



ANNUAL INFORMATION FORM

**FOR THE FISCAL YEAR ENDED
DECEMBER 31, 2019**

KRAKEN ROBOTICS INC.

**189 GLENCOE DRIVE
MT. PEARL, NL
CANADA, A1N 4P6**

AUGUST 27, 2020

TABLE OF CONTENTS

	Page
CAUTIONARY NOTE ON FORWARD-LOOKING INFORMATION.....	1
ITEM 1: PRELIMINARY NOTES	2
1.1 Effective Date of Information	2
1.2 Financial Statements and Management Discussion and Analysis	2
1.3 Currency	2
1.4 Glossary	2
ITEM 2: CORPORATE STRUCTURE OF THE COMPANY	6
2.1 Name, Address & Incorporation	6
2.2 Intercorporate Relationships	7
ITEM 3: GENERAL DEVELOPMENT OF THE BUSINESS	7
3.1 Qualifying Transaction – Kraken Subco Acquisition	7
3.2 Three Year History	8
ITEM 4: DESCRIPTION OF THE INDUSTRY AND BUSINESS.....	12
4.1 History	12
4.2 Principal Markets	14
4.3 Product Development Strategy – Sensors to Systems	15
4.4 Principal Products and Services	16
4.5 Research and Development	30
4.6 Intellectual Property	37
4.7 Customers & Sales and Marketing Strategy	37
4.8 Competitive Conditions	38
ITEM 5: RISK FACTORS	41
ITEM 6: DIVIDENDS.....	50
ITEM 7: DESCRIPTION OF CAPITAL STRUCTURE	50
7.1 Authorized and Issued Capital	50
ITEM 8: MARKET FOR SECURITIES	51
8.1 Price Range and Trading Volume	51
8.2 Prior Sales	52
ITEM 9: ESCROWED SECURITIES AND SECURITIES SUBJECT TO CONTRACTUAL RESTRICTION ON TRANSFER.....	52
ITEM 10: DIRECTORS AND EXECUTIVE OFFICERS	52
10.1 Name, Occupation and Security Holding	52
10.2 Shareholdings of Directors and Senior Officers	53
10.3 Cease Trade Orders, Bankruptcies, Penalties or Sanctions	53
10.4 Conflicts of Interest	54
ITEM 11: LEGAL PROCEEDINGS AND REGULATORY ACTIONS.....	54
11.1 Legal Proceedings	54
11.2 Regulatory Actions	55

TABLE OF CONTENTS
(continued)

	Page
ITEM 12: INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS.....	55
ITEM 13: TRANSFER AGENT AND REGISTRAR	55
ITEM 14: MATERIAL CONTRACTS	55
ITEM 15: INTEREST OF EXPERTS	56
15.1 Names of Experts	56
15.2 Interests of Experts	56
ITEM 16: ADDITIONAL INFORMATION	56

CAUTIONARY NOTE ON FORWARD-LOOKING INFORMATION

Certain statements contained in this Annual Information Form (“AIF”) and the documents incorporated by reference herein constitute forward-looking information or forward-looking statements (collectively, “forward-looking statements”) within the meaning of applicable Canadian and United States securities laws. Forward-looking statements include statements concerning the Company’s current expectations, estimates, projections, assumptions and beliefs, and, in certain cases, can be identified by the use of words such as “seeks”, “plans”, “expects”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates”, or “believes”, or variations of such words and phrases or statements that certain actions, events or results “may”, “could”, “should”, “would”, “might” or “will be taken”, “occur” or “be achieved”, or the negative forms of any of these words and other similar expressions.

Forward-looking statements reflect the Company’s current expectations and assumptions, and are subject to a number of known and unknown risks, uncertainties and other factors that may cause the Company’s actual results, performance or achievements to be materially different from any anticipated future results, performance or achievements expressed or implied by the forward-looking statements.

Should one or more of these risks and uncertainties materialize, or should underlying factors or assumptions prove incorrect, actual results may vary materially from those described in forward-looking statements. In making the forward-looking statements included in this AIF and the documents incorporated by reference herein, the Company has made various material assumptions, including, but not limited to:

- the Company will continue to be in compliance with regulatory requirements;
- the Company will have sufficient working capital and be able to secure additional funding necessary for the continued operation and development of the Company;
- key personnel will continue their employment with the Company and the Company will be able to obtain and retain additional qualified personnel, as needed, in a timely and cost-efficient manner;

Readers are cautioned not to place undue reliance on the forward-looking statements or the assumptions on which the Company’s forward-looking statements are based. Readers are also advised to carefully review and consider the risk factors identified in this AIF under Item 5: “**RISK FACTORS**” and elsewhere herein for a discussion of the factors that could cause the Company’s actual results, performance and achievements to be materially different from any anticipated future results, performance or achievements expressed or implied by the forward-looking statements.

Although the Company believes that the assumptions on which the forward-looking statements are made are reasonable, based on the information available to the Company on the date such statements were made, no assurances can be given as to whether these assumptions will prove to be correct. The forward-looking statements contained in this AIF and the documents incorporated by reference herein are expressly qualified in their entirety by the foregoing cautionary statements and those made in our other filings with applicable securities regulators in Canada and the United States, if any. These factors are not intended to represent a complete list of the factors that could affect the Company and readers should not place undue reliance on forward-looking statements in this AIF.



Forward-looking statements speak only as of the date the statements are made. The Company assumes no obligation to update publicly or otherwise revise any forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking statements, except to the extent required by applicable securities laws. If the Company does update one or more forward-looking statements, no inference should be drawn that the Company will make additional updates with respect to those or other forward-looking statements.

ITEM 1: PRELIMINARY NOTES

1.1 Effective Date of Information Throughout this AIF, references to “**Kraken**”, the “**Company**”, “**its**”, “**our**”, “**us**” and “**we**”, or related terms refer to Kraken Robotics Inc. (formerly Anergy), and includes, where the context requires, its subsidiaries.

All information contained herein is as at December 31, 2019, unless otherwise stated, being the date of our most recently completed financial year, and the use of the present tense and of the words “**is**”, “**are**”, “**current**”, “**currently**”, “**presently**”, “**now**” and similar expressions in this Annual Information Form is to be construed as referring to information given as of that date.

1.2 Financial Statements and Management Discussion and Analysis

This AIF should be read in conjunction with the Company’s:

- (a) Audited Annual Financial Statements for the years ended December 31, 2019 and 2018;
- (b) Management Discussion and Analysis for the year ended December 31, 2019;
- (c) Interim Financial Statements for the three and six months ended June 30, 2020; and
- (d) Management Discussion and Analysis for the three and six months ended June 30, 2020.

copies of which may be obtained online from the System for Electronic Document Analysis and Retrieval (“**SEDAR**”) at www.sedar.com.

All financial information in this AIF has been prepared in accordance with International Financial Reporting Standards (“**IFRS**”) as issued by the International Accounting Standards Board.

1.3 Currency

All dollar amounts referenced in this AIF are expressed in Canadian Dollars, unless otherwise indicated. The Company’s financial statements are prepared in accordance with IFRS. All references to “**US\$**” are to United States dollars.

1.4 Glossary

In this AIF, the following terms have the meanings set forth:

“**\$**” Means Canadian dollars.



“ Acquisition ”	Means the acquisition by Anergy of Kraken Subco pursuant to the Share Exchange Agreement as more particularly described in this AIF and the Company’s Filing Statement.
“ ACR ”	Means “ area coverage rate ”, typically qualified as the area of seabed (expressed in square kilometres) that can be surveyed in a standard unit of time (expressed in hours). Standard units are km ² /hr
“ Affiliate ”	Means a Company that is affiliated with another Company as follows: (a) a Company is an “ Affiliate ” of another Company if: (i) one of them is the subsidiary of the other; or (ii) each of them is controlled by the same Person; (b) a Company is “ controlled ” by a Person if: (i) voting securities of the Company are held, other than by way of security only, by or for the benefit of that Person; and (ii) the voting securities, if voted, entitle the Person to elect a majority of the directors of the Company; (c) a Person beneficially owns securities that are beneficially owned by: (i) a Company controlled by that Person; or (ii) an Affiliate of that Person or an Affiliate of any Company controlled by that Person.
“ Anergy ”	Means Anergy Capital Inc., a company incorporated under the laws of the Province of British Columbia; a CPC, having its common shares listed on the Exchange under the trading symbol “ ACA.H ”.
“ Associate ”	Means a relationship with an individual or Company: (a) an issuer of which the Person or Company beneficially owns or controls, directly or indirectly, voting securities entitling him to more than 10% of the voting rights attached to outstanding securities of the issuer; (b) any partner of the Person or Company; (c) any trust or estate in which an Person or Company has a substantial beneficial interest or in respect of which an individual or Company serves as trustee or in a similar capacity; (d) in the case of an individual, a relative of that individual, including: (i) that Person’s spouse or child; or (ii) any relative of the Person or of his spouse who has the same residence as that Person.
“ AUV ”	Means Autonomous Underwater Vehicle, a pre-programmed underwater vehicle that is not controlled by an operator.
“ Bathymetry ”	Means the study of underwater depth of lake, seas, or ocean floors. Bathymetry is the underwater equivalent to topography.
“ BCBCA ”	Means the <i>Business Corporations Act</i> (British Columbia).
“ BCIP ”	Means the Canadian government’s Build in Canada Innovation Program.
“ Board of Directors ”	Means the board of directors of the Company.
“ CBCA ”	Means the Canada Business Corporations Act.
“ CEO ”	Means Chief Executive Officer.
“ CFO ”	Means Chief Financial Officer.
“ Common Shares ”	Means the issued and outstanding common shares of the Company.



“Company” or “Kraken”	Means Kraken Robotics Inc., as it exists following the completion of the Acquisition.
“Completion of the Qualifying Transaction”	Means February 18, 2015, the date the Final Exchange Bulletin was issued by the Exchange.
“Control Person”	Means any Person that holds or is one of a combination of persons or companies that holds a sufficient number of any of the securities of an issuer so as to affect materially the control of that issuer, or that holds more than 20% of the outstanding voting securities of an issuer except where there is evidence showing that the holder of those securities does not affect materially the control of the issuer.
“CPC”	Means capital pool company, as defined by Exchange policies.
“CVL”	Means correlation velocity log. An underwater speed and navigation sensor developed by Kraken Subco as a derivative of its SAS technology. CVLs are an alternative to the historical industry standard Doppler velocity log (DVL).
“DaaS”	Means the Company’s Data as a Service business.
“Exchange”	Means the TSX Venture Exchange.
“FCT”	Means Foreign Comparative Testing.
“Filing Statement”	Means the filing statement dated February 5, 2015.
“Final Exchange Bulletin”	Means the Exchange Bulletin, issued February 18, 2015, following closing of the Qualifying Transaction that evidences the final Exchange acceptance of the Company’s Qualifying Transaction.
“Insider”	If used in relation to an issuer, means: (a) a director or senior officer of the issuer; (b) a director or senior officer of a corporation that is an Insider or subsidiary of the issuer; (c) a person that beneficially owns or controls, directly or indirectly, voting shares carrying more than 10% of the voting rights attached to all outstanding voting shares of the issuer; or (d) the issuer itself if it holds any of its own securities.
“Instrument”	Means National Instrument 51-102 – Continuous Disclosure Obligations.
“ITAR”	Means the United States’ International Traffic in Arms Regulation.
“KPG”	Means Kraken Power GmbH, an affiliate of Kraken Subco registered under the laws of the Republic of Germany.
“Kraken Shareholder”	Means a holder of Kraken Subco Shares.
“Kraken Shares”	Means a common share in the share capital of Kraken Subco.
“Kraken Subco”	Means Kraken Robotic Systems Inc., a wholly-owned Canadian subsidiary of the Company.
“KRG”	Means Kraken Robotik GmbH, a wholly-owned subsidiary of Kraken Subco incorporated under the laws of the Republic of Germany.



“KUS”	Means Kraken Robotics US Inc., a wholly-owned subsidiary of Kraken Subco incorporated under the laws of the State of Delaware with a registered office in the State of Massachusetts.
“LARS”	Means Launch and Recovery System, an electro-mechanical system used to both deploy and remove underwater vehicles from launch and recovery point (the surface vessel or dock).
“LOI”	Means the letter of intent executed between Anergy and Kraken Subco dated September 8, 2014, as amended September 18, 2014 and October 31, 2014.
“MINSAS”	Means Miniature Interferometric Synthetic Aperture Sonar.
“Ocean Infinity”	Means Ocean Infinity Limited.
“ODI”	Means Ocean Discovery Inc., a wholly-owned subsidiary of Kraken Subco incorporated under the laws of Canada.
“Person”	Means a company or an individual.
“Qualifying Transaction”	Means a transaction where a CPC acquires Significant Assets other than cash, by way of purchase, amalgamation, merger or arrangement with another Company or by other means.
“RaaS”	Means the Company’s Robotics as a Service business.
“ROV”	Means Remotely Operated Vehicle, tethered underwater vehicles remotely controlled by an operator on a surface ship.
“SAR”	Means Synthetic Aperture Radar, a form of radar that is used to create high resolution images of objects, such as landscapes. SAR uses the motion of the radar antenna over a target region to provide finer spatial resolution than conventional beam-scanning radars. SAR is typically mounted on a moving platform, such as an aircraft or spacecraft.
“SAS”	Means Synthetic Aperture Sonar, the underwater cousin of SAR. SAS is a form of sonar in which sophisticated signal processing is used in combining a number of acoustic pings to form an image with much higher along-track resolution than conventional sonars.
“Securities Laws”	Means the Securities Act (British Columbia) and the regulations and rules under such Act and the blanket rulings and orders issued by the British Columbia Securities Commission from time to time.
“Share Exchange Agreement”	Means the share exchange agreement among Anergy, Kraken Subco and Kraken Subco Shareholders dated November 20, 2014 which superseded and replaced the LOI.
“SSS”	Means Side Scan Sonar, a specialized system for detecting objects on the seafloor. Most side scan systems cannot provide depth information. Like other sonars, a side scan transmits sound energy and analyzes the return signal (echo) that has bounced off the seafloor or other objects.
“Stock Option Plan”	Means the incentive stock option plan of the Company.



“ Stock Options ”	Means the incentive stock options to purchase Common Shares pursuant to the terms of the Stock Option Plan.
“ Towfish ”	Means underwater vehicles that are tethered to a ship and towed below the water surface.
“ Transfer Agent ”	Means Computershare Investor Services Inc. of 510 Burrard Street, 2nd Floor Vancouver, British Columbia V6C 3B9.
“ UMS ”	Means Unmanned Maritime System.
“ UMV ”	Means Unmanned Maritime Vehicle.
“ USV ”	Means Unmanned Surface Vessel, a vehicle that operates on the surface of the water without a crew.
“ UUV ”	Means Unmanned Underwater Vehicle.

ITEM 2: CORPORATE STRUCTURE OF THE COMPANY

2.1 Name, Address & Incorporation

The Company was initially incorporated under the BCBCA on May 14, 2008 under the name of Anergy Capital Inc. The Company is a reporting issuer in the Provinces of British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia, Prince Edward Island and Newfoundland.

Anergy was classified as a CPC with the sole business from the time of its incorporation until the completion of its Qualifying Transaction on February 18, 2015 being the identification and evaluation of opportunities for the acquisition of an interest in assets or businesses, and once identified and evaluated, to negotiate an acquisition or participation subject to any approvals as required under applicable corporate and securities laws and subject to acceptance by the Exchange so as to complete a Qualifying Transaction.

Pursuant to the Share Exchange Agreement, Anergy acquired all of the issued and outstanding Kraken Shares (the “**Acquisition**”), which is now a wholly-owned subsidiary. Anergy was then renamed “Kraken Sonar Inc.” and began to carry on the business of the Company as more fully detailed in this AIF under Item 3: “**GENERAL DEVELOPMENT OF THE BUSINESS**”. As part of the Acquisition, the Company continued under and is now governed by the CBCA. Upon Completion of the Qualifying Transaction, the Company became a Tier 2 Technology Issuer and its Common Shares resumed trading on the Exchange on February 24, 2015 under the ticker symbol “**PNG**”.

On September 20, 2017, the Company changed its name to “Kraken Robotics Inc.” and Kraken Subco changed its name to “Kraken Robotics Systems Inc.” to reflect the Company’s continued growth and evolution from manufacturing sensors to supplying complete robotic systems, software and services in the global UMS market.

The registered office of the Company is located at Suite 1600, 100 King Street West, Toronto, ON, M5X 1G5.

The head office and principal place of business of the Company are now located at:



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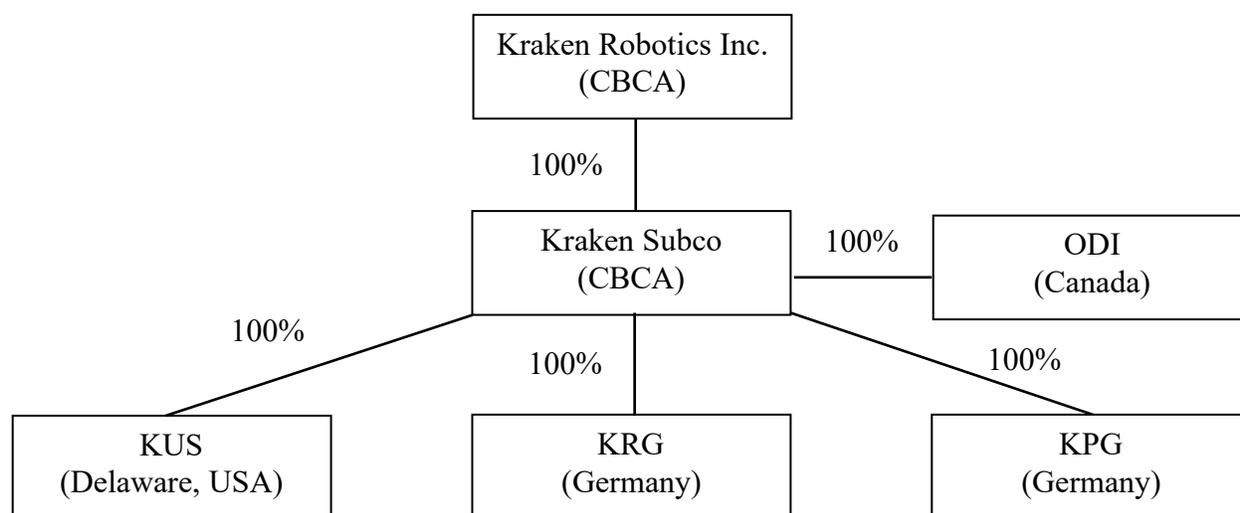
For further information regarding the Company reference is made to its filings with the Canadian securities regulatory authorities available on SEDAR at www.sedar.com.

2.2 Intercorporate Relationships

As at the most recently completed financial year ended December 31, 2019, the Company had one wholly-owned subsidiary, Kraken Subco.

Kraken Subco is an entity incorporated under the CBCA, and has four wholly-owned subsidiaries, KUS, KRG, KPG and ODI.

The different subsidiaries bring different skillsets to the table including sensor, software, and system development, and manufacturing allowing for cross-geography development. In this AIF, the term “Company” includes, where appropriate, Kraken Subco, KUS, KRG, and KPG.



ITEM 3: GENERAL DEVELOPMENT OF THE BUSINESS

3.1 Qualifying Transaction – Kraken Subco Acquisition

On February 18, 2015, the Company completed the Acquisition, whereby Anergy acquired all of the issued and outstanding Kraken Shares to constitute the Company’s Qualifying Transaction. Under the Share Exchange Agreement, Anergy acquired all of the issued and outstanding Kraken Shares from the Kraken Subco Shareholders in consideration of issuing to the Kraken Subco Shareholders an aggregate of 65,563,333 Anergy common shares (post-consolidation) at the deemed price of \$0.15 per Anergy common share.

Upon completion of the Acquisition, there were 70,957,110 Common Shares issued and outstanding on an undiluted basis. The Common Shares resumed trading on the Exchange on February 24, 2015.



3.2 Three Year History

The following is a summary of the general development of the Company's business over the last three completed financial years.

(a) Equity Financings

On April 11, 2017, the Company closed a non-brokered private placement offering comprised of 11,806,660 units (the "**2017 Units**") at a price of \$0.18 per 2017 Unit for aggregate gross proceeds of \$2,125,199. Each 2017 Unit consisted of one Common Share and one-half of one Common Share purchase warrant (each whole Common Share purchase warrant, a "**2017 Warrant**"), with each 2017 Warrant exercisable to acquire one Common Share at a price of \$0.30 per Common Share for a period of 24 months from the date of issuance. The Company paid cash finder's fees of \$12,600 and issued 191,333 finders warrants in connection with the offering. A total of 5,903,330 2017 Warrants were issued in connection with this offering.

On February 26, 2018, the Company closed a non-brokered private placement offering comprised of 10,714,285 Common Shares at a price of \$0.18 per Common Share for aggregate gross proceeds of \$1.5 million. The Company issued 9,000 Common Shares as finder's shares in connection with the offering.

On June 28, 2018, the Company closed a non-brokered private placement offering with Ocean Infinity comprised of 11,520,000 units (the "**OI Units**") at a price of \$0.20 per OI Unit for aggregate gross proceeds of \$2.304 million. Each OI Unit consisted of one Common Share and one-half of one Common Share purchase warrant (each whole Common Share purchase warrant, an "**OI Warrant**"), with each OI Warrant exercisable to acquire one Common Share of Kraken at a price of \$0.40 per Common Share for a period of 36 months from the date of issuance, subject to adjustment and acceleration.

On December 20, 2018, the Company closed a short form prospectus offering comprised of 15,000,000 Common Shares at a price of \$0.40 per Common Share for aggregate gross proceeds of \$6 million. The Company issued 550,000 broker warrants in connection with the offering. Each broker warrant is exercisable to acquire one common share of Kraken at a price of \$0.60 per Common Share for a period of 24 months from the date of issuance.

(b) Recent Development of the Business and Company Milestones

In January 2018, KRG was named a winner in the Carbon Trust's Offshore Wind Accelerator ("**OWA**") competition. The OWA is a collaborative R&D program funded by nine leading offshore wind developers and the Scottish government to reduce the cost of offshore wind energy. Kraken is using this opportunity to develop relationships with leading offshore wind developers and suppliers to them. The Company's SeaVision® and KATFISH™ technology are applicable to offshore wind turbine and submarine cable survey and inspection.

In February 2018, Kraken entered into a strategic alliance with ThayerMahan Inc. ("**TMI**"), a U.S. based systems integrator specializing in maritime autonomous systems. TMI's mission is to integrate and deploy the latest sensors, robotics, and machine learning technology as affordable and innovative solutions. TMI was founded by retired U.S. Navy Vice Admiral Mike Connor, who served as Commander of the entire U.S submarine force from September 2012 until September 2015. Mr. Connor is currently the Chief Executive Officer of TMI and a director of Kraken. The US market is the largest



market for underwater robotics and sensors for defense and homeland security applications. Kraken has spent more than 5 years ‘planting seeds’ with small volume sales, trial activity, and partnerships. Kraken is hopeful its partnership with TMI could be a key driver of opening up this market to Kraken.

Also in February 2018, the Canadian Ministry of Innovation, Science and Economic Development announced that 5 new superclusters were selected to receive part of \$950 million of federal funding. The Ocean Supercluster, of which Kraken is a member, was one of the selected winners. Kraken expects to benefit in conjunction with other industry partners to apply our advanced sensors, artificial intelligence software and robotics technology across a range of ocean industries that include fisheries, aquaculture, oil and gas, marine bio products, transportation, defense, marine renewables and ocean technology. In April 2019, Kraken submitted a final version of a project proposal called OceanVision™ to the Ocean Supercluster. This three-year project would see Kraken and its industry and academic partners develop new technology for ocean mapping and asset inspection and a new business model for how this data is collected and sold to customers. This new business model would focus on RaaS and DaaS.

In July 2018, Kraken entered a memorandum of understanding with Ocean Infinity for a strategic alliance on maritime robotics technology, products, and services. Ocean Infinity is a well-funded, new entrant in the ocean survey and exploration business. They are investing in industry-best technology to better automate the ocean survey data acquisition chain and accelerate industry adoption. Kraken signed its first contract for MINSAS sensors in the fall of 2017. The relationship with Ocean Infinity has grown and in June 2018 Ocean Infinity made a strategic investment of \$2.3 million in Kraken equity. In Q3 2018, Kraken was awarded a \$9 million contract for deep sea pressure tolerant batteries. In Q4 2018, Ocean Infinity invested a further \$1 million in a Kraken bought deal financing. In Q1 2019, Ocean Infinity exercised \$2.3 million of Kraken warrants and placed purchase orders for approximately \$1.7 million for AquaPix® SAS sensors and support. The companies have a strong relationship and expect to continue to work together with the potential for future co-development of products and services. The goal is to provide leading technology for seabed mapping which drives operational efficiencies and actionable intelligence through rapid processing and intelligent analysis of collected data.

After signing a cooperation agreement in October 2018 with LeeWay Marine Inc. (“**LeeWay**”), a vessel owner/operator based in Nova Scotia, the companies completed successful field trials of Kraken’s SeaScout® system in April 2019. LeeWay and Kraken are testing and validating the SeaScout® system for use on LeeWay’s newest fast patrol vessel, the LeeWay Striker. The two companies continue to strengthen their partnership in an effort to collect high resolution benthic data in an efficient way, while building technological capacity in Atlantic Canada. Trials were successfully completed near Halifax, Nova Scotia, validating a number of performance objectives set out. These included: (1) Stable performance during high speed towing operations (up to 10 kts); (2) Stable performance in a variety of sea states (up to SS4); (3) Navigational accuracy across all speed ranges and depths; (4) High resolution imagery and bathymetry; and (5) Evaluation of launch and recovery with Kraken’s Tentacle® winch and docking head.

In November 2018, Kraken received a contract from Public Works and Government Services Canada valued at \$0.468 million. The end user is the Canadian Department of National Defense (“**DND**”). Under the contract, Kraken will provide testing, repairs, integration and upgrading of an AquaPix® INSAS sensor originally sold to DND for integration on the Artic Explorer Autonomous Underwater Vehicle in 2014.



In December 2018, Kraken converted (in accordance with its terms) the entire outstanding amount of its May 2017 loan to KPG, resulting in an increase in its equity interest in KPG from 19.9% to 75%.

In January 2019, Kraken was awarded a \$0.568 million contract by Public Works and Procurement Canada under the Defence Innovation Research Program (“DIRP”) Call 3. The DIRP supports Canada’s long-term commitment to respond to the scientific and technological needs of the Department of National Defence and Canadian Armed Forces. The objective of Kraken’s DIRP contract is to develop a low frequency, ultra-wideband SAS for use in underwater operational environments.

On March 4, 2019, the Company received \$2.304 million from the exercise of all of the outstanding OI Warrants issued on June 28, 2018.

Also in March 2019, Kraken was awarded a contract valued at \$1 million with the Government of Canada for the ThunderFish® 300 AUV. Kraken delivered the ThunderFish® 300 to its test partner, Defense Research and Development Canada (“DRDC”), in Halifax in Q3 2019.

Also in April 2019, Kraken was awarded a contract for approximately \$0.6 million by a military customer to provide a high capacity battery solution for an underwater robotics application. For confidentiality reasons, the customer name was not disclosed. Delivery occurred during Q2 2019.

In May 2019, Kraken completed a move to a new 19,000 square foot manufacturing facility in Mt. Pearl, Newfoundland. This allowed Kraken to consolidate its administration, engineering design, and production in Newfoundland into one optimized location.

In June 2019, Kraken established a new 4,000 square foot facility named the Unmanned Maritime Vehicles Facility (“UMVF”). The UMVF is located at the Centre for Ocean Ventures and Entrepreneurship (“COVE”) in Dartmouth, Nova Scotia. Kraken’s Handling Systems Group has already moved into the new location and will continue to build Kraken’s Tentacle® Winch and Autonomous Launch and Recovery Systems there. The facility will also be used to field test and support a variety of Kraken’s underwater robotic platforms – including the KATFISH™ high speed towed SAS system and the THUNDERFISH® Autonomous Underwater Vehicle. Kraken has also installed a dockside remote operations container which is available for use by COVE residents. In 2020, Kraken added an additional 2,500 square feet to its lease to house additional engineering, technical, and management talent.

Also in June 2019, Kraken received a purchase order from TMI, for a KATFISH™ 180 system. TMI is a US-based company specializing in the design, integration, and operation of autonomous maritime systems for government, industry, and academic customers. The contract value is \$2.1 million and was delivered in Q3 2019. TMI will deploy Kraken’s KATFISH™ 180 as part of its SeaScout® expeditionary system for seabed mapping and intelligence.

Also in June 2019, Kraken was selected by the US Office of the Secretary of Defense, Comparative Test Office, to participate in a FCT program in support of a US Navy Program of Record managed by the Naval Sea Systems Command, EOD Program Office. The FCT is designed to test selected foreign technologies as evaluated by US military operators, with a view to future procurement. The contract value is \$0.9 million.

Also in June 2019, Kraken was conditionally approved by the Ocean Supercluster to move forward with its OceanVision™ project. OceanVision™ is a three-year, \$18.8 million project focused on the development of new marine technologies and products to enable an underwater robotics data acquisition



and data analytics as a service business. This will be a turnkey service solution for ultra-high definition seafloor imaging, mapping and analytics, including simultaneous acquisition of ocean environmental and marine habitat data. Rapid high-throughput data analytics will make it possible to significantly reduce the cost of obtaining high resolution seafloor imaging and mapping allowing end-users to make more informed operational decisions in real-time. The Ocean Supercluster will provide an investment up to a maximum of \$6.3 million to the OceanVision™ project. The project was finalized in January 2020.

In August 2019, Kraken was awarded a contract for approximately \$2 million by a military customer to provide a high capacity battery solution for an underwater robotics application. This is the same customer that placed a \$0.6 million order in April 2019. Product delivery for this follow-on order occurred in Q1 2020.

In November 2019, KPG signed a multi-year supply agreement with Multi Pump Innovation (“MPI”) of Norway. Under the agreement, MPI will purchase rim-driven thrusters and control systems for use in MPI’s new JetMaster automated cage cleaners used for fish farming. While JetMaster is a new product for MPI, its leading position in fish farming cleaners and the growth of the aquaculture industry, gives MPI confidence it will purchase at least \$2 million worth of Kraken thrusters per year going forward. In addition, the companies expect to partner on further developments in the aquaculture industry that may require batteries and underwater charging products from KPG.

On December 31, 2019 Kraken acquired the remaining 25% of KPG not then-owned for €0.35 million, consisting of €0.25 million in cash and the issuance of 236,258 Common Shares of the Company at \$0.62 per share. The shares issued had a four-month statutory hold period commencing on the date of issuance. The transaction triggered a change of control payment to an arm’s length third-party lender to Kraken Power in an amount equal to €0.12 million payable by September 2020.

In January 2020, Kraken was awarded a contract valued at \$0.524 million with the Government of Canada for Kraken’s SeaVision® 3D laser scanner. SeaVision® was initially pre-qualified under the Canadian government’s BCIP. Parks Canada and Kraken plan to conduct at-sea testing and evaluation of the SeaVision® system at a variety of archaeologically significant sites including the HMS *Erebus* and HMS *Terror* at the National Historic Site of Canada, Nunavut. Kraken was previously involved in Parks Canada’s discovery of the HMS *Erebus* during the Franklin Expedition in Summer 2014.

In January 2020, Kraken finalized the contract for the OceanVision™ project with the Ocean Supercluster and industry partners (Petroleum Research Newfoundland and Labrador, Ocean Choice International and Nunavut Fisheries Association). OceanVision™ is a three-year, \$18.8 million project focused on the development of new marine technologies and products to enable an underwater robotics data acquisition and data analytics as a service business. Under the OceanVision™ project, Canada’s Ocean Supercluster will provide an investment up to \$6.3 million, with the balance of project funding to be provided by other government agencies, industry partners, and Kraken.

In January 2020, Kraken signed an 8-year framework agreement with a leading international defense contractor. Under the agreement, Kraken’s Acoustic Signal Processing Group will provide development, maintenance and training to the customer to enhance and modernize their sonar product. The customer name and additional contract details cannot be disclosed for confidentiality reasons.

In March 2020, Kraken was awarded five new contracts for batteries, sonar sensors, and support totaling \$2.8 million.



In July 2020, Kraken received notification that the complaint process regarding the Royal Danish Navy’s mine hunting upgrade program has been finalized. The Board of Complaints which oversaw the complaint process has ruled in favor of the Royal Danish Navy on all points. Kraken originally announced in October 2019, that it was chosen as the successful bidder on a program for the acquisition of new sonar systems for an unnamed international navy. The delay since then was the result of the complaint process initiated by a losing bidder combined with a slowing of government activity during the COVID period in Europe. The total contract value is expected to be between \$35-\$40 million, with the majority of that received over a 2-year equipment acquisition phase. Kraken expects product margins on this contract to be in line with its historical averages. We expect to finalize matters with the Royal Danish Navy during Q3 2020.

In July 2020, NSP Maritime Link Inc. (“NSPML”) joined Kraken’s OceanVision™ project. NSPML is an indirect wholly owned subsidiary of Emera Inc., a multi-national energy company. OceanVision™ is a cross-sectoral pilot project designed to advance subsea technology and Robotics-as-a-Service (RaaS) capability. Along with providing expertise and knowledge of critical subsea infrastructure, NSPML will contribute over \$0.5 million during the term of the project.

In July 2020, Kraken received three defense customer orders totaling approximately \$1 million, including a follow-on order for MINSAS 60 LW sensors for man-portable vehicles. Delivery of this order is scheduled for Q4, 2020. The initial order shipped at the end of Q2, 2020. This product is currently being trialed on various man portable AUV platforms.

In August 2020, Cathy Bennett was added to Kraken’s Board of Directors. Ms. Bennett is a former Minister of Finance and Member of the House of Assembly of Newfoundland and Labrador. She is a seasoned entrepreneur, executive, and corporate director.

ITEM 4: DESCRIPTION OF THE INDUSTRY AND BUSINESS

4.1 History

Kraken is a marine technology company providing ultra-high-resolution software-centric sensors, power systems, and underwater robotic systems. The Company’s mission is to become a leading provider of underwater robotics equipment and services. Leveraging technology development tracing back to 2009 at a previous company, Kraken started with eight employees in 2012 to develop and commercialize SAS technology. At December 31, 2019, Kraken has 107 employees with a head office in St. John’s, Newfoundland, Canada and has shipped product to customers in 10 countries.

Kraken has a highly capable team of engineers, scientists, and technicians with specialized skills. Scientific staff have world-leading expertise in sonar design, remote sensing, and signal processing for synthetic aperture sonar, anti-submarine warfare, and 3D optical imaging. Kraken’s electrical and mechanical engineering teams have extensive experience designing tethered/towed and untethered/free-swimming underwater vehicles, custom payload sections, and launch and recovery systems. Kraken’s software engineering group develops applications for data acquisition, real-time processing, vehicle control, 3D visualization, telemetry, artificial intelligence, machine learning and data post-processing. The company is supported by a team of technicians that perform assembly, inspection, testing, calibration, and troubleshooting of mechanical and electrical systems. Kraken’s technical staff also have extensive experience performing system integration onboard customer-owned vehicles and conducting



operations at sea to collect data for a variety of surveys, technical demonstrations, and collaborative research projects.

Kraken's products are sold into both the manned and the UUV market. The UUV can be divided into AUVs and USVs. AUVs are either AUVs, ROVs, or Towfish. AUVs are used extensively for military and commercial applications, such as undersea search and survey missions. USVs may be remotely operated or be fully autonomous.

Kraken was founded with the objective of commercializing a software-centric version of SAS at the lowest cost in the market to compete with more hardware-dependent and expensive SAS solutions. SAS is an advanced imaging technology which dramatically improves seabed surveys by providing ultra-high-resolution imagery at superior ACRs as compared to conventional SSS technologies. These legacy SAS systems were seen as the domain of global defense contractors using SAS for military surveillance purposes to detect seabed mines or other types of unexploded ordnances. SAS is the next generation of sonar, following side scan sonar and multi-beam echo sounders, which while capable of producing high resolution images of objects on the seabed, only do so at short range and corresponding low ACR. SAS, on the other hand, is capable of producing ultra-high-resolution imagery at long ranges, which can be more than ten times the range of conventional side scan sonar, all while achieving significantly higher ACR.

SAS is the underwater equivalent of SAR used in the satellite and communications industry. This technology is 'rare air technology' with Kraken having only a handful of competitors at the high end of the market. Customers using SAS technology are looking to get maximum ACR at the highest resolution, for the lowest cost. One factor affecting ACR is the length of the aperture (antenna). Traditional sonar technology such as SSS uses real apertures that are limited by the size of the underwater vehicle they are deployed on. SAS, on the other hand, uses the motion of the underwater vehicle along with highly sophisticated signal processing algorithms to 'spoof' the system into thinking the aperture is 40-50 times longer than it really is. The result is up to a 10-times increase in area coverage rates over traditional SSS. In other words, more area can be surveyed at a much higher resolution in less time. The graphic below illustrates the difference in image quality of a 20 metre towrope lying on the seabed:

Sides Scan Sonar vs SAS – Towrope

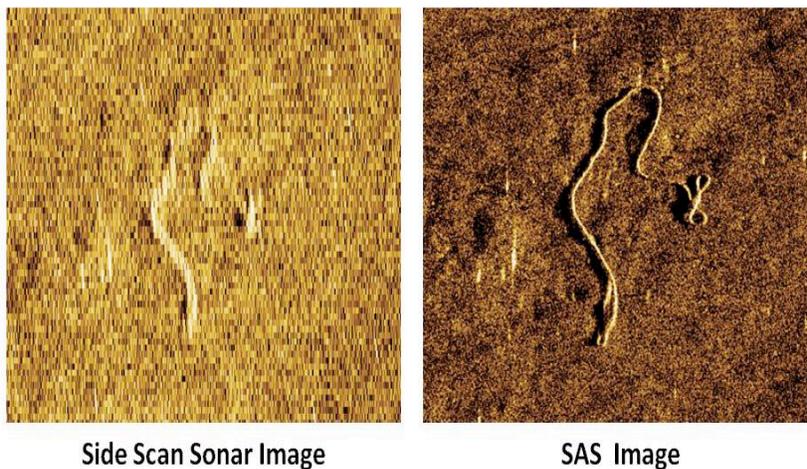


Figure 1: Side Scan vs SAS Images



In addition to improved area coverage rate, Kraken provides this data in real time, without the traditional limitations of extensive post mission processing. Furthermore, all of Kraken’s SAS systems are Interferometric, meaning that they are able to simultaneously provide real-time ultra-high definition SAS bathymetry that is co-registered with the SAS imagery. Through a partnership with Teledyne-owned Caris, Kraken also offers Caris Onboard, an automated hydrographic processing workflow which can combine the imagery and bathymetry into real-time hydrographic databases certified to IHO SP44 standards.

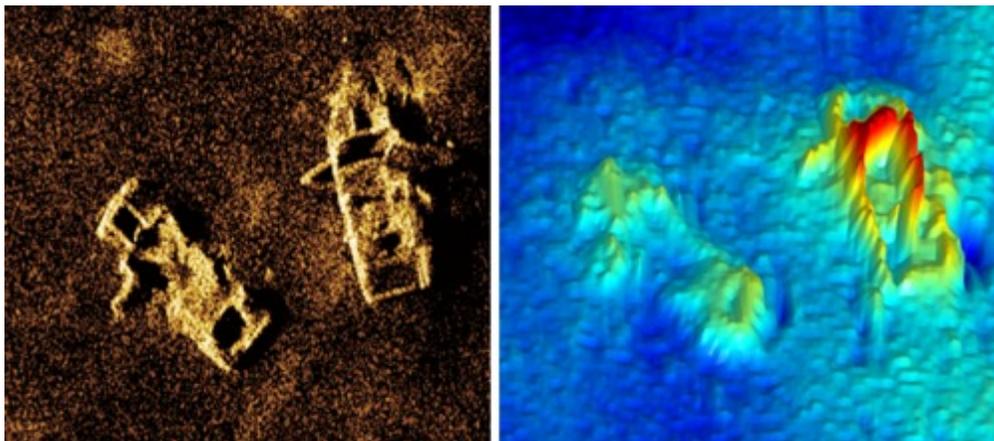


Figure 2: SAS Image and Bathymetry

As the company has grown, Kraken has developed additional sensors and has designed and produced our own UUVs. In addition to selling products, Kraken has a nascent RaaS business.

4.2 Principal Markets

The principal market for Kraken’s technology is the maritime robotics market which consists of defense contractors, national defense agencies, research institutions, oil and gas customers, seabed mining companies, search and salvage companies, and survey companies – both national and international. Today, these customers map the seafloor for many applications. Our perception of the ocean floor has expanded through the use of 3D geospatial applications. However, most 3D bathymetry maps that historically represent continuous global seafloor coverage are artist renditions. It was not until recently that concerted efforts have been made to compile sonar bathymetric data in the public and classified domains to produce higher-resolution 3D digital terrain models of the seafloor.

While the underwater robotics industry has multiple market segments, the military is currently the largest in terms of annual spending and in active robotic assets. The three main applications of underwater robotics for the military are mine counter measures (“MCM”); intelligence, signals intelligence, reconnaissance (“ISR”), and anti-submarine warfare (“ASW”).

In recent years, there has been a resurgence in underwater warfare as well as an emerging market in seabed warfare driving demand for unmanned systems. Key drivers include a mine warfare upgrade cycle, anti-submarine warfare, and the emergence of China in the underwater domain.

Traditionally the maritime robotics industry has been characterized by high costs for bespoke custom designs, low reliability, and high product life cycle costs due to products being expensive to operate and



maintain. Industry pioneers and their government sponsors spent billions of dollars on AUVs, ROVs, and sensor development. With technology evolution, better endurance, miniaturization, and enhanced payloads, product capabilities and reliability have improved, pricing has declined and adoption is increasing. Buyers of the technology have increased confidence that AUVs, ROVs, and other underwater robotics equipment can perform serious missions without failing.

In the commercial market, various segments use underwater robotics for data capture and data analysis. These include cable & pipeline survey, subsea infrastructure monitoring, inspection repair & maintenance, hydrography and seabed mapping, search locate and recovery, treasure hunting & salvage, offshore wind wave and tidal farms, seafloor mineral extraction, ocean science, environmental monitoring, and marine archeology. In the oil and gas and offshore wind sectors, maintenance of existing infrastructure is major driver for underwater sensors and robotics.

Kraken's growth will come from industry growth, an expanding product offering, and increasing market share. The maritime robotics market is currently estimated to be a \$5-\$10 billion market (including sensors, batteries, platforms, and services). The industry is at an inflection point to greater adoption and growth driven by multiple drivers. These drivers include: military cutbacks for 'dull, dirty, dangerous' human tasking; an industry upgrade cycle in MCM applications; offshore oil and gas migrating into deeper water; growth of offshore wind; increasing interest in ocean mining; improved sensor performance / resolution; emerging opportunities in the Arctic; deep-sea asset recovery operations; increasing interest in ocean science. All of these market drivers result in increased demand for improved sensor performance and resolution on underwater platforms.

4.3 Product Development Strategy – Sensors to Systems

Kraken's product offering has evolved from 'sensors to systems' to supply vertically integrated, turnkey seabed survey solutions (sensors and vehicles) into the global defense and commercial AUV and ROV markets. Leveraging a strong background in developing sensors, Kraken is moving up the food chain, expanding its addressable market, increasing average selling prices, and capturing greater margin.

Kraken's product development has been a combination of in-house effort, partnering in other geographies, and selective M&A opportunities. Key investment strategy developments over the last three financial years include:

- In May 2017, Kraken made a strategic investment in ENITECH Subsea GmbH of Rostock, Germany, which was subsequently renamed "Kraken Power GmbH". Under the agreement, Kraken took a 19.9% equity interest in KPG and provided a 3-year convertible loan which if converted, would increase Kraken's ownership in KPG to 75%. In December 2018, Kraken converted this loan and increased its equity interest in KPG to 75%. In December 2019, Kraken required the remaining 25% for €0.35 million in cash and through the issuance of Common Shares. This investment gave Kraken access to specialized deep sea components (batteries, battery management systems, thrusters, drive electronics) which could significantly reduce the bill of materials costs for its ThunderFish® AUV as well as have significant external commercial market sales.
- In July 2018, Kraken entered into a strategic alliance with Ocean Infinity for maritime robotics technology, products, and services. The alliance establishes a collaborative arrangement, pursuant to which Kraken will become a strategic partner to Ocean Infinity. This may include the



future supply of additional sensors, components, software, and systems as well as R&D and innovation support in areas such as data analytics and machine learning. Over time, the companies may enter into a series of project-specific agreements to engage in innovative development and other commercialization activities. In addition to the strategic alliance, Ocean Infinity acquired \$6 million of Kraken equity in a series of transactions, bringing its ownership stake in Kraken to approximately 15%. Since mid-2018, Kraken has sold more than \$12 million of product and services to Ocean Infinity including pressure tolerant batteries that have allowed Ocean Infinity to reach significant milestones in its business. In November 2019, Ocean Infinity announced that it had achieved significant milestones in endurance testing of their Kongsberg Hugin AUVs using Kraken batteries. This included several missions to greater than 5,000 meters and an unprecedented mission of over 100 hours without recharging, while running a full survey payload. As a result, using Kraken batteries, Ocean Infinity can operate increased survey ranges to nearly 700 line-kilometers per deployment.

- In April 2020, Kraken entered into a partnership agreement with Greensea Systems, Inc. (“**Greensea**”), creator of OPENSEA, an open architecture robotic platform (the “**Greensea Partnership Agreement**”). This partnership will expand upon the collaborative efforts already undertaken between the two companies to rapidly advance the capabilities of marine robotics. Under the agreement, Greensea will support development, integration, and testing work with Kraken across several of Kraken’s technology platforms. The Greensea Partnership Agreement simplifies contracting between the companies and allows for on-going collaboration for software and hardware technologies. Greensea will support Kraken in maturing on-going programs and accelerating new commercial offerings, including supporting Kraken’s R&D programs under the scope of the OceanVision™ project.

4.4 Principal Products and Services

The Company’s products can be broadly characterized in two categories: (1) sensors and platforms; and (2) energy. The Company’s principal sensor product is its SAS technology, which produces ultra-high resolution (2 cm) images at ranges far superior to conventional sonar technology. Our SAS systems are commercially available under the AquaPix® name and customized to seamlessly integrate into each customer’s underwater vehicle. These products are primarily designed for use onboard AUVs, remotely operated tow vehicles, ROVs and tow bodies.

What is SAS?

SAS is a powerful imaging technique that coherently combines echoes from multiple acoustic pings along the trajectory of an underwater robot to construct a ‘synthesized’ sonar array. When synthetic aperture techniques are applied at sufficiently low acoustic frequencies, a modest-sized SAS can generate imagery with a constant azimuth resolution comparable to that of higher frequency sonar systems, but with significantly longer range.

Interferometric SAS (“**INSAS**”) is strongly related to its airborne cousin – interferometric SAR (“**INSAR**”). While INSAR has transitioned into a commercial off-the-shelf product, INSAS has for a long time remained at the research stage. Some of the reasons for this delay have been the challenges in obtaining very high navigation accuracy through the ocean, as well as the high-computational cost of SAS imaging software. INSAS uses sophisticated signal processing techniques to compare the multiple observations of the same area of seafloor to calculate its depth. The image resolution of the seabed is



significantly increased – often by an order of magnitude – compared to conventional sonar technology. INSAS systems can achieve image and bathymetry resolutions of a few centimetres even in very deep waters and at very long ranges.

INSAS hardware (transducer arrays and electronics), image processing and INSAS processing have been a research topic at the NATO Undersea Research Centre in La Spezia, Italy for many years. The introduction of hydrodynamically stable UUVs, cheaper and more powerful data collection and processing electronics, combined with advanced micro-navigation and auto-positioning methods has recently brought INSAS forward as a viable alternative to SSSs and multibeam echo-sounders for seabed imaging.

Kraken's SAS History

Kraken's AquaPix® hardware development commenced in January 2011 (at a previous company) with the first major sea trial occurring in August 2012. Kraken's INSAS signal processing software, 'INSIGHT', was developed in parallel.

Kraken's SAS technology has been tested by various strategic industry partners including Defence Research and Development Canada, the United States Navy's Sea Systems Command and the United Kingdom Ministry of Defence. A successful cooperative research and development agreement with the Naval Undersea Warfare Center ("NUWC") in Rhode Island in 2013 was a key validation point for Kraken's SAS technology.

AquaPix® INSAS

While conventional sonars are commonly used for seafloor imaging and bathymetry, they suffer from range and resolution limitations. However, these limitations are overcome by using INSAS systems such as those designed and manufactured by the Company.

The Company's ultra-high resolution INSAS with 3D bathymetric capabilities is called AquaPix®. AquaPix® is capable of providing detailed images with an along-track/across-track resolution better than 2 centimetre out to a range of 300 metres from each side of an underwater vehicle (600 metre swath). It can also produce bathymetric data with a resolution better than 25 centimetre out to full range while delivering very high depth accuracy, in compliance with IHO S44 special order requirements.

In addition to being used for military applications such as naval mine countermeasures, INSAS is a multi-market technology with great potential for offshore oil and gas surveying, hydrographic surveys, underwater archaeology, benthic habitat mapping and deep-sea mining. With high resolution INSAS it is possible to use image fusion techniques to combine the bathymetric data with the reflectivity data to create a real-time 3D representation of objects on the seabed. The ability to generate centimetre-scale resolution in all three dimensions has the potential to provide significant improvements in the detection, classification and identification of small seabed objects.

MINSAS

In 2014, Kraken announced the AquaPix® MINSAS, a next generation MINSAS designed for smaller diameter AUVs. MINSAS is optimized for the demanding size, weight, power and cost constraints of AUVs, is based upon a proven military design, and is ideal for a variety of seabed imaging and survey missions. The MINSAS payload section also includes Kraken's latest generation Real Time SAS



Processor, the RTSAS MK-II. The RTSAS enables real-time, onboard processing of SAS imagery and bathymetry, and allows operators to leverage Kraken’s suite of post-processing tools, including the newly developed SASView 3D visualization and control software.

Since the launch of the AquaPix®, Kraken’s MINSAS sensors have been used by numerous customers including Defence Research and Development Canada Woods Hole Oceanographic Institute (“**WHOI**”), DSTO, Elta Systems, ECA Robotics, Fraunhofer, Atlas Elektronik, Lockheed Martin, Ocean Infinity and others. It has also been used in a number of high-profile seabed search applications, including being used to help discover the HMS Erebus during the Franklin Expedition in Canada’s Arctic in 2014, and used to locate the Avro Arrow free flight models in Lake Ontario in 2017.

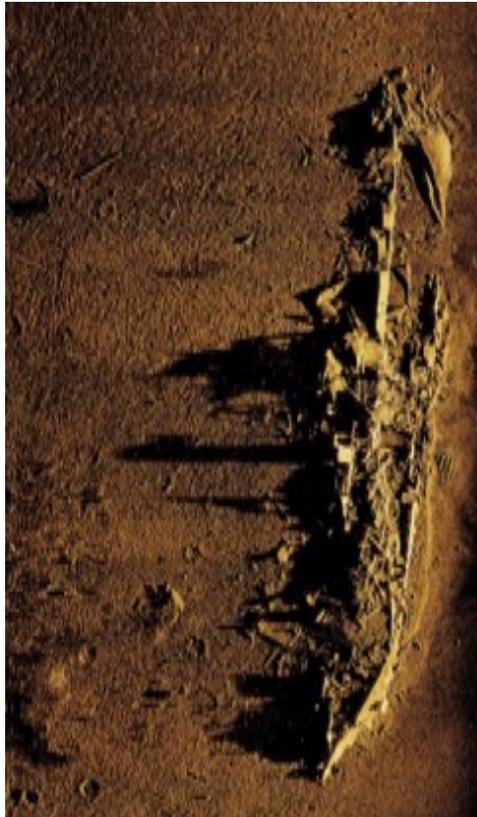


Figure 3: SS Ferrando Shipwreck Imaged by Kraken SAS (courtesy of ECA Robotics)

Additional SAS Developments

Kraken is leveraging the success of its INSAS and MINSAS developments towards additional SAS products. As the product is modular, it can be utilized for small, medium and large AUV and towed sonar applications. Recent developments include: Multi-spectral SAS, MINSAS 240, and lightweight MINSAS (“**MINSAS-LW**”). Kraken discusses MS-SAS and MINSAS-LW in the R&D section on pages 30 to 32.

In March 2019, Kraken announced the development of the AquaPix® MINSAS-240 Synthetic Aperture Sonar. Kraken’s AquaPix® MINSAS-240 sensor has been designed to advance the state-of-the-art in



seabed mapping for both high-speed towed systems and Large Diameter Unmanned Underwater Vehicles. The MINSAS-240 achieves an industry-leading ACR of 5.3 km²/hr with 3 cm x 3 cm image resolution and 6 cm x 6 cm bathymetry resolution across the entire swath. The incredibly high pixel density sets a new standard for seabed image quality. Kraken's embedded real-time processor enables in-stride data analysis for faster decision making as all data is processed at the highest quality setting in real-time. The superior length of the MINSAS-240 receiver array allows for true full-aperture SAS processing even at tow speeds up to 20 knots without switching to a lower resolution imaging mode at high speed. The sensor is rated for operating depths of up to 6,000 metres.

In March 2020, Kraken became the first to achieve a practical resolution of 2 cm with a Commercial-Off-The-Shelf SAS, Kraken's AquaPix® MINSAS. Kraken's Ultra HD software improves the AquaPix® SAS image resolution from 3.0 x 3.3 cm (across along track) to an industry-leading 1.9 x 2.1 cm and maintains constant Ultra HD resolution across the entire swath. Compared to conventional SAS processing, the incredibly high pixel density of Kraken's Ultra HD sonar imagery sets a new standard for seabed image quality, using Kraken's advanced image processing techniques to extract all the available information from sonar echoes.

In July 2020, Kraken began development of an innovative gap filler solution for unmanned underwater vehicles based on the company's AquaPix® SAS and SeaVision® 3D laser scanner. This solution fills the nadir gap with ultra-high definition data. The gap filler will be available for customer implementation in Q4 2020. Leveraging our background in SAS and underwater laser imaging systems, Kraken has developed two integrated nadir gap-filling technologies: (1) An acoustic gap reducer, based on Kraken's AquaPix® system, which drastically reduces the size of the nadir gap while maintaining full SAS resolution and (2) An optical laser/camera gap filler, based on Kraken's SeaVision® system, which fills the remainder of the nadir gap with ultra-high-resolution optical imagery and laser bathymetry. These gap filling technologies maximize the area coverage rate for high speed towed systems, such as Kraken's KATFISH, as well as autonomous underwater vehicles.

SEAVISION® 3D Underwater Imaging System

SeaVision® was developed by KRG with support from Kraken engineers in Canada. It is the world's first RGB underwater laser imaging system that offers the resolution, range and scan rate to deliver dense full color 3D point cloud images of subsea infrastructure with millimetre accuracy in real time. It operates in a twin pod configuration with each pod having three steerable laser lines, camera, and LED lights producing high-resolution point clouds in unprecedented scan speed and co-registered video data. The concentrated light source provides greater visibility even in high turbidity. SeaVision® can be operated in 2 modes, rotating the laser (a.k.a. scanning) or lasers in a fixed position (common approach provided by most laser suppliers, a.k.a. profiling). SeaVision® is an ideal tool for digital twinning applications and is a significant step forward in how different subsea assets can be inspected.



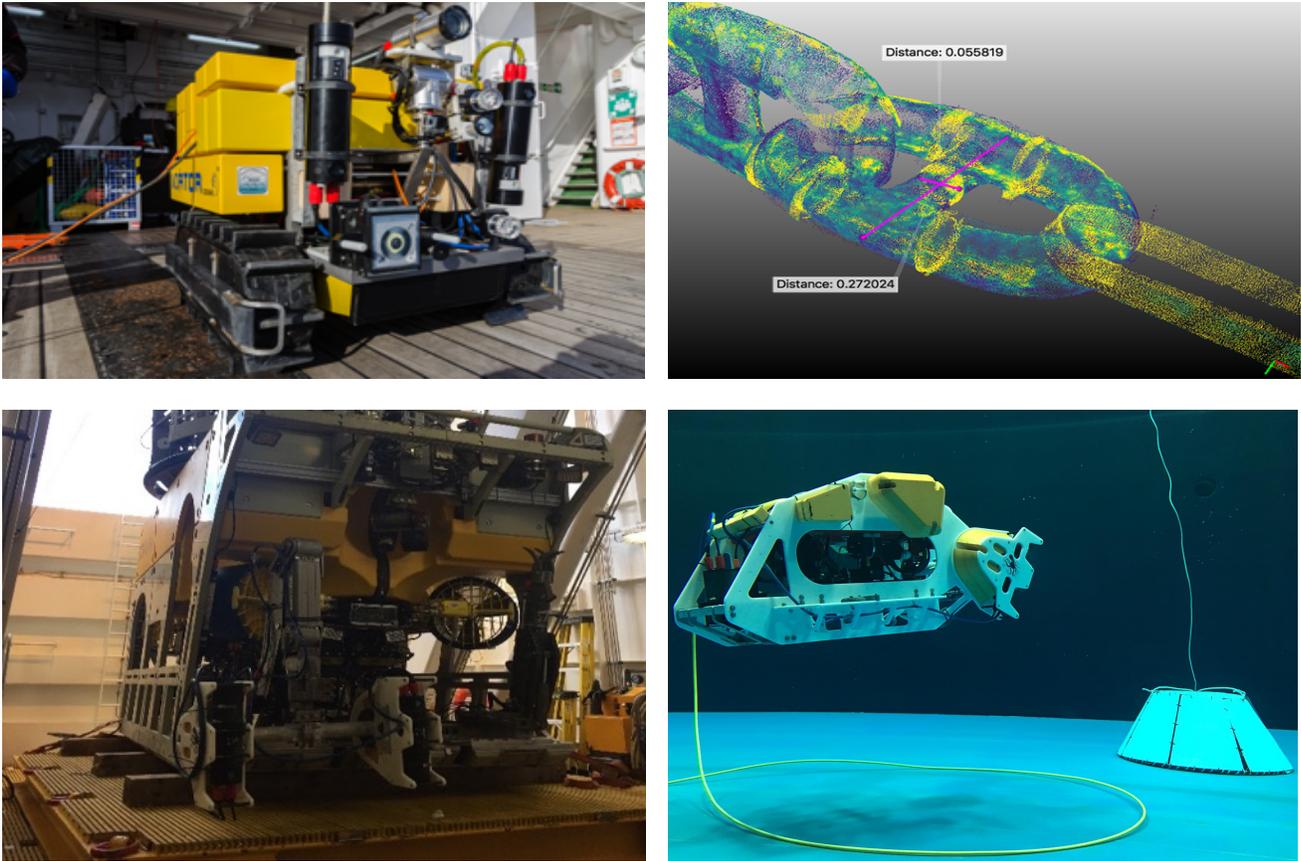


Figure 4: SeaVision® mounted on ROVs & Crawlers for Mooring Chain Inspection

Equipped with a high-resolution camera and laser, the system allows operators to reconstruct objects on the seabed in such a way that detailed models can be subsequently produced for 3D visualization. Its 3D imaging capabilities include generation of geo-registered ‘as-built’ models of structures on the seabed or in the water column, survey of subsea infrastructure and comparison against baseline models and detection of structural defects or other out-of-spec conditions that exceed threshold values.

The ability to generate accurate 3D reconstruction of underwater infrastructure is an important requirement for commercial, military, and ocean research applications. While sonar is the technology of choice for covering large areas, 3D laser systems such as Kraken’s SeaVision® provide significantly higher resolution and accuracy at inspection ranges of under 10 metres. The initial SeaVision® system is designed for deployment on underwater robotic platforms such as ROVs and AUVs.

Kraken has seen significant interest in SeaVision® from customers across many industries from defense to oil and gas, to renewable energy and nuclear. While this is a new product for Kraken, notable market developments in the last 24 months are as follows:

- In June 2018, Kraken was notified by the Government of Canada that Kraken’s SeaVision® underwater 3D laser imaging system had been pre-qualified for the BCIP. Kraken expects its test partner to be Parks Canada which will test SeaVision® on marine archaeology projects. The BCIP pays up to \$0.5 million for non-military innovations. The BCIP has been amalgamated into



a new program funding stream called Innovative Solutions Canada. This contract was formalized in January 2020 and will be completed during the 2020 financial year.

- In June 2018, KRG, secured over \$0.9 million in contracts for two development initiatives for evaluation of SeaVision® sensors and artificial intelligence control software for AUV. The two projects, ARIM and RoboVaaS, are collaborative research activities funded by the German Federal Ministry for Economic Affairs and Energy as part of the MarTERA Horizon 2020 initiative of the European Commission. Both projects will use Kraken's innovative SeaVision® sensor for monitoring and inspection services and autonomous vehicle control. The ARIM project, focused on subsea monitoring with a crawler system. Under this program, Kraken software and SeaVision® sensor will be used to control an underwater autonomous surface vehicle. Kraken's main funded activity is in the area of control and artificial intelligence. RoboVaaS is a 'robotic vessels as a service' project. Kraken's contribution will focus on shiphull inspection with software for sensor processing. The contracts started in June 2018 and continue over a period of 36 months.
- In July 2018, Kraken received the first commercial order of a standard SeaVision® product for a European customer. Product shipment occurred in Q1 2019. The main application is for power plant inspection.
- In August, 2019 KRG received a \$0.5 million order for a 3,000 meter rated SeaVision® laser scanning sensors from GEOMAR Helmholtz Centre for Ocean Research in Kiel, Germany. Kraken will deliver a twin pod SeaVision® 3D laser scanner as well as three SeaVision® profilers (each consisting of a Kraken SmartCam™ and separate laser). The sensor suite will be flexibly deployed on a variety of GEOMAR infrastructure to enable quantitative seafloor surveys.

Kraken has completed several commercial jobs and unpaid trials for offshore oil and gas customers in the last 24 months, including:

- In Q3 2018, Kraken completed a trial with a large offshore oil and gas company whereby SeaVision® was used for a mooring chain inspection.
- In Q4 2018, Kraken completed an inspection of a subsea pipeline with a large offshore oil and gas company using SeaVision®.
- In Q2 2019, Kraken received a follow-on purchase order from a large international offshore oil company for a mooring chain project, which follows successful commercial inspection campaigns of a subsea pipeline weak link and mooring chain.
- In Q3 2019, following successful trials with Husky Energy, Kraken was awarded funding for the development of a mooring chain laser inspection sensor, for use in offshore oil and gas applications. Under the project, a total of \$1.8 million of funding is being provided in cash and in-kind services from Husky Energy (\$1.26 million) and the Government of Newfoundland and Labrador, through the Innovation and Business Investment Corporation (\$0.54 million).
- In Q2 2019, Kraken completed a successful trial of a mooring chain inspection with an unnamed offshore energy customer.



Kraken continues business development efforts for SeaVision® inspection sales and services for the offshore wind market, mainly in Europe. This includes planning technology trials with major offshore wind farm operators.

KATFISH™ Intelligent SAS Towfish – Real time 3D seabed mapping

In 2015, Kraken kicked off the next stage in its sensors-to-systems strategy through the start of development of the KATFISH™ actively stabilized towed SAS towfish product. KATFISH™ is an actively stable towed SAS for manned surface vessels or USVs. Built upon Kraken's proven, real-time SAS technology, KATFISH™ reached commercial release in 2018. Its advanced hydrodynamic control system allows for bottom following, terrain referencing and obstacle avoidance. The full system includes cable, towbody and operator's console. Elbit Systems of Israel was the first customer for the KATFISH™. The KATFISH™ sells for US\$1.5 million with a hardened military version priced at US\$2.5 million. Key operating metrics include:

- High-speed (up to 10 kts) actively controlled towbody, tightly integrated with Kraken sensor payloads
- MINSAS180 with gap filler
- Resolution: Up to 1.9cm x 2.1cm
- Swath width: Up to 400 metres
- Operating Depth: Up to 300 metres
- Commercial and Military Certified

In September 2017, Kraken was awarded a \$2 million contract for KATFISH™ for an unnamed European defense contractor. Delivery occurred in 2018.

In May 2018, Kraken successfully completed military standard certification testing of the KATFISH-M, a ruggedized version of Kraken's KATFISH™ Towed Synthetic Aperture Sonar Platform. KATFISH-M was tested and certified by independent laboratories on a variety of United States Department of Defense military ruggedization standards known as MIL-STD-810G and MIL-STD-461. The MIL-STD-810G focuses on environmental engineering and requires products to pass a series of laboratory tests to ensure that military equipment can operate in extreme worldwide environments. The MIL-STD-461 standard covers the requirements and test limits for the measurement and determination of the electromagnetic interference characteristics (emission and susceptibility) of electronic, electrical, and electromechanical equipment.

In June 2019, Kraken received a \$2.1 million purchase order from TMI, for a KATFISH™180 system. TMI is a US-based company specializing in the design, integration, and operation of autonomous maritime systems for government, industry, and academic customers. Delivery occurred in Q3 2019. TMI will deploy Kraken's KATFISH™180 as part of its SeaScout® expeditionary system for seabed mapping and intelligence. Kraken received its second order from TMI for a KATFISH™180 system in October 2019, which was delivered in Q1 2020. These orders are a result from a strategic alliance entered



between the two companies in February 2018. Under this collaboration, both companies are delivering next generation underwater sensors and robotics for military, law enforcement, port and maritime security, environmental monitoring, and seabed survey applications.

In October 2019, Kraken received notification that the Company was chosen as the successful bidder on a program for the acquisition of new sonar systems for an unnamed international navy. Under the program, Kraken will deliver multiple KATFISH™ as well as autonomous launch and recovery systems (ALARS) to the customer. The total contract value is expected to be approximately \$35-\$40 million. The customer notified Kraken that it intended to enter a contract with the Company after the expiration of a standstill period. However, one of the losing bidders filed a protest and the complaint process took several months. In July 2020, Kraken received notification that the complaint process regarding the Royal Danish Navy's mine hunting upgrade program has been finalized. The Board of Complaints which oversaw the complaint process has ruled in favor of the Royal Danish Navy's position on all points. As a result, Kraken expects to finalize matters with the Royal Danish Navy during Q3 2020.

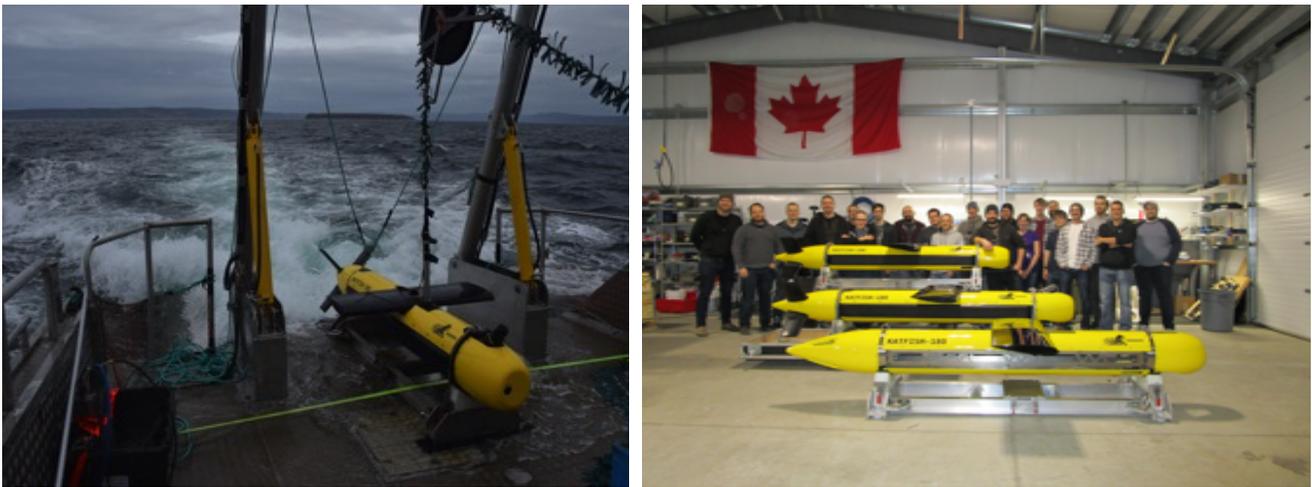


Figure 5: KATFISH™

Kraken is seeing significant opportunity for KATFISH™ across a range of markets and geographies. Kraken completed successful demonstrations in the U.S at the Advanced Naval Technology Exercise (“ANTX”) in 2019 as well as at the Trident Warrior naval exercise in 2020. In addition, Kraken has cooperative research and development agreements (each, a “CRADA”) with NUWC and National Oceanic and Atmospheric Administration (“NOAA”). In addition, Kraken continues to participate in foreign navy MCM bids both directly and in partnership with various defense prime contractors.

Tentacle® Winch and Launch and Recovery Systems (“LARS”)

In 2016, Kraken established a Handling Systems Division in Dartmouth, Nova Scotia, to design and manufacture Autonomous Launch and Recovery Systems (“A-LARS”) for Manned and Unmanned Maritime Vehicles. The team, formerly employed at Rolls-Royce Naval Marine, have extensive experience and were responsible for the development of advanced launch and recovery systems used by a wide variety of military, commercial and ocean science customers. Launch and recovery are some of the highest risk operations undertaken in the application of towed or autonomous underwater vehicles.



The primary function of an autonomous launch and recovery system is to enable an unmanned vehicle and its payloads to be brought aboard a host ship safely, efficiently and without damage.

Next-generation surface vessels will carry a variety of unmanned vehicles and modular mission packages that will require specialized launch and recovery equipment. The team in Halifax is designing winches and LARS systems for both the KATFISH™ as well as future AUV and ROV products and also undertake custom design work for third parties. These LARS systems are expected to range in price from \$0.75 million to \$1 million. In addition, Kraken's Handling Systems Division expects to work with KRG and other partners for subsea docking and residence applications as these technologies gain traction in the underwater vehicle market.

In August 2018, Kraken's Tentacle® electric winch was successfully fielded demonstrating KATFISH™ at ANTX in Rhode Island as well as under CRADAs with NOAA and NUWC. Tentacle® is a highly intelligent electric winch which can adjust cable scope through active feedback from underwater towed platform.

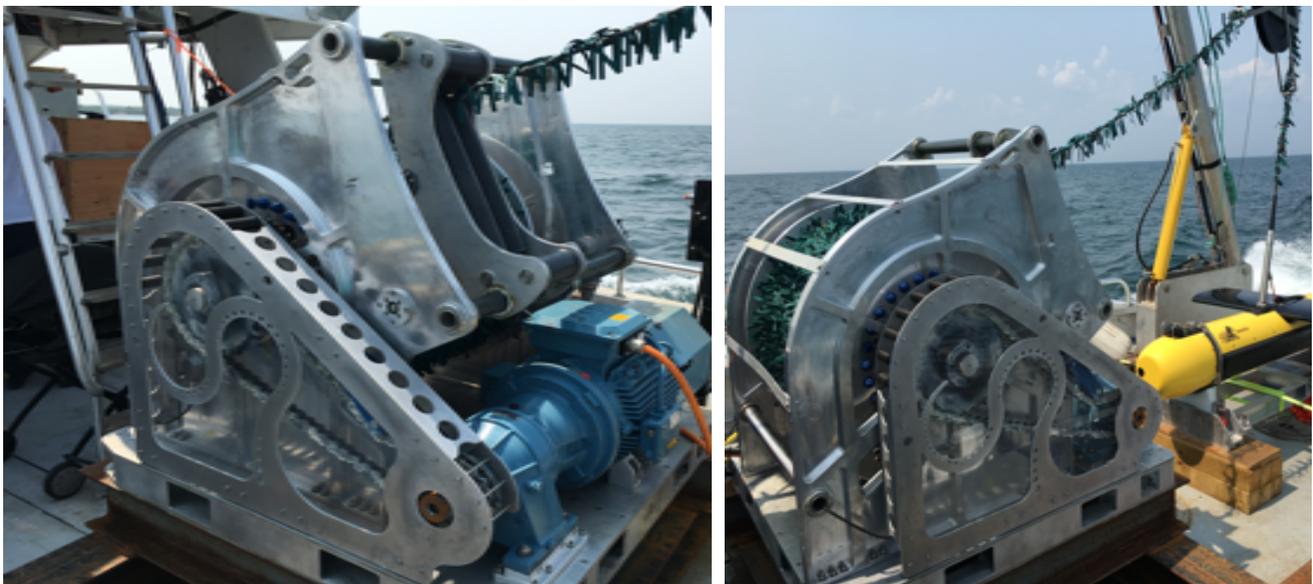


Figure 6: Tentacle® Winch and KATFISH™

Tentacle® Winch forms the starting point for a complete LARS system. Depicted below is a complete package of a KATFISH™ system and launch and recovery system including Tentacle Winch® and docking head. While Kraken has built and sold several Tentacle® Winch, the build of the first complete LARS systems has recently been completed and will be used as a Kraken owned and operated asset along with KATFISH™ for our OceanVision™ project and future service work.

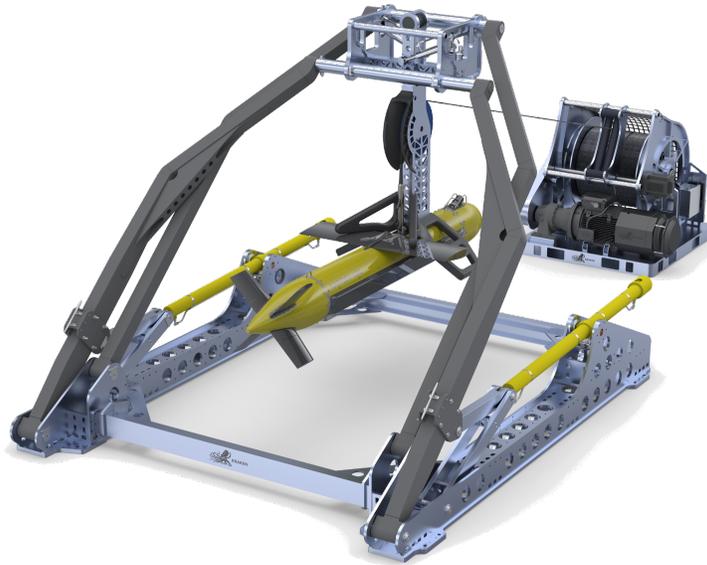


Figure 7: Render of ALARS for KATFISH

Deep Sea Pressure Tolerant Batteries, Thrusters, and Drives

Based in Rostock, Germany, KPG designs and manufactures unique pressure tolerant thrusters, drives, batteries, battery management systems, and electronics. These are specialized deep-sea components for AUVs and ROVs. KPG's unique pressure tolerant gel encapsulation technology for lithium polymer batteries provides an attractively priced, eco-friendly and superior alternative to oil compensated batteries currently used for subsea battery applications.

This durable silicone polymer encapsulation remains flexible, yet stable under pressure. This method of encapsulation allows Kraken to reduce the size and weight of traditional subsea battery packs by not requiring the cells to be located inside pressure housings or flooded with oil. As such, the battery design is no longer constrained by dimensions of the pressure or oil housings. They can now be contoured to better fit the shape of the vehicle, which improves packing efficiency and increases volumetric density. Ultimately, this technology reduces the size and weight of high-density battery packs for underwater vehicles and dramatically reduces the cost and weight versus traditional subsea batteries. Kraken Pressure Tolerant Battery Systems are modular and can be connected in banks to meet the vehicles voltage and capacity requirements. Each pack is individually rated to 6000 meters and contains its own battery management systems.

In August 2018, Kraken announced that Ocean Infinity has agreed to purchase \$9 million of Kraken's deep-sea batteries. Initial deliveries started at the end of Q1 2019 and were completed in Q4 2019.

Ocean Infinity reported in November 2019 that it achieved significant milestones in endurance testing of their Kongsberg Hugin AUVs using new pressure tolerant batteries from Kraken. This included several missions to greater than 5,000 meters and an unprecedented mission of over 100 hours without recharging, while running a full survey payload. As a result, using Kraken batteries, Ocean Infinity can operate increased survey ranges to nearly 700 line-kilometers per deployment.



During Q3 2019, Kraken was awarded a contract for approximately \$2 million by a military customer to provide a high capacity battery solution for an underwater robotics application. This is the same customer that placed a \$0.6 million order in April 2019. For confidentiality reasons, the customer name will not be disclosed. Product delivery for both of these orders occurred in Q2 2019 and in Q1 2020.



Figure 8: Deep Sea Batteries, Thrusters, and Drives

During Q4 2019, KPG signed a multi-year supply agreement with MPI of Norway. Under the agreement, MPI will purchase rim-driven thrusters and control systems for use in MPI’s new JetMaster automated cage cleaners used for fish farming. While JetMaster is a new product for MPI has a leading position in fish farming cleaners. In addition, the companies expect to partner on further developments in the aquaculture industry that may require batteries and underwater charging products from KPG.





Figure 9: MPI's JetMaster Net Cleaning Robot

Anti-Submarine Warfare

In July 2018, Kraken established its Acoustic Signal Processing Group (“ASPG”) in Toronto, Canada. This team of senior scientists and engineers brings 80+ years of experience in sonar system development and integration. The team’s core competency is in implementations of signal processing and user interface software for sonar applications.

Kraken’s ASPG team has been responsible for the development and in-service support of a number of military sonar systems including post-analysis, shipboard processing, harbour surveillance and operator team training applications. From 2002 to 2017, they delivered major projects to the navies of Canada, Sweden, and Germany. In September 2018, Kraken’s ASPG team was awarded their first contract from an international defense contractor valued approximately \$1 million. In January 2020, Kraken’s ASPG signed an eight-year framework agreement with the same defense contractor to provide development, maintenance, and training to the customer to enhance and modernize their sonar product.

Robotics as a Service

Kraken believes that certain customers would prefer to hire the Company to provide product output (i.e. imaging and bathymetry data) to them using the Kraken’s own equipment, rather than the customer buying the equipment and having to own, operate, and maintain the equipment. This is the genesis of Kraken’s RaaS offering.

Kraken’s RaaS model is an innovative solution to address the need for cutting edge technologies being deployed in field on customer assets. It also allows customers to gain exposure to and early adoption of next generation technologies, while minimizing the capital investment requirement. The model revolves



around Kraken technologies (sensors and vehicles) being operated in-field by Kraken engineers and technicians which have worked on the development of those same technologies.

Some real-world examples of Kraken's RaaS model are as follows:

- Kraken's SeaVision® Laser Scanner, operated by Kraken field technicians, using a customer's existing ROV. Data processed and delivered in real-time by Kraken technicians.
- Kraken's THUNDERFISH® AUV, deployed and recovered from a surface vessel, operated by Kraken field technicians. Data processed and delivered post-mission by Kraken surveyors.
- Kraken's KATFISH™, towed by a surface vessel, operated by Kraken field technicians. Data processed and delivered in real-time by Kraken surveyors.

In these examples, Kraken's systems and technology have been deployed by existing surface vessels (such as offshore support vessels already under contract by the customer), or Kraken has subcontracted a third-party vessel for operations. In the case of the SeaVision®, the sensor can be integrated on any inspection-class or work-class ROV.

In 2017, the Company was awarded its first RaaS contract by OEX Recovery Group Incorporated, to conduct a search for nine Avro Arrow free flight models launched over Lake Ontario in series of tests between 1954 and 1957. The models are one-eighth scale replicas of the famed flying jet, and were part of the final flight design tests done prior to the production of the CF-105 Arrow. The goal of the search was to discover the resting place of nine models, recover them and ultimately house them at the Canada Aviation and Space Museum in Ottawa and the National Air Force Museum of Canada in Trenton, Ontario.

Using Kraken's ThunderFish® underwater robot, the search for the lost Avro Arrow test models occurred in the second half of 2017 and Kraken generated revenues of approximately \$0.5 million on this contract. The search generated significant national and international media interest when the successful discovery of a free-flight Avro Arrow model on the floor of Lake Ontario was announced September 8, 2017.

While limited RaaS revenue was recognized in 2019, Kraken is bidding on opportunities involving both shallow and deeper water surveys with both KATFFISH™ and ThunderFish® as well as inspection jobs with our SeaVision® laser scanner.

Kraken expects RaaS to become a growing part of its revenue mix over time. As seen below, Kraken has branded its RaaS offering as SeaScout®, a complete seabed mapping and intelligence solution.



seascout
SEALED MAPPING & INTELLIGENCE

KRAKEN

High Speed Synthetic Aperture Sonar for Underwater ISR

- **Tightly Integrated System Solution**
SAS / Towbody / Intelligent Winch / LARS
- **UHD Resolution At Long Range**
3x3 cm imagery, 6x6 cm bathymetry
440 m swath with full resolution
- **Exceptional Area Coverage Rate**
3km² @ 8 knots tow speed
- **Rapid Deployment**
Complete system fits in 20' ISO container
- **Superior Price / Performance Value**
Purchase or contract as a service
COTS or MIL-STD certified

www.krakenrobotics.com

40 60 80 100 120 140 160

Figure 10: SeaScout® RaaS Offering

Kraken expects RaaS will be competitive to existing AUV and ROV service providers, with several key advantages:

- 1) The technologies being employed in Kraken’s RaaS business model are cutting-edge, and ever improving. RaaS is providing (primarily) Kraken products and technologies, as a Kraken-operated service, using Kraken engineers and technicians in the field. This allows the company to be continually updating and improving the offered products based on real-world operation and feedback, directly from the same personnel that are involved in the design and development process. Because Kraken’s product portfolio includes ever-improving acoustic and optical sensors and next generation battery and data storage technologies, customers will always be receiving the most efficient, highest quality data.
- 2) The overall cost of the service can be offered at substantially less than competitor systems. As Kraken is the manufacturer of the products being employed, Kraken can capitalize equipment for the RaaS business at bill of materials costs rather than list prices, significantly lowering the overall amortization costs on equipment being utilized. Furthermore, due to this significantly lower cost, Kraken can afford to include substantial spare parts or even complete spare vehicles for RaaS deployments, operating multiple vehicles in simultaneous operations while still maintaining a competitive cost.
- 3) A key differentiator is in Kraken’s BOOMI model: Build, Own, Operate, Maintain and Innovate. Compared to traditional surveyors / operators, BOOMI provides the ability to rapidly take



feedback, lessons learned, and feature requests from the field operations, and develop new technologies, solutions, or operating procedures to improve the quality and efficiency of data collection. In essence, each time Kraken RaaS is deployed, the customer is getting the best available capability.

Evolving RaaS to DaaS

DaaS is being built as a long-term commercial offering to provide multiple industries with a cheaper, faster, higher-quality option to obtaining subsea information that will be much more than simply a seabed survey service. The DaaS business model will support the growing need for cross-sectoral data requirements from various industries such as Fisheries, Oil and Gas, Hydrography, Environmental Monitoring / Habitat Monitoring, Search and Salvage, and Underwater Defence.

Kraken's OceanVision™ project (for more information, see “*Research and Development*”) will drive a newly developed business model in which data collected during operations is uploaded to a cloud-based data structure and made available to end-users from any industry to obtain. The solution would allow for customers to purchase existing data, including:

- Acoustic imagery (backscatter)
- 3D laser profiles
- Bathymetry
- Optical imagery
- Temperature and salinity
- Environmental (i.e. dissolved oxygen, turbidity, etc.)
- Additional underwater sensor data

As data is collected, it will be regularly uploaded to the cloud-based solution and made available to customers. Customers can purchase datasets with a variable pricing structure, driven by the resolution of the data they require and the type of data. Furthermore, customers can also request a new survey of a specific area that may not have been surveyed yet. OceanVision™ can provide fundamentally two options:

- One cost for survey data wherein the customer has exclusive rights to the data; or,
- One substantially lower cost for the survey data that is collected and then added to the OceanVision™ database.

4.5 Research and Development

Kraken employs more than 50 engineers, technologists, and scientific staff devoted to R&D, including 8 staff members with PhD degrees. In Newfoundland, the company operates its manufacturing and test facility in Mt. Pearl. Kraken assembles and tests all sonar systems and unmanned vehicles in its Mt. Pearl facility and conducts regular sea trials in Conception Bay with convenient access to a variety of water depths and bottom types.



In St. John's, the company has access to specialized test facilities at the Marine Institute, Memorial University of Newfoundland, and the National Research Council Ocean Coastal and River Engineering Research Centre. Kraken's Dartmouth office is located in the COVE facility with direct access to Halifax harbor for research and development as well as sea trials.

Kraken is recognized as a world leader in underwater technologies, and Kraken's engineering team has successfully brought several products from initial concept, prototyping, engineering test and evaluation, and ultimately to commercialization. Kraken has demonstrated success of managing the transition of products from R&D to commercial production using in-house resources.

Continuous research and development is needed to help the Company stay ahead of the competition. To help fund research and development, Kraken has received funding contributions from government agencies including the National Research Council of Canada Industrial Research Assistance Program ("NRC-IRAP"). These contributions have and will continue to enable Kraken to accelerate the development of next generation underwater robotics equipment and services for both military and commercial applications. Below are details of contributions to Kraken over the last three financial years:

- In March 2017, the Company was awarded a non-refundable financial contribution of up to \$1.47 million from the NRC-IRAP to be used to support the development of Kraken's underwater robotics program, which involves development of a technology demonstration platform. The first phase of the program will utilize the Fraunhofer Institute's DEDAVE AUV as the base platform. The AUV will be enhanced with hydrodynamic, control system, and payload upgrades.
- In May 2017, the Company was awarded a grant of \$745,950 from RDC for the development of Kraken's ThunderFish® AUV program. The ThunderFish® program will combine smart sonar, laser and optical sensors, advanced pressure tolerant battery and thruster technologies and cutting-edge artificial intelligence algorithms integrated onboard a cost effective 6,000-metre depth rated AUV.
- In November 2017, the Company entered into a commercial contract with Petroleum Research Newfoundland and Labrador that includes funding from General Electric Oil and Gas and Innovate Newfoundland and Labrador. As part of this agreement, a non-refundable financial contribution from Innovate Newfoundland and Labrador of \$248,324 will be received. Kraken is working with General Electric Oil & Gas to merge Kraken's next generation sensors and underwater robotics, with GE Avitas Systems' cloud-based data analytics infrastructure, demonstrating an end-to-end digitized concept of operations for subsea asset integrity management.
- In August 2018, Kraken signed a CRADA with the U.S. Navy's NUWC – Division Newport. Kraken recently completed successful testing of the KATFISH™ with NUWC off of Rhode Island. At the end of August, Kraken showcased its KATFISH-M at the ANTX in the United States. ANTX is an annual, invitation-only event that was created by the U.S. Navy to see the future of naval technology in action today.
- In January 2019, Kraken was awarded a \$0.568 million contract by Public Works and Procurement Canada under the DIRP Call 3. The DIRP supports Canada's long-term commitment to respond to the scientific and technological needs of the Department of National Defence and



Canadian Armed Forces. The objective of Kraken's DIRP contract is to develop a low frequency, ultra-wideband SAS for use in underwater operational environments.

- In April 2019, Kraken was awarded a financial contribution of \$1 million from the Government of Newfoundland and Labrador. The funding was awarded under the Innovation and Business Development Funding program and will be used for the initial phase of the OceanVision™ project that Kraken plans to pursue as part of the Ocean Supercluster initiative.
- In August 2019, the Company was awarded funding for the development of a mooring chain laser inspection sensor for use in offshore oil and gas applications. Under the project, a total of \$1.8 million funding is being provided in cash and in-kind services from Husky Energy (\$1.26 million) and the Government of Newfoundland and Labrador, through the Innovation and Business Investment Corporation (\$0.54 million). The project cash component received by Kraken will be \$0.72 million.
- In September 2019, the Company was awarded \$0.75 million in funding from the National Research Council of Canada Industrial Research Assistance Program (NRC IRAP). This funding is being used to support research and development of Kraken's Thunderfish® XL Autonomous Underwater Vehicle (AUV) and is also part of Kraken's OceanVision™ project.
- In January 2020, Kraken finalized the contract for the OceanVision™ project with the Ocean Supercluster and industry partners (Petroleum Research Newfoundland and Labrador, Ocean Choice International and Nunavut Fisheries Association). OceanVision™ is a three-year, \$18.8 million project focused on the development of new marine technologies and products to enable an underwater robotics data acquisition and data analytics as a service business. Under the OceanVision™ project, Canada's Ocean Supercluster will provide an investment up to \$6.3 million, with the balance of project funding to be provided by other government agencies, industry partners, and Kraken.
- In July 2020, NSPML joined Kraken's OceanVision™ project. NSPML is an indirect wholly owned subsidiary of Emera Inc., a multi-national energy company. Along with providing expertise and knowledge of critical subsea infrastructure, NSPML will contribute over \$0.5 million during the term of the project.

Kraken will continue to apply for available government funding and work with partners to supplement its internal financing efforts for new product developments in the areas of sensors, underwater vehicles, and a powerful suite of visualization and data analytics software tools for interacting and manipulating datasets from Kraken and third-party sensors.

ThunderFish® AUV

Fraunhofer is the largest organization for applied research in Europe with 69 institutes, over 24,500 employees and a €2.1 billion annual budget. In March 2015, the Kraken delivered a deep-sea rated INSAS system to Germany's Fraunhofer Institute for Optonics, System Technology and Image Exploitation.

From 2012 to 2015, Fraunhofer had been developing intellectual property and technology related to underwater robotics. Over \$6 million had been invested in Fraunhofer's underwater sensor robotics



programs, culminating in the development of the DEDAVE AUV. Under the terms of a contract, Kraken designed, engineered and delivered a 6,000-metre depth rated AquaPix® MINSAS sonar system that was integrated into the DEDAVE AUV.

Kraken continues its ThunderFish® Hovering-AUV development program. ThunderFish® is a next generation hovering AUV that can carry an array of sensors and custom payload modules, including Kraken's next-generation SAS and laser sensors. The platform can be configured to operate at depths up to 6,000m and is ideal for monitoring or surveillance tasks where cost efficiency, ease of deployment and operational simplicity matters. Its modular design allows for rapid sensor reconfiguration and battery replacement. Development of the ThunderFish® AUV platform continues with a focus to bring additional features to the market including the integration of our Multi-Spectral SAS, 3D laser scanner sensors and development of a hovering-capable control system.



Figure 11: ThunderFish® AUV

The ThunderFish® AUV is a technical upgrade of the Fraunhofer's DEDAVE AUV, however is still a prototype. Kraken will pay Fraunhofer a royalty based on a percentage of each sale with minimum commitments starting in 2022. Kraken is exclusively licensing Fraunhofer software and hardware intellectual property and technology for large AUVs.

In June 2017, the Company took delivery of the 6000-metre rated DEDAVE AUV which Kraken rebranded ThunderFish® Alpha AUV. This mid-sized AUV is designed for deep sea military, commercial and scientific applications for use as a sensor and robotics technology demonstration platform to support ongoing development of the Company's underwater sensor and robotics programs. Kraken has established a long-term technical co-operation program with Fraunhofer for hydrodynamic control systems, mission planning and autonomy algorithms that can be deployed in Kraken's ThunderFish® AUV program.

In April 2018, Kraken's ThunderFish® 300, a shallow water version of its AUV had pre-qualified under Canada's BCIP. Through the BCIP, companies can sell their pre-qualified innovations to the federal government as their first reference sale. After testing a company's innovation, federal departments provide feedback on the innovation's performance in an operational setting. In March 2019, Kraken was awarded a contract valued at \$1 million with the Government of Canada for the ThunderFish® 300 AUV. Kraken delivered the ThunderFish® 300 to its test partner, DRDC, in Halifax in Q3 2019.

Once complete, Kraken expects ThunderFish® to be an industry leading AUV platform offering next-generation performance with technologies such as real-time onboard mapping and target recognition,



SAS, Sub-Bottom 3D Volumetric Imaging, SeaVision® 3D underwater laser scanning, and other sensors. The ThunderFish® AUV has a targeted commercial list price of \$3 million, which is lower cost when compared to feature rich, commercially available AUV systems on the market today. ThunderFish® is being designed to be a subsea resident solution.

Multi-Spectral SAS

In May 2018, Kraken started the development of a next generation sonar sensor, an ultra-wideband acoustic remote sensing system for seafloor imaging and mapping. The AquaPix® Multispectral SAS will be the world's first commercial SAS to operate over such a wide spectrum, ranging from low audible frequencies to high ultrasonic frequencies. Kraken believes the AquaPix® Multispectral SAS is a true game changer in underwater sensors and will be ideal for a wide variety of seafloor imaging and mapping applications. The Multi-Spectral SAS will be developed in partnership with Alba Ultrasound of the U.K. and Dr. Allan Hunter from the University of Bath. Kraken is targeting commercial release of MS-SAS in the first half of 2021. In addition to being available for sale on AUVs from other companies, the MS-SAS will be optimized on Kraken's next-generation ThunderFish® AUV.

There are four notable benefits of this new technology:

- Significantly extended search range at constant high-resolution seabed pixels;
- Sub-bottom 3D volumetric imaging (i.e. finding objects buried beneath the seafloor such as pipelines and communications cables);
- Increased speed and accuracy for seabed classification and characterization; and
- Significantly reduces the survey costs and overall risks for buried pipeline and power cables.

Over the past number of years, multibeam sonar systems have come to dominate the world of marine survey. However, to meet the competing needs of range performance versus resolution, most of these systems only operate at a single frequency (or a very narrow band of frequencies) at any one time. As a result, the seabed and volume scattering products are essentially monochromatic and are typically displayed as a single-color image, representing a single data point for each bottom location. In contrast, Kraken's AquaPix® Multispectral SAS collects multispectral data at several frequency bands widely spaced from 5 kHz to 200 kHz. The broadband SAS provides much more data with significantly improved range and resolution.

As noted previously, Kraken was awarded a \$0.568 million contract under the DIRP. This funding will cover part of the development costs for the Multispectral SAS.



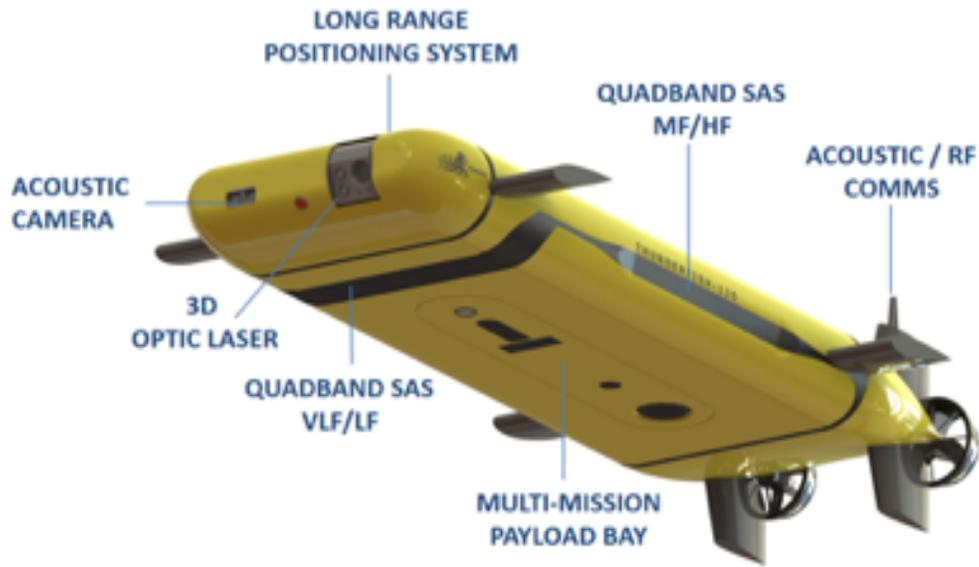


Figure 12: Multi-Spectral SAS on ThunderFish®

MINSAS-LW

In June 2019, Kraken was selected by the US Office of the Secretary of Defense, Comparative Test Office, to participate in a FCT program in support of a US Navy Program of Record managed by the Naval Sea Systems Command, EOD Program Office. The FCT is designed to test selected foreign technologies as evaluated by US military operators, with a view to future procurement. The contract value is \$0.9 million.

Under this contract, Kraken will integrate its AquaPix® MINSAS sensor on a man-portable AUV owned by the U.S. Navy. Man-portable AUVs make up the largest deployment of all AUV classes world-wide. The U.S. Navy and its allies continue to invest in man-portable AUVs, which today utilize a range of sonar technologies. Kraken’s AquaPix® MINSAS synthetic aperture sonar sensor is currently offered in the MINSAS 60, 120, 180, and 240 configurations and has been traditionally integrated to medium- and large-size AUVs and towfish. As part of this FCT contract, Kraken will optimize the MINSAS 60 sensor making it better suited for small, man-portable AUVs while offering a significant increase in capability and performance for man-portable platforms.

Kraken expects that with this initial contract, it will further prove our MINSAS-LW 60 is a reasonably priced, high-performance sonar upgrade path for existing man-portable AUVs as well as new builds.

In July 2020, Kraken received \$1 million of new defense contracts which included a follow-on order for MINSAS 60 LW sensors for man-portable vehicles. Delivery of this order is scheduled for Q4 2020. The initial order shipped at the end of Q2 2020. This product is currently being trialed on various man portable AUV platforms.





Figure 13: Lightweight MINSAS® Displayed at Warrior Expo

OceanVision™ - Kraken's Ocean Supercluster Project Submission

In June 2019, Kraken was conditionally approved by the Ocean Supercluster to move forward with OceanVision™ project with the \$18.8 million project being formally signed in January 2020. To fund the project, Canada's Ocean Supercluster will provide an investment of \$6.3 million, while the balance of the project will be provided by government agencies, industry partners (Petroleum Research Newfoundland and Labrador, Ocean Choice International and Nunavut Fisheries Association) and Kraken. Kraken's commitment to the project is \$7.4 million, of which \$7.1 million remains outstanding at December 31, 2019. Kraken's commitment will be reduced as government and industry partners join the project in 2020. Subsequent to December 31, 2019, another party joined the project, reducing Kraken's commitment by \$0.524 million.

OceanVision™ is a three-year project with the objective of developing new technologies enabling an underwater robotics DaaS business. In other words, this end-to-end digitalization solution offers advanced sensors, robots and data analytics as a turnkey service solution for seafloor imaging and mapping. Using rapid high-throughput data analytics will make it possible to significantly reduce the cost of obtaining high resolution seafloor imaging and mapping allowing end-users to make more informed operational decisions in real-time.



The OceanVision™ project is based on several enabling technologies. These include unmanned maritime vehicles, advanced sensors, robotics, autonomous systems, big data management and big data predictive analytics. Through OceanVision™, Kraken and its partners expect to meet several Ocean Supercluster goals including:

- deploying innovative technology platforms across ocean sectors
- strengthening links between ocean value chains and technology providers
- filling capability gaps in the innovation ecosystem
- extending global reach and market opportunities

For industry users, such as the oil and gas industry, OceanVision™ will help them save money, reduce risk, receive better intelligence and improve safety. This will be done by providing access to innovative technology including sensors, AUVs, artificial intelligence and big data that can reduce inspection maintenance and repair costs, improve operator safety and allow for increased uptime and profits.

The new technologies Kraken will develop within the scope of the OceanVision™ project are currently unavailable in a fully matured and tightly integrated offering in the commercial industry. The combination of a hovering-capable AUV with the potential for subsea residency, and a cutting-edge suite of acoustic and optical sensors, is a powerful package. As Kraken is the manufacturer of all the major vehicle components (i.e. sensors, batteries, propulsion system and software), the ThunderFish® AUV can be manufactured and sold at a much lower overall cost than competing systems. In addition to the ThunderFish AUV, Kraken will further develop SeaVision, Multi-Spectral SAS, and ALARS.

4.6 Intellectual Property

The Company's success depends in part upon its ability to protect its intellectual property. To accomplish this, the Company relies upon a combination of intellectual property rights, including patents, copyrights, trademarks, and trade secrets in Canada, the United States, and in select foreign countries where it believes filing for such protection is appropriate. The Company has registered several trademarks with respect to its products and services. The Company has filed for patents in the area of certain hardware developments. The Company protects its proprietary source code and algorithms as trade secrets by limiting access to such proprietary source code and algorithms and its other know-how, trade secrets and intellectual property to employees who have a need to know such information. Further, each employee and consultant of the Company has agreed in writing to maintain the confidentiality of its know-how, trade secrets and other intellectual property. Kraken's Intellectual Property lawyers are Toronto-based Perry + Currier Inc. Mr. Shaun McEwan, a Kraken Director since 2016, is the former Chief Financial Officer of Quarterhill, Inc., which owns WiLAN, a leading intellectual property licensing company.

4.7 Customers & Sales and Marketing Strategy

Kraken products have been successfully qualified since 2013 by customers in more than 10 countries. Kraken is leveraging its defense markets wins to move into other markets including oil & gas, commercial survey, ocean mining and search & salvage. Customers include DRDC (Canada), DSTO (Australia), NAVSEA (US), Boeing (US), Lockheed Martin (US), Dive Technologies (US), WHOI (US), Royal Navy (UK), Atlas Elektronik (UK & Germany), Fraunhofer Institute (Germany), Deep Ocean AS



(Norway), Elbit (Israel), ECA Robotics (France), Royal Danish Navy (Denmark), MPI (Norway), and Ocean Infinity (UK) amongst others. Kraken's SAS technology has been integrated on various AUV platforms including the Lockheed Marlin, Hydroid REMUS, ISE Explorer, Fraunhofer DEDAVE, Atlas Sea Otter, ECA A18, MacArtney ROTV, Kongsberg Hugin, and others. To our customers, Kraken products offer the advantages of cost, compactness, performance, and simplicity, resulting in the customer achieving the highest resolution seabed pixels at the lowest cost.

Kraken's products and services are marketed directly by the company as well as through independent agents, consultants and systems integrators. Kraken participates in industry trade shows and its scientists and engineering personal are actively engaged at the government and university research level.

Kraken has made significant efforts to develop relationships with a number of strategic partners including large defense contractors and commercial companies. Partnerships are a key part of Kraken's growth strategy and bring several benefits including:

- Reduce risk and time to market on new product developments;
- Add to the company's technology platform and intellectual property portfolio;
- Provide an ability to leverage relationships for ongoing low-cost R&D;
- Add relationships with oil and gas and other commercial customers;
- Provides access to world class, low cost facilities for development and testing purposes;
- Provides greater ability to access government funding including cross border funding

Kraken has and will continue to develop international partnerships and pursue multi-sector collaborations to mitigate risk and deliver new products with better performance at a lower price than competitors. For more information on Kraken's partnerships and business activity, see "*General Development of the Business – Recent Development of the Business and Company Milestones*".

4.8 Competitive Conditions

The Company competes in a very specialized, niche industry with high barriers to entry. The Company's employees have intimate knowledge of the underwater robotics industry, significant experience in advanced acoustics, deep industry insights and strong relationships with key decision-makers. In addition, Kraken is unique in having design, engineering and manufacturing expertise with both sonar technologies and AUVs.

Kraken sells both sensors and platforms and power in a market with larger competitors, in an industry lacking dominant players, and where consolidation is a theme. In addition, the market is often characterized by 'co-opetition' as companies partner together on larger industry bids. Kraken believes the keys to success are (1) product performance, quality and reliability; (2) technical talent; (3) price competitiveness; (4) strong customer service and support; and (5) funding.

The Company's current products and technology compete in the following market segments:



- **SSS** – Kraken’s sonar technology competes with SSS products, which provide lower resolution images and smaller coverage areas relative to the Company’s SAS technology. While pricing for its SAS technology is at a premium to the SSS alternatives currently on the market, the Company believes that the performance of its SAS technology makes it the superior choice from a price-performance perspective. Kraken’s major competitors in this market segment are Edgetech, Sonardyne International Ltd., Klein Marine Systems Inc., and Marine Sonics;
- **SAS** – Kraken’s sonar technology competes with other manufacturers of SAS products, including Kongsberg Gruppen ASA (Norway), iXBlue Limited (France), Northrop Grumman (US), the Thales Group (France), and Raytheon Company (US). Unlike the Company, the majority of competitors do not sell their SAS products as stand-alone products, but rather sell them only as a component part of a UUV, meaning that the cost of acquiring SAS products from these competitors can run into the millions of dollars. Further, the Company’s SAS product currently sells at a discount to comparable stand-alone products sold by larger competitors. Kraken also believes the ability of its systems to do real time data processing onboard the underwater vehicle is a competitive advantage and significantly reduces post mission processing times versus the competition. The end result is better data, quicker, and cheaper.
- **Laser scanner** – Kraken’s SeaVision® laser scanner competes with offerings from 2G Robotics, Cathyx Ocean, 3D at Depth, and Newton Labs. The Company believes its competitive advantage with SeaVision® includes the superior speed of under 4 seconds for a full resolution scan, real-time processing for immediate analysis and full-color vision using RGB lasers. Furthermore SeaVision® does not include any externally moving parts and is therefore optimally suited for ROV mounting and operation in challenging industrial inspection activities.
- **Towfish underwater vehicle** – The Company’s KATFISH towbody product competes in a market segment with 4-5 competitors. KATFISH is a high-speed (10 knots) active towbody, with tightly integrated Kraken sonar payloads. Competitor products in this segment include the Klein 5900, Raytheon AQS-20A, Northrup AQS-24A, and Thales T-SAS. Competitive factors include range, resolution, area coverage rate, price, real time SAS processing capabilities, bathymetry, ITAR control and other factors. Kraken’s competitive advantage with KATFISH includes: speed, price, performance (most advanced active towfish on the market), and the fact that our products are non-ITAR.
- **Deep sea batteries** – In this niche market, KPG competes with companies such as Bluefin (General Dynamics), Southwest Electronic Energy Group, and General Atomics. Kraken believes its pressure tolerant gel encapsulation technology allows customers to increase power density at lower costs than competitor products. Ocean Infinity, a Kraken customer, has noted that in using Kraken batteries they receive more than a 50% increase in energy density in the same footprint as compared to competing solutions.
- **AUVs** – There are multiple competitors in the AUV market. Kraken’s ThunderFish® is targeted at the large AUV category. In this segment, notable companies include ISE, Cellula Robotics, Bluefin, Kongsberg Maritime, Atlas Elektronik, ECA Robotics, Lockheed Martin, Saab Underwater Systems, Teledyne Gavia, and Hydroid. As a vertically integrated supplier of sensors and systems, Kraken believes it is well positioned to develop ThunderFish® into a high performance reasonably priced competitor in the AUV market.



Most of our AUV competitors employ a traditional “torpedo-shaped” hull design, which is limited to typical forward motion (incapable of hovering) and is not suitable for close-range inspection of sensitive assets, or long-term seabed residency applications. Kraken’s ThunderFish AUV’s hovering capabilities and “flat-fish” geometry make it ideally suited for long-term seabed residency and subsea inspection applications, allowing for the use of standardized docking technologies currently being tested.

A typical AUV consists of a variety of core components; batteries, thrusters, control systems, sensors and payloads. While most competitors are purchasing these components off-the-shelf from third parties and integrating them into a complete system, Kraken produces most of these components in-house. This allows Kraken to manufacture complete vehicle systems at lower cost than competitor systems, as Kraken does not need to further markup prices of components which normally are already marked up by third party suppliers.

The largest deep sea competitor in the international AUV market is Kongsberg Maritime, and their Hugin AUV. Kongsberg is one of the largest companies in the underwater robotics and sensor space, and presently are the major supplier of AUVs for commercial survey applications. The Hugin AUV is available in depths of up to 6000m, and can carry Kongsberg’s HiSAS Synthetic Aperture Sonar sensor. Kraken aims to compete with Kongsberg on both price and performance; this has been demonstrated by the fact that while Kongsberg offers pressure tolerant batteries and SAS sensors for their own AUVs, one of Kongsberg’s largest customers, Ocean Infinity, has been purchasing and installing Kraken technologies for its fleet of Hugin AUVs, including Kraken’s MINSAS sensor, and Kraken’s Pressure tolerant batteries. The MINSAS offers a higher resolution acoustic image than the HiSAS, and Kraken’s batteries offer up to 70% more endurance in the same size and weight as the Kongsberg batteries. Kraken anticipates that the ThunderFish AUV, which is built upon Kraken’s batteries, sensors, and software, will offer the commercial survey industry substantially better price and performance overall compared to the Hugin AUV.

- **RaaS** – Kraken’s main competitors in the RaaS business model are traditional survey and subsea inspection companies, which are heavily invested in surface vessels and traditional technologies. These include Fugro GeoSurvey (USA / Netherlands); DeepOcean (Norway); DOF Subsea (Norway). Fugro has 10,000 employees worldwide, and an annual revenue of 1.7 billion Euro. Fugro owns and operates only five AUVs (Hugins) worldwide. In contrast, Fugro also owns, operates or co-operates more than 40 vessels in their fleet (survey ships, ships for subsea work, and geotechnical vessels). This clearly demonstrates that Fugro is heavily invested into an infrastructure that requires large quantities of personnel and costly support vessels. While some innovations are being developed, existing Fugro contract work is heavily focused on labor-intensive methods and procedures, as their business model revolves around charging according to personnel time and vessel time with an appreciable markup.

As a metric for comparison, a typical ROV survey of an offshore pipeline requires 70 personnel onboard (2 x 12 hour shifts of 35 people), not including the ship’s crew, deployed on a Dynamic Positioning vessel with a work-class ROV. Typical cost for such a vessel would be \$0.12 million to \$0.16 million per day.



Kraken's advantages in the RaaS space revolves around leveraging cutting-edge robotics, sensors and autonomy to drastically reduce the number of personnel and size of surface vessels required for ocean data acquisition, including survey, exploration, and inspection. Kraken's KATFISH system only requires three personnel to operate, can be deployed and towed from a small-to-medium sized vessel of opportunity, and as the system is fully autonomous all data processing is performed automatically in real-time, including the georeferencing and mosaicking. The ultra-high-resolution SAS imagery and bathymetry are co-registered, in real-time, with zero post processing required.

- **DaaS** – Kraken has not identified any major competitors in the DaaS space for the seabed mapping community or the competitive landscape, as this business model fundamentally does not exist in the ocean seabed mapping environment. Fugro would be the largest potential competitor, as they are one of the longest standing seabed survey companies and have access to a large historical data collection. However, much of the data they've collected has been acquired under contract for specific customers, in which Fugro delivers the ownership of the datasets to the customer upon conclusion of the work scope.

Furthermore, Fugro's traditional survey technologies (such as MBES and Sidescan) provide limited resolution, which means that pre-existing datasets could not be monetized to the same extent. Finally, a large quantity of data at resolutions / qualities similar to what Fugro has already collected is already being made publicly available through programs like GEBCO, the Nippon Foundation, Seabed 2030, and even the Canadian Hydrographic Service (which has [released](#) all of their existing bathymetry data downsampled to a 100m resolution).

Kraken believes there is significant value for some customers in DaaS in a variety of areas:

- Access to new (i.e. non-existent) data which they otherwise cannot access
- Access to order-of-magnitude higher resolution data (2cm vs 100m)
- Access to repeat coverage of key areas of interest (i.e. monthly, seasonally, annually, etc.)
- Access to metadata (i.e. dissolved oxygen, temperature, salinity, turbidity, species tracking, etc.)

ITEM 5: RISK FACTORS

Prior to making an investment decision, investors should consider the investment risks and uncertainties set out below and those described elsewhere in this document, which are in addition to the usual risks and uncertainties associated with an investment in a business at an early stage of development.

The directors of the Company consider the risks and uncertainties set out below to be the most significant to potential investors in the Company; however, these are not all of the risks and uncertainties associated with an investment in securities of the Company. Additional risks and uncertainties not presently known to the Company, or that the Company currently deems immaterial, may also impair its operations. If any such risks actually occur, the assets, liabilities, financial condition, liquidity, results of operations (including future results of operations), and business and business prospects of the Company could be materially adversely affected and the ability of the Company to implement its growth plans could be adversely affected.



An investment in the Company's Common Shares is speculative. An investment will be subject to certain material risks and investors should not invest in securities of the Company unless they can afford to lose their entire investment.

Uncertainty of Revenues

Since the date of incorporation, the Company has accumulated losses. While the Company has spent on headcount, R&D, marketing and infrastructure, it is starting see meaningful revenue growth. The Company is subject to all of the business risks and uncertainties associated with any small business enterprise, including the risk that it will not achieve its growth objectives. Thus, there can be no assurance that losses will not continue.

Reliance on Management and Dependence on Key Personnel

The success of the Company is currently largely dependent upon on the performance of its directors and officers and the ability to attract and retain its key personnel. The loss of the services of these persons may have a material adverse effect on the Company's business and prospects. The Company will compete with numerous other companies for the recruitment and retention of qualified employees and contractors. There is no assurance that the Company can maintain the service of its directors and officers or other qualified personnel required to operate its business. Failure to do so could have a material adverse effect on the Company and its prospects.

Markets for Securities

There can be no assurance that an active trading market in the Company's Common Shares will be sustained. The market price for the Company's Common Shares could be subject to wide fluctuations. Factors such as government regulation, interest rates, share price movements of the Company's peer companies and competitors, as well as overall market movements, may have a significant impact on the market price of the securities of Company. The stock market has from time to time experienced extreme price and volume fluctuations which have often been unrelated to the operating performance of particular companies.

The Company is unable to predict whether substantial amounts of its Common Shares will be sold in the open market. Any sales of substantial amounts of the Company's Common Shares in the public market, or the perception that such sales might occur, could materially and adversely affect the market price of the Company's Common Shares.

Litigation

The Company and/or its directors may be subject to a variety of civil or other legal proceedings, with or without merit. At this time, there are no known outstanding, pending or contemplated legal proceedings against the Company which are material to the Company's business and affairs.

Global Financial and Economic Conditions

Global financial and economic conditions can be volatile. Some of the key impacts of the financial market turmoil include contraction in credit markets resulting in a widening of credit risk, devaluations and high volatility in global equity, commodity, foreign exchange markets and a lack of market liquidity. Such factors may impact the Company's ability to obtain financing in the future on favorable terms or obtain



any financing at all. Additionally, global economic conditions may cause a long-term decrease in asset values and demand for the services and products of the Company. If such global volatility, market turmoil and a global recession occur, the Company's operations and financial condition could be adversely impacted.

Insurance and Uninsured Risk

The business of the Company will be subject to a number of risks and hazards generally, including adverse environmental conditions, industrial accidents, labour disputes, unusual or unexpected technological considerations, changes in the regulatory environment and political or social instability. Such occurrences or events could result in damage to the business of the Company.

It can be difficult or expensive to obtain the insurance needed by the Company for its business operations. As part of its business operations, the Company maintains insurance both as a corporate risk management strategy and to satisfy the requirements of many of its contracts. Insurance products are impacted by market fluctuations and can become expensive and sometimes difficult to obtain. There can be no assurance that the Company can secure all necessary or appropriate insurance at an affordable price for the required limits. Its failure to obtain such insurance could lead to uninsured losses that could have a material adverse effect on its results of operations or financial condition, or cause it to be out of compliance with its contractual obligations. The Company will periodically evaluate the cost and coverage of the insurance against certain risks to determine if it would be appropriate to obtain or continue to maintain such insurance. Without insurance, the Company may incur significant costs that could have a material adverse effect upon its financial performance and results of operations.

The Company may in the future be involved in product liability and product warranty claims relating to the products that it manufactures and distributes that, if adversely determined, could adversely affect the Company's financial condition, results of operations, and cash flows. Product liability claims can be expensive to defend and can divert the attention of management and other personnel for significant periods, regardless of the ultimate outcome. Claims of this nature could also have a negative impact on customer confidence in the Company's products.

No Dividends

The Company does not expect to pay dividends on the issued and outstanding Common Shares in the near-term or in the foreseeable future. If the Company generates any future earnings such cash resources will be retained and utilized to finance further growth and enhance current operations. The Board of Directors of the Company will determine if and when dividends should be declared and paid in the future based on the financial position of the Company and other factors relevant at that time. Until the Company pays dividends, which it may never do, a shareholder will not be able to receive a return on his or her investment in the Company's Common Shares unless such Common Shares are sold. In such event, a shareholder may only be able to sell his, her or its Common Shares at a price less than the price such shareholder originally paid for them, which could result in a loss of such shareholder's investment.

Government Contracts

The Company will depend, in part, on government contracts, which may only be partially funded, subject to termination, heavily regulated, and audited. The termination of one or more of these contracts could have a negative impact on the operations of the Company. The termination of funding for a government



program would result in a loss of anticipated future revenues attributable to that program. That could have a negative impact on the operations of the Company. Also, no assurance can be given that the Company would be able to procure new contracts to offset the revenues lost as a result of any contract termination.

In addition, sales to the governments that the Company works with may be affected by:

- changes in procurement policies;
- changes in the structure and management of government departments;
- budget considerations;
- political developments domestically and abroad; and
- increased protectionism.

The influence of any of these factors, which are largely beyond the control of the Company, could also negatively impact the financial condition of the Company.

Competitive Bidding

The Company will derive significant revenue from contracts awarded through a competitive bidding process, which can impose substantial costs upon it, and the Company could fail to maintain its current and projected revenue if it fails to compete effectively. The Company expects that much of the business it will seek in the foreseeable future will be awarded through competitive bidding. Competitive bidding imposes substantial costs and presents a number of risks. Such risks include, but are not limited to:

- the need to bid on engagements in advance of the completion of their design, which may result in unforeseen difficulties in executing the engagement and cost overruns;
- the substantial cost and managerial time and effort that the Company spends to prepare bids and proposals for contracts that may not be awarded to it;
- the need to accurately estimate the resources and costs that will be required to service any contract the Company is awarded;
- the expense and delay that may arise if the Company's competitors protest or challenge contract awards made to it pursuant to competitive bidding, and the risk that any such protest or challenge could result in the resubmission of bids on modified specifications, or in termination, reduction, or modification of the awarded contract; and
- the opportunity cost of not bidding on and winning other contracts the Company might otherwise pursue.

To the extent the Company engages in competitive bidding and is unable to win particular contracts, it not only incurs substantial costs in the bidding process that could negatively affect the Company's operating results, but it may be precluded from operating in the market for services that are provided under those contracts for a number of years. Even if the Company wins a particular contract through



competitive bidding, its profit margins may be depressed as a result of the costs incurred through the bidding process.

Competition

Competition within the market of the Company may reduce its ability to procure future contracts and sales. The industry in which the Company operates is competitive. Many of the competitors of the Company are large diversified corporations in the sensor and marine robotics industry. Some of the competitors of the Company may have more extensive or more specialized engineering, manufacturing, and marketing capabilities. There can be no assurance that the Company can continue to compete effectively with these companies.

Development of New Technologies

The future success of the Company will depend on its ability to develop new technologies that achieve market acceptance. The marine sensor and robotics market is characterized by rapidly-changing technologies and evolving industry standards. Accordingly, the future performance of the Company depends on a number of factors, including its ability to:

- identify emerging technological trends in its market;
- develop and maintain competitive products;
- enhance its products by adding innovative features that differentiate its products from those of its competitors; and
- manufacture and bring products to market quickly at cost-effective prices.

In order to remain competitive in the future, the Company will need to continue to develop new products, which will require the investment of significant financial resources in new product development. In addition, there can be no assurance that the market for the products of the Company will develop or continue to expand as currently anticipated. The failure of the Company's technology to gain market acceptance could significantly reduce its revenues and harm its business. Furthermore, there is no assurance that the competitors of the Company will not develop competing technology, which gains market acceptance in advance of the products of the Company. The possibility that the competitors of the Company might develop new technology or products might cause the Company's existing technology and products to become obsolete. If the Company fails in its new product development efforts or its products fail to achieve market acceptance more rapidly than its competitors, the Company's revenues will decline and its business, financial condition, and results of operations will be negatively affected.

Protection of Intellectual Property

The Company may be unable to adequately protect its intellectual property rights, which could affect its ability to compete. Protecting the Company's intellectual property rights is critical to its ability to compete and succeed as a company. The Company currently has trademark registrations, which are necessary and contribute significantly to the preservation of its competitive position in the market. Further, the Company relies on a combination of copyright, trademark, and trade secret laws, confidentiality procedures, contractual provisions and other measures to protect its proprietary information. All of these measures afford only limited protection. There can be no assurance that any of



these measures will not be challenged, invalidated or circumvented by third parties. In the future, the Company may not be able to obtain necessary licenses on commercially reasonable terms. The Company enters into confidentiality and invention assignment agreements with its employees so as to limit access to and disclosure of the Company's proprietary information. These measures may not suffice to deter misappropriation or independent third-party development of similar technologies.

Outside Suppliers

The Company's operations depend on component availability and the manufacture and delivery by key suppliers of certain products and services. Further, the Company's operations are dependent on the timely delivery of materials by outside suppliers. The Company cannot be sure that materials, components, and subsystems will be available in the quantities required, if at all. If any of the suppliers fail to meet the needs of the Company, it may not have readily available alternatives. The Company's inability to fill its supply needs would jeopardize its ability to satisfactorily complete its obligations under its contracts on a timely basis. This might result in reduced sales, contractually-imposed penalties for delay in delivery, termination of one or more of these contracts, or damage to the reputation of the Company and its relationships with its customers. All of these events could have a negative effect on the financial condition of the Company.

Significant Sales of Common Shares

Sales of a significant number of the Company's Common Shares by existing shareholders could cause the market price of its common stock to decline. If the Company's shareholders sell substantial amounts of the Company's Common Shares, including Shares issued upon the exercise of outstanding options and warrants, the market price of the Company's Common Shares may decline. These sales also might make it more difficult for the Company to sell equity or equity-related securities in the future at a time and price that the Company deems appropriate. The Company is unable to predict the effect that sales may have on the then prevailing market price of its Common Shares.

Strategic Relationships, Investments and Acquisitions

The Company may pursue strategic relationships, investments, and acquisitions and may not be able to successfully manage its operations if it fails to successfully integrate the acquired technologies and/or businesses. As part of the business strategy of the Company, it may expand its product offerings to include products that are complementary to its existing products. This strategy may involve technology licensing agreements, joint development agreements, investments, or acquisitions of other businesses that offer complementary products. The risks that may be encountered in acquiring or licensing technology from third parties include the following:

- difficulty in integrating the third-party product with the products of the Company;
- undiscovered software errors in the third-party product;
- difficulties in selling the third-party product;
- difficulties in providing satisfactory support for the third-party product;
- potential infringement claims from the use of the third-party product; and



- discontinuation of third-party product lines.

The risks commonly encountered in the investment in or acquisition of businesses would accompany any future investments or acquisitions by the Company. Such risks may include the following:

- issues related to product transition (such as development, distribution, and customer support);
- the substantial management time devoted to such activities;
- the potential disruption of the Company's ongoing business;
- undisclosed liabilities;
- failure to realize anticipated benefits (such as synergies and cost savings);
- the difficulty of integrating previously-distinct businesses into one business unit; and
- technological uncertainty regarding the current and future functionality of the product.

Additional Capital

The Company may require additional capital, in which case it may need to raise additional funds from equity markets or lenders in the future. If the expenditures of the Company exceed its incoming cash flows, the Company may be required to raise additional capital. In addition, the Company may choose to pursue additional financing in order to capitalize on potential opportunities in the marketplace that may accelerate its growth objectives. The Company's ability to arrange such financing in the future will depend in part on the prevailing capital market conditions, as well as on its business performance. There can be no assurance that the Company will be successful in its efforts to raise additional funds, if needed, on satisfactory terms. If additional capital is raised by the issuance of Common Shares, shareholders may experience dilution to their equity interest in the Company.

Growth Management

If the Company fails to manage its growth effectively, its business and operating results could be adversely affected. The Company expects to continue to grow its operations domestically and internationally, and to hire additional employees. Any growth in its operations and staff will place a significant strain on its management systems and resources. If the Company fails to manage its future anticipated growth, it may experience higher operating expenses and may be unable to meet the expectations of investors with respect to future operating results. To manage this growth the Company must, amongst other things, continue to:

- improve its financial and management controls, reporting systems, and procedures;
- add and integrate new senior management personnel;
- improve its licensing models and procedures;
- hire, train, and retain qualified employees;
- maintain sufficient working capital;



- control expenses;
- diversify sales strategies; and
- invest in its internal networking infrastructure and facilities.

To the extent that this anticipated growth does not occur or occurs more slowly than the Company anticipates, the Company may not be able to reduce expenses to the same degree. If the Company incurs operating expenses out of proportion to revenue in any given quarter, its operating results may be adversely impacted.

Third Party Infringement Claims

The Company may receive claims that it has infringed the intellectual property rights of others. As the number of products in the marine sensor and robotics industry increases and the functionality of these products further overlap, the Company may become increasingly subject to infringement claims, including patent, trademark, and copyright infringement claims. In addition, former employers of our former, current, or future employees may assert claims that such employees have improperly disclosed to the Company the confidential or proprietary information of these former employers. Any such claim, with or without merit, could be time-consuming to defend, result in costly litigation, divert management's attention from the Company's core business, require it to stop selling or delay shipping, or cause the redesign of its product or products. In addition, the Company may be required to pay monetary amounts, such as damages, for royalty or licensing arrangements, or to satisfy indemnification obligations that it has with some of its customers.

The Company licenses and uses software from third parties in its business. These third-party software licenses may not continue to be available to the Company on acceptable terms. Also, these third parties may from time to time receive claims that they have infringed the intellectual property rights of others, including patent and copyright infringement claims, which may affect the Company's ability to continue licensing this software. The Company's inability to use any of this third-party software could result in shipment delays or other disruptions in its business, which could materially and adversely affect its operating results.

Defects

The Company's products may contain significant defects, which may result in liability and/or decreased sales. Despite efforts to test the products of the Company, significant errors or failures in such products may be experienced, or they might not work with other hardware or software as expected. This could delay the development or release of new products or new versions of products, or could adversely affect market acceptance of the Company's products. The Company's customers may claim that the Company is responsible for damages to the extent they are harmed by the failure of any of the Company's products. If the Company were to experience significant delays in the release of new products or new versions of products, or if customers were dissatisfied with product functionality or performance, the Company could lose revenue or be subject to liability for service or warranty costs. Should this occur, the business and operating results of the Company could be adversely affected.



International Sales

Sales to international customers expose the Company to political and currency related risks, as well as legal and regulatory changes in the jurisdictions in which its customers operate.

Every transaction with international customers is subject to certain domestic and foreign laws and regulations, including, but not limited to import-export controls, technology transfer restrictions, taxation, the Corruption of Foreign Public Officials Act (Canada) and other anti-corruption laws. While the Company has firm policies in place to comply with such laws and regulations, a failure to comply with these laws and regulations could result in administrative, civil, or criminal liabilities, which would have an adverse effect on the business and operating results of the Company.

The Company's international business is very sensitive to alterations in regulations, political environments, or security risks that may have an influence on its ability to perform business operations outside of Canada, including those regarding taxation, investments, and repatriation of earnings. The international business of the Company may also be impacted by changes in foreign national priorities and government budgets and may be further affected by global economic circumstances and conditions, and fluctuations in foreign exchange rates.

Foreign Operations

Our operations are exposed to various levels of political, economic and other risks and uncertainties. These risks and uncertainties include, but are not limited to government regulations (or changes to such regulations) with respect to restrictions on production, export controls, income taxes, expropriation of property, repatriation of profits, environmental legislation, land use, local ownership requirements and land claims of local people, regional and national instability. These factors are beyond the Company's control and the effect of these factors cannot be accurately predicted. Any changes in the above may adversely affect our business, future development and operations.

The COVID-19 Pandemic

The international outbreak of the respiratory illness COVID-19 (also referred to as the 'novel coronavirus') and efforts to contain it may have a significant effect on the Company's business, demand for its products, its ability to maintain operations and financial results. The impact of COVID-19 may also affect third parties' ability to meet their obligations to the Company and the Company's ability to meet its obligations to its customers.

COVID-19, or any other contagious diseases or public health threats in the human population, could result in a widespread health crisis that could adversely affect the economies and financial markets of many countries, resulting in an economic downturn that could affect demand for the Company's products and negatively impact operating results and financial performance.

Global pandemics and other public health threats similar to COVID-19, or a fear thereof, could adversely impact, among other things, our production operations, sales efforts, expansion projects, lead to labour shortages, and severely impact, among other things, supply chain logistics including travel and shipping disruptions and shutdowns (including as a result of government regulation, prevention and containment measures) affecting delivery of the raw materials we need to operate and delivery of our products to customers. It is unknown whether and how the Company may be affected if such an occurrence persists



for an extended period of time but we anticipate that it would have a material adverse effect on our business, operating results and financial performance. In addition, the Company may also be required to incur additional expenses and/or delays relating to such events which could have a further negative impact on our business, operating results and financial performance.

ITEM 6: DIVIDENDS

No dividends have been paid during the Company's three most recently completed financial years. The Company does not have a formal dividend policy and it is not expected that one will be implemented during the current financial year. For the foreseeable future, should the Company generate any future earnings such cash resources will be retained and utilized to finance further growth and enhance current operations. The Board of Directors of the Company will determine if and when dividends should be declared and paid in the future based on the financial position of the Company and other factors relevant at that time.

ITEM 7: DESCRIPTION OF CAPITAL STRUCTURE

7.1 Authorized and Issued Capital

The Company's authorized capital consists of an unlimited number of Common Shares, without par value, of which 149,507,186 Common Shares are issued and outstanding as of the date of this AIF.

The holders of Common Shares are entitled to one vote for each Common Share held and shall be entitled to dividends if, as and when declared by the Board of Directors. Holders of Common Shares are entitled, on liquidation, dissolution or winding up to receive such assets of the Company as are distributable to the holders of the Common Shares. There are no pre-emptive, redemption, retraction, purchase or conversion rights attaching to the Common Shares.

Options and Warrants

As of August 28, 2020, the following stock options and share purchase warrants are outstanding:

Security	Number	Number Exercisable	Exercise Price	Expiry Date
Options	350,000	350,000	0.17	September 8, 2020
Options	300,000	300,000	0.18	October 4, 2020
Options	1,441,834	1,441,834	0.18	December 18, 2020
Options	450,000	450,000	0.185	February 20, 2021
Options	200,000	200,000	0.21	June 21, 2021
Options	833,333	833,333	0.26	July 18, 2021
Options	500,000	333,333	0.70	March 5, 2022
Options	75,000	25,000	0.44	May 1, 2022
Options	1,500,000	1,000,000	0.63	July 14, 2022
Options	400,000	400,000	0.63	July 14, 2022
Options	2,746,667	910,000	0.53	September 8, 2022
Options	1,500,000	500,000	0.57	July 13, 2023
Options	300,000	100,000	0.51	August 4, 2023
Options	1,000,000	500,000	0.63	July 14, 2024
	11,596,834	7,343,500		



Security	Number	Exercise Price	Expiry Date
Warrants	550,000	0.60	December 20, 2020

ITEM 8: MARKET FOR SECURITIES

8.1 Price Range and Trading Volume

The Common Shares of the Company currently trade on the TSX Venture Exchange in Canada under the symbol “PNG” and the OTCQB market in the United States under the symbol “KRKNF”. As of December 31, 2019, the closing price of the Company’s Common Shares was \$0.60 per share on the TSX Venture Exchange and U.S. \$0.47 on the OTCQB.

The following table sets out the volume of trading and the closing price ranges of the Company’s Common Shares for the most recently completed financial year and the current year to date:

Month / Year	High (\$)	Low (\$)	Trading Volume
August 1-27, 2020	\$0.59	\$0.51	2,689,556
July 2020	0.62	0.50	4,348,997
June 2020	0.60	0.49	3,167,692
May 2020	0.56	0.39	2,184,992
April 2020	0.45	0.34	2,424,816
March 2020	0.53	0.27	4,906,004
February 2020	0.62	0.42	4,825,246
January 2020	0.63	0.54	3,102,725
December 2019	0.67	0.56	1,988,390
November 2019	0.71	0.62	1,361,149
October 2019	0.72	0.58	2,944,329
September 2019	0.66	0.49	3,080,618
August 2019	0.62	0.47	2,315,315
July 2019	0.76	0.53	2,409,726
June 2019	0.75	0.47	5,749,012
May 2019	0.71	0.57	7,711,827
April 2019	0.84	0.72	4,397,602
March 2019	0.90	0.65	8,099,603
February 2019	0.68	0.57	4,910,677
January 2019	0.65	0.375	7,487,461



8.2 Prior Sales

During the 12 months of the financial year ending December 31, 2019, the Company issued the following securities convertible into Common Shares at the following prices:

Date	Type of Security	Price per Security	Number of Securities
July 15, 2019	Options	\$0.63	1,500,000
July 15, 2019	Options	\$0.63	1,000,000
July 15, 2019	Options	\$0.63	400,000
September 9, 2019	Options	\$0.53	2,755,000

ITEM 9: ESCROWED SECURITIES AND SECURITIES SUBJECT TO CONTRACTUAL RESTRICTION ON TRANSFER

As at the date of this AIF, no Common Shares are held in escrow. Securities of the Company subject to contractual restrictions on transfer are 11,520,000 Common Shares issued to Ocean Infinity. These Common Shares were acquired in a private placement and have a 3-year lockup period which ends on June 28, 2021.

ITEM 10: DIRECTORS AND EXECUTIVE OFFICERS

10.1 Name, Occupation and Security Holding

As of December 31, 2019, the name, municipality and country of residence, positions and offices held with the Company, principal occupation of each of the directors and executive officers, and security holdings of the Company is as follows:

Name, Province of Residence and Position with the Company	Principal Occupation During the Past Five Years	Date First Appointed	Number and Percentage of Common Shares held ⁽¹⁾
Karl Kenny ⁽³⁾ St. John's, NL, Canada <i>President, CEO, and Director</i>	CEO of Kraken; CEO of Kraken Subco	February 18, 2015 ⁽²⁾	26,260,049 17.8%
Greg Reid ⁽⁵⁾ Toronto, ON, Canada <i>COO & Corporate Secretary</i>	COO of Kraken; CFO of Kraken; President of GasGen Canada Ltd.	July 15, 2019	2,715,664 ⁽⁶⁾ 1.8%
Joseph MacKay Halifax, NS, Canada CFO	CFO of Kraken; Vice President of Clarus Securities	July 15, 2019	Nil 0%
David Shea Halifax, NS, Canada Senior Vice-President Engineering	Senior Vice President, Engineering of Kraken Subco; Vice President, Engineering of Kraken Subco	July 15, 2019	562,000 0.4%



Name, Province of Residence and Position with the Company	Principal Occupation During the Past Five Years	Date First Appointed	Number and Percentage of Common Shares held ⁽¹⁾
Larry Puddister St. John's, NL, Canada <i>Director</i>	Executive Chairman of Pennecon Ltd; CEO of Newcrete	October 13, 2016	1,800,000 1.2%
Moya Cahill ⁽³⁾ St. John's, NL, Canada <i>Director</i>	CEO and co-founder of PanGeo Subsea	February 18, 2015 ⁽²⁾	Nil 0%
Admiral Michael Connor Mystic, CT, United States <i>Director</i>	CEO of ThayerMahan Inc.; US Navy Admiral	October 4, 2017	Nil 0%
Shaun McEwan ⁽³⁾ Ottawa, ON, Canada <i>Director</i>	Owner of Kin Vineyards Inc.; CFO of Quarterhill, Inc.	December 1, 2016	300,000 0.2%

Notes:

- The approximate number and percentage of Common Shares of the Company beneficially owned, directly or indirectly, or over which control or direction is exercised by each director or executive officer as of the date of this AIF. This information is not within the knowledge of the management of the Company and has been furnished by the respective individuals, or has been extracted from the register of shareholdings maintained by the Company's transfer agent or from insider reports filed by the individuals and available through the Internet at www.sedi.ca.
- Date of completion of the Qualifying Transaction
- Member of the Audit Committee
- Each Director and Officer of the Company will hold office until the next Annual General Meeting of Shareholders.
- As per the terms of a private option agreement dated August 14, 2017, Greg Reid has an option to acquire ownership and control of 3,000,000 of these Common Shares at an exercise price of \$0.18 per Common Share until August 14, 2022.
- Subsequent to December 31, 2019, Greg Reid acquired an additional 2,074,000 Common Shares and now holds a total of 4,789,664 Common Shares, equal to 3.2% of Kraken's current issued and outstanding Common Shares.

10.2 Shareholdings of Directors and Senior Officers

As of the date of this AIF, the directors and executive officers of the Company, as a group, own beneficially, directly or indirectly, or exercise control or direction over 33,711,713 Common Shares or 22.5% of the issued and outstanding Common Shares of the Company on an undiluted basis.

10.3 Cease Trade Orders, Bankruptcies, Penalties or Sanctions

Except as disclosed herein, to the knowledge of the Company, none of the directors or executive officers of the Company, and no shareholder of the Company holding sufficient number of securities of the Company to affect materially the control of the Company is, or has been within the ten years before the date of this AIF, a director or executive officer of any company (including the Company) that:

- was subject to an order that was issued while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer, or



- (b) was subject to an order that was issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and which resulted from an event that occurred while that person was acting in the capacity as director, chief executive officer or chief financial officer, where “order” refers to a cease trade or similar order, or an order that denied the relevant company access to any exemption under securities legislation, that was in effect for a period of more than 30 consecutive days

Except as disclosed herein, to the knowledge of the Company, none of the directors or executive officers of the Company, or a shareholder holding a sufficient number of securities of the Company to affect materially the control of the Company:

- (a) is, as at the date of this AIF, or has been within the 10 years before the date of the AIF, a director or executive officer of any company (including the Company) that, while that person was acting in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold the assets of that person, or
- (b) has, within the 10 years before the date of the AIF, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or became subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the director, executive officer or shareholder.

To the knowledge of the Company, as at the date of this AIF, no director or executive officer of the Company or a shareholder holding a sufficient number of securities of the Company to materially affect the control of the Company has been subject to:

- (a) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or
- (b) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

10.4 Conflicts of Interest

Some of the directors and officers of the Company or a subsidiary of the Company are or may be engaged in business activities on their own behalf and on behalf of other corporations and situations may arise where some of the directors may be in potential conflict of interest with the Company. Conflicts, if any, will be subject to the procedures and remedies under the CBCA or other applicable corporate legislation.

ITEM 11: LEGAL PROCEEDINGS AND REGULATORY ACTIONS

11.1 Legal Proceedings

The Company is not aware of any material or contemplated legal proceedings to which it is or was a party to, or of which any of its property is or was the subject.



11.2 Regulatory Actions

The Company is not aware of:

- (a) any penalties or sanctions imposed against the Company by a court relating to securities legislation or by a securities regulatory authority during the financial year ended December 30, 2019;
- (b) any other penalties or sanctions imposed by a court or regulatory body against the Company that would likely be considered important to a reasonable investor in making an investment decision; or
- (c) any settlement agreements the Company has entered into with a court relating to securities legislation or with the securities regulatory authority during the financial year ended December 30, 2019.

ITEM 12: INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

Other than as disclosed in this AIF, none of the following persons has any material interest, direct or indirect, in any transaction within the three most recently completed financial years or during the current financial year that has materially affected or will materially affect the Company:

- (a) a director or executive officer of the Company;
- (b) a person or company that beneficially owns, or controls or directs, directly or indirectly, more than 10% of the outstanding Common Shares; and
- (c) any known associate or affiliate of any of the persons or companies referred to in (a) or (b).

ITEM 13: TRANSFER AGENT AND REGISTRAR

The Company's transfer agent for its Common Shares is Computershare Investor Services Inc. with an office at 510 Burrard Street, 2nd Floor Vancouver, British Columbia V6C 3B9.

ITEM 14: MATERIAL CONTRACTS

The Company currently does not have any material contracts

- (a) required to be filed under section 12.2 of the Instrument at the time this AIF is filed, as required under section 12.3 of the Instrument, or
- (b) that would be required to be filed under section 12.2 of the Instrument at the time this AIF is filed, as required under section 12.3 of the Instrument, but for the fact that it was previously filed.



ITEM 15: INTEREST OF EXPERTS

15.1 Names of Experts

The persons referred to below have been named as having prepared or certified a statement, report or valuation described or included in a filing, or referred to in a filing, made under the Instrument during, or relating to, the Company's financial year ended December 31, 2019 and for the subsequent period to date:

- KPMG LLP, Chartered Accountants, who have prepared an independent auditors' report dated April 29, 2020 in respect of the financial statements of Kraken for the years ended December 31, 2019 and 2018.

15.2 Interests of Experts

Based on information provided by the experts, none of the experts named under "Names of Experts", when or after they prepared the statement, report or valuation, has received any registered or beneficial interests, direct or indirect, in any securities or other property of the Company or of one of the Company's Associates or Affiliates (based on information provided to the Company by the experts) or is or is expected to be elected, appointed or employed as a director, officer or employee of the Company or of any Associate or Affiliate of the Company.

ITEM 16: ADDITIONAL INFORMATION

Additional information relating to Kraken may be found on the SEDAR at www.sedar.com. Additional information, including particulars of directors' and officers' remuneration and indebtedness, principal holders of the Company's securities and securities authorized for issuance under equity compensation plans, where applicable and financial information is contained in the Company's Management Proxy Circular dated May 28, 2020 and the Company's Filing Statement in respect of the Company's Qualifying Transaction dated February 5, 2015. Further financial information is provided in the Company's audited Financial Statements and MD&A for its most recently completed financial year ended December 31, 2019 and interim financial statements for the current financial year.

