MANAGEMENT'S DISCUSSION AND ANALYSIS

For the three-month period and the year ended December 31, 2022

and the fourteen-month period ended December 31, 2021.

GENERAL

The following Management Discussion and Analysis of financial condition and results of operations ("MD&A") of NuRAN Wireless Inc. ("we", "us", "our", the "Company" or "NuRAN") for the year ended December 31, 2022 has been prepared by management and should be read in conjunction with the audited consolidated financial statements for the year ended December 31, 2022 and the fourteen-month period ended December 31, 2021 and the related notes thereto. The Company's consolidated financial statements are prepared in accordance with International Financial Reporting Standards ("IFRS"). References to notes are with reference to the consolidated financial statements. Unless otherwise noted, all currency amounts are in Canadian dollars. These documents, as well as additional information on the Company, are filed electronically through the System for Electronic Document Analysis and Retrieval (SEDAR) and are available online at www.sedar.com.

Unless otherwise stated, this MD&A is prepared as of May 12, 2023.

DISCLAIMER FOR FOWARD LOOKING STATEMENTS

This MD&A contains forward-looking statements. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "expects" or "does not expect", "is expected", "estimates", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved. Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Issuer (as defined herein) or NuRAN (as defined herein) to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Examples of such statements include: expectations regarding NuRAN's ability to raise capital, the intention to expand the business and operations of NuRAN and use of working capital and proceeds of capital raises. Actual results and developments are likely to differ, and may differ materially, from those expressed or implied by the forward-looking statements contained in this MD&A. Such forward-looking statements are subject to a number of risks as outlined below under "Risks and Uncertainties" and include risks such as the uncertainties regarding the impact of the COVID-19 outbreak, and measures to prevent its spread, risks relating to NuRAN's business and the economy generally; NuRAN's ability to adequately restructure its operations with respect to its new model of NaaS service contracts; the capacity of the Company to deliver in a technical capacity and to import inventory to Africa at a reasonable cost; NuRAN's ability to obtain project financing for the proposed site build out under its NaaS agreements with Orange, MTN and other telecommunication providers; the loss of one or more significant suppliers or a reduction in significant volume from such suppliers; NuRAN's ability to meet or exceed customers' demand and expectations; significant current competition and the introduction of new competitors or other disruptive entrants in the Company's industry; NuRAN's ability to retain key employees and protect its intellectual property; compliance with local laws and regulations and ability to obtain all required permits for our operations; access to the credit and capital markets; changes in applicable telecommunications laws or regulations or changes in license and regulatory fees; downturns in customers' business cycles; insurance prices and insurance coverage availability; the Company's ability to effectively maintain or update information and technology systems; our ability to implement and maintain measures to protect against cyberattacks and comply with applicable privacy and data security requirements; the Company's ability to successfully implement its business strategies or realize expected cost savings and revenue enhancements; business development activities, including acquisitions and integration of acquired businesses; the Company's expansion into markets outside of Canada and the operational, competitive and regulatory risks facing the Company's non-Canadian based operations. These forward-looking statements should not be relied upon as representing NuRAN's views as of any date subsequent to the date of this MD&A.

Although NuRAN has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward looking statements. The factors identified above are not intended to represent a complete list of the factors that could affect NuRAN. Such statements made by the Company are based on current expectations, factors and assumptions and reflect our expectations as at December 31st, 2022. Except as required by applicable law, we undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

For a description of material factors that could cause the Company's actual results to differ materially from the forward-looking statements in this MD&A, please see "Risks and Uncertainties" below.

CORPORATE STRUCTURE

NuRAN was incorporated under the *Business Corporations Act* (British Columbia) on September 23rd, 2014. The Company was initially a wholly owned subsidiary of Bravura Ventures Corp. ("Bravura"). On October 14th, 2014, the Company entered into an arrangement agreement with Bravura and 1014379 B.C. Ltd., pursuant to which the shareholders of Bravura exchanged certain common shares of Bravura for common shares of NuRAN by way of a plan of arrangement (the "Arrangement") and NuRAN became a reporting issuer in the provinces of British Columbia and Alberta.

Following completion of the Arrangement, NuRAN entered into an amalgamation agreement dated March 11, 2015 with Nutaq Innovation Inc. ("Nutaq") and 9215174 Canada Inc. ("Newco"), a wholly owned subsidiary of NuRAN formed for the purpose of the amalgamation, pursuant to which Nutaq amalgamated with Newco and NuRAN acquired all of the issued and outstanding shares of the amalgamated company in consideration of 32,999,994 common shares of NuRAN based on a ratio of 2.749 NuRAN common shares for each share of Nutaq issued and outstanding on the closing date. Nutaq and Newco completed the amalgamation on June 2nd, 2015, and the amalgamated company was named "Nutaq Innovation Inc.". Following the closing of the transaction, NuRAN had 40,471,869 common shares issued and outstanding and former shareholders of Nutaq acquired 81.5% of the issued and outstanding common shares of NuRAN. Following the closing of the Amalgamation, Nutaq Innovation Inc. was a wholly owned subsidiary of NuRAN and NuRAN operated the business of Nutaq.

Nutaq was incorporated under the laws of Canada on May 30, 2005, under the name "Lyrtech RD Inc.". Nutaq changed its name to "Nutaq Innovation Inc." on August 31, 2012; its registered and head office is located at 2150 Cyrille-Duquet Street, Suite 100, Quebec, Quebec G1N 2G3. On August 28, 2020, the Board of Directors of Nutaq voted to cease operations and on that date all its board members, except Mr. Francis Letourneau, resigned their respective positions. On August 31, 2020, Nutaq announced the decision and filed an insolvency proceeding and on September 1, 2020, the Company approved the appointment of Lemieux Nolet as trustee for Nutaq's bankruptcy proceedings. At the same time the trading of the Company's stock was halted.

On September 22, 2020, the trustee and Nutaq's first ranking secured creditors reached an agreement pursuant to which all the assets of Nutaq, including all inventory, equipment and R&D equipment, trademarks, patents, accounts receivables, bank account and SR&ED credits would be sold. On October 27, 2020, the parent company re-acquired these Nutaq Assets for $100,000.

As a result of the insolvency proceedings, the Company eliminated/extinguished the obligation to repay certain creditors and recorded a $1.5 million gain on the extinguishment of liabilities. As well, the Company assumed all obligations of Nutaq. Subsequently the management of NuRAN made the decision to initiate a process to unwind the bankruptcy of Nutaq in order to recover the significant losses accumulated and which can be used to offset future profits of the Company. The process began in 2021 and the final step was completed when NuRAN's proposal to creditors was accepted by the bankruptcy court on March 17, 2022. A final payment of settlement was made and on March 25, 2022, Nutaq received a Certificate of Full Performance of Proposal issued by the Licensed Insolvency Trustee signifying that Nutaq is released from the debt included in the proposal.

In 2021, NuRAN incorporated two wholly owned subsidiaries, NuRAN Wireless Cameroon Ltd. and NuRAN Wireless DRC S.A.R.L.U., to own and manage the networks that the Company is developing in those countries. In April 2022 the Company incorporated NuRAN Wireless (Africa) Holding based in Mauritius, a regional holding company that will hold all of its African investments. During 2022 the shares in both subsidiaries were transferred to the holding company and in future this entity will be used to raise debt and equity to fund further growth. The results for the year ended December 31, 2022, include the consolidated results of these African subsidiaries.

In 2021 NuRAN modified its bylaws to change its financial year-end from October 31 to December 31 such that the prior year was a transition year for the Company. As a result, the twelve-month period then ended December 31, 2022 is compared to the 14 month period then ended December 31, 2021.

DESCRIPTION OF BUSINESS

NuRAN is a leading supplier of mobile and broadband wireless infrastructure solutions. Its innovative radio access network (RAN), core network, and backhaul products dramatically reduce the total cost of ownership, giving mobile network operators (MNOs) the ability to profitably serve remote, low income and low population density locations, an unfeasible proposition with existing systems.

NuRAN's current business focus is to grow the market penetration of its Network as a Service (NaaS) offering, a communications solution whose backbone is its Wireless Infrastructure Systems (WIS).

NuRAN's WIS are mobile wireless infrastructure equipment (e. g. base station radios) that use proprietary breakthrough small cell solutions to offer better coverage, the lowest installed cost, the most efficient power consumption combined with leading technology for satellite bandwidth reduction usage currently available in the global marketplace.

Our design provides two key competitive advantages:

- Low total cost of ownership, a key feature for developing countries and rural/low population density areas, and
- Small footprint, easy to deploy private networks, customizable for large scale deployments such as rural mobile networks and specific markets such as defense, utilities, industrial and machine-to-machine ("M2M").

NuRAN's NaaS model leverages the capabilities of its WIS as well as its extensive expertise in building cost-effective cellular infrastructure. The model provides not only the network equipment, but NuRAN also finances, builds, operates and maintains the cellular sites in a very effective manner. Revenue to NuRAN comes in the form of either a revenue share with guaranteed minimum or threshold values, or fixed monthly payments. The NaaS model is receiving significant interest from MNOs as a carrier-grade mobile network infrastructure solution that allows them to continue focusing their capital expenditures on developing new technologies, while being able to reach previously uneconomic markets. Another reason for this growing interest in the NaaS model is that it allows MNOs to meet the obligations to serve remote communities, a requirement of their government licenses. The investment in the NaaS model is customer friendly but it also provides NuRAN with long-term recurring revenues resulting in a compelling return over contract periods which range from 5 to 10 years in length, and in the future will be indefinite length incorporating continued asset ownership by NuRAN.

NuRAN's wireless infrastructure solutions are also capable of supporting mobile payment transactions, a tremendous social and economic benefit for those in the developing world where 95% of all transactions are cash and 60% of adults don't currently have a bank account, as well a significant potential market for MNOs.

By deploying communication infrastructure in uncovered areas, NuRAN also makes a very significant contribution to the socio-economic conditions of the areas it serves and meets a significant number of the seventeen sustainable development goals set by the United Nations. This includes improving the local economies and enabling access to e-learning, e-health and other social services not currently available to the local population.

GENERAL OBJECTIVES

NuRAN's mission is to create a new possibility for over a billion people to communicate effectively over long distances. Our commitment combined with our ethical and ambitious values drive the company in its mission to connect the world.

Now more than ever, people need to be connected to the vast network that provides a window to the outside world and a connection with those around them. At NuRAN Wireless, we offer millions of people in developing countries a universal possibility: connect to a global network and communicate over long distances efficiently and affordably in addition to contributing to the local economy of emerging countries. Our innovative, compact, and specialised solutions for rural regions will allow everyone to stay connected with the world and keep in touch with family, friends, colleagues, and acquaintances.

NuRAN is a specialized telecommunication company committed to meet/ satisfy the growing demand for wireless network coverage in remote and rural areas across the world. NuRAN's solutions make it economically viable for MNOs to service small and isolated communities that have been previously ignored. With its affordable solutions supporting 2G, 3G, 4G technologies and its innovative NaaS business model, NuRAN builds, optimizes and manages rural connectivity expansion.

OVERALL PERFORMANCE AND OUTLOOK

Performance

During the year ended December 31, 2022, the Company continued to execute on its strategy to become the supplier of choice to MNOs across the world to connect remote and rural areas that until now could not take advantage of the economic and social benefits of connectivity.

Management's decision to redirect NuRAN's efforts to the NaaS market was made with the awareness that this would require considerable initial investments in marketing, branding, sales, field tests and to prepare for increased production as well as working capital and capital investments to fund the rollout and installation of networks. The recovery of this investment through recurring sustainable and more predictable revenues is starting to show. In fact, performance of sites that are currently in operation have shown both rapid uptake and average performance that either meets or exceeds the Company's business plan objectives on a per site basis.

Despite the longer than expected timeframe that the MNOs rigorous qualification processes required before obtaining approval of NuRAN's equipment and operating procedures and endorsing the use of our systems, the contracts executed to date, those currently being negotiated, and the growing sales pipeline confirms management's vision.

The Company's ongoing investments in research and development, engineering and manufacturing have been rewarded with the acknowledgment by leading industry organizations and participants that NuRAN's Wireless Infrastructure Solutions are "at the top of their class".

The performance of the sites installed to date provide great support to NuRAN's marketing and branding efforts and contributed to the increasing market awareness of Nuran's wireless solutions. The year saw the Company win two major industry awards, the first one being the 2022 Mobile World Live Pitch2Pitch Contest at Mobile World Congress ("MWC") in Barcelona, Spain in February. MWC is the pre-eminent industry event with over 60,000 attendees and NuRAN was selected from several participating companies satisfying the selection criteria of serving a huge market, examples of progress and success, rapid growth, and the social impact where many people will ultimately benefit.

In November, NuRAN won the Connectivity Project of the Year Award at the Africa Tech Festival at Africacom in Cape Town, South Africa. The award celebrates the network providers and services going above-and-beyond to provide connectivity in an environment where demand has never been higher, and broadband has become a lifeline for access to education & economic activity. The Company was selected ahead of MTN, Ericsson and Avanti, further highlighting the strength of its disruptive NaaS business model.

To further support the launch of the NaaS model, during 2022, management focused on raising capital to support its deployment plan.

During the year NuRAN announced the approval by two highly regarded European Development Finance Institutions (DFIs) of a US$ 27 million loan facility (the Loan) to fund the rollout of NaaS sites in Cameroon and the Democratic Republic of the Congo (DRC). The Loan alongside equity contributed by the Company will fund the rollout of a total of 1,092 sites between the 2 countries. Negotiations of a Loan of this size, involving more than one lender, are always complex, time consuming and involve extensive due diligence and legal work. Having a North American company, operating in Africa dealing with European lenders increased the complexity and the time required to negotiate the definitive documentation and customary conditions precedent (CPs) for loans of this nature.

The Company is in the final stages and management expects that the execution of the loan documents and the first drawdown will support its 2023 rollout plan delivering hundreds of sites and achieving positive monthly EBITDA by the end of the year. The loan can be drawn down in up to 6 tranches over a period of 36 months however the Company has already undertaken significant pre-development site work and has equipment on hand that should allow for an accelerated site installation. The entire Loan is expected be drawn down within 12 months subject only to raising sufficient equity, in addition to US$ 6 million already contributed, so that the Company complies with the Loan covenants, namely the Debt to Equity ratio. The Loan is being provided to NuRAN Wireless (Africa) Holding in Mauritius with the parent company providing oversight and assistance. As the parent provides products and services to its subsidiaries, the chargeback from NuRAN Canada could either be paid or considered as equity to meet the covenants.

Deploying the current backlog and the projected pipeline will obviously require continuing capital-raising efforts and management has initiated discussions with a number of parties to raise additional equity and debt to meet this requirement. Investors and lenders are at various stages of engagement and negotiations with interested parties have taken place in 2022 and were reinforced during the AfricaCom conference in November and have continued since then. Management favours debt finance at the African Holding level as a non-dilutive source of capital for its NaaS ambitions.

Operational and Business Highlights:

NuRAN's plans for deployment during the year were subject to the drawdown of the DFI Loans, expected as early as Q2 2022. Unfortunately, due to the delays mentioned above, NuRAN could not complete any significant build during the year. The major site rollout will resume immediately upon drawing of the Loan, and management expects significant growth in 2023. In the meantime, the operations team has been working on network and site selection process improvement as well as site acquisition to insure it is able to accelerate deployment immediately after funding is available.

As at the date of these financial statements, NuRAN has 4,642 NaaS sites under contract with Orange Cameroon, Orange Democratic Republic of the Congo (DRC), MTN South Sudan, MTN Namibia, MTN Sudan, MTN Ivory Coast and Orange Madagascar for a potential total contract value of over US$ 800 million. Following the announcement on July 21, 2022 of NuRAN's entry into a Group Framework Agreement ("GFA") with MTN Group (JSE: MTN) for up to 19,000 network sites in over 15 countries in the Middle East and Africa, the Company has been successful in engaging with a number of MTN operating companies. Management expects to bring additional contracts with MTN which will move the Company closer to meeting its objective of 10,000 sites under contract.

With the current backlog of sites under contract from which 1,092 sites are covered by the Phase 1 DFI Loans, the finance team has initiated a Phase 2 Funding for over 1,400 additional sites consisting of both equity and debt.

The Company plans to develop and fund its 10,000 sites network objective in several phases and while discussions are at various stages, management reports high interest from several investors and lenders, including the current DFIs, in participating in the next stages of financing. From the cash generated by its operations in Africa, the Company plans to reinvest in the project reducing the overall capital required.

There is no assurance the Company will reach the target of 10,000 sites under contract as planned or at all and the estimates above are subject to the risk factors and assumptions set out below under "forward looking statements".

Managements' belief in the increasing adoption of the NaaS model by MNOs and NuRAN's ability to efficiently and effectively manage the rollout of NaaS contracts is supported by a number of achievements:

- On April 14, 2022, the Company announced a contract with MTN in Namibia to deploy suburban and rural telecom sites for a minimum of 150 sites. All the sites delivered will be in 4G demonstrating the evolution and expandability of its NaaS model and once the project is completed annual revenue will be US$ 8 million.

- The Company continues to execute on its $4.75 million contract with Intelsat for the delivery and installation of NuRAN's Wireless Infrastructure Solutions to expand and enhance mobile connectivity services to the Marshall Islands. The work started in 2020 and, despite delays caused by the pandemic, to date approximately 65% of the contracted services have been delivered with further site deployment underway as at today's date. The final phase of the program is expected to be delivered in 2023.

- NuRAN completed the site build of its project in Ghana for Vodafone financed through a GSMA Connected Society Innovation Grant for rural connectivity. The Company is now managing daily operations, monitoring, and maintenance of 7 sites in Ghana with 3G capability added to 4 sites. Vodafone will take over the 7 sites and discussions are ongoing to grow our rural footprint under a NaaS agreement. The government has already disclosed their objective to deploy more than 2,000 sites in Ghana and an agreement could have a significant impact on our 10,000 sites objective.

- On May 10, 2022, the Company confirmed its selection for a 500 site project with negotiations continuing through 2022. This contract, with Orange Madagascar was concluded in January 2023 and is estimated at over US$ 90 million in potential gross revenue over its 10-year term.

- On July 21, 2022, and subsequent to its earlier announcement, the Company announced the signing of the Group Framework Agreement (GFA) with MTN Group as mentioned above which offers the potential to connect up to 50 million additional people.

- On July 26, 2022, NuRAN announced its first signing following the GFA of a definitive 10-year NaaS contract with MTN Sudan Company Ltd. for the deployment of a minimum of 500 rural sites in Sudan. The agreement is estimated to generate up to approximately US$ 125 million in revenues over its life and will support 2G and 3G. The Company expects to retain the ownership of the infrastructure beyond the 10-year period providing site operations and maintenance services and this continuing revenue generation significantly increases the value of the agreement to NuRAN and its shareholders. Due to the current situation in Sudan as of the date of these financials the Company has placed any effort to pursue the development of this network on hold.

- On October 11, 2022, the Company announced its second largest contract in terms of number of sites with an agreement for the rollout of up to 1,000 sites with MTN Ivory Coast. Over the 5-year period of the agreement, gross revenue is expected to be over US$ 75 million. The contract includes an automatic renewal for an additional 5 years and similar to the previously announced MTN Sudan and MTN Namibia agreements, NuRAN expects to retain the ownership of the infrastructure after the completion of the contract. This shift in business model to the ownership of infrastructure with no handover to the MNO potentially increases the value of the agreement substantively by providing a continuous revenue stream.

- The Company holds a patent related to 5G Massive MIMO granted by the United States Patent Office.

- NuRAN intends to perform 3G and/or 4G pilots using its LiteRAN xG solution in Cameroon and DRC during the third quarter of 2023.

- On January 17, 2023, NuRAN announced the entry into a US$ 90 million NaaS agreement with Orange Madagascar for the deployment of up to 500 rural sites on the east coast of Madagascar. The 10-year agreement is the Company's third contract with Orange and is expected to support 2G and 3G networks with variety of site categories to cover different population densities and coverage areas. NuRAN expects to retain the ownership of the infrastructure after completion of the contract which increases the overall value of the agreement.

- On February 21, 2023, the Company announced a US$ 1.41 million purchase order from the Marshall Islands National Telecommunication Authority to extend and add 4G coverage to their existing network which NuRAN deployed during 2021 and 2022.

Some of the financial achievements that support management's belief in its ability to complete the building of the networks currently under development and those being negotiated include:

- On January 6, 2022, the Company announced the signing of an agreement in principle with a development finance institution (DFI) for a senior secured credit facility of up to US$ 15 million ("Facility One") to finance a portion of NuRAN's network infrastructure installations being rolled-out in Cameroon and in the Democratic Republic of the Congo (the "Project"). Facility One is conditional on, amongst other customary conditions in a financing of this nature, NuRAN raising the remainder of the US$ 15 million in funding for the Project, the lender's due diligence and customary conditions, events of default and covenants. Facility One is for a term of seven years including two-year grace period on repayment of principal, and disbursements may be requested for up to 36 months from closing. Interest is to be paid at either a fixed or floating rate as specified by the Borrower for each tranche.

- On January 14, 2022, the Company signed a second mandate letter for another senior secured credit facility ("Facility Two") with another DFI that provides up to EUR 8 million in total funding to further finance the Project. Facility Two is conditional on, amongst other customary conditions in a financing of this nature, NuRAN raising the remainder of the funds required for the Project, the lender's due diligence and customary conditions, events of default and covenants. Facility Two is for a term of seven years including a two-year grace period on repayment of principal, and disbursements may be requested up to 36 months from closing. Interest is to be paid at a rate that is calculated based on a margin over six months EURIBOR.

- On March 18, 2022, the Company announced that it has signed the final agreement with Afriland First Bank in Cameroon ("Afriland") for the $2.87 million loan facility announced previously on November 29, 2021 with proceeds to be used for infrastructure investment in Cameroon.

- On May 10, 2022, the Company announced amended terms under Facility One increasing the overall loan amount from US$ 15 million to US$ 18 million on the same terms as previously disclosed to replace the Afriland loan facility and simplify the overall loan structure.

- On June 15, 2022, NuRAN announced that its auditors were submitting a revised audit report to the British Columbia Securities Commission (the "BCSC") which subsequently led to the formal revocation of its cease trade order (CTO) on June 29, 2022. At the same time the Company extended the exercise period of 450,000 unexercised common share purchase warrants issued pursuant to a private placement which closed on December 15, 2020.

- On July 12, 2022, the Company announced that it had received final approval of the EUR 8 million facility known as Facility Two from the second DFI Lender.

- Also on July 12, 2022, following revocation of the CTO, the Company announced the closing of a non-brokered private placement of convertible debentures with a strategic investor for aggregate gross proceeds of $2,000,000. The debentures have an original issuance discount of 10% and the principal of $2,222,222 is convertible into shares at a fixed price of $1.35. The principal amount is due one year from the date of closing and does not bear interest until the maturity date or an event of default. The investor also received 1,481,481 warrants to acquire one common share at an exercise price of $2.00 for a period of 24 months. The debentures may be prepaid by the Company by paying a price equal to 103% of the amount then outstanding. As a condition of closing, NuRAN entered into a sales agreement with the investor engaging it as its exclusive transmission equipment provider for its African operations.

- NuRAN also announced that following completion of all recent equity and bridge financings, including the financing completed with Space-Communication Ltd. in 2021, the Company has met the condition under the DFI Loan Facilities of contributing US$ 6 million of equity required as a pre-condition to signing and to enable the first drawdown.

- On August 22, 2022, the Company announced the restructuring of the secured convertible debenture financing closed on March 17, 2022 in the principal amount of $2,222,222. The lenders agreed to extend the maturity date to August 19, 2023 and advance an additional $900,000 in principal to NuRAN. The restructuring gives the Company the flexibility to either convert or repay the obligations and thereby manage the financial impact in the period leading up the closing of the non-dilutive DFI Loan Facilities. The restructuring meant that prior secured debentures, related security agreements and previously issued warrants were cancelled and the following were issued: (i) secured convertible debentures in an amount of $3,517,512 with a blended conversion price of approximately $0.905 representing a 25% premium to the 5 day volume weighted average price of NuRAN's shares subject also to an adjustment mechanism.; (ii) 2,694,667 share purchase warrants with an exercise price of $1.10 until August 19, 2025; and (iii) 153,954 bonus common shares of the Company. The debentures may be prepaid by the Company, upon ten business days' notice, subject to paying 103% of the principal amount. The Company also agreed to settle outstanding fees of $220,979 by issuing a new debenture in the same principal amount, 205,333 New Warrants, and 28,886 bonus shares. Subject to the closing of the DFI Loan Facilities and the conversion rights of the debenture holders, the Company intends to repay the debentures prior to maturity. Any securities issuable upon conversion or exercise of the debentures held by individual debenture holders, warrants, and bonus common shares are subject to a statutory hold period of four months and one day from August 19, 2022.

- On September 23, 2022, the Company announced that the European Investment Bank (EIB), the lender behind Facility One above, publicly announced its proposed financing via publication on its website. The financing, originally for US$ 15 million, was increased to US$ 18 million and falls under the Covid-19 Digital Africa Loan Envelope. Later on October 6, 2022, NuRAN announced that the EIB had granted formal approval of Facility One after extensive project due diligence as well as a number of other requirements completed over a number of months. This, along with the approval of Facility Two, was a major milestone for the Company clearing the way for completion of the financing to be used for project expenditures relating to the installation of network infrastructure and roll out of up to 242 rural sites in Cameroon and 850 sites in DRC.

- On February 21, 2023, announced that it had completed its application to list its common shares on the OTCQB® Venture Market ("OTCQB"). The OTCQB is a U.S. trading platform that is operated by the OTC Markets Group in New York and is the premier marketplace for early-stage and developing U.S. and international companies. To be eligible for quotation on the OTCQB, companies must be current in their reporting and undergo an annual verification and management certification process. Companies must also meet a minimum bid price test and other financial conditions.

- Also on February 21, 2023, the Company announced that it finalized negotiations with the holders of secured debentures issued in August 2022. The debenture holders have agreed to waive certain rights pursuant to the debentures, including relating to events of default in favour of EIB and the other DFI. As consideration to these debenture holders, the Company has entered into debt settlement agreements pursuant to which the prior secured debentures and related security agreements from August 2022 were cancelled and the Company agreed to issue the following: (i) secured convertible debentures (the " New Debentures") in the aggregate principal amount of $2,975,914 (inclusive of all advances, accrued interest and fees) with a conversion price of $0.42 per common share; and (ii) an aggregate of 750,000 bonus shares, which are subject to a 4 month hold. The New Debentures do not bear interest until maturity.

- On April 4, 2023, NuRAN announced that it secured a non-convertible bridge loan from a US based institution for US$ 1,500,000. The initial tranche of the Loan for US$ 400,000 was funded on April 4, 2023 and the balance of US$ 1,100,000 was funded and announced on April 25, 2023. The Loan is for a term of six months and is subject to a number of terms and conditions including the following: (i) the principal amount to be repaid is US$ 1,653,947.39 including a 5% original issuance discount and a 5% lending fee, (ii) 10% interest per annum, paid on maturity, (iii) the Loan will be senior to all existing and future debt and secured by all the assets of the Company and its subsidiaries excluding the shares in its African subsidiaries and any other assets which are to be pledged as part of the security package to the DFI lenders, (iv) a right of participation in future debt offerings during the term of the Loan; and (v) customary information rights and default provisions for a loan of this nature. In the event of a default, interest will accrue at the lesser of: (i) 24% and (ii) the maximum legal rate. The Loan may be prepaid by the Company at any time prior to the maturity date, without penalty. The Company also agreed to issue the Lender 2,000,000 share purchase warrants with each warrant exercisable to acquire a share of the Company at an exercise price of $0.40 for a period of 2 years from the closing date. Any securities issuable upon exercise of these warrants will be subject to a statutory hold period of four months and one day from the Second Tranche closing date.

Development Finance Institutions (DFI) Loan Facilities

Approval of the above announced Development Financial Institution ("DFI") Loan Facilities represented a significant effort on the part of NuRAN management spanning several months and a number of operating areas:

- Country visits were completed by the DFI lenders with a focus on NuRAN's operations and suppliers. They met the NuRAN team, Orange S.A.as well as regulatory bodies and government ministries.

- NuRAN has progressed significantly on a number of Environment and Social Governance (ESG) initiatives in order to meet the conditions precedent to the initial drawdown of the financing. This includes Environmental and Social Impact Assessments (ESIAs) on all sites including those to be built in the near future, a comprehensive Environmental and Social Management System (ESMS) to be adopted across the Company globally in all operations and finalization with local regulators on the ESG approach and requirements going forward. NuRAN local staff are also being trained in ESG compliance requirements and processes.

- On April 28, 2022, NuRAN completed the incorporation of its wholly owned subsidiary, NuRAN Wireless (Africa) Holding, domiciled in Mauritius. The subsidiary will be the recipient of the DFI Loan Facilities as well as equity capital from third party investors. The Company has exceeded the required equity commitment of US$ 6 million which clears the way for the first drawdown when all other conditions of the loan are met.

- NuRAN amended the terms with one of the DFI lenders to increase its overall loan amount from US$ 15 million to US$ 18 million on the same terms as previous disclosed to help accelerate its funding plans. The overall favorable terms of the loan means much less of a burden on the Company's borrowing capacity as it progresses through subsequent phases of borrowing and rollout.

- Prior to the receipt of formal approval of both facilities, the Company initiated the process of preparing definitive agreements for the Loan Facilities.

- Management met with representatives of both DFIs at the AfricaCom conference held in November. Discussions were held of pending conditions for the loan drawdown and progress against each of these as well as closing timetable. The negotiation of the loan documentation is in its last stages and the closing of this financing is expected to take place as soon as all conditions precedent have been met including the EIB's legal review.

- As of the date of these financial statements, the Company has received its requested authorizations and licenses to operate in the DRC, which had previously been applied for and paid, and these, along with those already obtained in Cameroon, are undergoing a final legal review by EIB.

- Due to the comprehensive and rigorous analysis conducted by the DFIs of NuRAN's business, financial, environmental, tax and regulatory compliance, by the time these reviews are completed, the Company will have confirmed, and in some cases significantly advanced, its internal practices and procedures. The fact that the Company meets these stringent requirements will be of significant benefit in future debt and equity fund raising and due diligence leading to a much-reduced timescale. This may also lead to increased interest from other significant lenders and investors in supporting NuRAN's growth.

Equity Investments Supporting Development Finance Institution (DFI) Financing

As mentioned, the complexity of the DFI Loans has led to unforeseen delays in closing these. While NuRAN has contributed sufficient equity to unlock the first drawdown, it continues to negotiate with Investment Funds targeting emerging market infrastructure and energy investments. These investments will allow for further drawdowns under the US$ 27 million DFI Loan Facilities and continue to pursue management's 10,000 site objective. Investments are targeted at NuRAN's newly formed African subsidiary and could exceed US$ 20 million through a number of alternative equity, debt or hybrid structures

Discussions to date have focused on site performance, primarily in the two markets of Cameroon and DRC, and many of the interested parties have requested a higher sampling of sites in DRC. This was due to the weighting of this contract in the backlog as of mid 2022 but since the Company has increased sites under contract to over 4,600 this has decreased DRC exposure to less than 50%. As a result, in parallel with closing Phase One of the DFI Loans, the team has been working to initiate operations in newly contracted countries. Investment will therefore be utilised across the business to build diversified and growing coverage in Africa. Continued interest in the investment case and strong fundamentals of existing operations reinforce management's belief in the success of the Company's strategic shift and its belief that NuRAN is positioned to become the market leader in this very important and growing space.

Management shares the frustration of investors with the delays of site construction and its negative impact on the Company's valuation but it is confident that it will be able to execute on its plan in a manner that will provide shareholders with strong returns over the coming years.

Outlook

NuRAN’s wireless infrastructure solutions have long been deployed by MNOs as an integral part of their network operations and now under the NaaS model in extending rural coverage. NuRAN solutions are being either tested or operated by MNOs in more than 20 countries across Southeast Asia, Africa, South America and Latin America. NuRAN has also established alliances with other key industry participants such as tower and power companies to further increase its market reach. Management believes that the successful acceptance and adoption of NuRAN’s system by MNOs and partnerships with key industry players place NuRAN in a position to generate significant sustainable business.

NuRAN previously announced its LiteRAN xG, a mobile wireless infrastructure solution that will provide operators with 2G, 3G, & 4G capability from a single piece of equipment allowing them to run multiple technologies simultaneously and evolve their services over time. Deployment will proceed with Intelsat. The addition of LiteRAN xG to the Company’s portfolio significantly widens the Company’s addressable market.

The market adoption of NuRAN’s NaaS offering is gaining traction, as demonstrated by the latest signing of a 1,000 site contract in October 2022 with MTN Ivory Coast, the second largest contract after the 2,000 site contract with Orange in DRC. This, along with the 500 sites contract with Orange Madagascar brings the total sites under contract to 4,642 including Orange SA in Cameroon and MTN Group in South Sudan, Namibia and Sudan.

The additional contracts with MNOs and the signature of the GFA with MTN Group is recognition of the quality of NuRAN’s carrier-grade mobile network infrastructure solutions, its extensive expertise in the installation and management of cost-effective cellular networks as well as the economic benefits of being able to reach a large base of customers not reachable to date that NuRAN’s systems provide. Aside from the two first Tier-1 clients, NuRAN is growing its pipeline with over US$ 300 million in potential revenue for its Naas business and direct CAPEX sales.

The following discussion of the Company’s financial performance is based on the consolidated financial statements for the twelve-month period then ended December 31, 2022 and the fourteen-month period then ended December 31, 2021.

Factors Concerning the Company’s Financial Performance and Results of Operations

To evaluate the results of the strategic shift, management closely monitors four key measures of the Company’s performance: Revenue, Gross Profit Margins (GPM), Earnings Before Interest, Taxes, Depreciation and Amortization (EBITDA) and Net Income.

Revenue growth measures the success of the NuRAN’s products and services, led by the NaaS solution, combined with our marketing and sales efforts. Growth is demonstrated by the Company’s ability to enter into contracts, build NaaS infrastructure, penetrate new markets and gain new customers for existing and new products and services. The investments in marketing and sales and the shift in direct to more of a services model have increased our sales pipeline, started to generate sales with first sites live and should produce increasing revenues as rural subscribers in previously covered and uncovered areas take advantage of more choice, availability and variety of mobile services to improve their economic position. The take-up of NaaS solutions and the resultant recurring revenue stream brought on by each live site is starting to already generate transformative growth in revenue for the Company.

GPM measures how efficiently and effectively NuRAN delivers its systems and services to its clients, both in terms of production of its product line, and increasingly, delivery of the NaaS solution in rural areas and direct costs incurred in local subsidiaries.

Our NaaS agreements were designed to minimize our risk by ensuring a reasonable return on each site through a guaranteed minimum monthly fee or revenue (GMR) which covers direct operating expenses, capital repayment and interest. The revenue share above this level and included in all contracts provides additional revenue-generating potential.

Due to the interpretation of the terms of our NaaS agreements under IFRS, we record the sale of each site in Cameroon and DRC at the time the site becomes operational, rather than at the time the ownership of the site is transferred to the MNO (5 to 6 years from the date a site becomes operational). This means that a large proportion of the sales revenue is recognised as the site goes live and a receivable is created. At the same time the cost of constructing the site is recorded as a cost of goods sold. As a result, a large proportion of the GMR collected every month is treated as a collection of the receivable. As the profit margin on the sale is much lower than the operational margin, our GPM is negatively impacted by this accounting.

To properly monitor the Company's operating performance, management will be monitoring three GPM indicators for NaaS: one on the sale of the site, another on the income from revenue share and services and a third on the site's monthly operational fees.

EBITDA measures the entire operations by including selling and administrative costs. It should increase as sales grow due to the fixed nature of much of the support infrastructure including administrative, sales & marketing, research & development and other costs and the economies of scale that can be achieved in monitoring network operations and maximizing site performance.

Net income is a measure of how efficiently and effectively the business is running, however management recognises that, given the stage of NaaS rollout and implementation, the Company is likely to be loss-making for some time. To achieve an acceptable net income, the company needs to significantly increase its revenues, while maintaining or slightly increasing its selling and general administration costs and efficiently utilising the capital assets that it deploys, achievable through the NaaS model.

The unwinding or the bankruptcy of Nutaq during the year resulted in the preservation of existing tax losses to be applied against future profits, although it meant recognizing an accounting loss on the debt settlement.

SELECTED ANNUAL FINANCIAL INFORMATION

The following is selected financial data derived from the annual consolidated financial statements of the Company as at December 31, 2022, December 31, 2021 and October 31, 2020 and for the periods then ended:

	Year ended December 31, 2022	Fourteen-months ended December 31, 2021	Year ended October 31, 2020
Total revenues	$ 4,871,890	$ 2,137,616	$ 3,930,078
Total loss	$ (9,892,114)	$ (12,718,098)	$ (2,107,861)
Net loss per share – basic	$ (0.30)	$ (0.58)	$ (0.30)
Net loss per share – diluted	$ (0.30)	$ (0.58)	$ (0.30)

	As at December 31, 2022	As at December 31, 2021	As at October 31, 2020
Total assets	$ 18,737,500	$ 15,035,632	$ 7,645,052
Total non-current financial liabilities	$ 405,522	$ 559,112	$ 2,233,722

RESULTS OF OPERATIONS

Revenue

The $2,734,274 increase in revenue for the year ended December 31, 2022 compared to the fourteen-month period then ended December 31, 2021 ($1,792,462 decrease for the fourteen-month period then ended December 31, 2021 compared to the year ended October 31, 2020) results mainly from the continuing shift in focus to the NaaS model. The total $4,871,890 in revenue includes a total of $3,103,236 of NaaS split $2,275,727 for the sale of sites, $649,670 of services revenue and $177,839 of interest revenue during the period. The remaining $1,768,654 in revenue is traditional equipment sales and includes approximately. $900,000 of revenue from the Marshall Islands contract that was previously deferred. The recognition of NaaS revenue in this way is required under IFRS 15 as described above. After the rollout is completed the amount of services revenue, consisting of the remaining GMR plus revenue share, will increase to generate a stable, predictable and recurring revenue stream for the Company. This IFRS 15 treatment is only required where there is a contractual transfer of site ownership. Therefore new contracts that do not have this feature will have a revenue stream that more closely reflects actual invoicing to the MNO and the economic results for NuRAN.

Gross Profit

Gross profit for the year ended December 31, 2022 increased by $1,656,124 compared to fourteen-month period then ended December 31, 2021 (decreased by $701,804 for the fourteen-month period then ended December 31, 2021 compared to the year ended October 31, 2020).

Gross margin % for the year ended December 31, 2022 increased to 42% from 18% for the fourteen-month period then ended December 31, 2021 (decreased to 18% for the fourteen-month period then ended December 31, 2021 from 28% for the year ended October 31, 2020).

The overall gross margin was improved by the recognition of previously deferred revenue for which minimal costs were incurred during this year. This improvement was offset however by the low margin from the sale of NaaS sites under IFRS 15.

As sites mature, services revenue will increase at a faster rate than the related operating costs (which include site leases, insurance and VSAT costs) and our gross margin will increase. In the aggregate the results for the year show a positive shift in overall gross margin, however this is negatively impacted by the elimination of the previously available Covid government subsidies in 2020 and 2021.

Expenses

During the year ended December 31, 2022, total expenses decreased by $2,545,616 from the fourteen-month period then ended December 31, 2021 (for the fourteen-month period then ended December 31, 2021 total expenses increased by $10,473,000 from the year ended October 31, 2020). The reduction is made up of lower non-cash charges for share-based compensation for the Company's senior executives, staff and consultants offset by increased administrative and financial expenses. The increase is a result of the start-up costs in subsidiaries and professional fees associated with the DFI financing as well interest costs of short-term borrowings and large losses on foreign exchange. These increases were partially offset by decreases including Selling and R&D expenses.

Net Loss Before Other Elements and Income Taxes
As a result of all the factors mentioned above the Net Loss Before Other Elements and Income Taxes for the year ended December 31, 2022 decreased to $9,432,226 from the fourteen-month period then ended December 31, 2021 loss of $13,633,966 (for the fourteen-month period then ended December 31, 2021 total Net Loss Before Other Elements and Income Taxes increased to $13,633,966 from the year ended October 31, 2020 loss of $2,429,152).

Other Elements
Other Elements for the year ended December 31, 2022 generated a net loss of $459,400 compared with a net loss of $493,949 in the fourteen-month period then ended December 31, 2021 (a net loss of $493,949 for the fourteen-month period then ended December 31, 2021 compared to a net gain of $1,761,108 for the year ended October 31, 2020). This loss was largely related to charges for debt settlements on short term loans net of a gain realised on unwinding the bankruptcy.

Net Loss
As a result of all the factors mentioned above the Net Loss for the year ended December 31, 2022 decreased to $9,892,114 from the fourteen-month period then ended December 31, 2021 loss of $12,718,098 (for the fourteen-month period then ended December 31, 2021 increased to $12,718,098 from the year ended October 31, 2020 loss of $2,107,861).

Total Comprehensive Income
Other Comprehensive Income for the year ended December 31, 2022 generated a net loss of $168,788 compared of a net loss of $0 for the fourteen-month period then ended December 31, 2021. This results from the foreign exchange difference on translation of foreign operations. Total Comprehensive Income for the year ended December 2022 decreased to $10,060,902 from $12,718,098 for the fourteen-month period then ended December 31, 2021.

Expenses

Below is a discussion of the expenses for the year ended December 31, 2022, and the fourteen-month period then ended December 31, 2021.

	2022	2021	% change from 2021
Selling expenses	1,364,192	1,413,458	-3.48%
Administrative expenses	7,588,704	5,881,731	+29.02%
Employee share-based compensation	1,177,464	5,842,184	-79.85%
Financial expenses	1,036,083	498,629	+107.79%
Research and development costs	302,390	378,447	-20.10%
	11,468,833	14,014,449	-18.16%

Selling expenses

Selling expenses consist of salaries to sales and marketing staff, commissions on sales, travel expenses, trade shows and presentations. The decrease is a result of reduced spending on consultants while focusing on MNO clients and NaaS projects. Other costs including commissions payable on recognized revenue as well as advertising and promotions remained at levels similar to the previous year.

Administrative expenses

Administrative expenses consist of remuneration, legal fees, audit and accounting fees, insurance, rent, consulting fees and general office expenses. The increase in administrative expenses is due mainly to increased professional fees associated with bridge and DFI financing, audit, tax planning and other administrative costs in setting up the African holding entity as well as increased scale in the Cameroon and DRC subsidiaries. The Company also began spending in South Sudan to launch this operation.

Financial expenses

Financial expenses consist of bank charges, convertible debenture and lease interest, charges associated with short term financing and gain/loss on foreign exchange. The increase in financial expenses for the year ended December 31, 2022, compared to the fourteen-month period then ended December 31, 2021, is mainly a result of interest expenses, factoring fees and foreign exchange losses resulting from the Company's exposure to the US dollar.

Research and development

Research and development costs for the year ended December 31, 2022 have decreased from the fourteen-month period then ended December 31, 2021 due entirely to an increase in the amount claimed as Scientific Research and Experimental Development (SR&ED) tax credits in Canada. The Company continued to focus its R&D efforts on bringing the XG product to market including using external contractors to support internal staff. The Company has $168,602 of Scientific research and experimental development tax credits receivable as at December 31, 2022. Generally, it recovers approximately one third of its R&D expenses through tax credits.

SUMMARY OF QUARTERLY RESULTS

Three Months Ended	Total revenues ($)	Total profit (loss) ($)	Basic and Diluted Loss Per Share ($)
31-12-22	1,193,772	(1,313,868)	(0.04)
30-09-22	1,625,652	(2,556,832)	(0.08)
30-06-22	231,128	(2,319,909)	(0.07)
31-03-22	1,881,960	(3,249,229)	(0.10)
31-Dec-21 (Two months)	730,297	97,984	(0.00)
31-Oct-21	519,061	(5,018,582)	(0.24)
31-Jul-21	7,363	(5,316,766)	(0.23)
31-Apr-21	410,488	(1,116,545)	(0.06)
31-Jan-21	470,407	(1,364,190)	(0.09)

Third quarter

During the three months ended December 31, 2022, the Company earned revenues of $1,193,772 compared to $730,297 during the two months ended December 31, 2021, an increase of $463,475. This was made up of fixed equipment and services revenues on NaaS sites as well as traditional equipment sales to 3rd party customers.

During the three months ended December 31, 2022, the Company incurred a gross profit of $463,116 compared to gross profit of $97,984 for the two months ended December 31, 2021. This came from services revenue on NaaS sites and margin on equipment sales.

LIQUIDITY AND CAPITAL RESOURCES

The Company's cash decreased to $183,397 as at December 31 2022, from $731,191 as at December 31, 2021. Current assets increased to $11,322,859 as at December 31, 2022, from $8,228,510 as at December 31, 2021 mainly due to an increase in trade receivables and accrued revenue as a result of service revenues and recognition of the sale of NaaS sites, which will be collected over time.

The cash position as at December 31, 2022 reflected the continued spending on operating expenditures for NaaS infrastructure during the period as the Company maintained the rollout as much as possible and maintained and enhanced the performance of sites already in operation. Given the ongoing deployment of network infrastructure for NaaS sites the Company expects to be consuming cash and in a loss position for the foreseeable future.

Future Financing

Management closely monitors the current cash position and the short and long-term cash requirements. The Company is focused on closing the DFI Loans as a priority while at the same time looking to other sources such as equity to support its objectives for the NaaS business. Management also recognizes the opportunity for improved cash flow from converting inventory to operating NaaS sites which will help bring liquidity for future operations and growth. In addition to spending on site rollout, the Company will continue to look for additional financing for costs to fund operations and maintain its growth strategy (including continuous development of next generation wireless solutions such as the multi-Standard 2G, 3G, 4G platform, as well as the deployment of mobile infrastructure under the NaaS model).

Current inflows are not sufficient to cover its selling, administrative and R&D costs and finance the capital investment necessary to implement it NaaS contracts. The Company will continue to depend on its ability to convert its sales opportunities into purchase orders (for example the recently signed agreements with Orange SA for Cameroon, the DRC and Madagascar and with MTN for South Sudan, Namibia, Sudan and Ivory Coast), raise debt to finance NaaS projects and future equity issuances or other means to finance its operations, including funding into NuRAN Wireless (Africa) Holding in Mauritius. Due to the current situation in Sudan as of the date of these financials the Company has placed any effort to pursue the development of this network on hold.

The ability of the Company to continue operating will therefore be dependent upon obtaining additional financing as required. The timing and ability to do so will depend on the liquidity of the financial markets as well as the acceptance of investors, in addition to the results of the Company's operations. Although management believes that the company will be able to raise the necessary financing, and that its financial position has improved, there can be no guarantee that these efforts will be successful.

RISKS AND UNCERTAINTIES

Additional Financing Requirements and Access to Capital

NuRAN's ability to realize its assets and discharge its liabilities depends on the continued financial support of its shareholders, the growth and profitability of the future sales of its products and services and from obtaining additional financing.

Sales Risks

NuRAN's sales efforts target large corporations that require sophisticated data capture and production execution systems to collect and analyze data relating to various operational activities. NuRAN spends significant time and resources educating prospective customers about the features and benefits of its solutions. NuRAN's sales cycle usually ranges from 3 to 18 months and sales delays could cause its operating results to vary. NuRAN balances this risk by continuously assessing the condition of its sales pipeline and making the appropriate adjustments as far in advance as possible. NuRAN's strategy also includes a comprehensive program to build and improve relationships with long-standing customers to better understand needs and proactively manage incoming business levels effectively.

Foreign Exchange Risk

NuRAN's sales are mainly outside Canada and are generally conducted in currencies other than the Canadian dollar, while a majority of our product research and development expenses, integration services, customer support costs and administrative expenses are in Canadian dollars. Fluctuations in the value of foreign currencies relative to the Canadian dollar can negatively, or positively, impact NuRAN's financial results. The company monitors this risk and will enter/consider entering into forward/ derivatives contracts to minimize the exposure.

Outsourcing Risk

NuRAN outsources the manufacture of its products to third parties. If they do not properly manufacture the products or cannot meet the needs in a timely manner, NuRAN may be unable to fulfill its product delivery obligations and its costs may increase, and its revenue and margins could be negatively impacted. The Company's reliance on third-party manufacturers subjects it to a number of risks, including the absence of guaranteed manufacturing capacity and the inability to control the amount of time and resources devoted to the manufacture of products. To mitigate this dependency, the Company has relationships with two separate manufacturing service providers and maintain contact with additional alternative suppliers in case the primary manufacturing sources should be disrupted.

Competition

NuRAN must contend with strong international competition. Therefore, there are no guarantees that NuRAN can maintain its competitive position. However, its unique mix of products combined with NaaS service delivery, and skilled human resources give it a competitive edge in several markets.

Availability and Cost of Qualified Professionals

The high-technology industry's strong growth as well as the Company's move into the NaaS model increased the demand for qualified staff. So far, NuRAN has successfully met its needs for personnel. NuRAN benefits from its location in Quebec City, which gives it access to a large pool of engineering resources but has also pursued hiring internationally. Aware that the satisfaction of its customers is directly tied to the quality of its employees, NuRAN continues to take measures to attract and retain well-qualified professionals from a global talent pool.

Ability to Develop and Expand Mix of Products and Services to Keep Pace with Demand and Technological Trends

NuRAN uses several means to remain on the cutting edge and to meet its customers’ changing needs—steady investments in product development and improvements, business alliances with major industry suppliers and partners, ongoing training of its personnel and occasional business acquisitions that provide it with specific know-how.

Protection of Intellectual Property

To protect its intellectual property, NuRAN relies on a series of patent and trademark laws, provisions respecting trade secrets, confidentiality protection measures, and various contracts. Regardless of all the efforts made to retain and protect its exclusive rights, third parties could attempt to copy aspects of its products or obtain information regarded as exclusive without authorization. There can be no assurance that the measures taken by NuRAN to protect its exclusive rights will be sufficient.

Dependence on Customers

NuRAN is currently dependent on a limited number of customers for the sale of its products and services. If one or several of these customers should cease doing business with NuRAN for any reason or should reduce or defer their current or planned product purchases, NuRAN’s operating results and financial position could be adversely affected.

International Operations Risk

Our international operations are subject to various economic, political and other uncertainties that could adversely affect our business. Since 2014, approximately 40% of our sales were derived from sales outside North America, and economic conditions in the countries and regions in which we operate significantly affect our profitability and growth prospects. The following risks, associated with doing business internationally, could adversely affect our business, financial condition and results of operations:

- regional or country specific economic downturns;
- the capacity of the Company to deliver in a technical capacity and to import inventory at a reasonable cost;
- fluctuations in currency exchange rates;
- complications in complying with a variety of foreign laws and regulations, including with respect to environmental matters, which may adversely affect our operations and ability to compete effectively in certain jurisdictions or regions;
- international political and trade issues and tensions;
- unexpected changes in regulatory requirements, up to and including the risk of nationalization or expropriation by foreign governments;
- higher tax rates and potentially adverse tax consequences including restrictions on repatriating earnings, adverse tax withholding requirements and double taxation;
- greater difficulties protecting our intellectual property;
- increased risk of litigation and other disputes with customers;

- fluctuations in our operating performance based on our geographic mix of sales;
- longer payment cycles and difficulty in collecting accounts receivable;
- costs and difficulties in integrating, staffing and managing international operations, especially in rapidly growing economies;
- transportation delays and interruptions;
- natural disasters and the greater difficulty in recovering from them in some of the foreign countries in which we operate;
- uncertainties arising from local business practices and cultural considerations;
- customs matter and changes in trade policy, tariff regulations or other trade restrictions; and
- national and international conflicts, including terrorist acts.

The percentage of our sales occurring outside of North America will increase over time largely due to increased activity in Africa, Central and South America and other emerging markets. The foregoing risks may be particularly acute in emerging markets, where our operations are subject to greater uncertainty due to increased volatility associated with the developing nature of the economic, legal and governmental systems of these countries. If we are unable to successfully manage the risks associated with expanding our global business or to adequately manage operational fluctuations, it could adversely affect our business, financial condition or results of operations.

Gross Margin May Not Be Sustainable

Our level of product gross margins may be adversely affected by numerous factors, including:

- Changes in customer, geographic, or product mix, including mix of configurations within each product group;
- Introduction of new products, including products with price-performance advantages;
- Our ability to reduce production costs;
- Entry into new markets or growth in lower margin markets, including markets with different pricing and cost structures, through acquisitions or internal development;
- Increases in material, labor or other manufacturing-related costs, which could be significant especially during periods of supply constraints;
- Excess inventory and inventory holding charges;
- Obsolescence charges;
- Changes in shipment volume;
- The timing of revenue recognition and revenue deferrals;
- Increased cost, loss of cost savings or dilution of savings due to changes in component pricing or charges incurred due to inventory holding periods if parts ordering does not correctly anticipate product demand or if the financial health of either contract manufacturers or suppliers deteriorates;
- Lower than expected benefits from value engineering;
- Increased price competition, including competitors from Asia, especially from China;
- Changes in distribution channels;
- Increased warranty costs;
- How well we execute on our strategy and operating plans implementing our new NaaS model.

Changes in service gross margin may result from various factors such as changes in the mix between technical support services and advanced services, as well as the timing of technical support service contract initiations and renewals and the addition of personnel and other resources to support higher levels of service business in future periods.

Competition Risks

The markets in which we compete are characterized by rapid change, converging technologies, and a migration to networking and communications solutions that offer relative advantages. These market factors represent a competitive threat to us. We compete with numerous vendors in each product category. The overall number of our competitors providing niche product solutions may increase. Also, the identity and composition of competitors may change as we increase our activity in newer product categories such as data center and collaboration and in our priorities. As we continue to expand globally, we may see new competition in different geographic regions. In particular, we have experienced price-focused competition from competitors in Africa and the U.S., and we anticipate this will continue.

Some of our competitors compete across many of our product lines, while others are primarily focused in a specific product area. Barriers to entry are relatively low, and new ventures to create products that do or could compete with our products are regularly formed. In addition, some of our competitors may have greater resources, including technical and engineering resources, than we do. As we expand into new markets, we will face competition not only from our existing competitors but also from other competitors, including existing companies with strong technological, marketing, and sales positions in those markets. Companies with whom we have strategic alliances in some areas may be competitors in other areas, and in our view this trend may increase. Companies that are strategic alliance partners in some areas of our business may acquire or form alliances with our competitors, thereby reducing their business with us.

The principal competitive factors in the markets in which we presently compete and may compete in the future include:

- The ability to provide a broad range of networking and communications products and services;
- Product performance;
- The ability to introduce new products, including products with price-performance advantages;
- The ability to reduce production costs;

- The ability to provide value-added features such as security, reliability, and investment protection;
- Conformance to standards;
- Market presence;
- The ability to obtain financing on reasonable terms;
- Disruptive technology shifts and new business models.

We also face competition from customers to which we license or supply technology and suppliers from which we transfer technology. The inherent nature of networking requires interoperability. As such, we must cooperate and at the same time compete with many companies. Any inability to effectively manage these complicated relationships with customers, suppliers, and strategic alliance partners could have a material adverse effect on our business, operating results, and financial condition and accordingly affect our chances of success. the loss of one or more significant suppliers or a reduction in significant volume from such suppliers

Intellectual Property Risks

We generally rely on patents, copyrights, trademarks, and trade secret laws to establish and maintain proprietary rights in our technology and products. Although we have been issued patents, there can be no assurance that any of these patents or other proprietary rights will not be challenged, invalidated, or circumvented or that our rights will, in fact, provide competitive advantages to us. Furthermore, many key aspects of networking technology are governed by industrywide standards, which are usable by all market entrants. In addition, there can be no assurance that patents will be issued from pending applications or that claims allowed on any patents will be sufficiently broad to protect our technology. In addition, the laws of some foreign countries may not protect our proprietary rights to the same extent as do the laws of the United States. The outcome of any actions taken in these foreign countries may be different than if such actions were determined under the laws of the United States. Although we are not dependent on any individual patents or group of patents for particular segments of the business for which we compete, if we are unable to protect our proprietary rights to the totality of the features (including aspects of products protected other than by patent rights) in a market, we may find ourselves at a competitive disadvantage to others who need not incur the substantial expense, time, and effort required to create innovative products that have enabled us to be successful.

Third parties, including customers, have in the past and may in the future assert claims or initiate litigation related to exclusive patent, copyright, trademark, and other intellectual property rights to technologies and related standards that are relevant to us. These assertions have increased over time as a result of our growth and the general increase in the pace of patent claims assertions, particularly in the United States. Because of the existence of a large number of patents in the networking field, the secrecy of some pending patents, and the rapid rate of issuance of new patents, it is not economically practical or even possible to determine in advance whether a product or any of its components infringes or will infringe on the patent rights of others. The asserted claims and/or initiated litigation can include claims against us or our manufacturers, suppliers, or customers, alleging infringement of their proprietary rights with respect to our existing or future products or components of those products. Regardless of the merit of these claims, they can be time-consuming, result in costly litigation and diversion of technical and management personnel, or require us to develop a non-infringing technology or enter into license agreements. Where claims are made by customers, resistance even to unmeritorious claims could damage customer relationships. There can be no assurance that licenses will be available on acceptable terms and conditions, if at all, or that our indemnification by our suppliers will be adequate to cover our costs if a claim were brought directly against us or our customers. Furthermore, because of the potential for high court awards that are not necessarily predictable, it is not unusual to find even arguably unmeritorious claims settled for significant amounts. If any infringement or other intellectual property claim made against us by any third party is successful, if we are required to indemnify a customer with respect to a claim against the customer, or if we fail to develop non-infringing technology or license the proprietary rights on commercially reasonable terms and conditions, our business, operating results, and financial condition could be materially and adversely affected. Our exposure to risks associated with the use of intellectual property may be increased as a result of acquisitions, as we have a lower level of visibility into the development process with respect to such technology or the care taken to safeguard against infringement risks. Further, in the past, third parties have made infringement and similar claims after we have acquired technology that had not been asserted prior to our acquisition.

Many of our products are designed to include software or other intellectual property licensed from third parties. It may be necessary in the future to seek or renew licenses relating to various aspects of these products. There can be no assurance that the necessary licenses would be available on acceptable terms, if at all. The inability to obtain certain licenses or other rights or to obtain such licenses or rights on favorable terms, or the need to engage in litigation regarding these matters, could have a material adverse effect on our business, operating results, and financial condition. Moreover, the inclusion in our products of software or other intellectual property licensed from third parties on a nonexclusive basis could limit our ability to protect our proprietary rights in our products.

Risks arising from the COVID-19 pandemic

The outbreak of COVID-19, which was declared by the World Health Organization to be a pandemic, spread across the globe and impacted worldwide economic activity. A pandemic, including COVID-19, or other public health epidemic poses the risk that we or our employees, vendors, suppliers and other partners may be prevented from conducting normal business activities at full capacity for an indefinite period of time, including due to spread of disease among our employees, vendors, suppliers and other partners, or due to shutdowns that may be or have been requested or mandated by governmental authorities. The COVID-19 pandemic and mitigation measures are currently having and may continue to have an adverse impact on global economic conditions, which has had and may have an adverse effect on our business and financial condition, including on our ability to obtain financing on terms acceptable to us, if at all. The extent to which the COVID-19 pandemic continues to impact our results will depend on future developments that are highly uncertain and cannot be predicted at this time, including new information that may emerge concerning the severity of the virus and the actions to contain its impact.