



Quarterhill Inc.

Management's Discussion and Analysis
For the three and nine months ended September 30, 2021 and 2020
November 10, 2021



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INTRODUCTION

This Management's Discussion and Analysis of Quarterhill Inc. (this "MD&A") is dated November 10, 2021. References in this MD&A to "Quarterhill", "the Company", "we", "us" and "our" refer to Quarterhill Inc. and its consolidated subsidiaries during the periods presented, unless the context requires otherwise. References to "Common Shares" in this MD&A refer to common shares in the capital of Quarterhill.

The Common Shares are listed under the symbol "QTRH" on the Toronto Stock Exchange (the "TSX") and on the United States OTCQX Best Market (the "OTCQX") under the symbol "QTRHF".

Quarterhill is a growth-oriented Canadian company operating in the intelligent transportation system ("ITS") and intellectual property licensing industries. Quarterhill is working to acquire and manage attractive technology companies in the intelligent transportation systems industry and its adjacent markets to become a global leader in this space.

More specifically, we are seeking out acquisition opportunities in the ITS industry that provide a foundation for growth and that have reasonable valuations, recurring and re-occurring revenues, predictable cashflows and gross profit, intimate customer relationships and dedicated management teams among other considerations. In appropriate circumstances, we may also divest certain assets if favourable conditions for such a divestiture are presented.

This MD&A provides information for the three and nine months ended September 30, 2021 and up to and including November 10, 2021. This MD&A should be read in conjunction with Quarterhill's interim condensed consolidated financial statements ("financial statements") and the notes thereto for the three and nine months ended September 30, 2021, which have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB").

Unless otherwise indicated, all financial information in this MD&A is reported in thousands of Canadian dollars, except for Common Share and earnings per share data which is reported in number of Common Shares and Canadian dollars respectively. The tables and charts included in this document form an integral part of this MD&A.

This MD&A has been prepared with reference to National Instrument 51-102 - Continuous Disclosure Obligations of the Canadian Securities Administrators. Additional information filed by us with the Canadian Securities Administrators, including quarterly reports, annual reports and our Annual Information Form for the year ended December 31, 2020 (our "AIF"), is available online at www.sedar.com and also on our website at www.Quarterhill.com.

Quarterhill and our operating subsidiaries operate in ever-changing business and competitive economic environments that expose us to a number of risks and uncertainties, many of which are discussed under the heading "Risks and Uncertainties" in this MD&A and/or under the heading "Risk Factors" in each of our AIF and the October 22, 2021 supplement to our October 19, 2021 short form base shelf prospectus (the "Prospectus Supplement"). A copy of the Prospectus Supplement is available online at www.sedar.com.

Our management is responsible for establishing appropriate information systems, procedures and controls to ensure that all financial information disclosed externally, including in this MD&A, and used internally by us, is complete and reliable. These procedures include the review and approval of our financial statements and associated information, including this MD&A, first by our management's Disclosure Committee, then by the Audit Committee of our Board of Directors (the "Board") and, finally, by our Board as a whole.

THIRD QUARTER 2021 BUSINESS HIGHLIGHTS

Acquisition of Electronic Transaction Consultants, LLC

On September 1, 2021, we completed the acquisition of Electronic Transaction Consultants, LLC ("ETC") by acquiring all of the issued and outstanding shares of its parent holding companies for cash consideration of \$151,614 (US\$120,262) plus transaction expenses. The purchase price and acquisition costs were financed by the Company's cash reserves and by newly established syndicated credit facilities which comprise of \$62,926 (US\$50,000) in term debt and \$19,090 (US\$15,000) revolving credit facility of which \$12,727 (US\$10,000) was drawn to finance the deal.

Based in Richardson, Texas, ETC is a leading U.S. ITS provider, developing and delivering best-in-class solutions for tolling, congestion management, urban mobility, and multimodal transportation needs. For over two decades, ETC has delivered sophisticated solutions to some of the U.S.' largest toll authorities, including state-wide programs, county networks and tolling-specific authorities. ETC's solutions process over two billion customer transactions annually totaling over \$3 billion in revenues for its customers, incorporating the latest Software-as-a-Service technologies.

This transformational acquisition marks the Company's largest acquisition in its history and establishes Quarterhill as a global leader in ITS. ETC's tolling business is complementary to IRD's business and we see significant potential for synergies between the two companies with product and geographic expansion. Governments are increasingly seeking new sources of revenue to pay for infrastructure projects and we believe our ITS business is well positioned to capitalize on this and from other opportunities that could result from the US\$1 trillion infrastructure bill recently passed by the US federal government.

Capital Strategy

The ETC acquisition marks our third acquisition this year with an aggregate deal value of approximately \$160 million which represents approximately 40% of our current five-year \$400 million capital deployment target. Subsequent to quarter end, we filed and obtained final approval for a short form base shelf prospectus for an aggregate offering amount of up to \$200 million over 25 months and subsequently entered into an over-subscribed \$57,500 bought-deal financing of unsecured subordinated convertible debentures with a syndicate of underwriters pursuant to the Prospectus Supplement. The gross proceeds of this offering includes the full exercise of the \$7,500 over-allotment option by the underwriters. The net proceeds will be used to support acquisitive growth and to provide additional working capital to support the operations of our business units. We have raised approximately \$140 million in debt and equity capital so far in 2021 and are well ahead of pace to meet our current five-year capital deployment target.

On August 6, 2020, the Company received approval from the TSX on its notice of intention to make a normal course issuer bid to purchase for cancellation up to 11,303,777 of its outstanding Common Shares (the "NCIB"). During the nine months ended September 30, 2021, the Company repurchased for cancellation 841,300 Common Shares at an average purchase price of \$2.45 per share totaling \$2,065 under the NCIB. Since the commencement of the NCIB on August 10, 2020, the Company has repurchased a total of 3,047,936 Common Shares for \$6,363. The NCIB expired on August 9, 2021 and we currently have no plans for any new issuer bids. The Company did not make any share repurchases under the NCIB for the three months ended September 30, 2021.

Business Performance and Future Business Developments

Our ITS business segment enjoyed solid results this quarter. Its revenues for the three and nine months ended September 30, 2021 were \$24,927 and \$53,520 compared to \$20,734 and \$48,651 in the respective comparative prior year periods.

During the quarter, our ITS segment announced several impressive business developments. Prior to our acquisition of ETC, it announced signing a 10-year contract with the Louisville-Southern Indiana Ohio River Bridges Joint Board to provide back office services for the Ohio River Bridges ("ORB"). Its partnership with ORB could generate long-term employment growth in the region and is expected to significantly improve population mobility for thousands of registered customers and visitors. Also during the quarter, IRD announced that it was awarded a \$4,100 contract from the Illinois Department of Transportation and \$2,200 Weigh-In-Motion ("WIM") contract from the Idaho Transportation Department. It also introduced a new WIM@Toll Controller solution for integrating WIM into toll and access control systems. This strategic solution

complements ETC's existing suite of products and services and further strengthens our global footprint in the international tolling industry.

Our Licensing segment's revenue for the three and nine months ended September 30, 2021 was \$11,416 and \$21,014 compared to \$67,263 and \$77,783 in the respective comparative prior year periods. Our Licensing business entered into new licensing agreements with Powerchip Semiconductor Manufacturing Corporation, Motorola Mobility LLC and a company in the automotive industry generally relating to the design or manufacturing of semiconductor devices and wireless technologies.

Our Licensing business also acquired a portfolio of patents related to semiconductor processes, packaging and circuit technologies.

Please refer to the Segmented Results section of this MD&A for further details of the financial performance of our ITS and Licensing segments for the three and nine months ended September 30, 2021.

COVID - 19 Pandemic Update

As the COVID-19 Pandemic continues to affect the global economy, we have continued to take active steps in each of our business segments to protect our employees and business operations as further described below.

Protecting our Employees, Customers, and Communities

The health and safety of our stakeholders remains critical to us. We continue to employ proactive measures such as providing for work from home arrangements, minimizing travel and closely following the guidelines issued by applicable health and regulatory authorities. During this time, our human resource policies have evolved to respond to questions or concerns from our employees while continuing to explore opportunities to return to an "in office" work environment where necessary.

Operations

To date, our businesses remain in full operation, and continue to execute on the delivery of existing customer mandates, while also working to build and sustain business pipelines and advance new opportunities through their respective sales cycles. As expected, the enhanced precautions being taken, and the broader dynamic of the current business environment, have resulted in some delay in the delivery of certain ongoing services, but fundamentally, the operating prospects for all businesses remain sound and are backed by our strong balance sheet.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This MD&A contains forward-looking statements and forward-looking information within the meaning of Canadian securities laws, including such statements relating to:

- assumptions and expectations described in our critical accounting policies and estimates;
- our expectation regarding the adoption and impact of certain accounting pronouncements;
- our expectation regarding the growth rates of our subsidiaries' businesses;
- our estimates regarding our effective tax rate;
- our expectations regarding our ability to acquire additional businesses to further our growth; and
- our expectations with respect to the sufficiency of our financial resources.

The words "expect", "anticipate", "estimate", "may", "will", "should", "would", "intend", "believe", "plan", "continue", "project", "could", the negatives of these words or other variations on these words, comparable terms and similar expressions are intended to identify forward-looking statements and forward-looking information. Forward-looking statements and forward-looking information are based on estimates and assumptions made by us in light of our experience and our perception of historical trends, current conditions and expected future developments, as well as other factors that we believe are appropriate in the circumstances.

We provide forward-looking statements and forward-looking information to assist external stakeholders in understanding our management's expectations and plans relating to the future as of the date of this MD&A and such statements and information may not be appropriate for any other purposes. The forward-looking statements and forward-looking information in this MD&A are made as of the date of this MD&A only. We have no intention and undertake no obligation to update or revise any forward-looking statements or forward-

looking information, whether as a result of new information, future events or otherwise, except as required by law.

CAUTIONARY NOTE REGARDING USE OF NON-IFRS MEASURES

Quarterhill has historically used a set of metrics when evaluating our operational and financial performance. We continually monitor, evaluate and update these metrics as required to ensure they provide information considered most useful, in our management's opinion, to any decision-making based on Quarterhill's performance. This section defines, quantifies and analyzes the key performance indicators used by our management and referred to elsewhere in this MD&A, which are not recognized under IFRS and have no standardized meaning prescribed by IFRS. These indicators and measures are therefore unlikely to be comparable to similar measures presented by other issuers.

In this MD&A, we use the non-IFRS term "Adjusted EBITDA" to mean net gain or loss from continuing operations adjusted for: (i) income taxes; (ii) finance expense or income; (iii) amortization and impairment of intangibles; (iv) special charges and other one-time items; (v) depreciation of right-of-use assets and property, plant and equipment; (vi) stock-based compensation; (vii) foreign exchange (gain) loss; and (viii) equity in earnings and dividends received from joint ventures. Adjusted EBITDA is used by our management to assess our normalized cash generated on a consolidated basis and in our operating segments. Adjusted EBITDA is also a performance measure that may be used by investors to analyze the cash generated by Quarterhill and our operating segments. Adjusted EBITDA should not be interpreted as an alternative to net loss and cashflows from operations as determined in accordance with IFRS or as a measure of liquidity.

DESCRIPTION OF OUR BUSINESS

Quarterhill is a disciplined acquirer and manager of established ITS companies operating alongside our existing licensing business. Our goal is to pursue an investment strategy that capitalizes on attractive market trends in the ITS industry and its adjacent markets. Additionally, in appropriate circumstances, we may also divest certain assets if favourable conditions for such a divestiture are presented.

Strategy

We have focused our business on seeking out acquisition opportunities in the ITS industry that provide a foundation for growth and that have reasonable valuations, recurring and re-occurring revenues, predictable cashflows and gross profit, intimate customer relationships and dedicated management teams among other considerations.

We believe that if we increase the share of our revenue derived from reoccurring sources we will also increase the predictability of our revenues and cash flows. This will allow us to better scale our operations to ensure we meet our strategic mandate of operating profitably regardless of the prevailing economic market conditions as we grow both organically and through acquisitions.

Our existing businesses are fully described in more detail in our AIF. As a result of the disposition of our former VIZIYA Corp. subsidiary together with its related companies (collectively, "VIZIYA") in the second quarter of 2020, which was the only investment in our former Enterprise Software business segment, we now operate in two business segments as we currently review our operating results, assess our performance, make decisions about resources and generate discrete financial information for each of these segments. We have called these segments ITS and Licensing.

Intelligent Transportation Systems Segment

Our businesses are focused on enhancing safety, mobility, efficiency and environment performance across road and rail transportation infrastructure by providing intelligent transportation systems, products, solutions and services. Based on market research, we believe the global ITS industry is expected to exceed US\$69 billion by 2025, influenced by major driving factors such as infrastructure spending, public safety, traffic congestion, smart city development and environmental impact. We believe that we are well positioned to capitalize on these trends.

Our businesses are leading providers of essential ITS products, solutions and services with more than 60 years of combined experience in areas such as commercial vehicle enforcement and tolling. Our customers include government transportation and tolling agencies, traffic engineering operators and industrial, mining and transportation service companies worldwide.

We have predictable and reoccurring revenue streams derived from selling ITS systems, products and solutions through long-term customer relationships and renewable service contracts. Our businesses offer a portfolio of integrated hardware and software to detect, measure and analyze a variety of transportation metrics which produces a valuable source of analytics and telematics for users. With a variety of product and service offerings throughout our operations in North America, Europe and Latin America, we believe there is an abundance of opportunity to create scale and efficiencies.

Licensing Segment

Our Licensing segment focuses on technology licensing as its principal business activity. We have a wholly owned subsidiary, Wi-LAN Inc. ("WiLAN"), a leading patent licensing company, based in Ottawa, Canada with offices in California and Texas. WiLAN has developed and patented inventions that have proven of great value to third-parties and has a history of acquiring additional patents that it believes hold great value from other inventors.

Both directly and through its wholly owned subsidiaries, WiLAN develops, acquires and commercializes innovative patented technologies that it believes hold value and also works with third party partners to monetize such patents in various ways which often involve sharing revenues and the financial risk associated with licensing these patents with third party partners. From time to time, WiLAN also sells selected patents as an alternative means of monetization.

Current WiLAN patent portfolios include patents relating to memory interface technologies, semiconductor manufacturing and packaging technologies, medical, industrial and automotive applications, computer gaming, intelligent personal assistant technologies, enhanced image processing, streaming video technologies, non-volatile Flash memory, DRAM and other memory technologies as well as semiconductor analog circuitry technologies. WiLAN's license agreements generally grant rights to patents that are relevant to a licensee's products and services as well as granting releases for past sales of relevant products and services. Related license consideration payments may be one-time lump-sum payments, a series of set payments based on fixed-prices made over a specified period or running royalties based on a price per-unit and/or a percentage of product sales or service revenues reported by licensees. The consideration for a license may vary significantly with different licensees because there are many factors that may make different rates and other terms appropriate. Although WiLAN prefers to negotiate license agreements without litigation, to ensure it receives fair consideration for the use of its patented technologies, WiLAN may, in appropriate circumstances, rely on litigation to enforce its patent rights against appropriate infringers with the ultimate goal of signing license agreements.

WiLAN's proven track record, business and technical expertise, as well as its strong reputation in the intellectual property licensing industry has allowed it to continue to be successful. WiLAN continues to access valuable patent portfolios through strategic partnerships with some of the world's largest companies seeking to monetize and protect their patents.

BUSINESS COMBINATIONS

We remain focused on building robust cash flows and controlling expenses throughout all our businesses to maintain a healthy and sustainable balance sheet capable of supporting both our organic and acquisitive growth strategies. With a strong balance sheet, and the contribution of our business units, we are well positioned to execute our M&A growth strategy and we are actively pursuing targets in the ITS industry that are synergistic and accretive to Quarterhill.

On January 5, 2021, we acquired all of the issued and outstanding shares of Sensor Line – Gesellschaft für Optoelektronische Sensoren mbH (“Sensor Line”), a German ITS provider of fiber optic traffic sensors for road and rail markets for cash consideration of \$5,933 (€3,800). Sensor Line has been integrated into IRD.

On April 28, 2021, we acquired all of the issued and outstanding shares of VDS Verkehrstechnik GmbH (“VDS”), a German ITS provider of high precision traffic monitoring devices for cash consideration of \$2,780 (€1,837). VDS has been integrated into IRD.

On September 1, 2021, we completed the acquisition of ETC by acquiring all of the issued and outstanding shares of its parent holding companies for cash consideration of \$151,614 (US\$120,262). ETC is a leader in providing tolling and mobility systems to tolling authorities across the United States. The purchase price and acquisition costs were financed by the Company’s cash reserves and by newly established syndicated credit facilities.

The ETC acquisition marks our third acquisition in 2021 with an aggregate deal value of approximately \$160 million representing approximately 40% of our current five-year \$400 million capital deployment target. Please refer to Note 5 - Business Combinations of the notes to the financial statements for more information on the acquisitions of Sensor Line, VDS and ETC.

In May 2020, we completed the sale of VIZIYA for cash proceeds of \$49,400 to Prometheus Group, based in Raleigh, North Carolina. Originally acquired by Quarterhill in May 2017, VIZIYA was a software and services provider that helped companies optimize their asset performance and uptime. The sale of VIZIYA served to further strengthen our balance sheet providing capital to fund our growth and return some capital to shareholders. The sale of VIZIYA delivered a strong internal rate of return on our initial investment in VIZIYA.

OVERALL PERFORMANCE

Interim Condensed Consolidated Statements of (Loss) Income (Unaudited)

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Revenues				
Licensing	\$ 11,416	\$ 67,263	\$ 21,014	\$ 77,783
Intelligent Transportation Systems	24,927	20,734	53,520	48,651
	36,343	87,997	74,534	126,434
Direct cost of revenues				
Licensing	5,318	32,118	16,041	40,949
Intelligent Transportation Systems	15,612	10,278	33,133	28,290
	20,930	42,396	49,174	69,239
Gross profit	15,413	45,601	25,360	57,195
Operating expenses				
Depreciation of right-of-use assets	418	257	1,001	738
Depreciation of property, plant and equipment	323	250	812	721
Amortization of intangible assets	5,156	4,726	13,994	14,316
Selling, general and administrative expenses	8,831	6,424	22,242	18,545
Research and development expenses	728	390	1,701	1,814
Impairment losses on intangible assets	—	62	—	295
Special charges	3,666	—	4,048	872
	19,122	12,109	43,798	37,301
Results from operations	(3,709)	33,492	(18,438)	19,894
Finance income	(56)	(146)	(110)	(528)
Finance expense	343	153	524	367
Foreign exchange (gain) loss	(637)	72	(655)	(513)
Other income	(661)	(383)	(1,847)	(1,192)
(Loss) income before taxes	(2,698)	33,796	(16,350)	21,760
Current income tax expense	270	325	1,044	1,669
Deferred income tax (recovery) expense	(965)	8,943	(4,728)	5,462
Income tax (recovery) expense	(695)	9,268	(3,684)	7,131
Net (loss) income from continuing operations	(2,003)	24,528	(12,666)	14,629
Net income from discontinued operations	—	—	—	14,255
Net (loss) income	\$ (2,003)	\$ 24,528	\$ (12,666)	\$ 28,884
(Loss) income per share				
From continuing operations	\$ (0.02)	\$ 0.21	\$ (0.11)	\$ 0.13
From discontinued operations	—	—	—	0.12
(Loss) income per share - Basic	\$ (0.02)	\$ 0.21	\$ (0.11)	\$ 0.25
From continuing operations	(0.02)	0.21	(0.11)	0.12
From discontinued operations	—	—	—	0.12
(Loss) income per share - Diluted	\$ (0.02)	\$ 0.21	\$ (0.11)	\$ 0.24

The components of our revenue are as noted below:

Intelligent Transportation Systems	ITS revenues include revenues earned on contracted projects, generally recognized on a percentage of completion basis, service and maintenance contracts, and proprietary and OEM products sales.
Licensing	Licensing revenues includes all revenues associated with technology licenses, perpetual software licenses and other revenues characterized as one-time licenses.

Consolidated revenues for the three and nine months ended September 30, 2021 were \$36,343 and \$74,534 compared to \$87,997 and \$126,434 in the comparative prior year periods. The primary reason for the decrease in consolidated revenue was due to the size and timing of completion of licensing agreements in the respective periods. Licensing revenues for the three and nine months ended September 30, 2021 were \$11,416 and \$21,014, compared to \$67,263 and \$77,783 in the comparative prior year periods. Licensing revenues are generally one-time in nature which can result in significant fluctuations in revenue, gross profit and Adjusted EBITDA when the volume or dollar value of licenses changes from one period to the next. However, for the three and nine months ended September 30, 2021 our ITS revenues were \$24,927 and \$53,520, compared to \$20,734 and \$48,651 in the comparative prior year periods as a result of the expansion of our ITS segment with the addition of Sensor Line, VDS and ETC.

Gross profit, calculated as revenues less direct cost of revenues for the three and nine months ended September 30, 2021 were \$15,413 and \$25,360, or 42% and 34%, compared to \$45,601 and \$57,195 or 52% and 45%, for the comparative prior year periods. For the current quarter, our Licensing segment generated \$6,098 in gross profit compared to \$35,145 in the comparative prior year period. The decrease in gross profit for the three months ended September 30, 2021 compared to the prior year period is due to closing of a number of larger licensing contracts in the prior year period. For the three and nine months ended September 30, 2021, our ITS segment generated \$9,315 and \$20,387 in gross margin compared to \$10,456 and \$20,361 in the comparative prior year periods. The decrease in the three months ended September 30, 2021 is primarily due to higher profit margins earned on certain projects worked on during the comparative prior year period. Margins can vary depending on the particular projects underway and level of product sales delivered in a particular period.

Direct cost of revenues includes: (i) for our Licensing segment, patent licensing expenses which include royalty obligations, cost of patents if purchased from third parties, employee costs, costs incurred in conducting license negotiations, contingent partner and legal fee payments and other licensing and litigation expenses as well as all costs associated with the ownership, maintenance and management of the related patents; and (ii) for our ITS segment, costs related to inventory solutions and all costs of delivering on a project or service including employee costs, inventory consumption costs, subcontractor costs and costs related to any maintenance and warranty work completed

Consolidated operating expenses are comprised of depreciation, amortization of intangible assets, selling, general and administrative costs, research and development costs ("R&D"), impairment losses on intangible assets and special charges. Total operating expenses for the three and nine months ended September 30, 2021 was \$19,122 and \$43,798, compared to \$12,109 and \$37,301 in the comparative prior year periods. The increase in operating expenses was primarily driven by special charges which represent acquisition-related costs for Sensor Line, VDS and ETC.

Selling, general and administrative costs are primarily comprised of management, sales and administrative personnel costs, sales and marketing expenses, occupancy costs, and professional advisory and regulatory fees. R&D costs are primarily composed of salary and materials costs associated with our various R&D activities, net of government grants and investment tax credits. Selling, general and administrative and R&D expenses for the three and nine months ended September 30, 2021 was \$9,559 and \$23,943 compared to \$6,814 and \$20,359 for the comparative prior year periods. The variance is primarily attributable to the additional costs from the new acquisitions this year to date.

Special charges include costs and recoveries that relate to certain restructuring initiatives undertaken from time to time, acquisition-related costs and recoveries and other charges. Special charges for the three and nine months ended September 30, 2021 were \$3,666 and \$4,048 compared to \$nil and \$872 for the comparative prior year period. The increase in the current year compared to the prior year periods is related to the transaction expenses incurred for the acquisitions of Sensor Line, VDS and ETC.

Net income of \$14,255 from discontinued operations for the nine months ended September 30, 2020, reflects the results of VIZIYA, the single investment in our former Enterprise Software segment that was sold on May 15, 2020. Revenue for the nine months ended September 30, 2020 was \$6,132 less direct cost of revenues of \$1,211, operating and other expenses of \$7,413, and a net tax expense of \$966.

Reconciliation of Net (Loss) Income to Adjusted EBITDA

Management considers Adjusted EBITDA, a non-IFRS measure, to be a useful indicator for the business to capture financial performance in a given period related to the operations of Quarterhill and each of our reporting segments.

We reported Adjusted EBITDA of \$7,576 and \$4,149 for the three and nine months ended September 30, 2021, compared to \$39,035 and \$37,280 for the comparative prior year periods. The decrease in Adjusted EBITDA for the three and nine months ended September 30, 2021, compared to the prior year periods is due to the changes in revenue and expenses from the Licensing segment as previously explained. With the creation of Quarterhill and the adoption of a growth oriented strategy anchored in acquisitions of technology businesses in 2017, we began tracking expenses related to the acquisitions. Special charges generally consist of advisor fees, accounting and valuation fees, due diligence related expenses and legal fees, restructuring charges, and other one-time items. Although these expenses may recur as we complete additional acquisitions, they are not fundamental to the actual operations of our businesses and, therefore, have been excluded in the calculation of Adjusted EBITDA. The remaining adjustments we have made relate to finance income or expense, depreciation and amortization, impairment loss on intangibles, non-cash stock-based compensation, equity earnings and dividends received from joint venture, other acquisition related accounting items and other one-time charges.

From time to time, we may acquire businesses in purchase transactions that typically result in the recognition of goodwill and other identifiable intangible assets. Acquired goodwill is not amortized but is subject to impairment testing at least annually and as other events and circumstances dictate. Other identifiable intangible assets are typically subject to amortization and, therefore, will likely increase future expenses. The determination of the value of such intangible assets requires us to make estimates and assumptions. We have ascribed value to identifiable intangible assets other than goodwill in our purchase price allocations including, but not limited to, backlog, trade name, non-competition agreements, customer and technology related intangible assets. To the extent we ascribe values to identifiable intangible assets that have finite lives, we amortize those values over the estimated useful lives of the assets.

Reconciliations of Net (Loss) Income to Adjusted EBITDA

	Three months ended September 30,			
	2021		2020	
	\$	Per Share	\$	Per Share
Net (loss) income from continuing operations	\$ (2,003)	\$ (0.02)	\$ 24,528	\$ 0.21
Adjusted for:				
Income tax (recovery) expense	(695)	(0.01)	9,268	0.08
Foreign exchange (gain) loss	(637)	(0.01)	72	—
Finance expense, net	287	—	7	—
Special charges	3,666	0.04	—	—
Impairment losses on intangible assets	—	—	62	—
Depreciation and amortization	5,897	0.06	5,233	0.05
Stock based compensation expense	374	—	248	—
Dividends received from joint venture	1,348	0.01	—	—
Other income	(661)	(0.01)	(383)	—
Adjusted EBITDA	\$ 7,576	\$ 0.06	\$ 39,035	\$ 0.34

Weighted average number of Common Shares		
Basic	113,756,329	115,990,313

Reconciliations of Net (Loss) Income to Adjusted EBITDA

	Nine months ended September 30,			
	2021		2020	
	\$	Per Share	\$	Per Share
Net (loss) income from continuing operations	\$ (12,666)	\$ (0.11)	\$ 14,629	\$ 0.13
Adjusted for:				
Income tax (recovery) expense	(3,684)	(0.03)	7,131	0.06
Foreign exchange gain	(655)	—	(513)	—
Finance expense (income), net	414	—	(161)	—
Special charges	4,048	0.04	872	0.01
Impairment losses on intangible assets	—	—	295	—
Depreciation and amortization	15,807	0.15	15,775	0.13
Stock based compensation expense	1,384	0.01	444	—
Dividends received from joint venture	1,348	0.01	—	—
Other income	(1,847)	(0.02)	(1,192)	(0.01)
Adjusted EBITDA	\$ 4,149	\$ 0.05	\$ 37,280	\$ 0.32

Weighted average number of Common Shares		
Basic	114,109,298	117,884,124

SEGMENTED RESULTS

(Unaudited)

Segmented results of operations for the three and nine months ended September 30, 2021 and 2020 are included in this MD&A. Following the disposition of VIZIYA in the quarter ended June 30, 2020, Quarterhill now operates in two distinct segments.

CONTINUING OPERATIONS	Three months ended September 30, 2021			
	Licensing	Intelligent Transportation Systems	Corporate	Total
Revenues	\$ 11,416	\$ 24,927	\$ —	\$ 36,343
Direct cost of revenues	5,318	15,612	—	20,930
Gross profit	6,098	9,315	—	15,413
Depreciation and amortization	3,137	2,713	47	5,897
Selling, general and administrative expenses	850	5,511	2,470	8,831
Research and development expenses	—	728	—	728
Special charges	—	3,538	128	3,666
Results from operations	2,111	(3,175)	(2,645)	(3,709)
Finance expense (income), net	12	295	(20)	287
Foreign exchange loss (gain)	306	(620)	(323)	(637)
Other income	—	(655)	(6)	(661)
Income (loss) before taxes	1,793	(2,195)	(2,296)	(2,698)
Income tax (recovery) expense	(214)	(855)	374	(695)
Net income (loss) from continuing operations	\$ 2,007	\$ (1,340)	\$ (2,670)	\$ (2,003)

CONTINUING OPERATIONS	Three months ended September 30, 2020			
	Licensing	Intelligent Transportation Systems	Corporate	Total
Revenues	\$ 67,263	\$ 20,734	\$ —	\$ 87,997
Direct cost of revenues	32,118	10,278	—	42,396
Gross profit	35,145	10,456	—	45,601
Depreciation and amortization	3,510	1,703	20	5,233
Selling, general and administrative expenses	862	2,607	2,955	6,424
Research and development expenses	—	390	—	390
Impairment losses on intangible assets	62	—	—	62
Results from operations	30,711	5,756	(2,975)	33,492
Finance (income) expense, net	(18)	110	(85)	7
Foreign exchange (gain) loss	(280)	305	47	72
Other income	—	(383)	—	(383)
Income (loss) before taxes	31,009	5,724	(2,937)	33,796
Income tax expense	7,608	1,236	424	9,268
Net income (loss) from continuing operations	\$ 23,401	\$ 4,488	\$ (3,361)	\$ 24,528

 Nine months ended September 30, 2021

CONTINUING OPERATIONS	Intelligent Transportation Systems			
	Licensing	Intelligent Transportation Systems	Corporate	Total
Revenues	\$ 21,014	\$ 53,520	\$ —	\$ 74,534
Direct cost of revenues	16,041	33,133	—	49,174
Gross profit	4,973	20,387	—	25,360
Depreciation and amortization	9,318	6,334	155	15,807
Selling, general and administrative expenses	2,976	11,638	7,628	22,242
Research and development expenses	—	1,701	—	1,701
Special charges	—	3,733	315	4,048
Results from operations	(7,321)	(3,019)	(8,098)	(18,438)
Finance expense (income), net	55	394	(35)	414
Foreign exchange gain	(82)	(460)	(113)	(655)
Other (income) loss	—	(1,850)	3	(1,847)
Loss before taxes	(7,294)	(1,103)	(7,953)	(16,350)
Income tax (recovery) expense	(2,987)	(1,132)	435	(3,684)
Net (loss) income from continuing operations	\$ (4,307)	\$ 29	\$ (8,388)	\$ (12,666)

 Nine months ended September 30, 2020

CONTINUING OPERATIONS	Intelligent Transportation Systems			
	Licensing	Intelligent Transportation Systems	Corporate	Total
Revenues	\$ 77,783	\$ 48,651	\$ —	\$ 126,434
Direct cost of revenues	40,949	28,290	—	69,239
Gross profit	36,834	20,361	—	57,195
Depreciation and amortization	10,737	4,977	61	15,775
Selling, general and administrative expenses	2,586	8,424	7,535	18,545
Research and development expenses	—	1,814	—	1,814
Impairment losses on intangible assets	295	—	—	295
Special charges	—	659	213	872
Results from operations	23,216	4,487	(7,809)	19,894
Finance (income) expense, net	(62)	228	(327)	(161)
Foreign exchange loss (gain)	1,316	(624)	(1,205)	(513)
Other income	—	(1,192)	—	(1,192)
Income (loss) before taxes	21,962	6,075	(6,277)	21,760
Income tax expense	2,879	730	3,522	7,131
Net income (loss) from continuing operations	\$ 19,083	\$ 5,345	\$ (9,799)	\$ 14,629

Intelligent Transportation Systems Segment

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Revenues	\$ 24,927	\$ 20,734	\$ 53,520	\$ 48,651
Direct cost of revenues	15,612	10,278	33,133	28,290
Gross profit	9,315	10,456	20,387	20,361
Depreciation and amortization, net	2,713	1,703	6,334	4,977
Selling, general and administrative expenses	5,511	2,607	11,638	8,424
Research and development expenses	728	390	1,701	1,814
Special charges	3,538	—	3,733	659
Results from operations	(3,175)	5,756	(3,019)	4,487
Finance expense, net	295	110	394	228
Foreign exchange (gain) loss	(620)	305	(460)	(624)
Other income	(655)	(383)	(1,850)	(1,192)
(Loss) income before taxes	(2,195)	5,724	(1,103)	6,075
Income tax (recovery) expense	(855)	1,236	(1,132)	730
Net (loss) income from continuing operations	\$ (1,340)	\$ 4,488	\$ 29	\$ 5,345
Adjusted EBITDA	\$ 4,469	\$ 7,477	\$ 8,583	\$ 10,186

Other reconciling items:

Stock-based compensation	\$ 45	\$ 18	\$ 187	\$ 63
Dividends received from joint venture	\$ 1,348	\$ —	\$ 1,348	\$ —

The ITS segment's revenues for the three and nine months ended September 30, 2021 were \$24,927 and \$53,520 compared to \$20,734 and \$48,651 in the prior year comparative periods, respectively, primarily due to the expansion of our ITS segment with the acquisitions of Sensor Line, VDS and ETC this year offset by a decline in project revenues in Latin America due to the nature and timing of customer contracts.

Our ITS revenue streams consist of revenues earned on contracted projects, which are generally recognized over time, product sales, hardware and software system implementations, and service and maintenance contracts. Service and maintenance projects generally range from one to five year terms but can be renewed with some contracts that could reach up to ten years or more. For project based work, revenues will routinely vary significantly depending on the timing and nature of the specific projects underway in each reporting period. This is due to the seasonality inherent in our ITS segment where weather conditions in North America in particular may impact installation for certain projects, potentially resulting in lower revenue in the first quarter of a given fiscal year, while subsequent quarters are generally when project and service contracts are most active.

The ITS segment's gross profit as a value and as a percentage of revenues may be subject to significant variance in each reporting period due to the nature and type of contact and service work currently in process, currency volatility and competitive factors, among other things. Since more than half of our revenue in the ITS segment is denominated in US dollars, the depreciation of the US dollar during this period relative to the prior year significantly impacted our gross margins within this business segment. In the prior year, we also had larger projects that were undertaken with significant profit margins compared to a moderate mix of active projects this quarter with a lower profit margin.

Total operating expenses are comprised of selling, general and administrative costs, R&D costs, depreciation, amortization of intangible assets and special charges. Total operating expenses for the three and nine months ended September 30, 2021 were \$12,490 and \$23,406 compared to \$4,700 and \$15,874 in the prior year comparative periods, respectively. The general increase compared to the prior period generally reflects the

addition to the operating expenses of our new acquisitions this year as well as an increase to special charges which is mostly comprised of acquisition-related expenses.

We are committed to continual investments in R&D to enhance our current products and advance the availability of new products within the ITS industry. For the three and nine months ended September 30, 2021, net R&D spending levels were approximately 3% of segment revenue. Total R&D expenses have been offset, in part, by government grant recoveries that have enabled us to maintain staffing levels to accelerate R&D activities in the area of data analytics and new non-intrusive sensor technologies.

Income tax recovery for the three months ended September 30, 2021 was \$855 compared to an expense of \$1,236 for the three months ended September 30, 2020. Income tax recovery for the nine months ended September 30, 2021 was \$1,132 compared to an expense of \$730 in the comparative prior year period. For the periods ending September 30, 2021, income tax recovery increased from an income tax expense in the prior period primarily from the revenue and profitability decreases over the same comparative periods. This was caused primarily by the decline in profit as a result of increased special charges related to the three acquisitions in the three and nine months ended September 30, 2021.

Our ITS segment is exposed to foreign exchange risk primarily relating to its revenue, operating and capital expenditures, net assets held in foreign currencies, and embedded derivative portions of unearned revenue on certain U.S. dollar denominated sales contracts in its North America and Latin America markets. This is more fully described in the Risks and Uncertainties section.

Other income includes IRD's share of income in its joint venture, Xuzhou-PAT Control Technologies Limited ("XPCT"). XPCT has two business divisions that provide products and services to the ITS industry and construction equipment manufacturers. For the three and nine months ended September 30, 2021, IRD's share of XPCT's income was \$587 and \$1,774 compared to \$383 and \$1,192 for the three and nine months ended September 30, 2020. The improved performance is primarily due to the continued strong performance and growth in XPCT's construction equipment division.

Licensing Segment

	Three months ended September 30,		Nine months ended September 30,	
	2021	2020	2021	2020
Revenues	\$ 11,416	\$ 67,263	\$ 21,014	\$ 77,783
Direct cost of revenues	5,318	32,118	16,041	40,949
Gross profit	6,098	35,145	4,973	36,834
Depreciation and amortization	3,137	3,510	9,318	10,737
Selling, general and administrative expenses	850	862	2,976	2,586
Impairment losses of intangible assets	—	62	—	295
Results from operations	2,111	30,711	(7,321)	23,216
Finance expense (income), net	12	(18)	55	(62)
Foreign exchange loss (gain)	306	(280)	(82)	1,316
Loss before taxes	1,793	31,009	(7,294)	21,962
Income tax (recovery) expense	(214)	7,608	(2,987)	2,879
Net income (loss)	\$ 2,007	\$ 23,401	\$ (4,307)	\$ 19,083
Adjusted EBITDA	\$ 5,389	\$ 34,353	\$ 2,704	\$ 34,417

Other reconciling items:

Stock-based compensation	\$ 141	\$ 70	\$ 707	\$ 169
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For the three and nine months ended September 30, 2021, Licensing segment revenues were \$11,416 and \$21,014 compared to \$67,263 and \$77,783 in the respective comparative prior year periods. The decrease in

revenues for the nine months ended September 30, 2021 is largely due to the general one-time nature of WiLAN's licenses as well as some impact from foreign exchange as WiLAN's licensing contracts are denominated in US dollars. Accordingly, significant fluctuations in revenue, gross profit, and Adjusted EBITDA will occur when volume or dollar value of licenses change from one period to the next. The decrease in revenue in the three and nine months ended September 30, 2021 was directly attributable to the closure of significantly larger licensing contracts in the prior year comparative periods.

Patent licenses are considered a promise to provide the right to use patented technologies and revenue is recognized when the patent right is effective. An exception to this guidance is related to revenue generated from sales or usage-based royalties promised in exchange for a patent license. In these circumstances, customers generally report their royalty obligations one quarter in arrears and accordingly, we will estimate the expected royalties to be reported for a particular accounting period, with a true up to the actual royalties reported in the following financial reporting period.

Direct cost of revenues for the three and nine months ended September 30, 2021 were \$5,318 and \$16,041 compared to \$32,118 and \$40,949 for the respective prior year comparative periods. The direct cost of revenues for the quarter decreased from the prior year comparative period primarily as a result of a decrease in the overall contingent litigation and contingent partner expenses. During the three months ended September 30, 2021, revenue related to significant contracts closed decreased compared to the prior year periods resulting in a decrease in the related contingent expenses incurred. Direct cost of revenues for the nine months ended September 30, 2021 have decreased from the prior year comparative period primarily as a result of decreased contingent litigation and partner expenses. Contingent litigation and contingent partner expenses can vary based on the arrangements negotiated with each contingent partner for each specific contract licensed in a quarter as well as the extent of licensing in a period. The amount of licensing revenue contracted during the nine months ended September 30, 2021 was significantly lower than the prior period and the contingent litigation and contingent partner fee arrangements applicable on these same licenses were relatively lower. This resulted in the overall decrease of the contingent litigation and contingent partner expenses for the nine months ended September 30, 2021.

Operating expenses are generally considered selling, general and administration type expenses and include all overheads for WiLAN operations in addition to depreciation and amortization expense and any loss on disposal of assets or impairment losses. For the three and nine months ended September 30, 2021, operating expenses within this segment were \$3,987 and \$12,294 compared to \$4,372 and \$13,323 in the comparative prior year periods. This decrease in costs in the current quarter as well as year to date is primarily related to lower amortization of intangibles.

Income tax recovery for the three months ended September 30, 2021 was \$214 compared to an expense of \$7,608 for the three months ended September 30, 2020. Income tax recovery for the nine months ended September 30, 2021 was \$2,987 compared to an expense of \$2,879 in the comparative prior year period. For the periods ending September 30, 2021, income tax recovery increased from an income tax expense in the prior period primarily from the revenue and profitability decreases over the same comparative periods. This was due to larger significant contracts having been closed during the prior periods. For the nine months ended September 30, 2021, current income tax expenses decreased from the prior year as a result of decreased revenue to which withholding taxes were attributable. Current income tax expense for all reported periods consists primarily of foreign taxes withheld on payments received from licensees in foreign tax jurisdictions for which there is no treaty relief.

Former Enterprise Software Segment

Net income of \$nil and \$14,255 from discontinued operations for the three and nine months ended September 30, 2020, reflects the results of VIZIYA, the single investment in our former Enterprise Software segment that was sold on May 15, 2020. Revenues for the three and nine months ended September 30, 2020 were \$nil and \$6,132 less direct cost of revenues of \$nil and \$1,211, operating and other expenses of \$nil and \$7,309, and an income tax expense of \$1,559.

SELECTED CONSOLIDATED QUARTERLY RESULTS

(Unaudited)

Quarter ended	Revenues			Net income (loss)			Net income (loss) per share (basic)		Adjusted EBITDA *	Adjusted EBITDA per share *(basic)
	Cont. Ops	Disc. Ops.	Total	Cont. Ops	Disc. Ops.	Total	Cont. Ops	Disc. Ops.	Cont. Ops.	
	\$ 000's	\$ 000's	\$ 000's	\$ 000's	\$ 000's	\$ 000's	\$	\$	\$ 000's	\$
September 30, 2021	36,343	—	36,343	(2,640)	—	(2,640)	(0.02)	—	7,576	0.07
June 30, 2021	18,875	—	18,875	(6,376)	—	(6,376)	(0.06)	—	(3,019)	(0.02)
March 31, 2021	19,316	—	19,316	(4,287)	—	(4,287)	(0.04)	—	(408)	—
December 31, 2020	18,092	—	18,092	(10,201)	—	(10,201)	(0.09)	—	(6,080)	(0.05)
September 30, 2020	87,997	—	87,997	24,528	—	24,528	0.21	—	39,035	0.34
June 30, 2020	16,824	1,723	18,547	(4,987)	14,455	9,468	(0.04)	0.12	(1,992)	(0.02)
March 31, 2020	21,589	4,433	26,022	(4,932)	(180)	(5,112)	(0.04)	—	218	—
December 31, 2019	48,299	3,389	51,688	8,639	(2,266)	6,373	0.07	(0.02)	18,687	0.16

Adjusted EBITDA and the respective per share amounts are non-IFRS measures; please refer to "Non-IFRS Disclosures" and "Reconciliation of Adjusted EBITDA" sections of this MD&A.

Historically, our operating results have fluctuated on a quarterly basis and we expect that quarterly results will continue to fluctuate in the future due to the portion of consolidated revenues derived from the general one-time nature of WiLAN's licenses as well as the fluctuation occurring in the ITS business due to seasonality. Operating results for interim periods should not be relied upon as an indication of the results to be expected or achieved in any future period or any fiscal year as a whole. The risk factors affecting our revenue and results, many of which are outside of our control, include those set out under the heading "Risk Factors" in each of our AIF and the Prospectus Supplement.

CAPITAL AND LIQUIDITY

The Company's capital management objectives are to maintain financial flexibility in order to pursue its strategy of organic and acquisitive growth, and, from time to time, pay dividends and return capital to shareholders. The Company defines our capital as cash, the aggregate of cash and cash equivalents, short-term investments, restricted short-term investments, bank indebtedness, long-term debt and shareholders' equity. The Company manages its capital structure in accordance with changes in economic conditions. To maintain or adjust its capital structure, the Company may purchase Common Shares for cancellation pursuant to one or more normal course issuer bids and/or substantial issuer bids, issue new Common Shares, or raise or retire our debts.

Our cash, cash equivalents and short-term investments, exclusive of any restricted amounts, totaled \$37,049 at September 30, 2021 compared to \$141,250 at December 31, 2020 representing a decrease of \$104,201 primarily due to the acquisitions of Sensor Line, VDS and ETC. At September 30, 2021, we had sufficient working capital of \$60,037 to cover short and long-term obligations. Our cash position remains very strong, however, due to the nature of our business segment activities, operating cash flows may vary significantly between periods due to changes in working capital balances. As of the date of this MD&A, our cash balance was approximately \$93,600.

Our cash resources are generally used to fund our operations, provide working capital to any of our subsidiaries if needed and to acquire additional businesses. We may also fund our ongoing cash requirements through the use of additional short-term and long-term debt and, if desirable based on market conditions, by selling Common Shares and debt securities to the public.

We have a revolving credit facility through Canadian Imperial Bank of Commerce ("CIBC") available in the amount of \$8,000 (or the equivalent in US dollars) for general corporate purposes and a further \$2,000 for a foreign exchange facility. Canadian dollar or US dollar amounts advanced under this credit facility are payable on demand and bear interest at the bank's Canadian prime rate plus 1.0% per annum or US base rate plus 1.0%

per annum as may be applicable. Borrowings under this facility are collateralized by a general security agreement over our cash and cash equivalents, receivables and present and future personal property of the Quarterhill holding company and the Licensing segment. As at and during the quarter ended September 30, 2021, we had no borrowings under this facility.

On September 1, 2021, generally to finance the ETC acquisition, we entered into a credit agreement to receive senior secured credit facilities from HSBC Bank Canada and Royal Bank of Canada consisting of a revolving credit facility in the maximum amount of \$19,090 (US\$15,000) and a term credit facility of \$62,926 (US\$50,000). These facilities replaced all existing credit facilities we had with HSBC Bank Canada. The interest rate as at September 30, 2021 was 2.34% and both facilities have a maturity date of August 31, 2026 with a general security agreement over all of the assets in North America of IRD, ETC and its parent holding company, Quarterhill USA, Inc. The carrying value of these assets as at September 30, 2021 was \$237,133. As at September 30, 2021, we had borrowings of \$12,727 (US\$10,000) drawn from the revolving credit facility to help finance the ETC acquisition.

During the quarter, WiLAN received access to a revolving demand facility in the amount of \$3,040 to support letters of credit and/or letters of guarantee as well as a \$50 credit facility with Royal Bank of Canada for which \$3,095 in restricted short-term investments are held as collateral.

Pursuant to our NCIB, during the nine months ended September 30, 2021, the Company repurchased for cancellation 841,300 Common Shares at an average purchase price of \$2.45 per share totaling \$2,065 under the NCIB. Since the commencement of the NCIB on August 10, 2020, the Company has repurchased a total of 3,047,936 Common Shares for \$6,363. The NCIB expired on August 9, 2021 and the Company did not make any share repurchases under the NCIB for the three months ended September 30, 2021.

Subsequent to September 30, 2021, we filed and obtained a receipt for a short form base shelf prospectus for an aggregate offering amount of up to \$200,000 over 25 months and subsequently entered into a \$57,500 bought-deal financing of convertible unsecured subordinated debentures with a syndicate of underwriters pursuant to the Prospectus Supplement. The gross proceeds of this offering include the full exercise of the \$7,500 over-allotment option by the underwriters. The net proceeds of approximately \$55,000 will be used to support acquisitive growth and to provide additional working capital to support the operations of our businesses. We have raised approximately \$140,000 in debt and equity capital this year to date.

CONTRACTUAL OBLIGATIONS

Contractual obligations relating to bank indebtedness, accounts payable and accrued liabilities, long-term debt, and lease liabilities as at September 30, 2021 are as follows:

	Total	Less than 1 year	2 - 3 years	4 - 5 years	Thereafter
Bank indebtedness	\$ 12,727	\$ 12,727	\$ —	\$ —	\$ —
Accounts payable and accrued liabilities	26,571	26,571	—	—	—
Long-term debt	63,633	3,182	9,545	50,906	—
Lease liabilities	8,369	2,135	3,038	2,357	839
	\$ 111,300	\$ 44,615	\$ 12,583	\$ 53,263	\$ 839

OUTSTANDING COMMON SHARE DATA

We are authorized to issue an unlimited number of Common Shares, 6,351 special preferred, redeemable, retractable, non-voting shares and an unlimited number of preferred shares, issuable in series. As at September 30, 2021, there were 113,787,517 Common Shares and no special or preferred shares issued and outstanding. We also maintain the Quarterhill Inc. 2018 Equity Incentive Plan (the "Plan"). Under the Plan, we can issue a maximum of 9.5% of our issued and outstanding Common Shares from time to time which was, as at September 30, 2021, up to 10,809,814 Common Shares. As at September 30, 2021, we had options granted to

purchase up to 8,508,426 Common Shares. During the nine months ended September 30, 2021, the Company repurchased 841,300 Common Shares for \$2,065 under our NCIB.

Pursuant to the Company's 2018 Equity Incentive Plan the ("Equity Plan"), the Company has granted restricted stock units ("RSUs") to certain employees in March 2021. Pursuant to the Equity Plan, these RSUs are settled in common shares issued from treasury on a one-to-one basis in six tranches, with the first tranche vested at the grant date on March 15, 2021 and each subsequent tranche vesting upon the Company coming out of its regular quarterly blackout for the fiscal quarters ending June 30 and December 31, in 2021, 2022 and 2023. The Company granted 556,721 RSUs on March 15, 2021, valued using the most recent TSX closing price for the common shares on the grant date of \$2.59 for a total of \$1,441. For the three and nine months ended September 30, 2021, the Company has recognized \$163 and \$907, respectively, in stock-based compensation expense as a result.

OFF-BALANCE SHEET ARRANGEMENTS

As at September 30, 2021, IRD has an outstanding 100% guarantee to XPCT, for a loan in the amount of 15,000 yuan or \$2,954 (December 31, 2020 - \$2,937); however, IRD has the right to seek recourse against its joint venture partner for any amount greater than IRD's proportionate share of the liability. The amount owing represents the maximum amount available to be drawn under this facility.

PROPOSED TRANSACTIONS

There are no proposed transactions.

CRITICAL ESTIMATES

Key areas involving estimation, uncertainty and critical judgments include the following:

Revenue recognition

Contract revenue, contract costs, contract liabilities and contract assets relating to the ITS segment are based on estimates and judgments used in determining the progress to completion of a contract. Estimates include amounts derived to measure the progress to completion of the contract. Progress towards completion is measured by comparing the actual costs incurred to the total estimated costs for the contract. In determining the estimated costs to complete the contracts, assumptions and estimates are required to evaluate issues related to schedule, material and labour costs, changes in contract scope and subcontractor costs. Due to the nature of project contracts, estimates may change significantly between accounting periods. Changes in estimates are reflected in the period in which the circumstances that gave rise to the change became known and affect our revenue, contract assets, and contract liabilities.

Leases

Management uses judgment in determining whether a contract contains a lease, the interest used to discount the present value of fixed payments in accounting for the lease liability and corresponding right-of-use asset, and in determining whether it is likely that a lease term will be extended.

Asset Impairments and Impairment Reversals

Quarterhill's estimate of the recoverable amount for the purpose of impairment testing requires management to make assumptions regarding estimates of the present value of future cash flows including growth opportunities, economic risk, and the discount rate. These same assumptions are also used when assessing recoverability of impairments previously recognized.

Income taxes and deferred taxes

The Company is subject to income taxes in Canada and other foreign jurisdictions. The calculation of income taxes in many cases, however, requires significant judgment in interpreting tax rules and regulations. The Company's tax filings are subject to audits which could materially change the amount of current and deferred income taxes and liabilities. Additionally, estimation of the income tax provision includes evaluating the recoverability of deferred tax assets based on the assessment of the Company's ability to use the underlying future tax deductions before they expire against future taxable income. The assessment is based on existing

tax laws, estimates of future profitability and tax planning strategies. If the future taxable results of the Company differ significantly from those expected, the Company would be required to increase or decrease the carrying value of the deferred tax assets with a potentially material impact on the Company's consolidated statements of financial position and consolidated statements of comprehensive income. The carrying amount of deferred tax assets is reassessed at each reporting period and reduced to the extent that it is no longer probable that sufficient taxable income will be available to utilize all or part of the deferred tax assets. Unrecognized deferred tax assets are recognized to the extent that it is more likely than not that taxable income will be available against which deferred tax assets can be utilized.

Financial assets

Assessments about the recoverability of financial assets, including accounts receivable and unbilled revenue, require judgment as to whether a loss event has occurred and estimate of the amounts and timing of future cash flows.

FUTURE ACCOUNTING PRONOUNCEMENTS

Listed below are the standard, amendments, and interpretations that we reasonably expect to be applicable to Quarterhill at a future date and that we intend to adopt when they become effective.

Classification of Liabilities as Current or Non-Current (Amendments to IAS 1)

In January 2020, the IASB issued amendments to IAS 1, Presentation of Financial Statements to clarify that the classification of liabilities as current or non-current should be based on rights that are in existence at the end of the reporting period and is unaffected by expectations about whether or not an entity will exercise their right to defer settlement of a liability. The amendments further clarify requirements for classifying liabilities an entity will or may settle by issuing its own equity instruments. These amendments are effective for annual reporting periods beginning on or after January 1, 2023, with earlier application permitted. The adoption of these amendments is not expected to have a significant impact on our consolidated financial statements.

Onerous Contracts – Cost of Fulfilling a Contract (Amendments to IAS 37)

IAS 37 Provisions, Contingent Liabilities and Contingent Assets has been revised to incorporate amendments issued by the IASB in May 2020. The amendments specify which costs an entity includes in determining the costs of fulfilling a contract for the purpose of assessing whether the contract is onerous. The amendments are effective for annual reporting periods beginning on or after January 1, 2022. Earlier application is permitted. The Company is currently assessing the impact of these amendments.

Financial Instruments – Fees in the “10 percent” Test for Derecognition of Financial Liabilities (Amendments to IFRS 9)

IAS 9 Financial Instruments have been revised to incorporate amendments issued by the IASB in May 2020. The amendment clarifies which fees an entity includes when it applies the '10 percent test' in assessing whether to derecognize a financial liability. An entity includes only fees paid or received between the entity (the borrower) and the lender, including fees paid or received by either the entity or the lender on the other's behalf. The amendments are effective for annual reporting periods beginning on or after January 1, 2022. The Company is currently assessing the impact of these amendments.

COVID- 19 Related Rent Concessions Beyond June 30, 2021 (Amendments to IFRS 16 - Leases)

In May 2020, the IASB issued an amendment providing lessees with an exemption from assessing whether a COVID-19 related rent concession is a lease modification. On issuance, the practical expedient was limited to rent concession for which any reduction in lease payments affects only payments originally due on or before June 30, 2021. In April 2021 the IASB extended the availability of the exemption for COVID-19 related rent concessions by one year to June 30, 2022. The amendment is effective for annual reporting periods beginning on or after April 1, 2021. Earlier application is permitted. The Company does not expect the adoption of this amendment to have any impact on the consolidated financial statements.

Disclosure of Accounting Policies (Amendments to IAS 1 and IFRS Practice Statement 2)

In February 2021, the IASB issued Disclosure of Accounting Policies (Amendments to IAS 1 and IFRS Practice Statement 2). The amendments provide guidance to help entities disclose their material (previously "significant") accounting policies. The amendments are effective for annual reporting periods beginning on or

after January 1, 2023. Earlier application is permitted. The Company is currently assessing the impact of these amendments.

Definition of Accounting Estimates (Amendments to IAS 8)

In February 2021, the IASB issued Definition of Accounting Estimates (Amendments to *IAS 8 - Accounting Policies, Changes in Accounting Estimates and Errors*). The amendments define accounting estimates and clarify the distinction between changes in accounting estimates and changes in accounting policies. The amendments are effective for annual reporting periods beginning on or after January 1, 2023. Earlier application is permitted. The Company is currently assessing the impact of these amendments.

Deferred Tax Related to Assets and Liabilities Arising From a Single Transaction (Amendments to IAS 12)

IAS 12 Income Taxes has been revised to incorporate amendments issued by the IASB in May 2021. The amendments clarify the accounting for deferred tax on transactions such as leases and decommissioning obligations. The scope of the recognition exemption no longer applies to transactions that, on initial recognition, give rise to equal taxable and deduction temporary differences. The amendments are effective for annual reporting periods beginning on or after January 1, 2023. Earlier application is permitted. The Company is currently assessing the impact of these amendments.

RISKS AND UNCERTAINTIES

Quarterhill and its operating subsidiaries operate in dynamic business and competitive economic environments that expose it to a number of risks and uncertainties. This MD&A is qualified in its entirety by the risk factors described under the heading "Risk Factors" in each of our AIF and Prospectus Supplement. The risks and uncertainties discussed in greater detail under the heading "Risk Factors" in our AIF are not, however, the only risks we face. We may also be subject to additional risks and uncertainties that are currently unknown or not currently deemed material to our respective business operations. If any of the risks or uncertainties we and our operating subsidiaries face were to occur, they could materially affect our future operating results and could cause actual events to differ materially from those which we expect or that we have described in our forward-looking statements.

In addition to items identified in the AIF and Prospectus Supplement, we may be exposed to other risks as follows:

Credit Risk

Credit risk is the risk of financial loss to the Company if a licensee or counter-party to a financial instrument fails to meet its contractual obligations. Financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash and cash equivalents, short-term investments, restricted short-term investments and accounts receivable.

Our cash and cash equivalents and short-term investments consist primarily of deposit investments that are held primarily with Canadian chartered banks. Management does not expect any counter-parties to fail to meet their obligations.

We recognize a loss allowance provision using the simplified approach based on lifetime expected credit losses. Our exposure to credit risk with our accounts receivable from customers is influenced mainly by the individual characteristics of each customer. Our operating subsidiaries' customers are for the most part, large multinational companies or government organizations which do not have a history of non-payment. Credit risk from accounts receivable encompasses the default risk of customers. Prior to entering into transactions with new customers, we assess the risk of default associated with the particular customer. In addition, on an ongoing basis, management monitors the level of accounts receivable attributable to each customer and the length of time taken for amounts to be settled and where necessary, takes appropriate action to follow up on those balances considered overdue. We have had no material bad debts for any periods presented.

None of the amounts outstanding have been challenged by the respective counterparties and we continue to conduct business with them on an ongoing basis.

Quarterhill reviews financial assets on an ongoing basis with the objective of identifying potential matters which could delay the collection of funds at an early stage. Once items are identified as being past due, contact is

made with the respective customer to determine the reason for the delay in payment and to establish an agreement to rectify the breach of contractual terms.

Liquidity Risk

Liquidity risk is the risk that we will not be able to meet our financial obligations as they fall due. Our objective in managing liquidity risk is to ensure that we have sufficient liquidity available to meet our liabilities when due. We manage our liquidity needs through various sources including cash generated through operations, cash reserves, various revolving credit facilities, long-term debt and the issuance of Common Shares.

Market Risk

Market risk is the risk that the fair value of future cash flows from our financial instruments will fluctuate due to changes in interest rates and foreign currency exchange rates.

Interest Rate Risk

The financial instruments that expose us to interest rate risk are our cash and cash equivalents, short-term investments, restricted short-term investments, bank indebtedness and long-term debt. Our objectives to manage these financial instruments are to ensure sufficient funds are maintained on hand at all times to meet day-to-day requirements and to place any amounts that are considered in excess of day-to-day requirements on short-term deposit with our banks so that they earn interest. When placing amounts of cash and cash equivalents into short-term investments, we only place investments with Canadian chartered banks and ensure that access to the amounts placed can be obtained on short notice. A one percent increase or decrease in interest rates would not have resulted in a material increase or decrease in interest income or expense during the period.

Currency Risk

Portions of the Company's revenues and operating expenses are denominated in US dollars, Indian rupees, Chilean pesos, Mexican pesos, Euros and Chinese yuan. Because these financial statements are reported in Canadian dollars, the Company's operating results are subject to changes in the exchange rate of the foreign currencies (primarily US dollars) relative to the Canadian dollar. For instance, a decrease in the value of the US dollar relative to the Canadian dollar has an unfavourable impact on US dollar denominated revenues and a favourable impact on US dollar denominated direct cost of revenues and operating expenses. Approximately 85% of the Company's cash and cash equivalents and short-term investments are denominated in US dollars and are subject to changes in the exchange rate of the Canadian dollar relative to the US dollar.

From time to time, the Company may manage the risk associated with foreign exchange rate fluctuations by entering into foreign exchange forward contracts and engaging in other hedging strategies. To the extent that Quarterhill engages in risk management activities related to foreign exchange rates, it may be subject to credit risks associated with the counterparties with whom it contracts.

The COVID-19 Pandemic

Since the onset of the COVID-19 Pandemic and the impacts of this crisis on the global economy, our businesses continue to evolve as we adapt to manage, operate, and sustain these businesses during these uncertain times.

Some countries or states in which we operate remain in COVID-19-related lockdowns of some degree and/or have imposed restrictions on non-essential business activities. As a result, each of our business segments has undertaken a number of steps to protect their employees while continuing their respective business operations. Since the onset of the pandemic, we have continued to employ proactive measures including closing offices, making provision for employees working from home, eliminating travel and closely following the guidelines issued by health and regulatory authorities. Over the past year, our human resource policies have evolved to respond to questions or concerns from our employees while continuing to explore opportunities to return to "in office" work environments where necessary. As a result of our proactive measures, our business units remain in full operation and continue to execute on the delivery of existing customer mandates, while also working to build and sustain business pipelines and advance new opportunities through their respective sales cycles.

Our business has not been immune to the impacts of the COVID-19 Pandemic, however, the majority of the work within each business unit remains ongoing, and in the case of the ITS business segment, certain work in our ITS segment has been deemed "essential" by applicable governing authorities. There remains risk,

however, that certain project work or license sales will be deferred or restricted and new orders delayed, particularly in jurisdictions outside of Canada and the United States such as Latin America. In addition, we are experiencing some work inefficiencies due mainly to travel restrictions and also some delay in supply chain deliveries.

Diversification is central to Quarterhill's business model and, as such, revenues are not highly concentrated within any geography, business, or client base. During this period of uncertainty, we are prudently managing costs and safeguarding the strength of our balance sheet to support the resiliency of our business.

All risk factors should be considered carefully and readers should not place undue reliance on our forward-looking statements and forward-looking information. Any of the matters described under this "Risks and Uncertainties" section could have a material adverse effect on our businesses, results of operations and financial condition, in which case the trading price of the Common Shares could decline and a holder of Common Shares could lose all or a part of their investment. Please also refer to the "Cautionary Note Regarding Forward-Looking Statements" section of this MD&A.

DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROL OVER FINANCIAL REPORTING

Our Chief Executive Officer and Chief Financial Officer have designed or caused to be designed under their supervision, disclosure controls and procedures which provide reasonable assurance that material information regarding Quarterhill is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer in a timely manner.

In addition, our Chief Executive Officer and Chief Financial Officer have designed or caused to be designed under their supervision internal controls over financial reporting ("ICFR") to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements. The control framework used to design our ICFR is the "Internal Control - Integrated Framework (2013)" published by the Committee of Sponsoring Organizations of the Treadway Commission.

As of December 31, 2020, an evaluation was performed on the effectiveness of ICFR to provide reasonable assurance regarding the reliability of financial reporting and financial statement compliance with IFRS. Based on the evaluation performed at that time, the Chief Executive Officer and Chief Financial Officer concluded they were able to certify that the design and operating effectiveness of ICFR were effective.

There were no changes to our ICFR during the three and nine months ended September 30, 2021 that have materially affected, or are reasonably likely to materially affect, our ICFR.

A control system, no matter how well designed, can provide only reasonable, not absolute, assurance that its objectives are met. Due to inherent limitations in all such systems, no evaluations of controls can provide absolute assurance that all control issues, if any, within a company have been detected. Accordingly, our disclosure controls and procedures and our internal controls over financial reporting are effective in providing reasonable, not absolute, assurance that the objectives of our control systems have been met.

