023E (Cur.)
Q1 Mar	(0.11)A	(0.49)A	(0.27)E
Q2 Jun	(0.83)A	(0.22)A	(0.27)E
Q3 Sep	(0.68)A	(0.30)A	(0.22)E
Q4 Dec	(0.05)A	(0.10)E	0.01E
Total	**(1.63)A**	**(1.06)E**	**(0.74)E**
P/E	N/A	N/A	N/A

For analyst certification and other important disclosures, refer to the Disclosure Section, located at the end of this report, beginning on page 31.

Exhibit 1: Duos Technologies Group, Inc. Stock Price (5-Years)



Source: https://bigcharts.marketwatch.com/

INVESTMENT THESIS

We are initiating coverage of Duos Technologies Group with a BUY rating and a 12-month price target of $5.00.

Duos Technologies Group, based in Jacksonville, FL develops and operates intelligent vision based inspection technology solutions supporting rail, logistics, intermodal, and government customers. The company's intelligent technology solutions automate the mechanical and security inspection of fast-moving trains, trucks, and automobiles through a broad range of proprietary hardware, software, information technology, and artificial intelligence ("AI"). This helps railroading, logistics, and inter-modal transportation operations by streamlining operations, improving safety, and reducing costs.

The company has developed the Railcar Inspection Portal (RIP) that provides both freight and transit railroad customers and select government agencies the ability to conduct fully automated inspections of trains while they are in transit. The system, which incorporates a variety of sophisticated optical technologies, illumination and other sensors, scans each passing railcar to create an extremely high-resolution image set from a variety of angles including the undercarriage. These images are then processed through various methods of artificial intelligence ("AI") algorithms to identify specific defects and/or areas of interest on each railcar.

Exhibit 2: Duos Technologies Group Corporate Overview

Source: Company reports.

The company is currently providing its RIP solution to three of seven Class 1 railroad operators with 11 systems already deployed (with 15 planned to be deployed by the end of 1H 2023). One of those railroad customers is broadly deploying the technology across its network. The RIP Railcar Inspection Portal is a modular intelligent visualization system that provides real-time detailed 360-degree imaging at high speeds. The RIP can be used for a variety of inspection criteria on mainlines or in yards. The company has deployed RIPs in Canada, Mexico, and the U.S. and anticipates expanding this solution into Europe and Australia in coming years.

The company is expanding its focus in the rail industry to encompass passenger transportation and was awarded a large, multi-year contract with a national rail carrier. The company anticipates that it will manufacture a two-RIP solution for the carrier in 2022 and complete delivery during Q2 2023.

The company has also developed the Automated Logistics Information System (ALIS) which automates and reduces/removes personnel from gatehouses where trucks enter and exit large logistics and intermodal facilities. This solution incorporates sensors and data points for each operation and directly interconnects with backend logistics databases and processes to streamline operations and significantly improve operations and security and improves vehicle throughputs.

Duos currently operates in North America including the U.S., Mexico, and Canada and its main customers are rail transportation companies, though it is trying to expand and diversify to other commercial and government customers as its technology solutions can be employed into many other industries. Duos's contracts have historically been an initial fixed price with ongoing maintenance and support contracts though there is now a push into low/no initial costs but recurring subscription revenues.

Exhibit 3: Duos Investment Highlights

Investment Highlights

Significant Global Market Opportunities*

- *Combined North American markets exceed $24B*
  - *$3.5B Rail Transportation*
  - *$2.3B Global Cargo Inspection*
  - *$4.7B Aviation Maintenance and Repair Operations*
  - *$13.5B 5G/Edge Data Centers*

• Multiple sources previously cited

Strong Rail Industry Tailwinds

- *Industry rapidly moving toward automation and optimization to reduce costs, increase safety and improve efficiency*
- *Planned deployments of Duos owned portals in strategic locations on North American rail network*

Expanded Potential Customer Base

- *Multiple multi-million dollar deployments announced in 2022 continuing in 2023*
- *Potential for 100s of additional customers through **new subscription data** program*

Superior Proprietary Technology

- *Spent majority of 2021 on further developing in-house technologies to enable exponential scaling in 2022 – 2024*
- *Significant capabilities to acquire **value added data** for Class 1 & transit rail companies*

Improving Financial Position

- *2021 revenue of $8.25 million*
- *2022 expected revenue of **$16.5 - $18 million with improved margins anticipated***
- *Improved Balance sheet with sufficient working capital*
  - Strengthening cash position to tackle subscription market
- *Increasing project scopes & recurring revenue base*

Built for the Future

- *Expanded AI and deep learning functionality*
- *Developed "**Expert AI**" concept*
- *Launch AI Detection Catalogue*
- *Ongoing Focus on AI and Software Technology*
  - Expected increased margins and recurring revenues

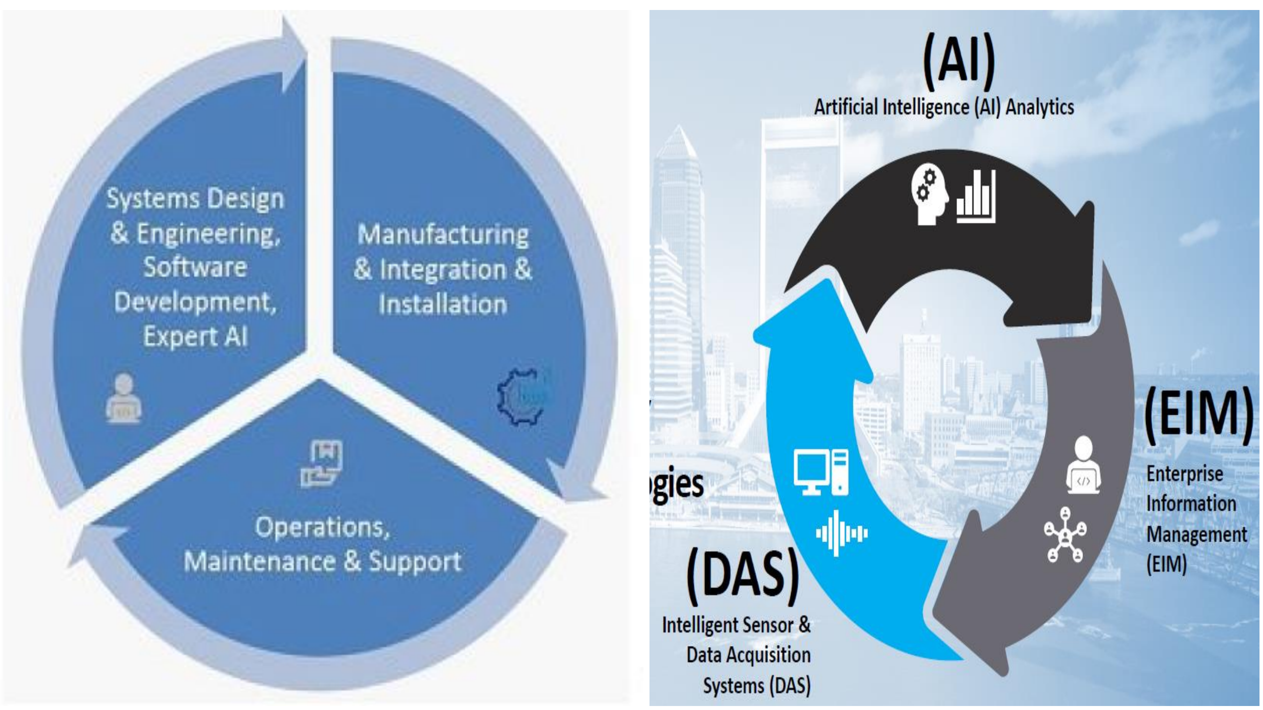
Source: Company reports.

Federal regulations require each railcar/train to be inspected for mechanical defects prior to leaving a rail yard. Under current practice, inspections are conducted manually, a very labor intensive and inefficient process that only covers a select number of inspection points and can take several hours per train. Duos believes its RIP has the potential to reduce this inspection to minutes while the train is moving at speed improving safety, reducing dwell time (the time a railcar spends at a scheduled stop without moving) and optimizing maintenance.

Duos believes the market opportunity for its Rail Inspection Portal (RIP) business is substantial. In 2022, the company estimated that it performed over seven million comprehensive railcar scans. Of this, it estimated that 573,000 were unique railcars, representing approximately 35% of the total freight car population in North America. While this may seem a lot, there are a lot of rules and regulations requiring rail car inspections such that there are still a lot of market growth opportunities.

There are an estimated 1.6 million railcars, 140,000 track miles, and over 500 rail yards in North America. There is a big push by federal regulators and railroad companies to move towards advanced technology and automation to reduce costs, increase efficiency, and improve safety. The company constantly upgrades its RIP engineering and software to meet anticipated Federal Railroad Association (FRA) and Association of American Railroad (AAR) standards. Currently, the company is focused on the North American market, but plans to expand globally in the future.

Exhibit 4: Duos's Turnkey Intelligent Technologies Solutions



Source: Company reports.

Duos's recent financial performance has been strong and reflective of its early and high growth commercialization stage. In its Q3 2022 report (on November 14, 2022), the company reported revenues of $4.0 million and net loss was $1.9 million (EPS of $(0.30)), compared with Q3 2021's revenue of $1.7 million and net loss of $2.5 million (EPS of $(0.68)). Revenues grew +131% y-o-y and +11% sequentially from Q2. Operating expenses were $3.0 million, compared to Q3 2021's $2.5 million (reclassified).

The large increase in revenue was primarily related to the substantial completion of several railcar inspection portals and portal installations in Q3. Duos currently has two additional RIPs that are nearing completion with another two expected to come online in early 2023. Duos expects to have 15 RIPs installed by the end of the first half of 2023.

Duos plans to build, own and operate RIPs at strategic locations within the North American rail network. This new offering and subscription pricing model should dramatically increase its potential customer base, while also improving margins and predictability of revenues over the long term.

The company has provided 2022 revenue guidance of $16.5 – 18.0 million, representing an increase of 99% to 117% from 2021. This implies Q4 revenue guidance of $7.4 – 8.9 million (+100 – 140% y-o-y). The company has not provided specific earnings guidance, but we believe that the higher revenue growth should provide operating leverage and improve gross margins and operating income (loss).

We have modeled solid revenue growth in 2022 and 2023 and relatively steady operating costs over the next year, which should drive improved margins and profitability. For 2022, we expect revenue of $16.7 million (+102%), a net loss of $6.6 million, and EPS of $(1.06). For 2023, we expect revenues of $18.3 million (+10%), a net loss of $5.4 million, and EPS of $(0.74).

The company has provided general qualitative goals (not formal financial guidance) for 2023 revenues of $20 – 24 million and to be break even profitability. While our 2023 estimates are below the company's qualitative goals, we believe our estimates are very conservative and there is significant upside potential particularly if the company continues to add customers and expand business with existing customers.

We believe investors should be focused on its progress on its RIP product commercialization, which is growing very fast and is expected to have continued high growth over the next several years. We believe that the biggest potential variable and challenge to our financial model is the ability of the company to successfully develop, commercialize, and grow its RIP business platforms. If the company can make significant progress towards these goals, then revenue and earnings will likely be able to grow significantly. However, if the company has difficulties in making progress towards these goals, then revenue growth and profitability may not be achieved or will likely grow at a low rate or even not at all.

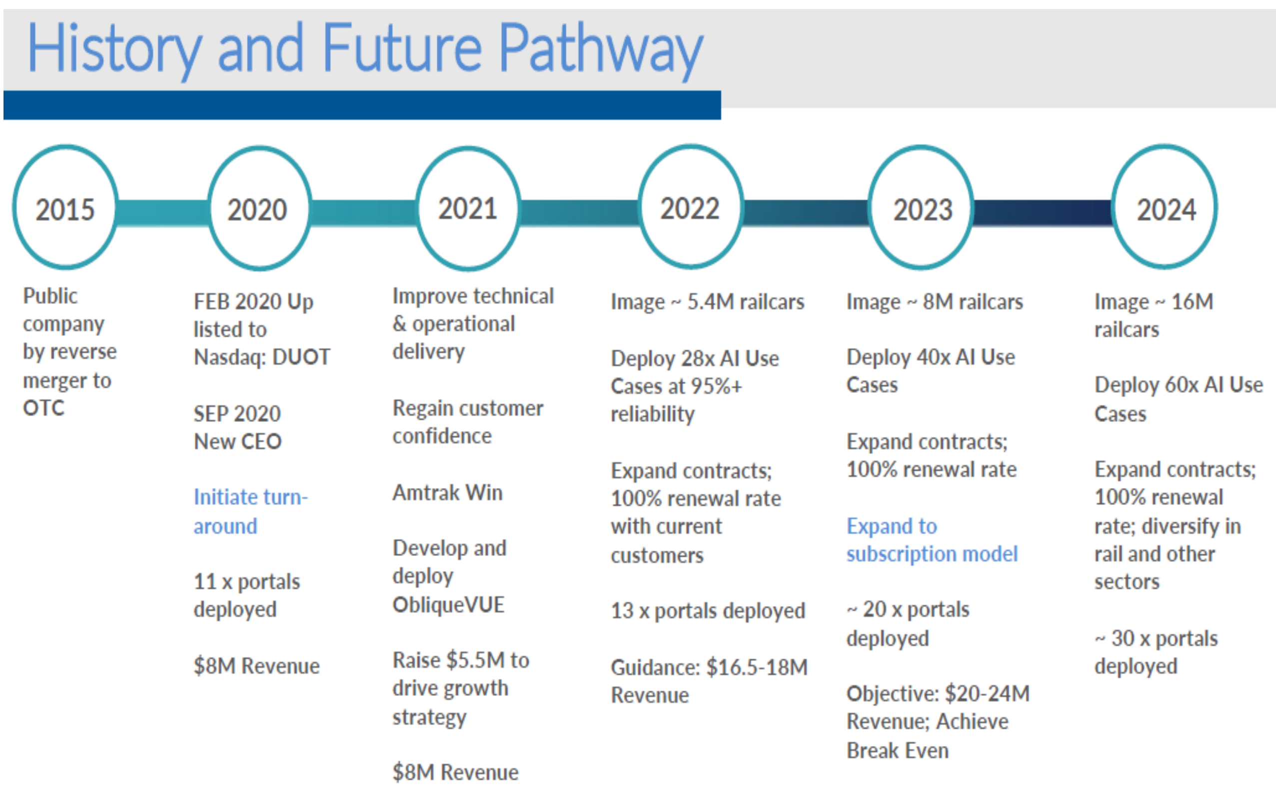
The company's balance sheet has $5 million in cash and no debt as of September 2022. In October 2022 (just ended Q4), the company raised ~$0.6 million selling stock and preferred stock (~0.2 million shares at $3.00/share). In September 2022, the company raised ~$3.5 million selling stock and preferred stock (~1.2 million shares at $3.00/share). We believe the company has enough cash through Q4 2023, but that it will likely need to raise capital in late 2023.

Our investment thesis factors in an uncertain product commercialization and growth prospects which is offset by the very large potential upside opportunities created from successful business execution of its financial and strategic plans. We believe that the current valuation for Duos has already factored in many of its risks (principally successful commercialization and growth) but is under valuing its overall growth prospects and market opportunities, resulting in a positive risk versus reward scenario for an investment in Duos.

We believe the current valuation is attractive.

Based on our expectations and assumptions and our NPV analysis, we calculate a 12-month price target for shares of Duos to be $5.00, representing significant upside from current share price. We believe this valuation appropriately balances out the company's high risks with the company's high growth prospects and large upside opportunities. We acknowledge that Duos is still at an early stage in its product commercialization, but we believe its high growth and key product development and commercialization milestones over the next year should be positive catalysts for the stock.

Exhibit 5: Duos Recent History and Future Growth Plans



Source: Company reports.

INVESTMENT RISKS

Growth and Commercialization Risks

Duos's goal is to increase the operational and financial growth and profitability of its main RIP business. The company will need to increase awareness to its target markets (railroad industries) and to demonstrate superiority (more effective, lower costs, and/or better technologies) of its technologies and services. The markets for technology software and hardware are characterized by high competition, frequent technological developments and innovations, new product and services, and evolving technology industry standards. This will require Duos to develop its technologies, services, expertise and reputation, and continue to improve the effectiveness and ease of use of its technologies and services. While the market opportunities are large, there are always significant risks to grow (add new customers) and commercialize products (grow or maintain revenue per customers).

Competition

Duos operates in a highly competitive environment and competes against a wide range of other technology companies that are attempting to replicate or have better technologies and operations than the company's main RIP product. Although Duos believes that its products and services are superior to competing products and technologies and has limited direct competition, there are always the possibility of new entrants or difficulties with existing competition. In addition, railroad companies may develop their own "in-house" technology systems or continue to rely on historical "low-tech" inspection methods.

Duos competes directly and indirectly with very large technology and railroad companies that are much larger, have greater resources, very large customer base, and proprietary technology; which could result in lower projected sales for Duos and at higher costs, reduced margins, and lowered profitability for the company.

Technology Risks

Technologies are constantly changing and improving due to new technologies, changing business and consumer demands, or changes in government regulations. This requires a company like Duos to constantly invest in its technology and products. This is much more the case for Duos since the company is relatively small and it is actively focused on software and AI (artificial intelligence) which has rapidly changing technologies. Specifically, AI technologies and products are still being established and there are numerous various viable business platforms being developed. If Duos is unable to keep its products innovative, effective, and useful, it may find its technologies and products obsolete.

Concentrated Products and Customers

The company is currently focused on its one main product (RIP). This product is aimed for the railroad industry and railroad (freight and passenger) companies. While the company has a large and wide range of customers to target (since its customer base is still small), its current customer base is highly concentrated. In 2021, one customer accounted for 83% of revenues. It has broadened in 2022, as for the 9-months ended September 30, 2022, four customers accounted for ~84% of revenues (25%, 21%, 19%, and 19% respectively). For the 9-months ended September 30, 2022, ~54 % of revenue was generated from four customers outside of the U.S. The company is very leveraged to the success or failure of RIP. If Duos were to experience difficulties with development and commercialization of its RIP products, then it may have a material negative impact on its business and financials as there are no meaningful products which can offset.

Economic Uncertainties

General technology spending tends to be correlated with economic activity and income levels due to their discretionary nature, so major deterioration in economic conditions tends to result in an overall decline in consumer and enterprise spending. This was demonstrated during the 2008 and 2009 Great Recession and global economic slowdown. While enterprise and consumer spending levels and economic conditions have rebounded since and have been strong the past several years, the global macroeconomic environment can change significantly quickly as was shown with the start of the pandemic in March 2020. Since then, due to huge government stimulus the U.S. economy has been very strong the past 2 years. However, recent macro slowdowns, high inflation, and disrupted supply chains have caused costs to soar, inventory and product input shortages, and unreliable lead times. Further economic disruptions and weakness may result in depressed enterprise and consumer spending levels; this may have a negative impact on Duos and its customers.

Capital Markets Risks
We believe Duos has enough cash to fund its operations into Q4 2023, but that it will likely need to raise capital in late 2023 to fund its commercialization and growth plans. We believe that it will be at least another year before the company can be cash flow self-sufficient from operations. Many early stage technology companies fund their operations from the sale of equity or debt capital until their products or services reach commercial success. Early stage technology companies valuations tend to fluctuate widely, particularly in the past year with the volatility in the markets. There is always the chance that market interests and valuations for companies in this industry (or the total stock market) can decline significantly. The share price volatility in the past year (with a stock price range of $1.80 – 6.24) in Duos share price may make capital raising much more difficult and expensive.

VALUATION

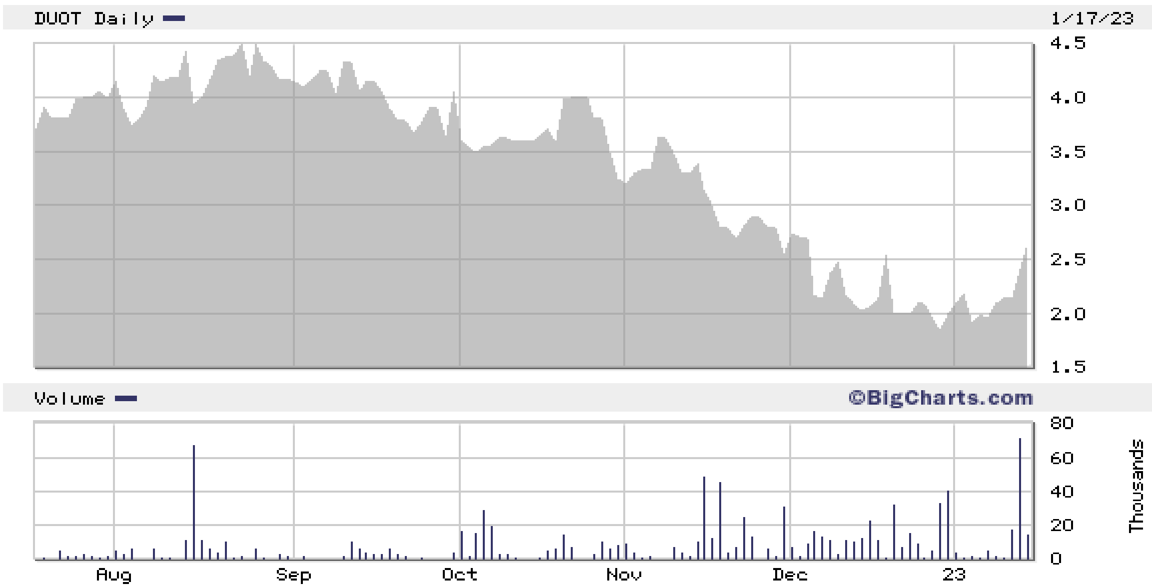
We are initiating coverage of Duos Technologies Group with a BUY rating and a 12-month price target of $5.00, which is based on a NPV analysis. The company currently generates revenue but also significant losses as it invests to grow its businesses so traditional valuation metrics are not useful. We believe a more accurate valuation should take into consideration the potential future value of its businesses. We do acknowledge that this valuation is complex and requires a large number of forward assumptions that we have to estimate that may be imprecise and may vary significantly from actual results. This is particularly so for a company like Duos which is still in early high growth phase with its main business.

However, we believe our assumptions are fair and provide a reasonable basis for our valuation analysis. Our analysis considers future estimated profits from its major business segment (based on estimated future revenue and profits and discounted this back to a current value), currently focused on its RIP (Railcar Inspection Portal) business. We apply a high discount rate to capture the high uncertainties associated generally with early stage companies. We then added up the values (including estimated current net cash), and allocated the value based on current share count. Based on our NPV analysis, we arrived at our 12-month price target of $5.00, which we believe appropriately balances out the company's risks with its high growth prospects.

Duos's share price has been weak (and highly volatile) in the past year. Since 12/31/21, Duos's share price is –48% (was $5.13 on 12/31/21) to the current share price of $2.67 (as of 1/17/23). The share price has traded between $1.80 and $6.24 in the past year and $1.80 and $4.11 in the past 3 months (since October 1, 2022). We believe the share price weakness is due to general stock price weakness and volatility with small/microcap tech stocks in 2022 (Russell 2000 Index of small-cap U.S. stocks was -20% in 2022).

We believe that there are near term catalysts that can drive the stock (particularly for key sales and growth milestones expected in 2023). As the company is likely to make significant progress (and growth) in its businesses over the next several years, we believe this will result in much improved visibility into future cash flows and higher share price. Although it is very likely that the company will have to raise capital to achieve its product development and commercialization goals, we believe that positive progress will make future financings accretive to current shareholders.

Exhibit 6: Duos Technologies Group, Inc. Stock Price (6-Months)



Source: https://bigcharts.marketwatch.com/

We believe the company has enough cash through Q4 2023, but that it will likely need to raise capital in late 2023 to fund its commercialization and growth plans and to achieve its strategic goals.

We expect valuations for Duos to improve as visibility into cash flow generation becomes clearer, resulting in significant upside to the current share price. We also want to note that investor's interest in technology companies (particularly with software, SAAS, and AI companies) are still very high (even with recent market pullbacks) with many companies in this area attributed high valuations due to the large market and growth opportunities.

Exhibit 7: Company Valuation (DCF) (in millions)

Valuation of Business Segments (in millions)

Product	Calculated NPV	Discount Rate	Estimated Annual Profits	Estimated Net Income Margin	Estimated Annual Revenues
Rail Inspection Portal (RIP) Software and Services	$ 32	20%	$ 6	16%	$ 40
Total	**$ 32**				
Net cash	$ 4				
Current Value for existing shareholders	$ 36				
Shares Outstanding (mils)	7				
Estimated Value per share	**$ 5.00**				

Source: Ascendiant Capital Markets estimates

COMPANY

Duos Technologies Group, based in Jacksonville, FL develops and operates intelligent vision based inspection technology solutions supporting rail, logistics, intermodal, and government customers. The company's intelligent technology solutions automate the mechanical and security inspection of fast-moving trains, trucks, and automobiles through a broad range of proprietary hardware, software, information technology, and artificial intelligence ("AI"). This helps railroading, logistics, and inter-modal transportation operations by streamlining operations, improving safety, and reducing costs.

The company has developed the Railcar Inspection Portal (RIP) that provides both freight and transit railroad customers and select government agencies the ability to conduct fully automated inspections of trains while they are in transit. The system, which incorporates a variety of sophisticated optical technologies, illumination and other sensors, scans each passing railcar to create an extremely high-resolution image set from a variety of angles including the undercarriage. These images are then processed through various methods of artificial intelligence ("AI") algorithms to identify specific defects and/or areas of interest on each railcar.

Information Systems Associates, Inc. ("ISA") was incorporated in Florida in 1994. ISA's original business consisted of consulting services for asset management of large corporate data centers and the development and licensing of information technology ("IT") asset management software. In late 2014, ISA entered negotiations with Duos Technologies, Inc. ("duostech") to execute a merger (a "reverse triangular merger" with a newly formed subsidiary of ISA to merge with and into duostech, with duostech as the surviving entity). Incorporated in Florida in 1990, duostech specialized in the design, development and deployment of proprietary technology applications and turn-key engineered systems. From its inception, duostech initially focused on security solutions for the homeland security and critical infrastructure protection markets, and has adapted its technologies over the years to a wide suite of applications.

This transaction was completed in April 2015, whereby duostech became a wholly owned subsidiary of ISA. ISA then changed its corporate name to Duos Technologies Group, Inc. ("Duos"). In February 2020, Duos uplisted to the NASDAQ Capital Market from OTCQX (top tier of the three marketplaces for the over-the-counter (OTC) trading of stocks). As part of the uplisting, the company raised $9 million selling stock (1.5 million shares at $6.00/share). The company has approximately 75 employees.

Exhibit 8: Duos Company Timeline

Source: Company reports.

Exhibit 9: Duos Management Team

Source: Company reports.

Charles (Chuck) Ferry (age 56) has been Chief Executive Officer since September 2020. Mr. Ferry combines over three years of experience in the energy industry and seven years in the defense contracting industry following 26 years of active-duty service in the United States Army.

On November 14, 2022, the company announced the retirement of Adrian Goldfarb (age 64) as Chief Financial Officer (has been CFO of Duos and its predecessor since 2012). Mr. Goldfarb will remain as a strategic advisor to the company. The company appointed Andrew Murphy (age 39) as its new CFO. Mr. Murphy has served as VP, FP&A of the company since November 2020. Mr. Murphy has over 16 years of progressive business experience in accounting and finance including nearly five years of public company experience for a London Stock Exchange-based company.

PRODUCT

Duos, operating under its brand name duos tech, develops and deploys vision based analytical technology solutions that helps to transform precision railroading, logistics, and inter-modal transportation operations. The company's intelligent technology solutions are used for inspecting and evaluating moving objects. Duos has developed key technologies over the past several years in software, industry specific hardware, and artificial intelligence (AI) and has demonstrated industrial strength usability of its systems supporting rail, logistics and intermodal businesses that streamline operations, improve safety and reduce costs. Duos is currently developing industry solutions for other target markets including trucking, aviation, and other vehicle based processes.

Duos's Railcar Inspection Portal (RIP) provides both freight and transit railroad customers and select government agencies the ability to conduct fully automated railcar inspections of trains while they are moving at full speed (up to 70mph). The RIP utilizes a variety of sophisticated optical, laser, and speed sensors to scan each passing railcar to create a high-resolution mage-set of the top, sides and undercarriage. These images are then processed with its edge data center using artificial intelligence (AI) algorithms to identify safety and security defects on each railcar. Within minutes of the railcar passing through the RIP, a detailed report is sent to the customer where they are able to take action on identified issues.

The company is currently providing its RIP solution to three of seven Class 1 railroad operators with 11 systems already deployed (with 15 planned to be deployed by the end of 1H 2023). One of those railroad customers is broadly deploying the technology across its network. The RIP Railcar Inspection Portal is a modular intelligent visualization system that provides real-time detailed 360-degree imaging at high speeds. The RIP can be used for a variety of inspection criteria on mainlines or in yards. The company has deployed RIPs in Canada, Mexico, and the U.S. and anticipates expanding this solution into Europe and Australia in coming years.

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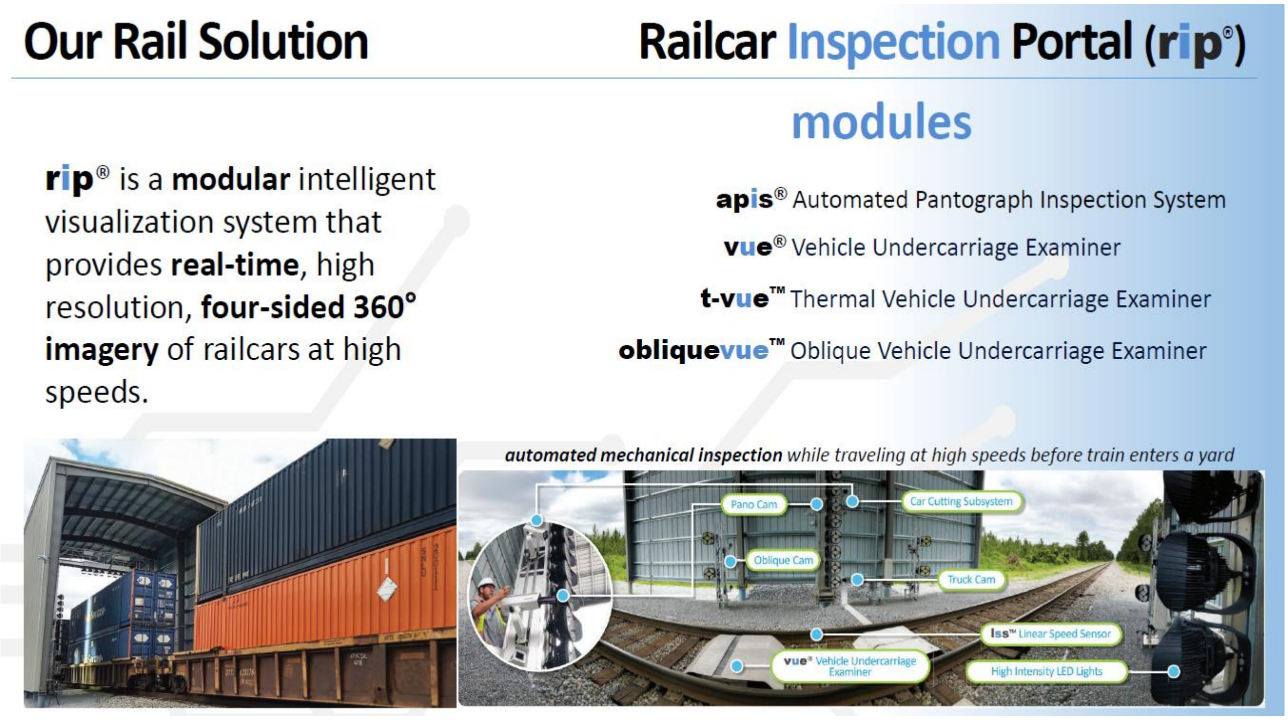
Duos currently operates in North America including the U.S., Mexico, and Canada and its main customers are rail transportation companies, though it is trying to expand and diversify to other commercial and government customers as its technology solutions can be employed into many other industries. Duos's contracts have historically been an initial fixed price with ongoing maintenance and support contracts though there is now a push into low/no initial costs but recurring subscription revenues.

Exhibit 10: Duos Railcar Inspection Portal (RIP)



Source: Company reports.

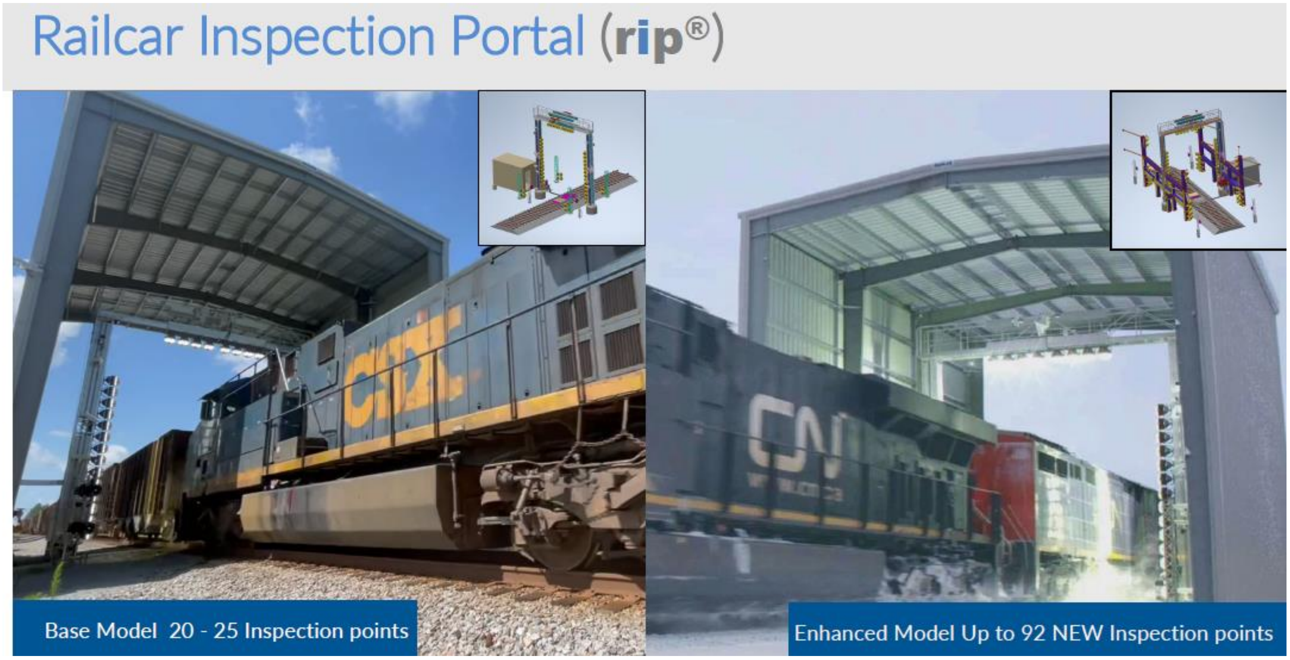
Exhibit 11: Duos Revenue Breakdown

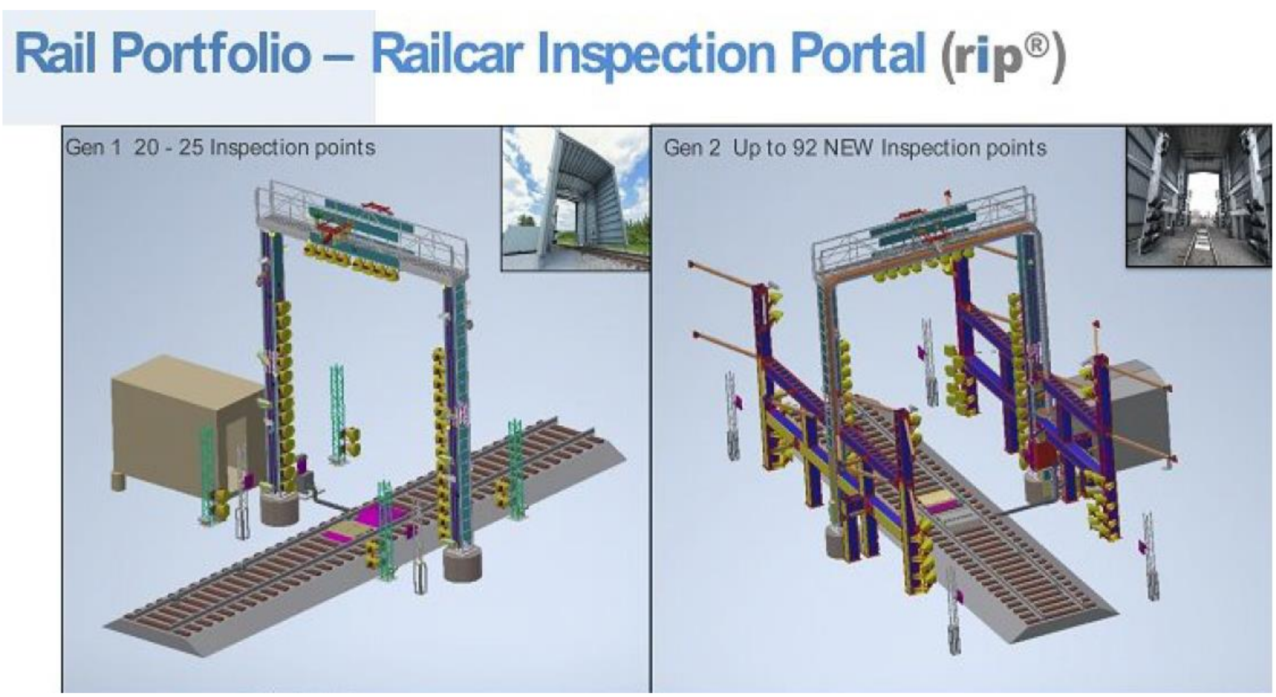
For the Nine Months Ended September 30, 2022

Segments		Rail		Commercial		Government		Artificial Intelligence		Total
Primary Geographical Markets										
North America	$	8,087,759	$	76,818	$	214,124	$	699,995	$	9,078,696
Major Goods and Service Lines										
Turnkey Projects	$	5,885,477	$	(498)	$	153,462	$	—	$	6,038,441
Maintenance and Support		2,202,282		77,316		60,662		465,223		2,805,483
Algorithms		—		—		—		234,772		234,772
	$	8,087,759	$	76,818	$	214,124	$	699,995	$	9,078,696

Source: Company reports.

Exhibit 12: RIP Portfolio





Source: Company reports.

RAILCAR INSPECTION PORTAL (RIP)

Federal regulations require each railcar/train to be inspected for mechanical defects prior to leaving a rail yard. Founded in 1934, the Association of American Railroads (AAR) is responsible for setting the standards for the safety and productivity of the U.S./North American freight rail industry. Also known as the “Why Made” codes, the AAR established approximately 110 inspection points under its guidelines for mechanical inspections. Under current practice, inspections are conducted manually, a very labor intensive and inefficient process that only covers a select number of inspection points and can take several hours per train. Duos believes its RIP has the potential to reduce this inspection to minutes while the train is moving at speed improving safety, reducing dwell time (the time a railcar spends at a scheduled stop without moving) and optimizing maintenance.

Duos RIP system combines high-definition image and data capture technologies with its AI-based analytics applications that are typically installed on active tracks located between two rail yards. Duos inspect railcars traveling through its inspection portal at speeds of up to 70 mph and report mechanical anomalies detected by its system to the inbound train yard, well ahead of the train entering the yard. One of Duos objective is to change inspection regulations that would allow replacement of the current manual inspection (in the yard) with Duos fully automated RIP processes.

See the following Exhibits for examples of Duos RIP image capture technologies. Some of these mechanical defects, if unattended, could cause a derailment. Other examples of Duos’s AI-based detection applications include inspections at rail border crossings in support of the Customs and Border Protection Agency. The company continues to expand its detection capabilities through the development and integration of additional sensor technologies to include laser, infrared, thermal, sound and x-ray to process AI-based analytics of inspection points.

Vehicle Undercarriage Examiner (vue)
A system that inspects the undercarriage of railcars (both freight and transit rail) traveling at speeds of up to 70 mph. Duos is currently developing an expanded version for higher speeds with additional sensor technologies and algorithms for automated detections.

Thermal Undercarriage Examiner (tvue)
Duos has developed and deployed a new thermal undercarriage examiner. The system uses high-speed thermal imaging technology to inspect the thermal signature of undercarriage components. Thermal monitoring of component heat signatures while underway will provide indications of the overall operating health of the railcars that are not possible to observe during static yard inspections.

Enterprise Command and Control Suite (centraco)
This intelligent user interface is at the core of all Duos systems and enables end users to connect to an unlimited number of operational sites from one central interface, the centraco Enterprise Command and Control Suite. A multi-layered command and control interface, it is designed to function as the central point and aggregator for information consolidation, connectivity and communications. It provides full integration for seamless user credentialing and performs the following major functions:

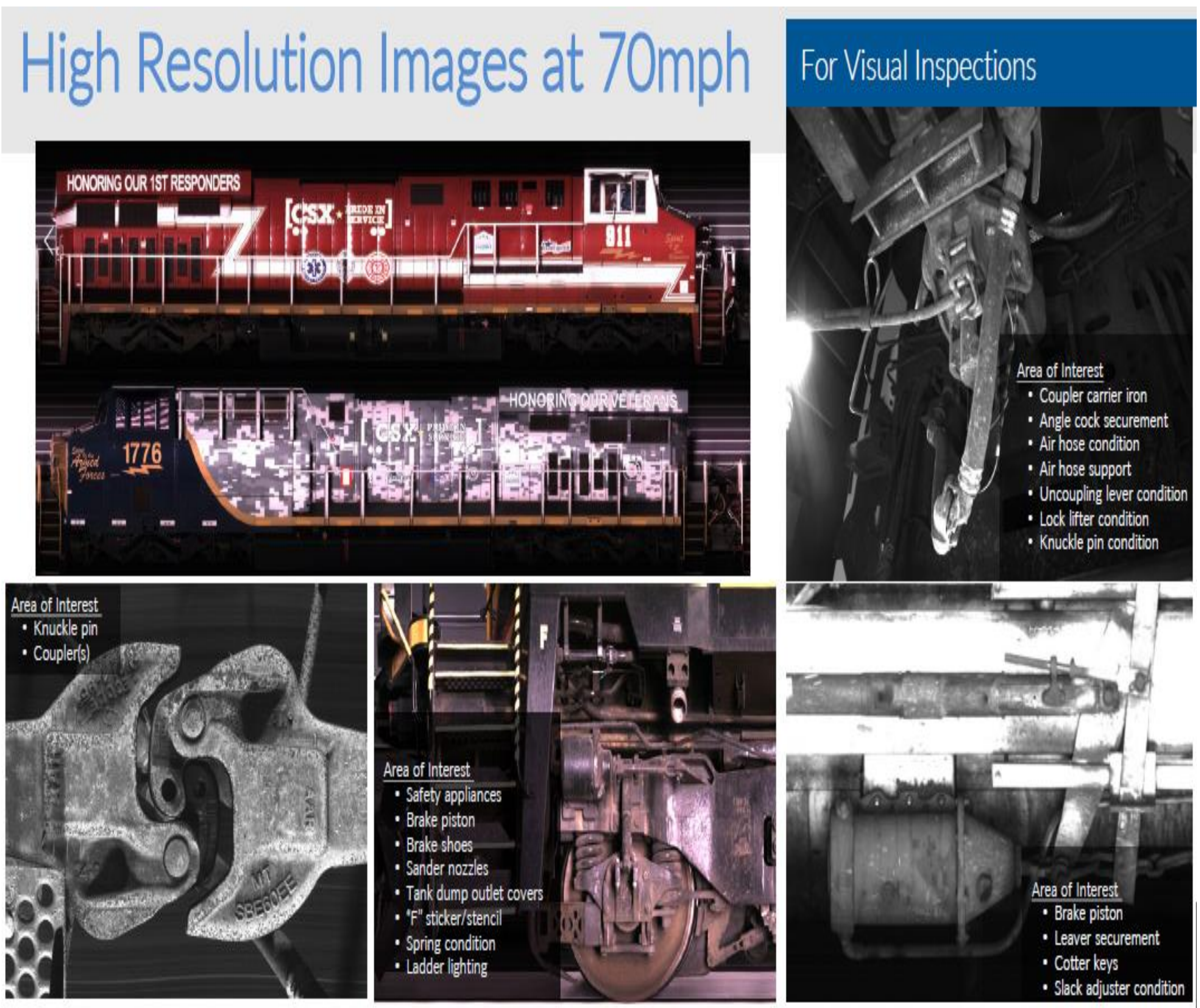
- Collection: Device management independently collects data from any number of disparate devices or sub-systems.
- Analysis: Correlates and analyzes data, events and alarms to identify real-time situations and their priorities for response measures and end-user’s Concept of Operations (“CONOPS”).
- Verification: The contextual layer represents relevant information in a quick and easily interpreted format which provides operators optimal situational awareness.
- Resolution: Event-specific presentation of user-defined Standard Operating Procedures (“SOPs”), that includes step-by-step instructions on how to resolve situations.
- Reporting: Tracking of data and events for statistical, pattern, comparative data, and/or forensic analysis.
- Auditing: Device-level drill down that records each operator’s login interaction with the system and tracks manual changes including calculations of operator alertness and reaction time for each event.
- AutoCheck: The system pings devices connected to its wide area network and performs periodic functionality audits.

Automated Logistics Information Systems (ALIS)

Duos has developed and deployed a proprietary intelligent system to automate security gate operations at nine distribution centers owned and operated by a national retail chain. Using similar technology that is used in its RIP, this solution automates the process of entering and exiting a large logistics or intermodal yard. This automates the logistics transaction, improves throughput and can also be used to automate security and maintenance screening/detection.

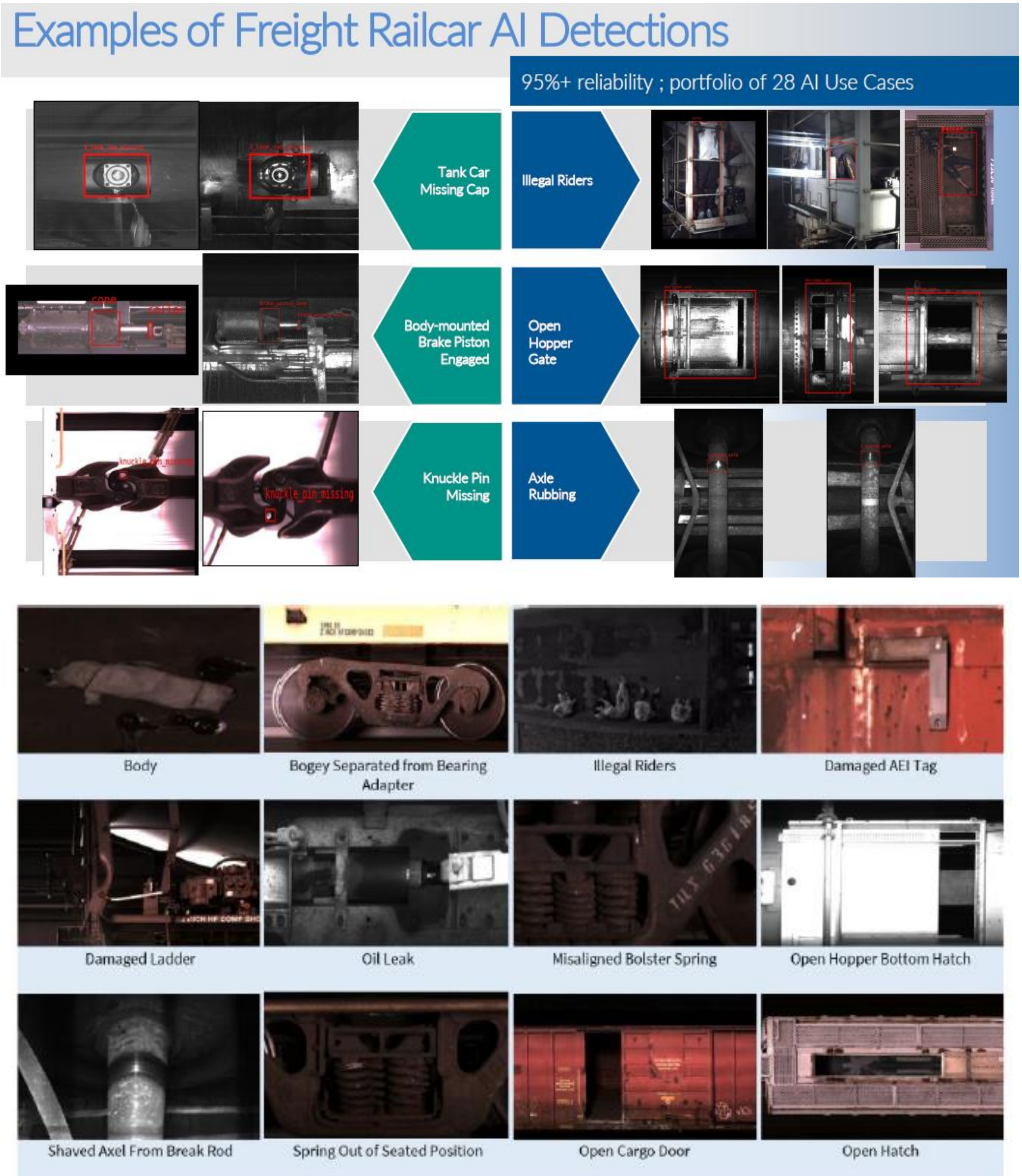
Duos has developed two proprietary solutions that operate its software and artificial intelligence. centraco is an Enterprise Information Management Software platform that consolidates data and events from multiple sources into a unified and distributive user interface. true vue 360 is the company's platform to develop and deploy Artificial Intelligence (AI) algorithms, including Machine Learning, Computer Vision, Object Detection and Deep Neural Network-based processing for real-time applications.

Exhibit 13: RIP Railcar Inspection Images



Source: Company reports.

Exhibit 14: RIP Railcar AI (Artificial Intelligence) Detections



Source: Company reports.

Duos believes the market opportunity for its Rail Inspection Portal (RIP) business is substantial. In 2022, the company estimated that it performed over seven million comprehensive railcar scans. Of this, it estimated that 573,000 were unique railcars, representing approximately 35% of the total freight car population in North America. While this may seem a lot, there are a lot of rules and regulations requiring rail car inspections such that there are still a lot of market growth opportunities.

There are an estimated 1.6 million railcars, 140,000 track miles, and over 500 rail yards in North America. The Federal Railroad Administration (FRA, the main regulatory body for railroads in the U.S.) requires that all railcars be inspected prior to leaving a rail yard. Most of these are currently being done manually inside rail yards and take about 1.5 to 3 hours per train. There is a big push by federal regulators and railroad companies to move towards advanced technology and automation to reduce costs, increase efficiency, and improve safety. The company constantly upgrades its RIP engineering and software to meet anticipated Federal Railroad Association (FRA) and Association of American Railroad (AAR) standards. Currently, the company is focused on the North American market, but plans to expand globally in the future.

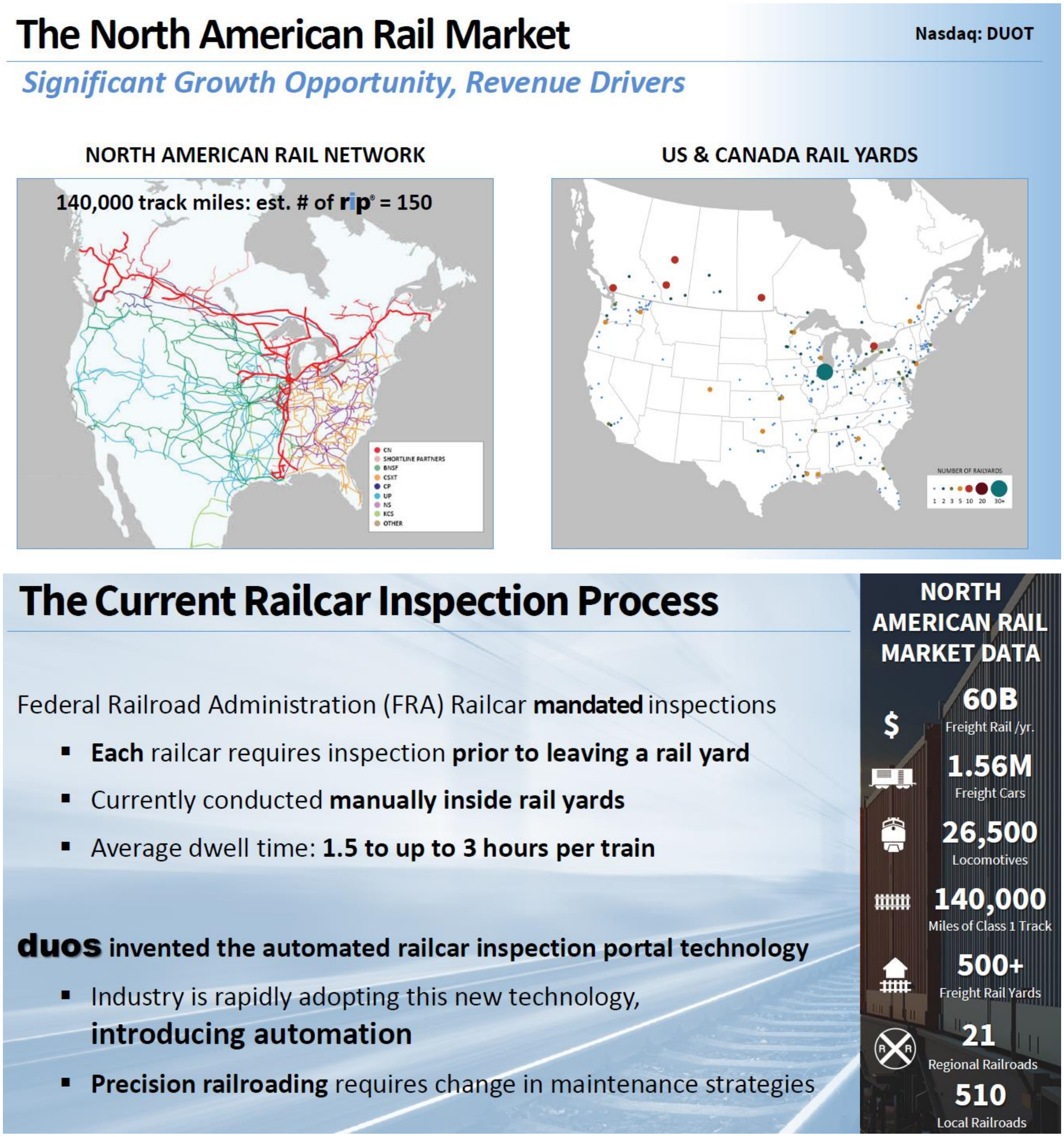
The company believes its Railcar Inspection Portal (RIP) is the most advanced technology currently focused on 360-degree inspections of railcars and they have limited direct competition domestically or globally. There are several companies that provide visual and optical (laser) based imaging systems, but they are specifically designed to focus on a single aspect of a railcar whereas the latest RIP will identify 50+ inspection points on each car. This is not to be confused with track inspection technologies, where Duos does not compete. Duos is not aware of any other company that creates images of the entire car from multiple perspectives and with many different inspection points. Other companies that participate in the visual and optical (laser) based railcar inspection systems market include Trimble Rail Solutions/Beena Vision and KLD Labs, both primarily focused on wheel and brake inspections and the Class 1 railroads themselves developing “in-house” solutions.

Its Automated Logistics Information System (ALIS) also represents an opportunity to expand into a mature market that the company believe has a significant technology gap. While most facilities, such as distribution centers, that process commercial trucks in and out have sophisticated software management applications for logistics control, they have most often not implemented an advanced gatehouse automation solution. Historically, this category was referred to as “Automated Gate Systems” or AGS. The purpose of AGS technology is to streamline entry in to and exit out of facilities. The marketplace for this was mostly seaports and intermodal transfer facilities and was relatively expensive technology to deploy.

Duos has identified a market gap with regards to distribution facilities that all currently utilize manual processes and heavy staffing to accomplish commercial truck entry and exit. The barrier to entry for distribution centers was predominately “cost”, as well as the requirement for a different set of logistics management software and tools. The current competition includes Nascent with a primary focus on seaports and intermodal transfer facilities.

Potential ALIS customers include commercial retail logistics and intermodal operators, Class 1 rail intermodal operators that are moving large amounts of automobiles, and U.S. Government agencies such as the Department of Defense and the Department of Homeland Security. Today, Duos currently have 20 production systems in use, but believes the market opportunity to be substantial. The company has identified over 900 lanes of traffic within nearly 300 facilities as potential business opportunities in the near-term.

Exhibit 15: RIP North America Rail Market Opportunity



Source: Company reports.

Exhibit 16: Duos RIP Customers

Clients

AMTRAK · CN · CSX · Ferromex · Kansas City Southern de México · Metra The way to really fly. · TTC · U.S. Department of Homeland Security

Source: Company reports.

Exhibit 17: RIP Market Challenges

Rail Industry Technology Adoption Headwinds

TAM for RIPs across all Class 1 track network is 150 x RIP (no change).

Class 1 is slow to adopt & to push regulators for full-scale implementation on leading-edge inspection technology.

Challenges with Class 1s, Regulators, and Labor Unions:

- Publicly praise the technology, but internally challenged to quickly adopt full-scale.
- Capital investment needed is competing with other critical investments for the RRs.
- Challenged to replace labor with technology due to regulations and labor unions.

"We must find an alternate, more predictable pathway to market to achieve our growth targets."

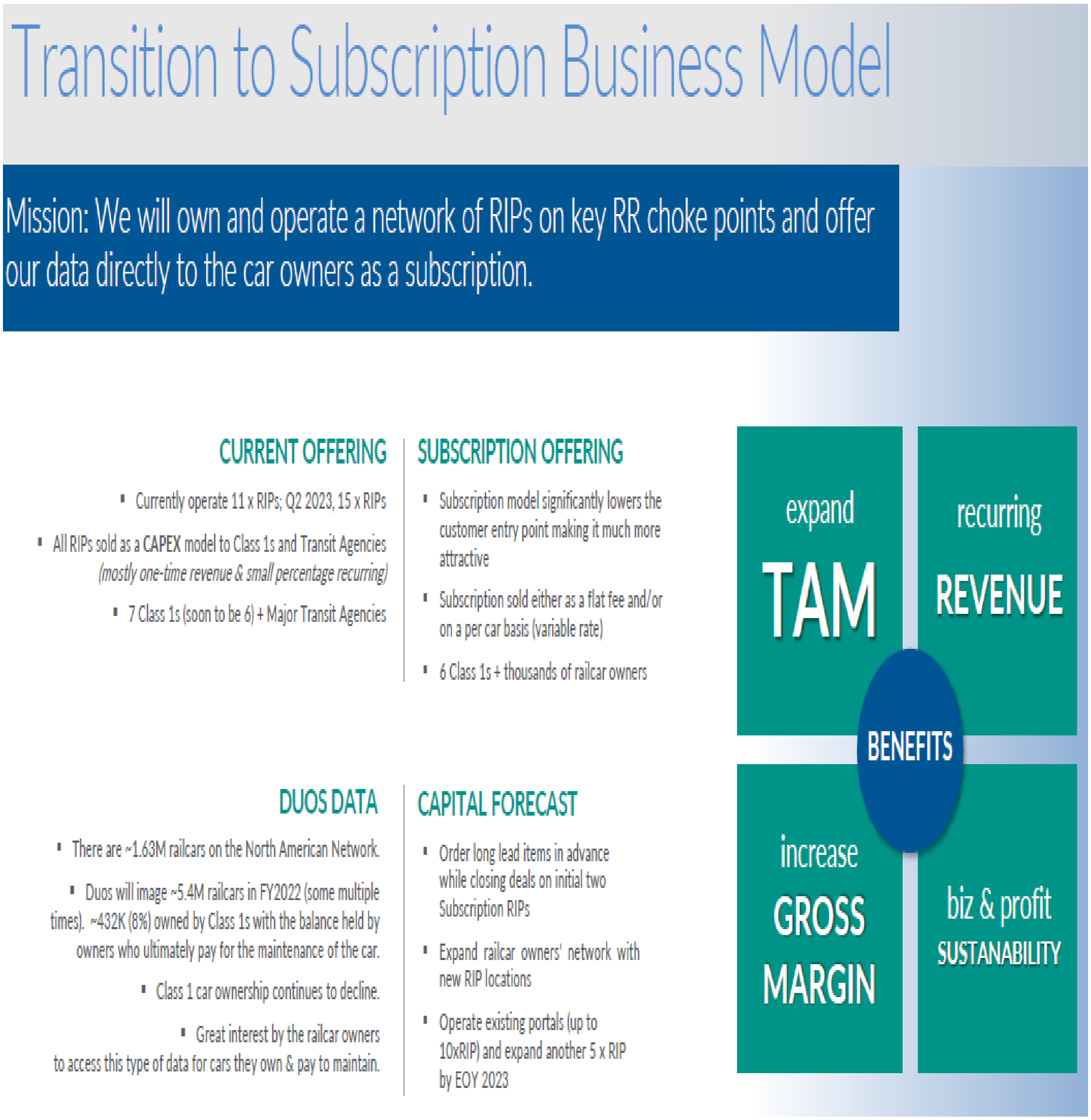
Challenges with Supply Chain and Inflation:

- The time from contract close to RIP installation is now ~six months or more due to long lead procurement items.
- Difficult to hold profit margins with price increases on material while negotiating price increase with Class 1s.

"To make the pathway to market more predictable (in our control) we purchase more inventory ahead of time."

Source: Company reports.

Exhibit 18: RIP Transition to Subscription Business Model



Source: Company reports.

Duos's near-term goals are to expand its RIP systems and to transition from a fixed purchase business model to a subscription (SAAS like) model. The company also recently disclosed that it intends to build and deploy additional systems around the North American rail network which can be accessed via subscription, lowering the barriers to entry for acquiring a RIP system for railroads and railcar owners alike. In 2023, the company was recently awarded a contract for two high-speed systems ("Super RIPs") which are expected to be operational in mid-2023 in the northeast U.S. as part of a major passenger rail infrastructure upgrade. The Super RIPs will deploy new machine vision technologies capable of capturing safety data at speeds of up to 125 miles per hour. Duos also expects to deploy new wheel and brake inspection technologies with this installation.

Duos's long-term goals are to offer its enterprise and government customers the ability to do visual inspections as effectively and efficiently as possible using its proprietary AI software and hardware technology. Their technology solution being used in its railcar RIP system incorporates a similar set of sensors, data processing and artificial intelligence can also automate security and safety inspections for other logistics, trucks, passenger and freight transportations, and border crossings. The company is also evaluating other solutions for moving vehicles including aircraft and passenger cars as well as other general opportunities in Aviation, Trucking, and Edge Data Centers.

The company's key business objectives are:

- Improve its operational and technical execution, customer satisfaction, and implementation speed.
- Expand Rail Inspection Portal (RIP) and Automated Logistics Information System (ALIS) with current and future customers in Rail, Logistics and U.S. Government sectors.
- Offer both CAPEX and OPEX pricing models that seek to increase recurring revenue and improve profitability.
- Form strategic partnerships that improve market access and credibility.
- Improve policy, processes, and toolsets to become a viable platform for internal growth and for mergers and acquisitions.
- Thoughtfully execute mergers and acquisitions once the business is more mature and profitable to expand offerings and/or capabilities.
- Promote a performance-based work force where employees enjoy their work and are incentivized to excel and innovate.

Exhibit 19: Duos Business Strategy

Source: Company reports.

Exhibit 20: Duos Product Expansion Opportunities

Source: Company reports.

FINANCIALS

Duos's fiscal year ends on December 31. We expect its next earnings report (for Q4 2022 ending December) to be in late March. However, the company plans to release preliminary results for Q4 2022 later this month (in late January). In 2022, the company reclassified certain Cost of Revenue expenses to Operating Expenses. There was no net effect on total expenses, but comparability to historical reported results by expense type has changed.

Exhibit 21: Duos Historical and Projected Financials

FYE Dec 31 (in millions except EPS)	2018A	2019A	2020A	2021A	2022E	2023E
Total Revenue	**12.0**	**13.6**	**8.0**	**8.3**	**16.7**	**18.3**
Growth % (y/y)		13%	-41%	3%	102%	10%
Gross Profit	**5.2**	**6.5**	**2.8**	**(2.6)**	**4.8**	**5.9**
Operating income (loss)	**(1.6)**	**(2.4)**	**(6.6)**	**(7.5)**	**(6.6)**	**(5.4)**
Net income (pro forma)	**(1.6)**	**(2.5)**	**(6.7)**	**(6.0)**	**(6.6)**	**(5.4)**
EPS	**$ (1.06)**	**$ (1.39)**	**$ (2.03)**	**$ (1.63)**	**$ (1.06)**	**$ (0.74)**
EBITDA	**(1.0)**	**(2.0)**	**(5.7)**	**(6.5)**	**(5.4)**	**(4.2)**

Source: Company reports and Ascendiant Capital Markets estimates.

Recent Results (fiscal Q3 ending September 2022)

Duos's recent financial performance has been strong and reflective of its early and high growth commercialization stage. In its Q3 2022 report (on November 14, 2022), the company reported revenues of $4.0 million and net loss was $1.9 million (EPS of $(0.30)), compared with Q3 2021's revenue of $1.7 million and net loss of $2.5 million (EPS of $(0.68)). Revenues grew +131% y-o-y and +11% sequentially from Q2. Operating expenses were $3.0 million, compared to Q3 2021's $2.5 million (reclassified).

The large increase in revenue was primarily related to the substantial completion of several railcar inspection portals and portal installations in Q3. Duos currently has two additional RIPs that are nearing completion with another two expected to come online in early 2023. Duos expects to have 15 RIPs installed by the end of the first half of 2023.

Duos plans to build, own and operate RIPs at strategic locations within the North American rail network. This new offering and subscription pricing model should dramatically increase its potential customer base, while also improving margins and predictability of revenues over the long term.

The company has provided 2022 revenue guidance of $16.5 – 18.0 million, representing an increase of 99% to 117% from 2021. This implies Q4 revenue guidance of $7.4 – 8.9 million (+100 – 140% y-o-y). The company has not provided specific earnings guidance, but we believe that the higher revenue growth should provide operating leverage and improve gross margins and operating income (loss).

Exhibit 22: Q3 2022 and Recent Corporate Highlights (as of November 14, 2022)

Third Quarter 2022 and Recent Operational Highlights

Scanned approximately 2.0 million railcars during the quarter, detecting thousands of actionable defects in the field. This represents a 33% increase in the number of railcars scanned over the previous quarter with the number of detections increasing as the AI software is deployed and becomes more effective.

Released five (5) new AI detection models for use within the Company's RIP solution covering the following key areas: brake beam bent, ladder stile condition, retainer valve handle position, side handhold condition, and ladder tread condition. Duos now has 30 AI detection models deployed at the track edge.

Total revenue was $4.02 million, an increase of 131% over comparable quarter in 2021. Includes $1.31 million recurring services and consulting revenue.

Received gross proceeds of approximately $4.01 million from a securities purchase agreement with existing investors and other accredited investors that closed on October 29, 2022. Duos intends to use the net proceeds from this offering to support its planned business expansion within its target rail market and working capital.

Announced an expanded business plan to build, own, and operate Railcar Inspection Portals ("rip®" or "RIP") at strategic locations within the North American rail network. The portals will be 100% owned and operated by Duos and will supply near real-time machine vision-based data and artificial intelligence-based detections to railcar owners who will be able to access these enhanced services on a recurring, subscription model.

Formed an Industry Advisory Group to be a key resource for the Company as it expands its offerings to private railcar owners, lessors, and shippers, naming David McKee as first member. McKee brings nearly 40 years of experience in the industry, having spent most of his career in various leadership roles for CSX Transportation.

Named Andrew Murphy as the Company's new Chief Financial Officer, effective November 15th. As part of the Company's strategic succession plan, Murphy succeeds longtime Duos CFO Adrian Goldfarb, who will be supporting the transition and taking on a consulting role within the Company's newly formed Industry Advisory Group.

Appointed Matt Keepman as the Company's Senior Vice President of Sales and Marketing. Keepman brings two decades of experience in managing strategic accounts within the North American rail industry. In this newly created role, Keepman will be responsible for leading the Company's commercial strategy with a focus on driving top line growth.

Source: Company reports.

We have modeled solid revenue growth in 2022 and 2023 and relatively steady operating costs over the next year, which should drive improved margins and profitability. For 2022, we expect revenue of $16.7 million (+102%), a net loss of $6.6 million, and EPS of $(1.06). For 2023, we expect revenues of $18.3 million (+10%), a net loss of $5.4 million, and EPS of $(0.74).

The company has provided general qualitative goals (not formal financial guidance) for 2023 revenues of $20 – 24 million and to be break even profitability. While our 2023 estimates are below the company's qualitative goals, we believe our estimates are very conservative and there is significant upside potential particularly if the company continues to add customers and expand business with existing customers.

Exhibit 23: Consensus Expectations (as of January 17, 2023)

	Revenue (mil) 2022E	Revenue (mil) 2023E		EPS 2022E	EPS 2023E
Q1 Mar	$1.4A	$2.7E	Q1 Mar	$(0.49)A	$(0.31)E
Q2 Jun	$3.6A		Q2 Jun	$(0.22)A	
Q3 Sep	$4.0A		Q3 Sep	$(0.30)A	
Q4 Dec	$7.5E		Q4 Dec	$(0.07)E	
Total	$16.6E	$18.5E	Total	$(0.98)E	$(0.81)E

**Quarterly estimates may not add to annual estimates due to variations in contributing estimates and rounding.*

Source: Company report, Refinitiv, and Ascendiant Capital Markets estimates

We believe investors should be focused on its progress on its RIP product commercialization, which is growing very fast and is expected to have continued high growth over the next several years. We believe that the biggest potential variable and challenge to our financial model is the ability of the company to successfully develop, commercialize, and grow its RIP business platforms. If the company can make significant progress towards these goals, then revenue and earnings will likely be able to grow significantly. However, if the company has difficulties in making progress towards these goals, then revenue growth and profitability may not be achieved or will likely grow at a low rate or even not at all.

The company's balance sheet has $5 million in cash and no debt as of September 2022. In October 2022 (just ended Q4), the company raised ~$0.6 million selling stock and preferred stock (~0.2 million shares at $3.00/share). In September 2022, the company raised ~$3.5 million selling stock and preferred stock (~1.2 million shares at $3.00/share). In February 2022, the company raised ~$6.0 million selling stock (~1.5 million shares at $4.00/share). We believe the company has enough cash through Q4 2023, but that it will likely need to raise capital in late 2023.

Exhibit 24: Duos Financial Metrics

Recent Share Price (1/17/23)	$ 2.67
52-Weeks Share Price (Low - High)	$1.80 - 6.24
Shares Outstanding	7.1 million
Market Capitalization	$19 million
Enterprise Value	$14 million
Cash (9/30/22)	$5 million
Debt (9/30/22)	$0
2021A Revenue	$8 million
2021A Net loss	$6 million
2021A EPS	$ (1.63)
2022E Revenue	$17 million
2022E Net loss	$7 million
2022E EPS	$ (1.06)
2023E Revenue	$18 million
2023E Net loss	$5 million
2023E EPS	$ (0.74)

Source: Company reports and Ascendiant Capital Markets estimates.

FINANCIAL MODEL

Duos Technologies Group, Inc.

Income Statement ($ mils)	2018	2019	Mar-20	Jun-20	Sep-20	Dec-20	2020	Mar-21	Jun-21	Sep-21	Dec-21	2021	Mar-22	Jun-22	Sep-22	Dec-22	2022	Mar-23	Jun-23	Sep-23	Dec-23	2023
Fiscal Year End: December 31	FY-A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E
Total Revenue	**12.0**	**13.6**	**1.0**	**2.0**	**1.3**	**3.8**	**8.0**	**2.2**	**0.6**	**1.7**	**3.7**	**8.3**	**1.4**	**3.6**	**4.0**	**7.6**	**16.7**	**2.5**	**3.8**	**4.2**	**7.7**	**18.3**
Cost of Revenues	6.8	7.2	1.6	1.8	1.5	0.3	5.3	2.7	2.2	2.8	3.1	10.8	1.2	2.3	2.9	5.4	11.9	1.8	2.6	2.9	5.1	12.4
Gross Profit	5.2	6.5	(0.7)	0.2	(0.2)	3.5	2.8	(0.6)	(1.5)	(1.1)	0.6	(2.6)	0.2	1.3	1.1	2.2	4.8	0.8	1.2	1.4	2.6	5.9
Sales & marketing	0.3	1.0	0.1	0.1	0.2	0.3	0.7	0.3	0.4	0.4	0.2	1.2	0.3	0.4	0.3	0.7	1.6	0.3	0.4	0.4	0.7	1.8
Research & development	0.5	3.9	0.0	0.1	0.0	3.5	3.7	0.1	0.1	0.1	0.1	0.3	0.4	0.5	0.3	0.7	2.0	0.3	0.4	0.5	0.9	2.0
Administration	6.0	4.0	1.3	1.3	2.3	0.2	5.0	0.9	1.0	1.0	0.6	3.4	2.1	1.8	2.3	1.5	7.8	2.1	2.3	2.1	1.0	7.5
Restructuring and other							0.0					0.0					0.0					0.0
Total operating expenses	6.8	8.9	1.4	1.6	2.5	3.9	9.4	1.2	1.4	1.4	0.9	4.9	2.9	2.7	3.0	2.9	11.4	2.7	3.1	3.0	2.6	11.3
Operating income (loss)	**(1.6)**	**(2.4)**	**(2.1)**	**(1.4)**	**(2.7)**	**(0.4)**	**(6.6)**	**(1.8)**	**(2.9)**	**(2.4)**	**(0.2)**	**(7.5)**	**(2.6)**	**(1.4)**	**(1.9)**	**(0.7)**	**(6.6)**	**(1.9)**	**(1.9)**	**(1.6)**	**0.1**	**(5.4)**
Interest income (expense)	(0.0)	(0.1)	(0.1)	(0.1)	(0.0)	(0.0)	(0.2)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)
Other income (expense)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	0.0	1.5	0.0	0.1	(0.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Income before income taxes	(1.6)	(2.5)	(2.1)	(1.5)	(2.7)	(0.4)	(6.7)	(0.4)	(3.0)	(2.5)	(0.2)	(6.0)	(2.6)	(1.3)	(1.9)	(0.7)	(6.6)	(1.9)	(1.9)	(1.6)	0.1	(5.4)
Income taxes							0.0					0.0				0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net income (loss)	(1.6)	(2.5)	(2.1)	(1.5)	(2.7)	(0.4)	(6.7)	(0.4)	(3.0)	(2.5)	(0.2)	(6.0)	(2.6)	(1.3)	(1.9)	(0.7)	(6.6)	(1.9)	(1.9)	(1.6)	0.1	(5.4)
Nonrecurring/noncash adjustments							0.0					0.0					0.0					0.0
Net income (pro forma)	**(1.6)**	**(2.5)**	**(2.1)**	**(1.5)**	**(2.7)**	**(0.4)**	**(6.7)**	**(0.4)**	**(3.0)**	**(2.5)**	**(0.2)**	**(6.0)**	**(2.6)**	**(1.3)**	**(1.9)**	**(0.7)**	**(6.6)**	**(1.9)**	**(1.9)**	**(1.6)**	**0.1**	**(5.4)**
EBITDA	(1.0)	(2.0)	(2.0)	(1.1)	(2.6)	(0.0)	(5.7)	(1.6)	(2.7)	(2.3)	0.1	(6.5)	(2.2)	(1.0)	(1.8)	(0.4)	(5.4)	(1.6)	(1.6)	(1.3)	0.4	(4.2)
Shares, Basic	1.5	1.8	2.7	3.5	3.5	3.5	3.3	3.5	3.6	3.6	4.2	3.7	5.4	6.1	6.5	7.1	6.3	7.2	7.3	7.4	7.5	7.4
Shares, Diluted	1.5	1.8	2.7	3.5	3.5	3.5	3.3	3.5	3.6	3.6	4.2	3.7	5.4	6.1	6.5	7.1	6.3	7.2	7.3	7.4	7.5	7.4
EPS Basic (pro forma)	**($1.06)**	**($1.39)**	**($0.80)**	**($0.42)**	**($0.77)**	**($0.12)**	**($2.03)**	**($0.11)**	**($0.83)**	**($0.68)**	**($0.05)**	**($1.63)**	**($0.49)**	**($0.22)**	**($0.30)**	**($0.10)**	**($1.06)**	**($0.27)**	**($0.27)**	**($0.22)**	$0.01	**($0.74)**
EPS Diluted (pro forma)	($1.06)	($1.39)	($0.80)	($0.42)	($0.77)	($0.12)	($2.03)	($0.11)	($0.83)	($0.68)	($0.05)	($1.63)	($0.49)	($0.22)	($0.30)	($0.10)	($1.06)	($0.27)	($0.27)	($0.22)	**$0.01**	($0.74)
Margins																						
Gross margin	43%	48%	-66%	9%	-19%	93%	35%	-27%	-237%	-61%	17%	-31%	15%	35%	27%	29%	29%	30%	31%	32%	34%	32%
Sales & marketing	2%	7%	14%	6%	14%	7%	9%	14%	54%	21%	6%	15%	20%	10%	7%	9%	10%	11%	11%	9%	9%	10%
Research & development	4%	29%	4%	8%	2%	92%	46%	3%	12%	3%	1%	3%	30%	15%	8%	9%	12%	11%	11%	11%	11%	11%
Administration	50%	29%	126%	68%	177%	4%	62%	41%	151%	55%	16%	41%	149%	49%	58%	20%	47%	85%	60%	50%	13%	41%
Operating margin	-13%	-18%	-211%	-72%	-211%	-11%	-83%	-85%	-455%	-141%	-6%	-90%	-184%	-39%	-46%	-9%	-40%	-77%	-51%	-38%	1%	-30%
Tax rate, GAAP	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Net margin	-13%	-18%	-217%	-74%	-211%	-11%	-84%	-19%	-455%	-141%	-5%	-73%	-184%	-37%	-48%	-9%	-40%	-77%	-51%	-38%	1%	-30%
Y/Y % change																						
Total Revenue		13%					-41%	117%	-67%	36%	-2%	3%	-33%	458%	131%	104%	102%	75%	5%	5%	2%	10%
Gross margin		25%					-57%	-12%	-920%	331%	-82%	-192%	-139%	-183%	-203%	256%	-288%	240%	-8%	23%	19%	23%
Sales & marketing		229%					154%	-57%	13%	3%	-42%	490%	-77%	32%	-21%	130%	140%	-83%	51%	-9%	83%	155%
Research & development		708%					6%	-98%	30%	-28%	-5%	362%	74%	21%	-38%	107%	190%	-86%	51%	11%	83%	136%
Administration		-33%					3186%	-83%	12%	-2%	-38%	474%	-37%	-17%	32%	-35%	412%	-72%	6%	-7%	-52%	650%
Operating income (loss)		53%					176%	-13%	107%	-10%	-42%	12%	45%	-53%	-24%	185%	-12%	-27%	39%	-14%	-111%	-18%
Net income (loss)		56%					173%	-81%	101%	-10%	-53%	-11%	551%	-55%	-21%	243%	10%	-27%	44%	-17%	-111%	-18%
EPS Diluted (pro forma)		30%					47%	-86%	100%	-11%	-61%	-20%	330%	-73%	-56%	103%	-35%	-45%	21%	-27%	-110%	-30%

Source: Company reports and Ascendiant Capital Markets estimates.

Duos Technologies Group, Inc.

Balance Sheet ($ mils) Fiscal Year End: December 31	Dec-18 Q4A	Dec-19 Q4A	Mar-20 Q1A	Jun-20 Q2A	Sep-20 Q3A	Dec-20 Q4A	Mar-21 Q1A	Jun-21 Q2A	Sep-21 Q3A	Dec-21 Q4A	Mar-22 Q1A	Jun-22 Q2A	Sep-22 Q3A	Dec-22 Q4E	Mar-23 Q1E	Jun-23 Q2E	Sep-23 Q3E	Dec-23 Q4E
Assets																		
Cash and cash equivalents	1.2	0.1	6.6	5.4	4.1	4.0	7.1	4.8	2.3	0.9	5.3	6.3	5.0	5.2	4.2	2.0	0.2	0.1
Short term investments														0.0	0.0	0.0	0.0	0.0
Accounts receivable, net	1.5	2.6	0.6	0.5	1.3	1.2	1.4	0.2	0.4	1.8	0.3	0.3	2.2	3.4	1.1	1.7	1.9	3.4
Contract assets	1.2	1.4	0.4	0.8	0.2	0.1	0.0	0.2	0.2	0.0	0.3	0.7	0.8	0.8	0.8	0.8	0.8	0.8
Inventory						0.1				0.3	0.3	0.8	0.7	0.7	0.7	0.7	0.7	0.7
Deferred income taxes														0.0	0.0	0.0	0.0	0.0
Prepaid expenses and other	0.2	0.7	0.9	0.7	0.6	0.4	0.7	0.7	0.6	0.3	0.8	0.7	0.7	1.2	0.9	1.4	1.6	2.9
Total current assets	4.2	4.8	8.5	7.4	6.3	5.8	9.2	6.0	3.5	3.3	7.1	8.8	9.4	11.3	7.8	6.6	5.1	7.9
Property and equipment, net	0.2	0.3	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.6	0.6	0.6	0.7	0.6	0.8	0.7	1.1	1.3
Operating lease						0.2				4.9	4.8	4.8	4.7	4.7	4.7	4.7	4.7	4.7
Intangibles, net	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Deferred income tax														0.0	0.0	0.0	0.0	0.0
Other		0.4	0.4	0.3	0.3		0.2	0.1	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	0.6	0.6
Total assets	**4.5**	**5.5**	**9.2**	**8.2**	**6.9**	**6.4**	**9.7**	**6.5**	**4.6**	**9.5**	**13.2**	**15.0**	**15.6**	**17.5**	**14.1**	**12.8**	**11.7**	**14.7**
Liabilities and stockholders' equity																		
Accounts payable	1.4	2.6	0.7	0.6	0.7	0.6	0.7	0.5	1.0	1.0	1.0	1.3	1.6	3.1	1.4	2.1	2.4	4.3
Accounts payable - related party	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						0.0	0.0	0.0	0.0	0.0
Accrued expenses	0.5	0.5	0.2	0.1	1.0	1.0	1.0	1.3	1.2	0.6	0.6	0.5	0.5	0.9	1.0	0.8	0.8	1.5
Deferred revenue	0.4	0.9	0.7	0.5	0.7	0.3	1.3	1.1	0.9	0.6				0.0	0.0	0.0	0.0	0.0
Deferred income tax														0.0	0.0	0.0	0.0	0.0
Contract liabilities						0.7				1.2	2.4	5.0	3.9	3.9	3.9	3.9	3.9	3.9
Warrant liabilities														0.0	0.0	0.0	0.0	0.0
Other	2.2	0.3	0.3	0.3	0.7	0.3	0.4	0.2	0.6	0.4	0.5	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Short term debt	0.1	1.0	1.1	0.8	0.9	0.7	0.2	0.2	0.1	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Total current liabilities	**4.7**	**5.4**	**3.0**	**2.4**	**4.0**	**3.6**	**3.6**	**3.2**	**3.7**	**3.9**	**4.5**	**7.6**	**6.6**	**8.5**	**6.9**	**7.4**	**7.7**	**10.4**
Deferred income taxes														0.0	0.0	0.0	0.0	0.0
Warrant liabilities														0.0	0.0	0.0	0.0	0.0
Other long term liabilities		0.3	0.2	0.2	0.1	0.1	0.1	0.1	0.0	0.0	0.0			0.0	0.0	0.0	0.0	0.0
Leases										4.7	4.7	4.6	4.6	4.6	4.6	4.6	4.6	4.6
Deferred revenue														0.0	0.0	0.0	0.0	0.0
Long term debt				0.8	0.5	0.8								0.0	0.0	0.0	0.0	0.0
Total other liabilities	**0.0**	**0.3**	**0.2**	**1.0**	**0.7**	**0.9**	**0.1**	**0.1**	**0.0**	**4.8**	**4.7**	**4.6**	**4.6**	**4.6**	**4.6**	**4.6**	**4.6**	**4.6**
Preferred stock	2.8	1.7	1.7	1.7	1.7	1.7	6.2	6.2	6.2	3.4	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
Common stock	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.4	0.6	0.8	1.0
Additional paid-in capital	27.4	31.1	39.3	39.5	39.7	39.8	39.9	40.0	40.1	43.1	51.4	51.6	55.9	55.9	55.9	55.9	55.9	55.9
Retained earnings	(30.3)	(32.7)	(34.9)	(36.4)	(39.1)	(39.5)	(39.9)	(42.8)	(45.3)	(45.5)	(48.1)	(49.5)	(51.4)	(52.1)	(54.0)	(56.0)	(57.6)	(57.5)
Other	(0.1)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)	(0.2)
Accumulated other comprehensive income														0.5	0.5	0.5	0.5	0.5
Total stockholders' equity	**(0.2)**	**(0.1)**	**6.0**	**4.7**	**2.2**	**1.9**	**6.1**	**3.2**	**0.9**	**0.8**	**3.9**	**2.8**	**4.3**	**4.3**	**2.6**	**0.8**	**(0.6)**	**(0.3)**
Total stockholders' equity and liabili	**4.5**	**5.5**	**9.2**	**8.2**	**6.9**	**6.4**	**9.7**	**6.5**	**4.6**	**9.5**	**13.2**	**15.0**	**15.6**	**17.5**	**14.1**	**12.8**	**11.7**	**14.7**

Balance Sheet Drivers

	Dec-18 Q4A	Dec-19 Q4A	Mar-20 Q1A	Jun-20 Q2A	Sep-20 Q3A	Dec-20 Q4A	Mar-21 Q1A	Jun-21 Q2A	Sep-21 Q3A	Dec-21 Q4A	Mar-22 Q1A	Jun-22 Q2A	Sep-22 Q3A	Dec-22 Q4E	Mar-23 Q1E	Jun-23 Q2E	Sep-23 Q3E	Dec-23 Q4E
Prepaid as % of total rev	8%	21%	90%	35%	48%	10%	32%	114%	37%	8%	58%	20%	16%	16%	37%	37%	37%	37%
A/P as % of total rev	47%	77%	67%	32%	55%	16%	32%	82%	56%	28%	67%	36%	41%	41%	56%	56%	56%	56%
Accrued exp related as % of total rev	18%	15%	16%	7%	77%	28%	46%	197%	68%	17%	41%	14%	12%	12%	40%	20%	20%	20%
Activity Ratios																		
A/R Days Sales Outstanding	46	69	59	23	94	30	58	33	20	43	21	8	50	40	40	40	40	40
Book & Cash Value (per share)																		
Book Value per Share (diluted)	-$0.12	-$0.07	$2.23	$1.34	$0.63	$0.53	$1.71	$0.89	$0.24	$0.19	$0.74	$0.46	$0.67	$0.61	$0.35	$0.11	-$0.08	-$0.05
Cash per Share (diluted)	$0.81	$0.03	$2.44	$1.52	$1.17	$1.12	$2.00	$1.36	$0.63	$0.21	$1.00	$1.03	$0.77	$0.73	$0.59	$0.27	$0.02	$0.01
Net cash per Share (diluted)	$0.76	-$0.52	$2.01	$1.07	$0.77	$0.71	$1.93	$1.31	$0.61	$0.20	$0.96	$1.00	$0.75	$0.72	$0.57	$0.26	$0.01	$0.00

Source: Company reports and Ascendiant Capital Markets estimates

Duos Technologies Group, Inc.

Cash Flow Statement ($ mils)	2018	2019	Mar-20	Jun-20	Sep-20	Dec-20	2020	Mar-21	Jun-21	Sep-21	Dec-21	2021	Mar-22	Jun-22	Sep-22	Dec-22	2022	Mar-23	Jun-23	Sep-23	Dec-23	2023
Fiscal Year End: December 31	FY-A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4A	FY-A	Q1A	Q2A	Q3A	Q4E	FY-E	Q1E	Q2E	Q3E	Q4E	FY-E
Cash flow from operating activities																						
Net income	(1.6)	(2.5)	(2.1)	(1.5)	(2.7)	(0.4)	(6.7)	(0.4)	(3.0)	(2.5)	(0.2)	(6.0)	(2.6)	(1.3)	(1.9)	(0.7)	(6.6)	(1.9)	(1.9)	(1.6)	0.1	(5.4)
Depreciation	0.1	0.2	0.0	0.0	0.1	0.1	0.2	0.1	0.1	0.1	(0.0)	0.3	0.1	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.1	0.4
Amortization		0.2	0.1	0.1	(0.1)	0.2	0.2	0.0	0.1	(0.1)	0.3	0.3	0.1	0.1	(0.2)		0.0					0.0
Debt related amortization expense		0.1	0.0	0.0	0.0		0.1					0.0					0.0					0.0
Dividend							0.0					0.0					0.0					0.0
Stock comp	0.4	0.0	0.0	0.2	0.2	0.1	0.5	0.1	0.1	0.1	0.1	0.4	0.3	0.2	0.2	0.2	0.9	0.2	0.2	0.2	0.2	0.8
Deferred rent							0.0					0.0					0.0					0.0
A/R reserves		0.2				(0.0)	(0.0)			0.1		0.1					0.0					0.0
Deferred income taxes							0.0					0.0				0.0	0.0	0.0	0.0	0.0	0.0	0.0
Change in fair value of warrant liability							0.0					0.0					0.0					0.0
Writedowns and impairments							0.0					0.0					0.0					0.0
Other gains/losses							0.0	(1.4)			0.0	(1.4)					0.0					0.0
Other							0.0					0.0					0.0					0.0
Changes in operating assets and liabilities:																						
Accounts receivable	(1.2)	(1.3)	2.0	0.1	(0.8)	0.1	1.4	(0.2)	1.1	(0.3)	(1.2)	(0.6)	1.4	0.0	(1.9)	(1.1)	(1.6)	2.3	(0.6)	(0.2)	(1.6)	(0.1)
Contract assets	(0.8)	(0.2)	1.0	(0.5)	0.7	0.1	1.3	0.1	(0.1)	(0.1)	0.2	0.1	(0.3)	(0.4)	(0.1)		(0.8)					0.0
Inventory							0.0				(0.2)	(0.2)	(0.0)	(0.5)	0.1		(0.4)					0.0
Prepaid expenses & other curre	0.1	(0.2)	(0.0)	0.2	0.1	0.2	0.5	0.0	0.1	0.2	0.2	0.4	(0.3)	0.0	0.2	(0.6)	(0.6)	0.3	(0.5)	(0.2)	(1.3)	(1.6)
Income tax							0.0					0.0					0.0					0.0
Other assets							0.0			(0.6)		(0.6)			0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Accounts payable	0.6	1.2	(2.0)	(0.0)	0.1	(0.1)	(2.0)	0.1	(0.2)	0.4	0.1	0.4	(0.1)	0.4	0.3	1.5	2.1	(1.7)	0.7	0.2	2.0	1.2
Accrued expenses	0.0	0.0	(0.3)	(0.0)	0.9	0.0	0.6	(0.0)	0.1	0.1	(0.7)	(0.5)	(0.0)	(0.1)	(0.0)	0.4	0.3	0.1	(0.2)	0.1	0.7	0.6
Contract liabilities	2.0	(2.2)	0.0	(0.0)	0.3	0.4	0.7	(0.5)	0.0	0.3	0.7	0.5	0.5	2.7	(1.1)		2.1					0.0
Deferred revenue	(0.1)	0.6	(0.3)	(0.2)	0.2	(0.4)	(0.6)	1.0	(0.2)	(0.2)	(0.3)	0.3					0.0					0.0
Other liabilities		(0.2)	(0.1)	(0.1)	0.1	(0.2)	(0.2)	(0.0)	(0.1)	0.1	0.0	0.0	0.1	(0.0)	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Net cash (used in) provided by	**(0.3)**	**(4.0)**	**(1.7)**	**(1.5)**	**(1.1)**	**(0.0)**	**(4.2)**	**(1.3)**	**(1.9)**	**(2.3)**	**(1.1)**	**(6.6)**	**(0.8)**	**1.1**	**(4.1)**	**(0.2)**	**(4.1)**	**(0.7)**	**(2.2)**	**(1.3)**	**0.2**	**(4.1)**
Cash flow from investing activities																						
Purchases of property and equi	(0.2)	(0.2)	(0.0)	(0.1)	(0.0)	(0.1)	(0.3)	(0.1)	(0.1)	(0.1)	(0.2)	(0.5)	(0.1)	(0.0)	(0.3)	(0.0)	(0.5)	(0.3)	(0.0)	(0.5)	(0.3)	(1.0)
Purchases of short-term investments							0.0					0.0					0.0					0.0
Acquisitions	(0.1)	(0.0)	(0.0)	(0.0)	(0.0)		(0.0)	(0.0)				(0.0)		(0.0)	0.0		0.0					0.0
Other							0.0					0.0					0.0					0.0
Net cash used in investing activ	**(0.3)**	**(0.2)**	**(0.0)**	**(0.1)**	**(0.0)**	**(0.1)**	**(0.3)**	**(0.1)**	**(0.1)**	**(0.1)**	**(0.2)**	**(0.6)**	**(0.1)**	**(0.1)**	**(0.2)**	**(0.0)**	**(0.5)**	**(0.3)**	**(0.0)**	**(0.5)**	**(0.3)**	**(1.0)**
Cash flow from financing activities																						
Issuance of debt		1.4		1.5	0.0	0.0	1.5		(0.2)	0.2		0.0				0.0	0.0	0.0	0.0	0.0	0.0	0.0
Repayment of debt	(0.3)	(0.6)	(0.1)	(1.1)	(0.1)	(0.1)	(1.4)	(0.0)	(0.0)	(0.3)	(0.1)	(0.4)	(0.2)	(0.1)	(0.1)		(0.4)					0.0
Issuance of stock	(0.0)	(0.0)	8.3	0.0	0.0	0.0	8.3	4.5				4.5	5.5	0.0	3.2	0.0	8.7	0.0	0.0	0.0	0.0	0.0
Proceeds from stock option exe	0.2	2.3					0.0					0.0					0.0					0.0
Other							0.0					0.0				0.5	0.5					0.0
Dividends and distributions							0.0					0.0					0.0					0.0
Cash provided by (used in) fina	**(0.1)**	**3.1**	**8.2**	**0.5**	**(0.1)**	**(0.1)**	**8.4**	**4.5**	**(0.2)**	**(0.1)**	**(0.1)**	**4.1**	**5.4**	**(0.1)**	**3.1**	**0.5**	**8.8**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Effect of exchange rate on cash							0.0					0.0					0.0					0.0
Net increase (decrease) in cash	**(0.7)**	**(1.2)**	**6.5**	**(1.2)**	**(1.3)**	**(0.1)**	**3.9**	**3.1**	**(2.2)**	**(2.6)**	**(1.4)**	**(3.1)**	**4.4**	**0.9**	**(1.3)**	**0.2**	**4.3**	**(1.0)**	**(2.3)**	**(1.8)**	**(0.1)**	**(5.1)**
Beginning cash and equivalents	**1.9**	**1.2**	**0.1**	**6.6**	**5.4**	**4.1**	**0.1**	**4.0**	**7.1**	**4.8**	**2.3**	**4.0**	**0.9**	**5.3**	**6.3**	**5.0**	**0.9**	**5.2**	**4.2**	**2.0**	**0.2**	**5.2**
Ending cash and equivalents	**1.2**	**0.1**	**6.6**	**5.4**	**4.1**	**4.0**	**4.0**	**7.1**	**4.8**	**2.3**	**0.9**	**0.9**	**5.3**	**6.3**	**5.0**	**5.2**	**5.2**	**4.2**	**2.0**	**0.2**	**0.1**	**0.1**

Source: Company reports and Ascendiant Capital Markets estimates

ANALYST CERTIFICATION

Each analyst hereby certifies that the views expressed in this report reflect the analyst's personal views about the subject securities or issuers. Each analyst also certifies that no part of the analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this report. The analyst who prepared this report is compensated based upon the overall profitability of Ascendiant Capital Markets, LLC, which may, from time to time, include the provision of investment banking, financial advisory and consulting services. Compensation for research is based on effectiveness in generating new ideas for clients, performance of recommendations, accuracy of earnings estimates, and service to clients.

Duos Technologies Group, Inc.

- Ascendiant Capital Markets, LLC has not received compensation for advisory or investment banking services from the company in the past 12 months.

IMPORTANT DISCLOSURES

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Risks & Considerations

Risks to attainment of our share price target include balance sheet/liquidity risks, technological changes, customer demand for software, AI, and inspection technologies, investor sentiment for investing in technology stocks, enterprise sentiment and industry growth for technology companies, competition, changing macroeconomic factors, and changes in government regulations.

Ascendiant Capital Markets, LLC Rating System

BUY: We expect the stock to provide a total return of 15% or more within a 12-month period.

HOLD: We expect the stock to provide a total return of negative 15% to positive 15% within a 12-month period.

SELL: We expect the stock to have a negative total return of more than 15% within a 12-month period.

Total return is defined as price appreciation plus dividend yield.

Ascendiant Capital Markets, LLC Rating System

Prior to January 31, 2014, ASCM used the following rating system:

Strong Buy: We expect the stock to provide a total return of 30% or more within a 12-month period.

Buy: We expect the stock to provide a total return of between 10% and 30% within a 12-month period.

Neutral: We expect the stock to provide a total return of between minus 10% and plus 10% within a 12-month period.

Sell: We expect the stock to provide a total return of minus 10% or worse within a 12-month period.

Speculative Buy: This rating is reserved for companies we believe have tremendous potential, but whose stocks are illiquid or whose equity market capitalizations are very small, often in the definition of a nano cap (below $50 million in market cap). In general, for stocks ranked in this category, we expect the stock to provide a total return of 50% or more within a 12-month period. However, because of the illiquid nature of the stock's trading and/or the nano cap nature of the investment, we caution that these investments may not be suitable for all parties.

Total return is defined as price appreciation plus dividend yield.

Ascendiant Capital Markets, LLC Distribution of Investment Ratings (as of January 15, 2023)

			Investment Banking Services Past 12 months	
Rating	**Count**	**Percent**	**Count**	**Percent**
Buy	44	98%	18	41%
Hold	0	0%	0	0%
Sell	1	2%	0	0%
Total	45	100%	18	40%

Other Important Disclosures

Our analysts use various valuation methodologies including discounted cash flow, price/earnings (P/E), enterprise value/EBITDAS, and P/E to growth rate, among others. Risks to our price targets include failure to achieve financial results, product risk, regulatory risk, general market conditions, and the risk of a change in economic conditions.

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