# Kraken Robotic Systems Inc. World Leaders in Underwater Sensors & Robotics Corporate Overview

September 2019

# **Forward Looking Statements**



Some statements herein contain forward-looking information. The use of any of the words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "will," "plans," "project," "should," "target" and similar expressions are intended to identify forward-looking statements. These statements may include, but are not limited to, statements with respect to potential markets and contracts, the completion of a proposed transaction, sales and EBITDA projections or potential applications.

These statements address future events and conditions and, as such, involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the statements. Such factors and assumptions include, among others, the effects of general economic conditions, the ability to project future sales and margins from current fundamentals and assumptions about market share, changing foreign exchange rates and actions by government authorities or cross-border authorities with jurisdiction over waterways, and negotiations and misjudgments in the course of preparing forward-looking information. Kraken believes the expectations reflected in those statements are reasonable but no assurance can be given that these expectations will prove to be correct and such forward-looking statements included in, or incorporated by reference into, this presentation should not be unduly relied upon. These statements speak only as of the date of this presentation, there are known and unknown risk factors which could cause the Company's actual results, performance or achievements to differ materially from any future results, performance or achievements expressed or implied by the forward-looking statements.

Known risk factors include risks associated with the ability to close contracts, working capital risk to be able to build inventory, loss of key personnel, lack of patents protecting intellectual property, changes in competing technology, continuing shrinkage of military budgets or other target customer budgets, risks associated with publicly traded company obligations, inability to raise required capital, and other potential risks that arise in the normal course of business. Forwardlooking statements are made based on management's beliefs, estimates and opinions on the date that statements are made and the Company undertakes no obligation to update forward-looking statements if these beliefs, estimates and opinions or other circumstances should change, except as required by law.

# **Reasons to Invest**



Leader in underwater robotics with leading-edge hardware and software to address military and commercial markets.

Recent wins in the military market have validated the technology when put up against global defense companies.

Commercial markets (oil & gas, offshore wind, pipeline inspection, fisheries) looking to use robotics and software to save money and keep people safe.

Recently announced contracts include \$30M contract with Belgian & Dutch navies; \$20M Ocean Supercluster; \$2M follow-on battery order; \$2.9M KATFISH order.

Experienced management team and high insider ownership of 27%. Strategic investor Ocean Infinity owns 15%.

2019 Guidance: Rev of \$15M and profitable, up from \$6.7M in 2018. \$300M pipeline of additional opportunities being worked.

Product sales transitioning to recurring revenue (Robotics-as-a-Service and Data-as-a-Service)

# **Capitalization Table**



Market Capitalization		
All figures in C\$ million except per share values		
Share structure as of June 30, 2019		
Share price (September 20, 2019)	\$0.56	
Shares outstanding	145.9	
Market Capitalization (basic)	\$81.7	
Options	7.4	
Warrants	0.6	
Fully diluted shares outstanding	153.8	
Market Capitalization (fully diluted)	\$86.1	
Add debt	\$1.9	
Less cash from short term investments	\$5.4	
Total EV	\$82.6	



Ownership		
Management & Insiders	27%	
Strategic Investor Ocean Infinity	15%	

#### Analyst Coverage





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# Some of the Problems Kraken Solves

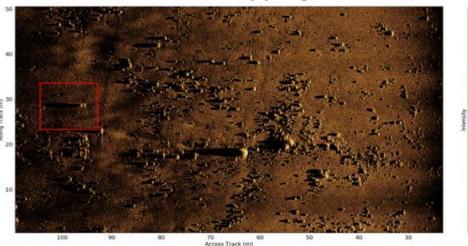




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### **Seabed Mapping**



## **Underwater Infrastructure**



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# **Kraken's Business Strategy**

### DATA ANALYTICS

Recurring Revenue from Data Analytics

### **ROBOTICS** as a **SERVICE**

Recurring Revenue from Subsea Data Acquisition

### UNDERWATER PLATFORMS

- KATFISH<sup>™</sup> High Speed Towed SAS System
- THUNDERFISH® Untethered AUV System
- JELLYFISH<sup>™</sup> Hybrid-ROV System
- TENTACLE<sup>™</sup> Winch and ALAR Systems

### COMPONENTS

- Pressure Tolerant Batteries
- Rim Driven Thrusters

### SENSORS

- AquaPix® Synthetic Aperture Sonar
- SeaVision® 3D Laser Scanner
- SmartCam<sup>™</sup> High Res Camera





# **Kraken's Solutions**









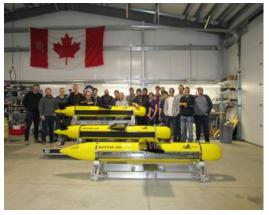






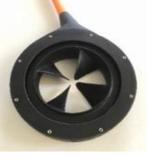












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# **Go-to-Market / Customer Validation**





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# Currently \$300M+ of Contract Pursuits



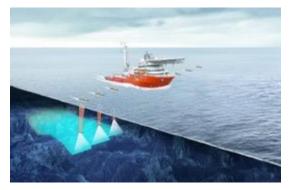
International Navy Sonar Upgrades \$125M+



US Navy AUV Upgrades \$100M+



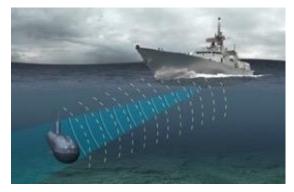
Pressure Tolerant Batteries \$50M+



Supercluster Seabed Mapping \$25M+



Offshore Wind Energy \$10M+



ASW Acoustic Signal Processing \$10M+



- Sept. 23, 2019 Awarded \$2.9 Million KATFISH contract from ThayerMahan
- Aug. 29, 2019Awarded \$2 Million deep sea battery contract
- Aug. 13, 2019 ThunderFish® 300 vehicle delivered to Defense Research and Development Canada
- Aug. 12, 2019 <u>\$0.5 million contract</u> for SeaVision® sensors
- Aug. 2, 2019 <u>\$1.8 million project funding</u> to develop mooring chain laser inspection sensor
- July 22, 2019 Conduct joint technology demonstrations with NOAA & ThayerMahan
- June 28, 2019 Canada's Ocean Supercluster commits funds to Kraken's \$20 million OceanVision Project
- June 17, 2019 <u>\$0.9 million U.S. Navy Contract</u>
- June 13, 2019 <u>\$2.1 million KATFISH contract</u> from ThayerMahan
- Apr. 24, 2019 <u>\$0.6 million contract</u> for subsea battery solution for military customer
- Apr. 17, 2019 <u>\$1 million funding</u> contribution to support initial phase of OceanVision<sup>™</sup> project
- Mar. 25, 2019 <u>\$1 million contract</u> for ThunderFish® robot from Government of Canada
- Mar. 22, 2019 Part of <u>winning consortium for Belgium & Dutch Navy</u> mine hunting program
- Mar. 5, 2019 Receive \$2.3 million from exercise of warrants by Ocean Infinity
- Feb. 21, 2019 Ranked #1 Technology Company on 2019 TSX Venture Top 50 List
- Feb. 19, 2019 \$1.7 million of purchase orders from Ocean Infinity
- Jan. 8, 2019 Awarded <u>\$0.5 million contract</u> under Canada's Defence Innovation Research Program



DATE	ACQUIRER	TARGET	TRANSACTION VALUE	
June 2019	BAE Systems	Riptide Autonomous Solutions assets	Undisclosed	
September 2018	L3	ASV Global	Undisclosed	
September 2017	L3	Ocean Aero	\$1-5 million (est.)	
September 2017	L3	Adaptive Methods	Undisclosed	
May 2017	L3	Open Water Power	Undisclosed	
March 2017	L3	OceanServer Technology	Undisclosed	
December 2016	Boeing	Liquid Robotics	\$300 million (est.)	
October 2016	Oceaneering	Blue Ocean Tech	\$30 million	
June 2016	Delmar	InterOcean Systems	Undisclosed	
June 2016	MacArtney Group	EMO Marine	Undisclosed	
May 2016	MacArtney Group	CPU GmbH	Undisclosed	
May 2016	Teledyne	Caris	Undisclosed	
March 2016	ION Geophysical	Global Dynamics	Undisclosed	
February 2016	General Dynamics	Bluefin Robotics	Undisclosed	

# **Ocean Supercluster – RaaS Opportunity**



- Private sector led partnership to boost innovation and modernization across ocean sectors. Major industry contributors: Irving (shipbuilding), PRNL (oil and gas), Emera (renewable energy), Cooke (aquaculture), Clearwater (fisheries), Canada Steam Lines (shipping)
- Key areas of interest relevant to Kraken: Unmanned vehicles, advanced sensors, digital twins, ship hull inspection, enhanced ocean networks, robotic surveys, robotic inspections, artic innovation
- \$300 million pool of capital for projects over 5 years. Initial project awards expected in Q2, 2019
- Kraken is proposing OceanVision<sup>™</sup> a \$20 million project to map the sea floor in high definition for members across the stakeholder chain (science, defence, fisheries, offshore energy, etc.)

#### Supercluster Goals:

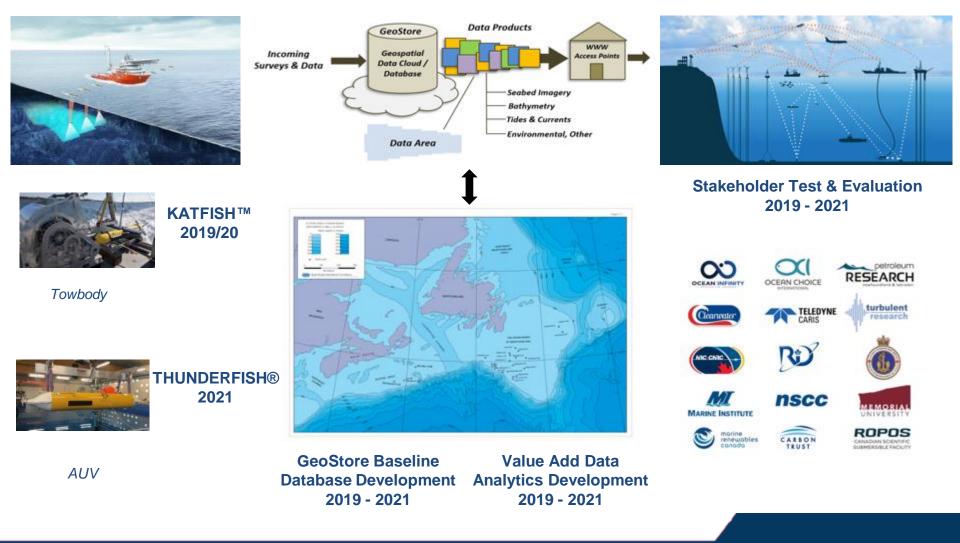
- Deploy innovative technology platforms across ocean sectors
- Strengthen links between ocean value chains and technology providers
- Fill capability gaps in the innovation ecosystem.
- Extend global reach and market opportunities.

#### **Enabling Technologies:**

- Sensors & imaging
- Robotics
- Autonomous systems
- Big data & analytics
- Subsea communications
- Biotechnology & genomics
- Remote systems & Satellite technology



# **OceanVision™ - \$20M Ocean Supercluster Initiative**





# F2019 Revenue Guidance of \$15 million & Profitability

FYE December 31	6 Months en	ding June 30	GUIDANCE 2018	2019	2017	2016	2015
Canadian \$	H1/F2019	H1/F2018		2010	2017	2010	2015
Product revenue	2,197,521	3,684,979		6,471,784	2,874,467	2,245,318	1,883,426
Service revenue	509,359	41,668		236,172	659,138	22,500	9,873
TOTAL REVENUE	2,706,880	3,726,647	\$15 MILLION	6,707,956	3,533,605	2,267,818	1,893,299
Gross Margin	45.0%	55.7%		41.8%	45.2%	55.%	49.2
Operating Expenses	3,894,200	2,717,661		6,788,086	4,603,715	2,653,214	2,717,382
Net loss	(2,851,364)	(818,486)	PROFITABLE	(2,852,389)	(2,397,229)	(1,420,175)	(1,992,410)
Cash	5,398,244	2,340,855		4,929,865	0	85,650	771,940
Debt	368,203	0		386,159	326,448	1,416,353	0
Shares Issued & Out.	146,002,595	115,557,767		137,025,820	90,992,740	78,519,414	71,068,214

# **Contact Us**



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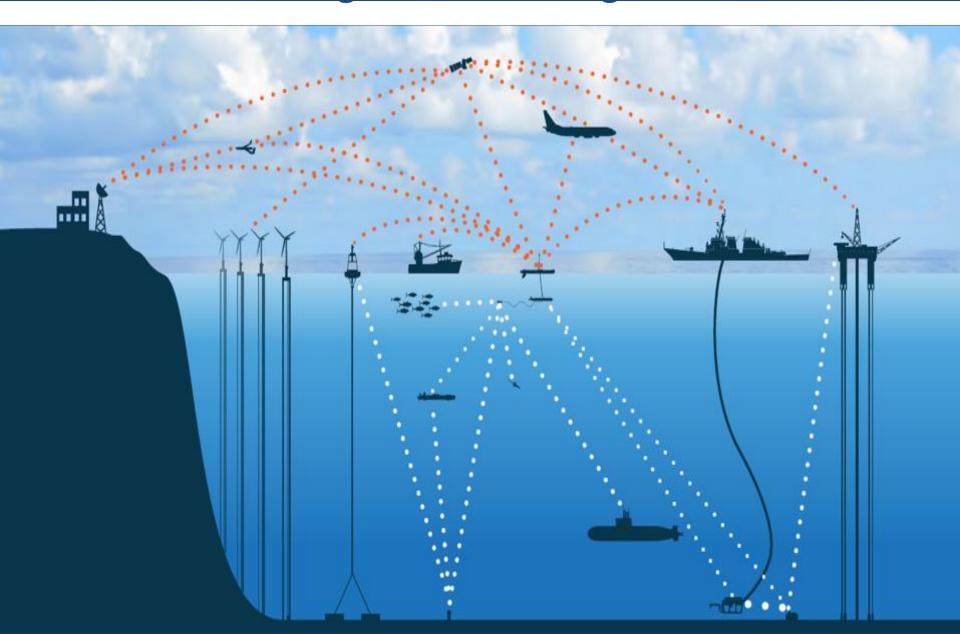


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# **Supplementary Slides**

# Actionable Intelligence for the Digital Ocean



# **Serving the Maritime Robotics Market**



- Kraken provides underwater sensors, batteries, and robots to military and commercial customers who use them to Image and Map the Seafloor and Subsea Infrastructure in ultra high resolution
- 7 year old company with 80 employees in Canada, US and Germany; validated by leading Navies and Defense contractors and exports to 10 countries.
- Our **proven technology** and **robust** products enable **complex missions** in all water depths and **challenging ocean conditions** (no GPS, limited comms, extreme pressure).



AUV Autonomous Underwater Vehicle USV Unmanned Surface Vehicle

TOWFISH Towed Underwater Vehicle ROV Remotely Operated Vehicle

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# **US\$5B Maritime Robotics Market – Key Drivers**

#### MILITARY

- Mine Warfare 500,000 underwater mines
- Anti-Submarine Warfare 400 operational submarines
- Intelligence, Surveillance, Recon Special forces, covert operations, environmental assessment
- Resurgence in underwater warfare and emergence of seabed warfare driving demand for unmanned systems for "dull, dirty, dangerous" missions.
- Unmanned Systems budget growing rapidly but still just 1.4% of US DOD F19 budget. F19 Budget for Unmanned Maritime Systems \$1.3 billion.

#### OIL & GAS & Other

- >7,000 fixed platforms; >200 floating platforms
- >4,000 subsea wells; >650 offshore drilling rigs
- >200,000 km subsea pipelines
- >4,000 offshore wind turbines
- >600,000 subsea connectors
- Maintenance of existing infrastructure is a major driver for underwater sensors and robotics.
- Sensor data key for data analytics and digital twins
- Hydrography / seafloor mapping; Offshore Wind Farms
- Seafloor Mining; Treasure Hunting; Search and Recovery; Ocean Science; Fisheries Habitat
  Mapping









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## **Ultra High Image Resolution**

- Constant along/across track resolution of 3cm x 3cm
- 15x better compared to Real Aperture Sonar

# Increased Area Coverage Rate

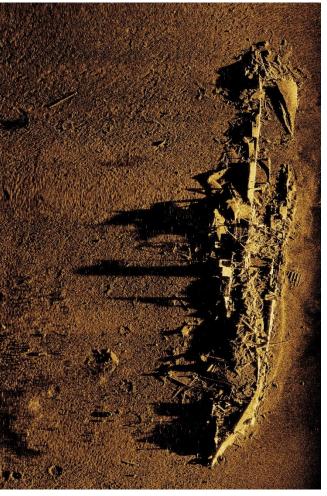
- Up to 4 km<sup>2</sup>/h
- Up to 600m swath
- 10x better compared to Real Aperture Sonar

# **Operational Safety**

- Ability to fly high off-bottom
- 10x UUV altitude (ie. 30m altitude = 300m range /600m swath)
- •

# **Additional By-Products**

- Real-time, co-registered high resolution 3D bathymetry
- Multi-aspect creates optical-like quality imagery
- Shadow enhancement improves target classification
- Enables Real Time ATR
- SAS micro-navigation output to INS increases accuracy



### Image courtesy ECA Robotics

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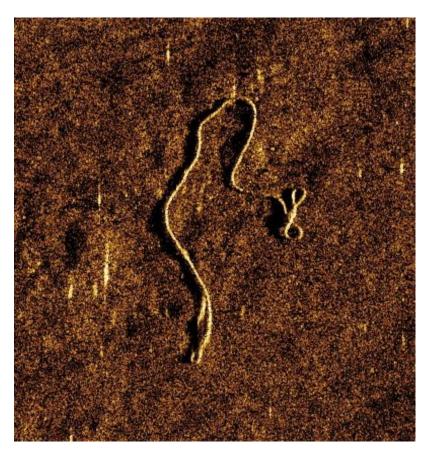
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### Conventional Sonar vs Kraken's Sonar – Towrope (50m range)



# **Real Aperture Sonar**

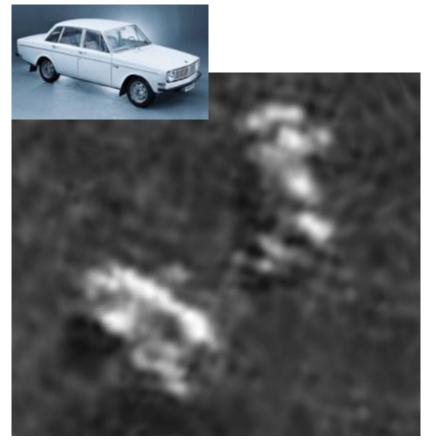


# Kraken AquaPix® SAS

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# **Conventional Technology Does Not Compete**





Conventional Side Scan Sonar Pixel Resolution: 20cm @ 80m range

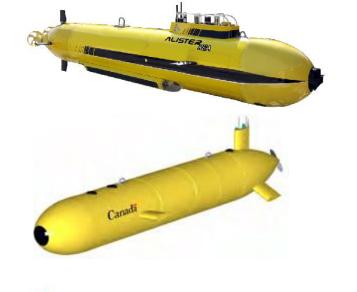


Kraken AquaPix® SAS Pixel Resolution: 3cm @ 80m range

# **AquaPix® Product Line**



- Modular SAS systems
- INSAS 1 and 2 for large platforms
- MINSAS 60, 120, 240
- Prices range from US\$150K to US\$500K+
- Have integrated with many AUV platforms







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# **US Navy Foreign Comparative Test Award**

US Navy has awarded Kraken a \$900K FCT program to develop a Synthetic Aperture Sonar payload for man-portable AUVs.

Have completed successful demo of prototype to USN's EOD teams. NRE underway.

Target to significantly reduce SWaP for deployment.

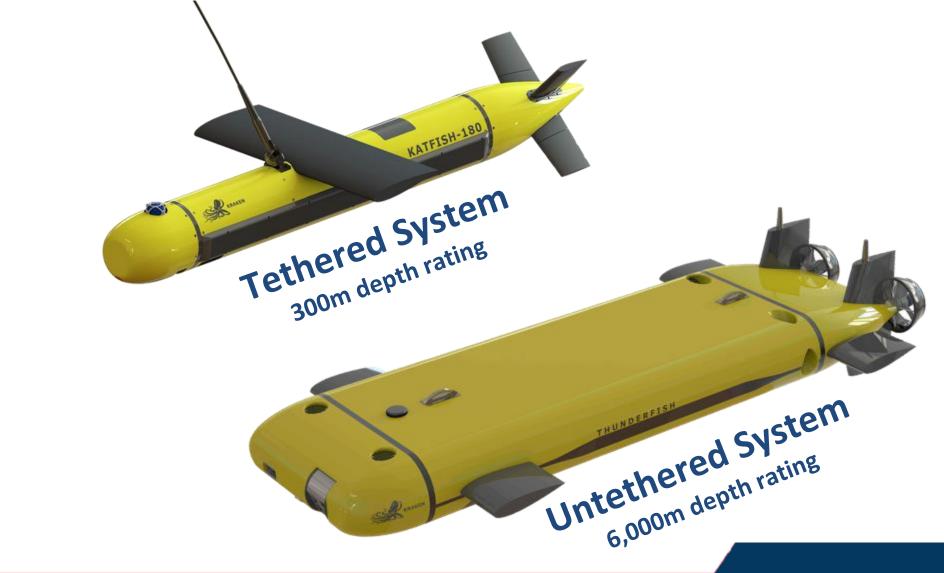




# **Underwater Platforms Overview**



# **KATFISH<sup>™</sup> & THUNDERFISH<sup>®</sup> PLATFORMS**







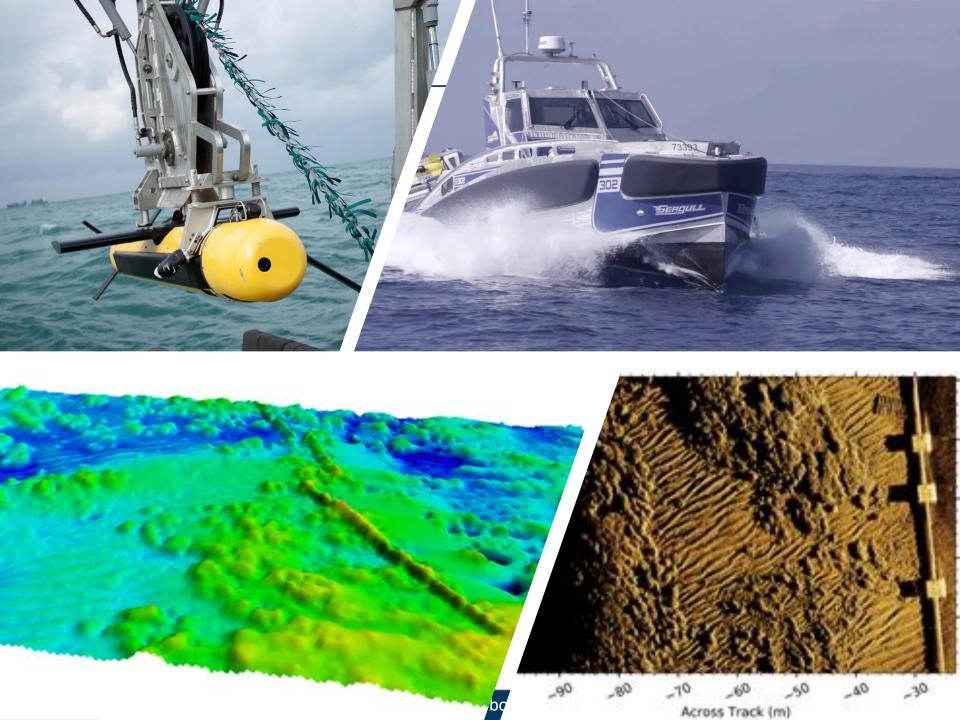


# Commercial & Military Certified Versions



- Key component in major foreign navy bids
- Recent surveys performed under CRADA with US Navy and NOAA
- Successful demonstrations at Advanced Naval Technology Expo (ANTX) in USA
- Successful integration on Elbit's Seagull USV
- Now building KF4, KF5 and KF6

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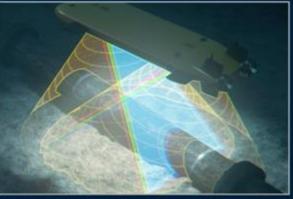




# SEAVISION | 3D UNDERWATER

- Ultra-high resolution
- Twin pods enable flexible mounting on ROVs and AUVs
- Dynamic (profiling) or static (scanning) operation
- Full colour point clouds from RGB lasers
- Unprecedented scan speed (300,000 points/second)
- High-sensitivity colour camera with live video streaming
- No wet moving parts
- Real-time signal and image processing
- Embedded inertial navigation system
- Simple in-field, on-deck calibration
- Compact and lightweight (42 cm length x 11.4 cm diameter, 6 kg)
- Low capital cost

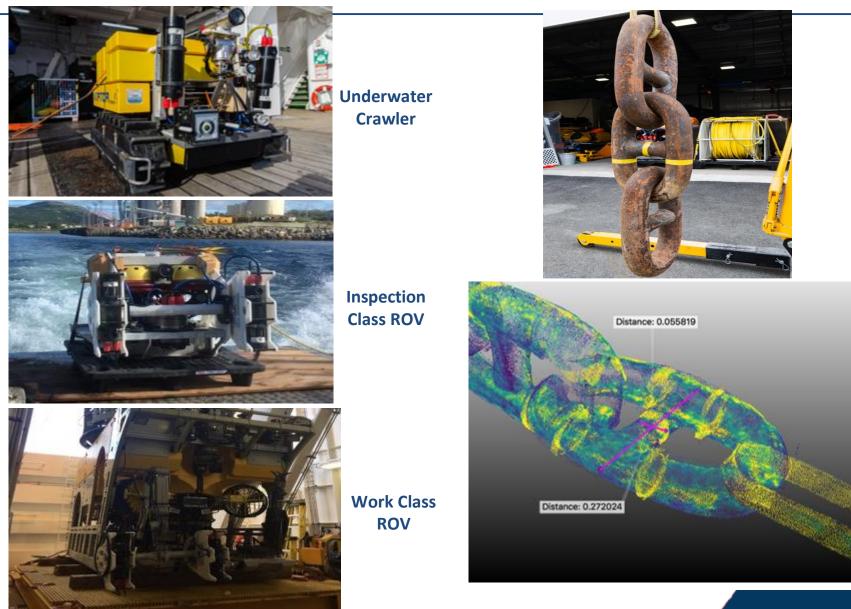






# **SeaVision Inspections – Mooring Chain, Ship Hull, etc.**

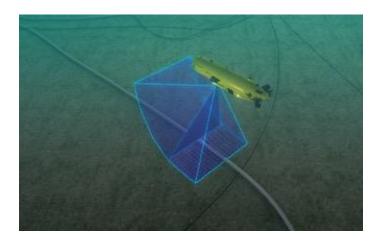




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# Maritime RaaS Offers Compelling Value Proposition





Conventional	RaaS	Operator Benefit
\$150,000 per day	\$20K per day	Significantly Lower Opex
60 Survey / Ops Personnel	4 Ops Personnel	Mitigates Operational
Emergency Response: 72 Hours	Emergency Response: Immediate	Mitigates Production Losses and Safety Issues
Daily Area Coverage: 50 miles	Daily Area Coverage: 100 miles	Increased Area Coverage & Ability to "Force Multiply"

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# 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 3km<sup>2</sup> @ 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

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# **Tentacle® Winch & ALARS**





Designed and developed by Kraken's Handling Systems Group in Nova Scotia

- Highly intelligent electric winch and ALARS which can adjust cable scope through active feedback from underwater towed platform
- Intelligently communicates with KATFISH for motion compensation and bottom avoidance
- Successful demonstrations at USN ANTX 2018 in U.S and CRADAs with NOAA and NUWC
- Handling Systems Group is former team from Rolls Royce Marine

# **Management & Technical Team Depth**



### Karl Kenny, President & CEO

- Ex-Canadian Navy maritime surface officer and Microsoft employee pre-public company
- 20 year history in imaging technologies having founded 3 companies

### **Greg Reid, Chief Operating Officer**

- 20+ years of finance, investment, and business development experience
- Founding partner of Wellington West Capital Markets, led technology and clean technology research and then investment banking efforts

### Joe MacKay, Chief Financial Officer

- 25+ years of finance, investment, and research experience, targeted mainly at the technology, telecommunications and media sectors
- Chartered Professional Accountant with experience in audit, accounting and management consulting. Also Chartered Financial Analyst
- Capital markets experience included working as a equity research analyst at Scotia Capital, Desjardins Securities and Clarus Securities.

### Jeff Bartkowski, Director of Business Development

- 12 years experience in the marine technology industry specializing in imaging, navigation, and positioning
- Worked at both larger marine technology companies such as Teledyne-RESON and iXBlue and start-ups such as Sea Machines Robotics

### David Shea, VP Engineering

- Designed, built & operated AUVs for International Submarine Engineering, University of Southern Mississippi & University of Victoria
- Formerly Engineering Manager for Marine Robotics Inc. (Marport spin off)

### Dr. Jakob Schwender, MD for Kraken Germany

- 10 years at DFKI, (the German Research Center for Artificial Intelligence) as an expert in autonomy, systems and software engineering for robotics, mission management, SLAM navigation, embedded systems, sensor processing and sensor fusion.
- PhD in Robot Navigation; led multi-disciplinary teams on autonomy in both space and underwater robotics.

### Dr. Jeremy Dillon, Chief Scientist

- 20 years in R&D with a strong background in signal processing and mathematics. Previously a control systems engineer at Honeywell Aerospace, a flight test engineer at the NRC Flight Research Laboratory, and a research officer in guidance, navigation, and control at NRC.
- PhD in Physics and Physical Oceanography from Memorial University of Newfoundland, a MSc in Mathematics from Carleton University, a MSc in Aeronautics from Caltech, and a BEng in Aerospace Engineering from Carleton University.

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### Karl Kenny, President & CEO

### Vice Admiral Mike Connor, Board of Directors

- CEO of ThayerMahan and Former commander of U.S. submarine force from September 2012 until September 2015.
- 35 year US Navy veteran

### Moya Cahill

- CEO and co-founder of PanGeo Subsea, a technology and service provider of high-resolution 3D sub-bottom acoustic imaging technology
- 25+ years in oil and gas sector and recently the renewable energy sector

### Shaun McEwan

- CFO of Quaterhill Inc, Former CFO of WiLan, CFO Breconridge, CEO Calian Technologies
- 25+ years of technology & manufacturing industry expertise

### **Larry Puddister**

Executive Chairman of Pennecon Ltd, Atlantic Canada's largest construction firm

