# ACCELEWARE LTD. MANAGEMENT'S DISCUSSION AND ANALYSIS FOR THE THREE MONTHS ENDED MARCH 31, 2022

This management's discussion and analysis of financial condition and results of operations ("MD&A") should be read together with Acceleware Ltd.'s ("Acceleware" or the "Company") unaudited condensed interim financial statements and the accompanying notes for the three months ended March 31, 2022 ("Q1 2022"), which were prepared in accordance with International Financial Reporting Standards ("IFRS"), and the audited annual financial statements, accompanying notes and MD&A for the year ended December 31, 2021, which have been prepared in accordance with IFRS. Additional information relating to the Company is available on the System for Electronic Document Analysis and Retrieval ("SEDAR") at www.sedar.com under Acceleware Ltd.

This MD&A is presented as of May 25, 2022. All financial information contained herein is expressed in Canadian dollars unless otherwise indicated.

## **FORWARD LOOKING STATEMENTS**

Certain statements contained in this MD&A constitute forward-looking statements. These statements relate to future events or the Company's future performance. All statements other than statements of historical fact may be forward-looking statements. Forward-looking statements are often, but not always, identified by the use of words such as "seek", "anticipate", "plan", "continue", "estimate", "expect", "may", "will", "project", "predict", "potential", "targeting", "intend", "could", "might", "should", "believes" and similar expressions. These statements involve known and unknown risks, uncertainties, and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking statements. The Company believes that the expectations reflected in these forward-looking statements are reasonable, but no assurance can be given that these expectations will prove to be correct and such forward-looking statements included in this MD&A should not be unduly relied upon by investors. These statements speak only as of the date of this MD&A and are expressly qualified, in their entirety, by this cautionary statement.

In particular, this MD&A may contain forward-looking statements, pertaining to the following:

- the expectation of Acceleware's ability to continue operating as a going concern, fund its
  operations through the sale of its products and services, and access external financing when
  required;
- the future growth prospects for radio frequency ("RF") heating technology for heavy oil and oil sands based on technical and economic feasibility analyses and testing performed to date;
- the patentability of concepts developed through RF Heating research and development ("R&D")
  efforts;
- the expectation that the positive economic and technical analyses and testing to date will be reinforced by future results of subsequent testing of the RF technology;
- potential benefits of the Company's software to customers, including cost savings and increases to cash flow and productivity;
- the lasting impact on local and global markets of the COVID-19 pandemic;
- oil and natural gas production levels of both Organization of Petroleum Exporting Countries ("OPEC") and non-OPEC countries;
- oil and natural gas commodity prices;
- advantages to using Acceleware's products and technology;
- the demand for new products currently under development at the Company;
- ease and efficiency of implementing Acceleware's products; and
- supply and demand for Acceleware's primary software products.

With respect to forward-looking statements contained in this MD&A, the Company has assumed, among other things:

- that the future revenue and resulting cash flow expected by the Company's management ("Management") and ability to attract new financing will be sufficient to fund future operations this assumption being subject to the risk and uncertainty that the Company may not generate enough cash flow from operating activities to meet its capital requirements and that the Company may not be able to secure additional capital resources from external sources to fund any shortfall. Operating cash flow may be negatively affected by general economic conditions, increased competition, increased equipment or labour costs, and adverse movements in foreign currencies. Should the Company experience a cash flow shortfall from operating activities, Management's contingency plan may not be sufficient to reverse the shortfall;
- that industry and government interest in reducing greenhouse gas ("GHG") emissions, reducing industrial water use, and minimizing land disturbance remains constant or increases;
- that the long-term impact of the COVID-19 pandemic on the Company's products and services and R&D efforts will be manageable;
- that the long-term oil and natural gas commodity price trend and its effect on the Company's products, services, and R&D efforts will be manageable;
- that the long-term effect of any sentiment, law or policy regarding future investment in new heavy oil or oil sands projects will be manageable;
- that the analyses coupled with lab and field testing that the Company has performed to date regarding the technical and economic feasibility of RF Heating technology for heavy oil and oil sands will be confirmed in future commercial-scale testing and in commercial products;
- that the Company will maintain all regulatory approvals required to carry out the commercial-scale testing of its RF heating technology at Marwayne, Alberta (the "RF XL Pilot");
- that the RF Heating concepts developed by the Company are unique, novel and non-infringing of intellectual property owned by others;
- that the Company will be able to maintain sales of its software products and services which is subject to the risks that sales in core vertical markets may be negatively affected by general economic conditions, that the Company's R&D efforts may be unable to develop continuous improvements; and
- that the Company will be able to withstand the impact of increasing competition.

The Company's actual results could differ materially from those anticipated in these forward-looking statements as a result of the risk factors set forth below and elsewhere in this MD&A.

Investors should not place undue reliance on forward-looking statements as the plans, intentions or expectations upon which they are based might not occur. Forward-looking statements include statements with respect to the timing and amount of estimated future revenue and sales and the Company's ability to protect and commercially exploit its intellectual property. Readers are cautioned that the foregoing lists of factors are not exhaustive. The forward-looking statements contained in this MD&A are expressly qualified by this cautionary statement. The Company does not undertake any obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, unless required by law.

#### **BUSINESS OVERVIEW**

Acceleware is an innovator of transformative technologies leading to a new era of responsible and cost-effective energy development focused within two business segments: radio frequency heating ("RF Heating") for enhanced oil recovery and high-performance computing ("HPC") scientific software.

RF XL is Acceleware's patented RF heating technology, designed to improve the extraction of heavy oil and bitumen, featuring a cost effective and environmentally friendly alternative to steam assisted gravity drainage ("SAGD"). When applied, RF XL has the potential to reduce both capital and operating costs, while offering significant environmental benefits, including:

- immediate GHG emission reductions;
- the elimination of external water use;
- a substantial decrease in land use;
- no requirement for solvents; and
- substantial elimination of water treatment facilities and no need for tailings ponds.

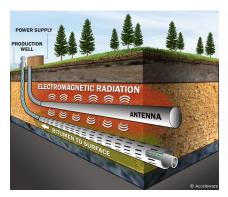
The Company believes that RF XL electrification can provide a clear pathway to low-to-zero GHG production of heavy oil and oil sands and provide optimal alignment between industry and government to recognize innovation as a meaningful component of the oil and gas industry's overall emission reduction plans.\*

Acceleware's HPC segment helps customers meet their oil and gas exploration needs with seismic imaging software that provides the most accurate and advanced imaging available for oil exploration in complex geological zones and formations, and clients' electronic and medical product development needs with state-of-the-art electro-magnetic ("EM") simulation software.

## RF Heating for Enhanced Oil Recovery

Acceleware's RF heating technology broadly falls into two distinct use-cases:

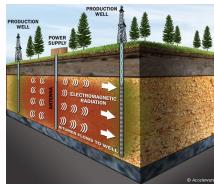
- 1. RF XL targets long horizontal wells most often associated with in-situ oil sands production.
- 2. Modular RF is technology primarily aimed at deeper, vertical wells where efficiencies can be gained due to the innovative approach offered by downhole RF power generation.











Multiple Vertical - RF flood

Single Vertical - Cyclic RF flood

Horizontal - RF injector

RF Heating can be used in a variety of vertical and horizontal well arrangements.

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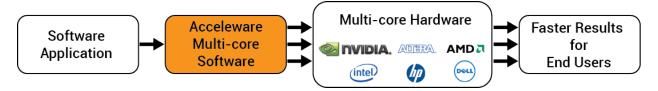
In 2010, Acceleware began investigating technology that would use RF energy for in-situ heating of heavy oil and bitumen. Since then, Acceleware has vigorously developed RF heating technology, securing the intellectual property with patents where appropriate.

Through the Company's RF heating development and services business, Acceleware developed sophisticated simulation software tools based on its proprietary AxFDTD solution coupled with third party reservoir simulation software. In late 2013, Acceleware commercialized and introduced these simulation tools as AxHEAT<sup>TM</sup>, a product aimed at oil and gas companies that are investigating the effectiveness of RF heating to increase the efficiency of heavy oil and oil sands production.\*

RF heating for oil production is not a new concept, as failed trials were conducted in Russia and North America as far back as 1948. Acceleware believes that these early failures were a result of technology limitations imposed by adapting radio communications technology for RF heating. Acceleware believes these limitations can be overcome with an entirely new approach to RF heating technology. The Company's RF heating R&D efforts have focused on reducing the capital cost of the technology, increasing its efficiency and therefore reducing its operating cost, and improving its scalability to be conducive for very long horizontal wells commonly used in Alberta's oil sands, as well as in Latin America, Africa, Asia, the Middle East and elsewhere. Acceleware's unique expertise with RF heating technology has resulted in the generation of revenue both locally and abroad.

#### High-Performance Computing Software

Acceleware's traditional high performance computing market has been centered around EM simulation software, and the Company continues to provide products to this industry. Its first software commercialized was an accelerated finite difference time domain ("FDTD") solution for the EM simulation industry. AxFDTD™ has been used by many Fortune 500 companies such as GE, Apple, Samsung, LG, Blackberry, Foxconn, Nikon, Renault, Mitsubishi, Merck, Boeing and Lockheed Martin, many of which continue to use the software today. With AxFDTD, Acceleware was a pioneer in the graphics processing unit ("GPU") computing revolution as most of the major mobile telephone manufacturers in the world are using Acceleware's EM design solutions which facilitate more rapid design of their products. Acceleware's fourth-generation software acceleration solutions, which support multi-board GPU systems, can accelerate entire industrial simulation and processing applications by more than 35 times.



The EM solutions developed by Acceleware can be easily integrated by software developers, saving them the expense and time of migrating applications to high performance multi-core platforms. Acceleware improves the overall experience for end users of these applications by providing greater computing speed without the need for end users to learn new skills or change their work processes.

In the EM market, software developers choose to partner with Acceleware to increase the speed of their software. Such partners currently include SPEAG, ZMT Zurich MedTech and Keysight Technologies. Acceleware reaches the EM market through a combination of partner channels and direct sales. Investment in AxFDTD continues for traditional markets because it is an enabling technology for AxHEAT.

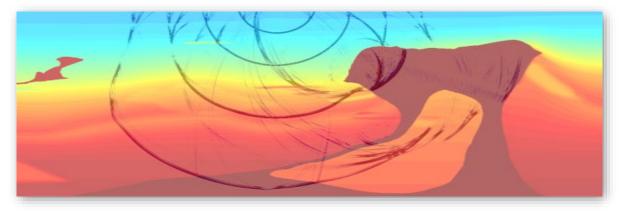
Acceleware recognized the similarity between EM FDTD and certain seismic imaging algorithms, which led the Company to enter the seismic imaging market in 2008. The Company's first product was a GPU accelerated Kirchhoff

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Time Migration solution, followed closely by AxRTM™ in 2009, a central processing unit ("CPU") and GPU enabled Reverse Time Migration ("RTM") library.

In 2013, Acceleware introduced AxWave<sup>TM</sup>, a forward modelling variant of AxRTM which allows customers to accurately model seismic acquisition and perform data characterization.

In late 2014, Acceleware added AxFWI<sup>TM</sup> a revolutionary modular full waveform inversion ("FWI") application to its seismic imaging suite. AxFWI allows geophysicists to create high quality subsurface velocity models in dramatically less time than before. Beginning in 2019, Acceleware accesses the oil and gas geoscience software market with innovative licensing structures through a direct sales model that targets oil and gas exploration companies and seismic service providers.



Seismic forward modelling in complex subsurface geology using AxWave

In February 2004, Acceleware was founded by a group of graduate students and professors from the University of Calgary's Electrical Engineering department for the purpose of building software solutions that targeted the GPU as a compute platform. Since 2006, Acceleware's common shares have been listed on the TSX Venture Exchange (symbol: AXE). Acceleware is headquartered in Calgary, Alberta.

On March 31, 2022, Acceleware had 20 employees and long-term contractors, including five in administration; three in sales, marketing and product management; and twelve in R&D and engineering.

For further information about the Company, please visit www.acceleware.com.

#### **OPERATING SUMMARY**

The commercial-scale RF XL pilot project at Marwayne, Alberta (the "RF XL Pilot") is the final step before commercialization of the RF XL enhanced oil recovery technology. RF XL is the first application of the Company's patent-protected Clean Tech Inverter ("CTI"), a novel electrification "engine" for industrial heating. Acceleware believes the CTI can economically decarbonize many industry verticals through electrification with immediate application in the clean energy transition. Functionality of the CTI has already been proved through scaled field tests conducted in 2019 and 2020, and when combined with existing heating systems and an immediate appetite within industry to adopt a clean technology, can facilitate an economic decarbonization strategy for many organizations.

The drilling and completions program for the RF XL Pilot was finished during Q4 2021 and facilities installation followed and was complete in the first quarter of 2022. In March 2022, Acceleware announced that heating had commenced, and as such the RF XL Pilot entered the final phase. As of late May 2022, progress on the demonstration of RF XL's potential to produce heavy oil and bitumen through RF-based electrification is in-line with expected outcomes.

In addition, the Company experienced the following events in the last twelve months:

- The Company's Chief Technology Officer resigned to pursue another career opportunity;
- CEO, Geoff Clark, received Canada's Clean-50 Award;
- A third major oil sands producer signed-on as a consortium member of the RF XL Pilot and committed up to \$2 million in funding and technical expertise; and
- Jim Boucher was elected to the board of directors.

As of April 5, 2022, the Company had closed two non-brokered private placements of 10% unsecured convertible debentures due 2026 for total gross proceeds of \$2,215,000. Each debenture matures four years after the issue date and is convertible into units of the Company at a conversion price of \$0.80. Each unit consists of one common share and one-half of one common share purchase warrant. Each whole warrant entitles the holder to acquire one common share, at an exercise price equal to 200% of the conversion price of the debentures for a 24-month period following the distribution of the debentures. Net proceeds from the offering will be used to fund the further development and testing of the Company's RF heating technology and for general corporate purposes.

Acceleware estimates the net cost to construct and operate the RF XL Pilot for six months to be in the range of \$21 million to \$22 million. Estimated gross costs of \$23 million to \$25 million are net of an estimated \$2 million to \$3 million proceeds from the sale of produced oil. There is uncertainty in estimated proceeds from the sale of produced oil due to fluctuating oil prices and simulated production volumes. Operating cost estimates remain subject to fluctuating commodity prices, in particular electricity and unforeseen mechanical or electrical engineering costs due to uncertainty inherent in a commercial scale pilot program of this nature.

As of March 31, 2022, total direct funding committed to the RF XL Pilot included \$5 million from Alberta Innovates, \$5.5 million from Sustainable Development Technology Canada ("SDTC"), \$5 million from Emissions Reduction Alberta ("ERA"), and up to \$6 million from three consortium members. \* All three consortium members of the RF XL Pilot have each committed up to \$2 million in funding and technical expertise. In exchange for this funding, Acceleware will provide exclusive access to detailed technical data and test results, prioritized rights to host a subsequent test, preferred pricing on pre-commercial products and preferred access to RF XL products. These three consortium members are three major oil sands producers and represent well over one million barrels of oil sands and heavy oil production per day.

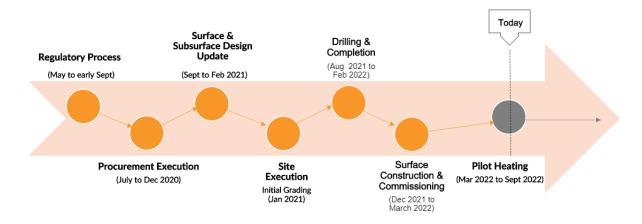
**Project Update:** As of May 25, 2022, the RF XL Pilot is almost halfway through the six-month initial heating phase since energizing the RF XL system in early March 2022. The Company has successfully injected power into the

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transmission lines for over 60 days, a significant milestone. During this time, the Company has monitored the performance of the CTI and related components, including control systems, cooling system, temperature monitoring in the heating lines and in the CTI, and power and efficiency measurements. As anticipated, this phase has included trouble shooting and operational changes that have led to multiple insights which will further refine CTI design, performance, and economics and optimize RF XL technology and operations. Another significant milestone was reached early April 2022 with first oil production from the RF XL Pilot. Oil shipments commenced in May 2022.

Acceleware plans to continue to gradually increase power, pause heating intermittently to evaluate performance, and test the RF XL system as required. The team will use data from this initial phase to optimize operations, establish an operating baseline for the system, and identify design enhancements for future deployments. The data will also be used to refine the operating plan, going forward. Ongoing oil production capabilities resulting from increasing the heat will continue to be assessed.

While the RF XL heating phase is planned for at least six months, this period may be extended to allow Acceleware to capture additional information on the efficiency and operation of the technology. If proven successful, the Pilot will mark a world first for electrification of low-to-zero GHG heavy oil and oil sands production using RF energy. With a successful Pilot and subsequent commercialization, numerous potential environmental benefits could be realized by oil sands producers deploying RF XL, and the Company anticipates highly skilled job creation as well as skilled jobs transition opportunities, including jobs for Indigenous peoples. \*



There are 13 patents granted or allowed to protect various proprietary technologies related to Acceleware's RF Heating R&D, and 29 patent applications pending or under development. The Company uses an integrated strategy to IP protection involving a combination of patenting and trade secrets, working closely with the patent offices and intellectual property advisors.

Acceleware also continues to focus on driving external awareness of the Company and on positioning its RF Heating and CTI technology more prominently within both the oil and gas and clean-tech communities. The company was recently featured in several news stories by the <u>CBC on television</u>, <u>radio</u>, and <u>online</u>. Several new blog posts and videos have been released via social media recently which feature discussions on the RF Heating technology by Acceleware's engineering team. The collection of videos is available for viewing here: Acceleware Vlog Posts .

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#### **FINANCIAL SUMMARY**

R&D spending in Q1 2022 declined significantly compared to the last two quarters, as the drilling program was completed in Q4 2021, surface facility installation was completed early in Q1 2022, and operations began in early March 2022. Cumulative RF XL Pilot expenses as at March 31, 2022 were approximately \$23.0 million (December 31, 2021 - \$20.4 million). The remaining cash committed but not yet received from SDTC, ERA and Alberta Innovates, including holdbacks receivable was \$2.4 million as at March 31, 2022 (December 31, 2021 - \$2.9 million) and amounts committed but not yet received from three major oil-sands producers were \$2.4 million as at March 31, 2022 (December 31, 2021 - \$2.8 million).

Since the onset of the pandemic, the Company's priority has remained the health and safety of its staff, clients, partners, and other stakeholders. Acceleware continues to support modified work practices, staggered work hours as needed, and work-from-home protocols to meet all appropriate health and safety standards.

The Company has also implemented several operational responses to address the following challenges:

- the potential for increased costs for materials and services,
- · tempered access to capital and funding from the oil and gas industry and public markets, and
- a temporary decline in demand for certain software used in the oil and gas industry,

with a variety of proactive measures including:

- successfully closing additional funding,
- reducing reliance on international suppliers by sourcing from Canadian companies,
- engaging with a broader group of funders,
- cost effectively increasing communications with stakeholders regarding progress and technology,
- reducing travel and entertainment and other discretionary spending, and
- implementing flexible terms of engagement with contractors and employees.

# **QUARTER IN REVIEW**

Revenue of \$0.1 million was generated in Q1 2022 compared to \$0.3 million in the three months ended March 31, 2021 ("Q1 2021"). Revenue of \$0.1 million was generated in the previous quarter ended December 31, 2021 ("Q4 2021"). Revenue in Q1 2022 was generated from software sales and maintenance with the largest amount attributable to maintenance. Higher revenue in Q1 2021 compared with Q1 2022 and Q4 2021 is attributable to sales of RF software within the RF Heating segment and a higher level of seismic maintenance activity. Revenue in Q1 2022 is similar to Q4 2021, with a comparable mix between software and maintenance. Acceleware also received non-refundable milestone cash payments of \$0.5 million in Q1 2022 compared to \$0.3 million in Q1 2021 which was recorded in deferred revenue. Data revenue equal to the amount recorded in deferred revenue will be recognized as revenue at the end of the RF XL Pilot or when the data contracts are terminated, whichever is earlier. Total deferred revenue recorded on the statement of financial position as at March 31, 2022 is \$3.45 million (December 31, 2021 – \$3.05 million).

Total comprehensive loss for Q1 2022 was \$1.9 million compared to a comprehensive loss of \$0.5 million for Q1 2021 and a comprehensive loss of \$1.8 million for Q4 2021. The higher comprehensive loss in Q1 2022 compared to Q4 2021 and Q3 2021 is due to a lower ratio of government assistance recognized in Q1 2022 as the RF XL Pilot nears completion.

Gross R&D expenses incurred in Q1 2022 were \$2.6 million compared to gross R&D expenses in Q1 2021 of \$1.6 million and \$5.2 million in Q4 2021. The higher level of spending in Q1 2022 and Q4 2021 over Q1 2021 is due to significant investment in the RF XL Pilot activities beginning in August of 2021. During Q1 2022, facility installation was completed and in Q4 2021 a significant portion of the drilling activity was completed. A lower level of federal and provincial government assistance of \$1.1 million was recognized in Q1 2022 compared to \$1.3 million recognized in Q1 2021 and \$3.9 million recognized in Q4 2021, offsetting gross research and development costs.

General and administrative ("G&A") expenses incurred in Q1 2022 were \$0.5 million compared to \$0.4 million in Q1 2021 and \$0.5 million in Q4 2021. The Company continues to prioritize cost control given uncertain economic conditions.

As at March 31, 2022, Acceleware had negative working capital of \$0.4 million (December 31, 2021 – negative working capital of \$0.9 million) including cash and cash equivalents of \$2.4 million (December 31, 2021 – \$1.9 million). The increase in working capital is attributable to the timing of receipt and recognition of government and partner funding and receipt of proceeds from the convertible debentures. Increasing the deficit is deferred revenue of \$3,450,000 as at March 31, 2022 (December 31, 2021 – \$3,050,000). Despite receiving non-refundable cash payments for these amounts, the milestone payments have not met all requirements for revenue recognition under IFRS 15 Revenue from Contracts with Customers. These amounts will be recognized as revenue and increase shareholders' equity when RF XL Pilot heating is complete or the data revenue contracts are terminated, whichever is earlier.

In the interests of matching cash requirements with a combination of cash generated from operations, external funding, and capital raising activities, the Company actively manages its cash flow and investments in new products. Acceleware intends to maximize cash generated from operations through several initiatives which include continuing to focus on higher gross margin software products that are marketed through a combination of direct and reseller models; minimizing operating expenses where possible; and limiting capital expenditures. As the Company continues to develop its RF Heating technology, new R&D investments will be financed through a combination of internal cash flow from the HPC business, project funding agreements, government assistance and external financing, when available.\*

#### STRATEGIC UPDATE

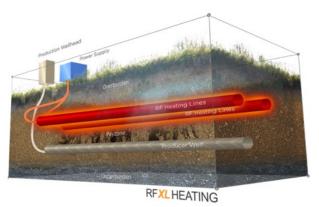
Acceleware will continue to focus on the energy markets, with RF Heating, AxRTM, AxWave, AxFWI, and AxHEAT as the primary strategic revenue-generating and investment technologies. Innovations and improvements to AxFDTD will continue for the EM markets and be an enabling technology for AxHEAT in the energy market. Acceleware has a proven track record for successful development and commercialization of revolutionary technologies.

The Company believes that its RF Heating technology presents significant potential environmental and economic benefits for the oil industry. Acceleware has been able to continue to fund the development of RF XL through non-refundable government funding and industry contributions, supplemented by financing activities such as the non-brokered private placement announced in Q1 2022 and mentioned above. However, the unprecedented impact of COVID-19 and measures taken by governments and companies to contain its spread, and investor sentiment may affect the Company's ability to raise additional funding for the final stages of the RF XL Pilot, should further funding be required. A further delay in the testing program may result in additional costs and a delay in technology commercialization. To mitigate these risks, the Company plans to prioritize the RF Heating segment by concentrating capital allocation and resources deployment to it and maintain its cost containment efforts.

#### **RF** Heating

In 2010, Acceleware began investigating technology that would use RF energy for in-situ heating of heavy oil and bitumen. In each of the four years immediately prior to 2017, the Company received funding from NRC-IRAP to partially finance its RF Heating technology development. In 2018, the Company began preparation for the RF XL Pilot, which will use two megawatts of electricity with an 800m horizontal well.

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Schematic of the RF XL Pilot

Since 2017, Acceleware has been awarded a \$5.5 million non-repayable contribution from SDTC, a \$5 million non-repayable contribution from ERA and a \$5 million non-repayable contribution from Alberta Innovates in accordance with their mandates to bring to market clean technologies that are economically viable and reduce GHG emissions. As at December 31, 2021, Acceleware has raised a further \$6 million in funding for its RF XL Pilot from three major oil sands producers. The Company continues to pursue partnerships with oil sands and heavy oil producers to not only provide additional financial and technical support for this commercial-scale field test but to also to pave the way for continued commercialization after the completion of the RF XL Pilot at Marwayne.

Acceleware, with partner GE, completed the design, manufacturing, and factory testing of the prototype Acceleware CTI which is the electronic platform for RF XL. In late 2019, the prototype CTI was field tested at the Company's simulated "ditch" reservoir in Alberta with record-level results and has now been deployed in the RF XL Pilot. Acceleware retains all intellectual property rights to the CTI design.

In early 2020, Acceleware received approval from its core funders for the partnership with Broadview to host the RF XL Pilot on their site near Marwayne, Alberta. In October 2020, the Company received approval of its Experiment Recovery Scheme Application under the Oil Sands Conservation Act from the AER for the RF XL Pilot, and in December 2020 received approval for its application under the Environmental Protection and Enhancement Act. Upon receipt of these regulatory approvals, Acceleware commenced RF XL Pilot activity in earnest in 2021, completing the drilling and completions program. Facilities were installed beginning in late 2021 and completed in Q1 2022. Heating commenced in early March 2022, with oil production commencing in early April 2022.

## <u>HPC</u>

In 2019, the Company focused on selling seismic imaging software to the oil and gas exploration market and continued the development of its suite of seismic products, as well as adding features, functionality, and performance to AxRTM, AxWave and AxFWI. Since 2018, the Company has accessed the oil and gas geoscience software market with innovative licensing structures through a direct sales model.

The Company continues to develop AxRTM, AxWave and AxFWI, which are GPU-accelerated and CPU-optimized seismic solutions, providing a multi-fold performance increase over alternative solutions, resulting in reduced processing times and enabling expedited drilling decisions for the oil and gas industry.

While the Company is focusing on energy markets, it continues to develop and sell its EM FDTD solution to end users primarily through independent software vendors ("ISV") that have integrated Acceleware's solution into their software architecture. Acceleware currently works with some of the world's largest companies in the electronics market, which consists of mobile phone manufacturers, industrial electronics firms, and government organizations. Acceleware's key ISV partners include SPEAG, ZMT Zurich MedTech AG, Keysight Technologies, Synopsis, Inc., and Crosslight Software Inc.

# **SUMMARY OF QUARTERLY RESULTS**

The following table highlights revenue, cash generated (used) in operating activities, total comprehensive loss and loss per share for the eight most recently completed quarters ended March 31, 2022.

	2022		2021				2020	
	Q1	Q4	Q3	Q2	Q1	Q4	Q3	Q2
Revenue	82,407	\$87,031	\$297,226	\$97,408	\$271,106	\$74,347	\$130,219	\$611,712
Cash generated (used) in operating activities	(1,401,272)	(1,440,665)	(211,875)	(467,445)	1,814,730	(981,479)	(544,129)	(1,216,156)
Total comprehensive loss for the period	(1,904,876)	(1,755,118)	(1,103,068)	(721,632)	(499,775)	(1,041,937)	(541,689)	(50,709)
Loss per share basic and diluted	(\$0.02)	(\$0.02)	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.01)	(\$0.001)

The Company's software revenue model results in relatively few overall sales transactions with higher overall revenue per transaction, which could potentially lead to increased volatility in quarterly revenue. This was evident in Q3 2021, Q1 2021 and Q2 2020 during which the Company recorded noticeably higher revenue than in other recent quarters. The timing of receipt of government funding and spending levels for the RF XL Pilot throughout all eight quarters contributed to the fluctuations in cash flows from operating activities.

# RESULTS OF OPERATIONS – THREE MONTHS ENDED MARCH 31, 2022

Revenue	Three	months	Thr	ee months	Thi	ree months	% change	% change
	e	ended		ended		ended	Q1 2022	Q1 2022
	March	31, 2022	Mar	ch 31, 2021	De	cember 31,	over	over
						2021	Q1 2021	Q4 2021
Software	\$	17,639	\$	111,335	\$	21,373	-84%	-17%
Maintenance		64,768		159,771		65,657	-59%	-1%
Services		-		-		-	N/A	N/A
	\$	82,407	\$	271,106	\$	87,030	-70%	-5%

For the three months ended March 31, 2022, the Company recognized revenue of \$82,407 representing a 70% decrease over Q1 2021 and a 5% decrease over Q4 2021 driven by lower seismic maintenance revenue in the HPC division and lower software revenue in the RF Heating division.

RF Heating Revenue	Three months	Three months	Three months	% change	% change
	ended	ended	ended	Q1 2022	Q1 2022
	March 31,	March 31, 2021	December 31,	over Q1	over Q4
	2022		2021	2021	2021
Software	\$ -	\$ 85,000	\$ -	N/A	N/A
Maintenance	-	-	11,250	N/A	N/A
	\$ -	\$ -	\$ 11,250	N/A	-100%

RF Heating revenue was \$nil in Q1 2022 compared to \$85,000 in Q1 2021 and \$11,250 in Q4 2021 due to sales of RF simulation software and simulation services, a relatively new revenue stream attributable to customers' interest in applying RF XL to specific reservoirs and operations.

HPC Revenue	Three months	Three months	Three months	% change	% change
	ended	ended	ended	Q1 2022	Q1 2022
	March 31,	March 31, 2021	December 31,	over	over
	2022		2021	Q1 2021	Q4 2021
Software	\$ 17,639	26,335	\$ 21,373	-33%	-17%
Maintenance	64,768	159,771	54,407	-59%	19%
	\$ 82,407	186,106	\$ 75,780	-56%	9%

HPC revenue decreased to \$82,407 in Q1 2022 compared to \$186,106 in Q1 2021 but slightly increased compared to \$75,780 in Q4 2021. Higher revenue in Q1 2021 was due to higher maintenance revenue for a large seismic contract. The Company's software revenue model results in relatively few overall sales transactions with higher overall revenue per transaction, which could potentially lead to increased volatility in quarterly revenue.

## **Expenses**

Expenses	Three months	Three months	Three months	% change	% change
	ended	ended	ended	Q1 2022	Q1 2022
	March 31,	March 31, 2021	December 31,	over	over
	2022		2021	Q1 2021	Q1 2022
Cost of revenue	\$ -	\$ 13,475	\$ -	-100%	N/A
General & administrative	473,656	423,229	523,156	12%	-9%
Research & development	1,512,124	325,641	1,312,165	364%	15%
	\$ 1,985,780	\$ 762,345	\$ 1,835,321	160%	8%

Expenses for the three months ended March 31, 2022, increased 160% to \$1,985,780 as compared to \$762,345 in Q1 2021 and increased 8% compared to \$1,835,321 in Q4 2021 due to a lower ratio of government assistance recognized in Q1 2022 as the RF XL Pilot activities near completion in 2022. During Q1 2022, the Company finished installing the surface facilities for the RF XL Pilot and began operations at the end of the quarter. In Q4 2021, the Company completed manufacturing and assembly of the RF XL Pilot E-house including installation of the CTI prototype and ancillary components, installed downhole and surface components, and successfully completed the well drilling and completions program.

RF Heating Expenses	Three months	Three months	Three months	% change	% change
	ended	ended	ended	Q1 2022	Q1 2022
	March 31,	March 31, 2021	December 31,	over	over
	2022		2021	Q1 2021	Q4 2021
Cost of revenue	\$ -	<b>\$</b> 13,475	\$ -	-100%	N/A
General & administrative	357,563	279,404	412,653	28%	-13%
Research & development	1,512,124	325,641	1,312,165	364%	15%
	\$ 1,869,687	\$ 618,520	<b>\$</b> 1,724,818	202%	8%

RF Heating expenses for the three months ended March 31, 2022, were \$1,869,687 or 202% higher than in Q1 2021 and 8% higher than in Q4 2021. R&D expenses were higher compared to both Q1 2021 and Q4 2021 due to lower government assistance recognized in Q1 2022. Additionally, gross RF XL Pilot expenses were significantly higher for contractor and materials costs in Q1 2022 and Q4 2021 compared to Q1 2021 due to higher activity for the RF XL Pilot. G&A expenses were higher compared to Q1 2021 and lower compared to Q4 2021 due to fluctuations in payroll and payroll related costs.

HPC Expenses	Three months	Three months	Three months	% change	% change
	ended	ended	ended	Q1 2022	Q1 2022
	March 31,	March 31, 2021	December 31,	over	over
	2022		2021	Q1 2021	Q4 2021
General & administrative	116,093	143,825	110,503	-19%	5%
	\$ 116,093	<b>\$</b> 143,825	<b>\$</b> 110,503	-19%	5%

HPC expenses for the three months ended March 31, 2022 were \$116,093 or 19% lower than in Q1 2021 and 5% higher than in Q4 2021. G&A expenses were lower compared to Q1 2021 and higher compared to Q4 2021 due to fluctuations in share-based compensation expenses driven by the timing of grants. R&D expenses were \$nil in all periods as the Company focuses on the RF XL Pilot.

#### LIQUIDITY AND CAPITAL RESOURCES

At March 31, 2022, Acceleware had negative working capital of \$385,293 (December 31, 2021 – negative working capital of \$911,335), \$2,350,055 in cash and cash equivalents (December 31, 2021 - \$1,947,512), and \$114,306 in combined short-term and long-term debt in the form of leases (December 31, 2021 - \$121,646). Fluctuations in non-cash working capital were attributable to the timing of receipt of government assistance and related R&D spending. Cash and cash equivalents increased due to receipt of proceeds from the convertible debentures. Increasing the deficit is deferred revenue of \$3,450,000 as at March 31, 2022 (December 31, 2021 – \$3,050,000). Despite receiving non-refundable cash payments for these amounts, the milestone payments have not met all requirements for revenue recognition under IFRS 15 Revenue from Contracts with Customers. These amounts will be recognized as revenue and increase shareholders' equity when RF XL Pilot heating is complete or the data revenue contracts are terminated, whichever is earlier.

In the interests of matching cash requirements with a combination of cash generated from operations, external funding, and capital raising activities, the Company actively manages its cash flow and investments in new products. Acceleware intends to maximize cash generated from operations through several initiatives which include continuing to focus on higher gross margin software products that are marketed through a combination of direct and reseller models; minimizing operating expenses where possible; and limiting capital expenditures. As the Company continues to develop its RF Heating technology, new R&D investments will be financed through a combination of internal cash flow from the HPC business, project funding agreements, government assistance, industry partners and external financing, when available. Management believes that successful execution of its business plan will result in sufficient cash flow and new financing to fund projected operational and investment requirements. However, no assurances can be given that the Company will be able to achieve all or part of the objectives discussed above, or that sufficient financing from outside sources will be available. Further, if the Company's operations are unable to generate cash flow levels at or above current projections, the Company may not have sufficient funds to meet its obligations over the next twelve months. Should such events occur, Management is committed to implementing all or a portion of its contingency plan. This plan has been developed and designed to provide additional cash flow, and includes, but is not limited to: deferring certain additional product development initiatives; reducing sales, marketing and G&A expenses; and seeking outside financing. The failure of the Company to achieve one or all the above items may have a material adverse impact on the Company's financial position, results of financial performance and cash flows.\*

Cash flows used in operations totaled \$1,401,272 for the three months ended March 31, 2022 compared to cash flows provided by operations of \$1,814,730 for the three months ended March 31, 2021, a significant increase in the use of cash in operations due to the timing of receipt of funding for the RF XL Pilot and timing of payment of RF XL Pilot expenses. Cash used in operations before changes in non-cash working capital was \$1,677,211 for Q1 2022 compared to cash used in operations before changes in non-cash working capital of \$461,470 in Q1 2021.

On March 24, 2022, the Company closed its first non-brokered private placement of 10% unsecured convertible debentures due 2026 for gross proceeds of \$1,500,000. On April 5, 2022, the Company closed its second non-brokered private placement on terms, similar to the first, for gross proceeds of \$715,000. For both offerings, each debenture matures four years after the issue date and is convertible into units of the Company at a conversion price of \$0.80. Each unit consists of one common share and one-half of one common share purchase warrant. Each whole warrant entitles the holder to acquire one common share, at an exercise price equal to 200% of the conversion price of the debentures for a 24-month period following the distribution of the debentures. Net proceeds from the offering shall be used to fund the further development and testing of the Company's RF heating technology and for general corporate purposes.

#### Trade and Other Receivables

Trade and other receivables as at March 31, 2022 decreased to \$2,875,695, compared to \$2,960,602 as at December 31, 2021 due to an decrease in government assistance receivable for work completed on the RF XL Pilot. The

\* this paragraph contains forward looking information. Please refer to "Forward Looking Statements" and "Risk Factors and Uncertainties" for a discussion of the risks and uncertainties related to such information

Company maintains close contact with its customers to mitigate risk in the collection of receivables and a large portion of the receivables is due from provincial and federal government bodies related to a contract for government assistance, and therefore is deemed lower risk.

#### **Current Liabilities**

As at March 31, 2022, the Company had current liabilities of \$5,948,662 compared to current liabilities of \$6,108,625 as at December 31, 2021. The change in current liabilities is due to receipt and recognition of deferred government assistance for R&D and an increase in accounts payable and accrued liabilities for increased costs for the RF XL Pilot.

#### **Income Tax**

The Company follows the liability method with respect to accounting for income taxes. Deferred tax assets and liabilities are determined based on differences between the carrying amount and the tax basis of assets and liabilities (temporary differences). Deferred tax assets and liabilities are measured using the substantively enacted tax rates that will be in effect when these differences are expected to reverse. Deferred tax assets, if any, are recognized only to the extent that, in the opinion of Management, it is probable that the assets will be realized.

As at March 31, 2022, the potential tax benefits of Acceleware's available tax pools have not been recognized in the Company's account due to uncertainty surrounding the realization of such benefits.

Alberta's Innovation Employment Grant ("IEG") to support research and development is effective January 1, 2021 and provides a grant of up to 20% of eligible R&D expenses incurred in Alberta. This new grant effectively replaces Alberta's 10% scientific research and experimental development refundable tax credit that was eliminated as of December 31, 2019. Based on preliminary evaluation, the Company meets eligibility criteria and expects to incur eligible R&D expenditures in the taxation year. No amounts have been recorded as at March 31, 2022 due to uncertainty surrounding the estimate.

## **RISKS FACTORS AND UNCERTAINTIES**

Management defines risk as the probability of a future event that could negatively affect the financial condition and/or results of operations of the Company. There have been no material changes in any risks or uncertainties facing the Company since December 31, 2021. A discussion of risks affecting the Company and its business is set forth under the heading Risk Factors and Uncertainties in Management's Discussion and Analysis for the period ended December 31, 2021.

# **TRANSACTIONS WITH RELATED PARTIES**

For the three months ended March 31, 2022, the Company incurred expenses in the amount of \$45,938 (three months ended March 31, 2021 - \$45,208) with a company controlled by an officer of the Company as fees for duties performed in managing operations, and this amount is included in research and development expense. As at March 31, 2022, \$81,703 was included in accounts payable and accrued liabilities (December 31, 2021 - \$73,325). These fees were incurred in the normal course of operations and in the opinion of management represent fair value for services rendered.

For the three months ended March 31, 2022, the Company incurred expenses in the amount of \$26,902 (three months ended March 31, 2021 - \$nil) with a company controlled by an officer of the Company for legal fees, and this amount is included in general and administrative expense. As at March 31, 2022, \$28,244 (December 31, 2021 - \$nil) was included in accounts payable and accrued liabilities. These fees were incurred in the normal course of operations and in the opinion of management represent fair value for services rendered.

For the three months ended March 31, 2022, the Company incurred expenses in the amount of \$36,000 (three months ended March 31, 2021 - \$46,000) with a company controlled by the spouse of an officer of the Company for communications and other services, and this amount is included in general and administrative expense. As at March

31, 2022, \$12,600 was included in accounts payable and accrued liabilities (December 31, 2021 - \$12,804). These fees were incurred in the normal course of operations and in the opinion of management represent fair value for services rendered.

Key management includes the Company's directors and members of the executive management team. Compensation awarded to key management included:

	2022	2021
Salaries and short-term employee benefits	\$ 267,678 \$	256,043
Share-based payments	70,033	22,876
	\$ 337,711 \$	278,919

## **CRITICAL ACCOUNTING ESTIMATES**

#### General

The Management's Discussion and Analysis for the year ended December 31, 2021 outlined critical accounting policies including key estimates and assumptions that Management has made under these policies and how they affect the amounts reported in the financial statements. During the quarter, there have been no material changes in Management's key estimates and assumptions and, except as noted below, the significant accounting policies used in the preparation of the condensed interim financial statements are unchanged from those disclosed in the Company's financial statements for the year ended December 31, 2021.

#### SIGNIFICANT ACCOUNTING POLICIES

## **Convertible Debentures**

In accordance with IAS 39, convertible debentures are financial instruments which are accounted for separately, dependent on the nature of their components. The identification of such components embedded within a convertible note requires significant judgment given that it is based on the interpretation of the substance of the contractual arrangement. Where the embedded derivative has a variable conversion rate, the option is recognized as a derivative liability or asset measured at fair value through profit and loss. The residual amount is recognized as a financial liability and subsequently measured at amortized cost.

The convertible debenture consists of a debt host with multiple embedded derivatives including a conversion privilege, a forced conversion option, a pre-payment option and an anti-dilution option. The embedded derivatives did not meet the definition of equity and are required to be recognized separately from the debt host.

At initial recognition, the embedded derivatives were measured at fair value and recorded as a derivative liability within non-current other liability on the statement of financial position. The initial carrying amount of the debt host was the residual amount after deducting the fair value of the embedded derivatives from the proceeds net of associated transaction costs.

Subsequent to initial recognition, the debt host is measured at amortized cost with interest recognized using the effective interest rate method which will accrete the debt host to the face value of the debentures over the term of the debenture. The embedded derivative liabilities are marked to market at each financial reporting date with changes in fair value recognized in profit or loss. No change in fair value occurred between issuance and the reporting date.

# **DISCLOSURE OF OUTSTANDING SHARE DATA**

As of the date of this MD&A, Acceleware had the following common shares, options and warrants outstanding:

Common Shares	108,355,340
Stock Options	9,489,164

# ADDITIONAL DISCLOSURE FOR VENTURE ISSUERS WITHOUT SIGNIFICANT REVENUE

Additional disclosure concerning the Company's research and development expenses and general and administrative expenses is provided in the audited financial statements for the year ended December 31, 2021 that are available on <a href="https://www.sedar.com">www.sedar.com</a> and as noted below.

Research and Development	Three Months Ended	Three Months Ended	
Research and Development	March 31, 2022	March 31, 2021	
Salaries	\$ 211,916	\$ 120,541	
Consulting	198,401	153,054	
R&D supplies and materials	2,160,475	1,324,396	
Share-based payments	26,865	3,779	
Rent and overhead allocations	13,485	10,780	
Amortization	11,825	6,458	
Government assistance	(1,110,843)	(1,293,367)	
Total	\$ 1,512,124	\$ 325,641	

Sales, General and Administration	Three Months Ended	Three Months Ended
	March 31, 2022	March 31, 2021
Salaries	\$ 160,541	\$ 208,759
Marketing	56,498	56,827
Travel	8,991	-
Share-based payments	74,806	20,552
Rent, supplies and public company fees	91,046	76,901
Amortization	11,825	6,458
Professional fees	69,949	53,732
Total	\$ 473,656	\$ 423,229