



ANNUAL REPORT 2018

SPECIAL EDITION: 10 YEARS IN REVIEW

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letter from the CEO

ACAMP has been part of the Alberta ecosystem for more than 10 years now and continues to support advanced technology development through our experienced personnel, world-class equipment and global industry connections. We are recognized as a leading product development centre for advanced technology entrepreneurs in Canada.

In the past six months, ACAMP has been under a 10-year performance review by the Government of Alberta and Alberta Innovates, reviewing the successes of our clients over the life of ACAMP. I am proud to say that the results to date have been outstanding. We have helped Alberta enormously in wealth creation as measured by job growth, yearly revenue by our clients, patents produced and products introduced from ACAMP's product development support. The numbers are outlined within this annual report.

The AST Consortium created and supported by ACAMP now has over 50 corporations involved looking at advanced technologies associated with ground, sea and air autonomous systems applications.

We continue to make great progress in the development of packaging technologies, embedded system development as well as autonomous systems for our clients. A large majority of our clients are start-ups and mid-sized companies, and they look to us to deliver products quickly and on budget, helping them get to market as quickly as possible.

Each year we reinvent ourselves, adding new capabilities in support of our clients' development activities. This past year we have added specialists in machine learning and artificial intelligence.

We continue to champion opportunities for Canada and all our clients by building partnerships and supporting economic diversification and job creation.

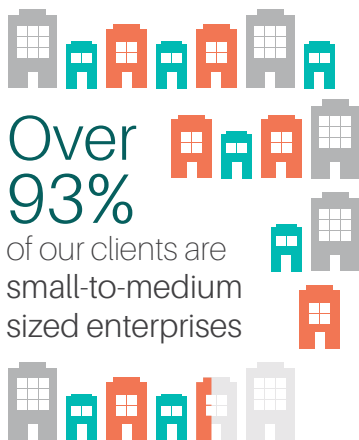
I am honoured to work together with my team to support our clients' dreams.

Sincerely,
Ken Brizel

// We continue to champion opportunities for Canada and all our clients by building partnerships and supporting economic diversification and job creation. //

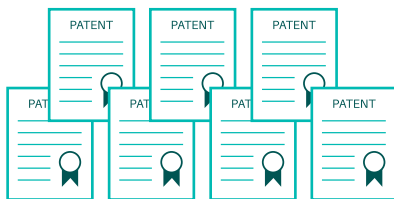
10 Year Highlights

\$20 Million invested in ACAMP by Alberta Government

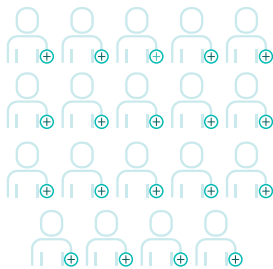


420 clients since inception

\$275 million in investment raised by clients

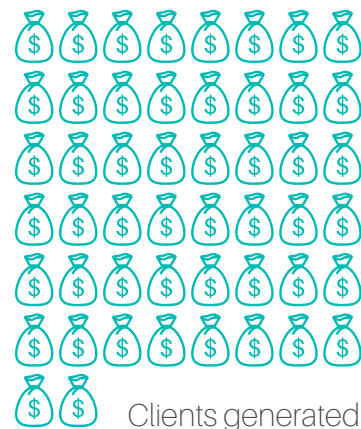


350 client patent filings



Over **1,900** jobs created

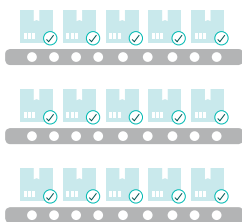
38% of clients surveyed are pursuing new market/business opportunities.



Clients generated over **\$500 million** in revenues

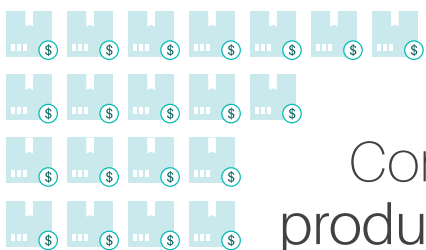
150

products
went to production



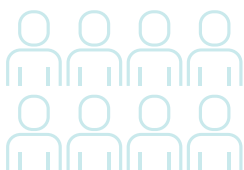
Client Projects Sector Distribution

- Oil & Gas
- Medical Devices
- Transportation
- Environmental Monitoring
- Consumer Electronics
- Pipelines
- Agriculture
- Geospatial Technologies
- Energy Efficiency
- Energy Systems
- Renewable Energy Technologies
- Information Technologies
- Water Management
- Health Technologies



120

Companies took
products to market



Over
4,600
HQP trained



90%
of clients
surveyed
indicated that
they were
very satisfied
with ACAMP's
support

ACAMPs technical capabilities have grown tremendously over the past 10 years. We now have a full staff of multi-disciplinary engineers to meet the needs of our clients.

- Electrical Engineers
- Mechanical Engineers
- Optical Physicists
- Solid State Physicists
- Mathematicians
- System Architects
- Embedded Systems Engineers
- Firmware Engineers

- Process Engineers
- Material Scientists
- Software Developers
- Machine Learning Specialists
- Artificial Intelligence Specialists
- Technicians

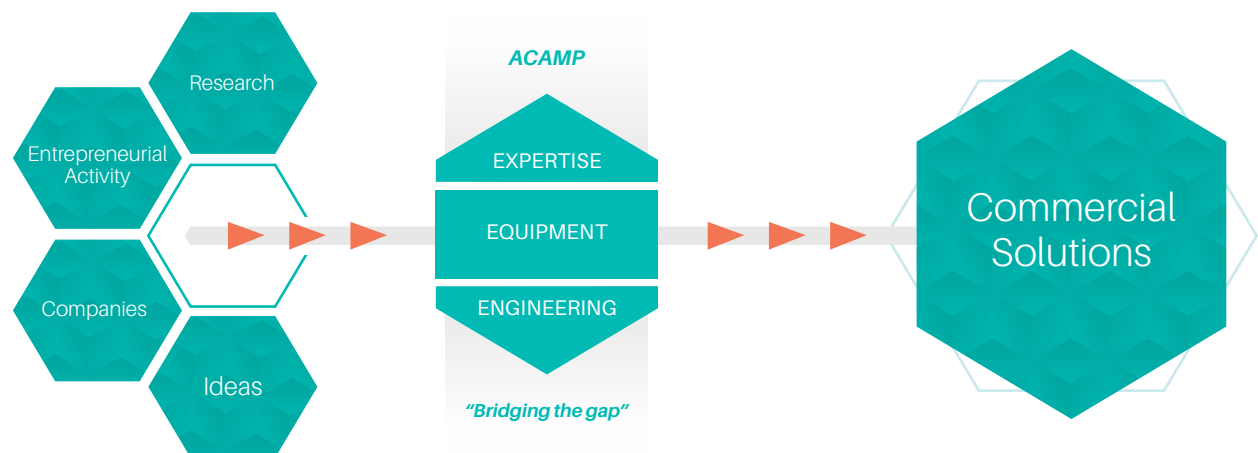
Our Core Strategy

The Core Strategy of ACAMP is to:

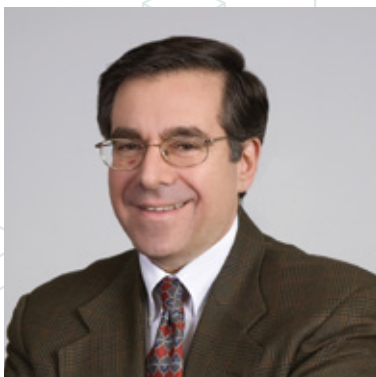
Provide small-to-medium size enterprises (SMEs) access to the best, most experienced product developers, manufacturing and channel support personnel to solve complex product issues in the build and delivery of commercially viable technology products.

ACAMP delivers this strategy through implementation of five business functions:

- **Technology & Product Development** – Provide direct, hands-on assistance to Alberta SMEs and others in technology and product development – including design, engineering proof-of-concept, prototype development, testing and low-volume manufacturing;
- **Facilities & Infrastructure** – Provide access to specialized, state-of-the-art equipment and expertise that could not be afforded by SMEs;
- **System Linkages** – Support clients' needs through access and referrals to other entities and programs within Alberta's innovation ecosystem;
- **Talent Development** – Provide opportunities for growth of Highly Qualified Personnel (HQP) through training on specialized equipment and methods that are key to developing quality, advanced technologies and systems; and
- **Market / Sector Development** – Through support to client organizations, contribute to the growth of companies, markets and advanced technology sectors in Alberta.



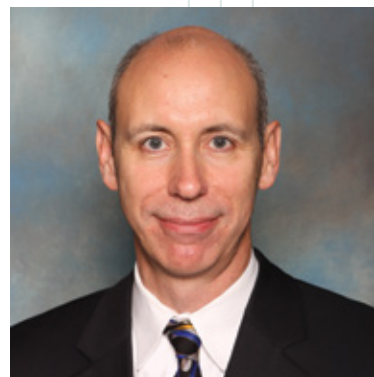
Leadership



KEN BRIZEL
CEO



ROSY AMLANI
*CFO & VP,
Business Development*



ANDREW CARROLL
VP, Engineering

BOARD OF DIRECTORS



DR. SERGIO KAPUSTA
ACAMP Chairman
Former Chief Scientist for Royal Dutch Shell and General Manager of Physics & Materials Research at Shell International E&P Inc.

JAYSON TYMKO
*ACAMP Vice-Chairman,
J2 Capital Corp, President*

CHRIS ERICKSON
*ACAMP Director
(Departed October 2018),
Founder of Pangaea Ventures*

AMOLAK GREWAL
*ACAMP Director, President &
CEO, Human Edge Global*

JIM SEETHRAM
*ACAMP Director,
Founder of Orissa
Software Inc.*

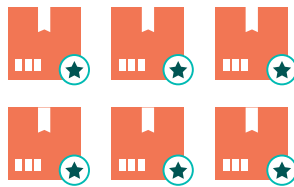
CHRIS HARTSHORN
ACAMP Director

KEN BRIZEL
ACAMP Director & CEO

2018 Highlights & Accomplishments



Over 100
clients



Developed
6 new
products



Over
92%
Alberta-based
clients

Edmonton staff moved to a new location:

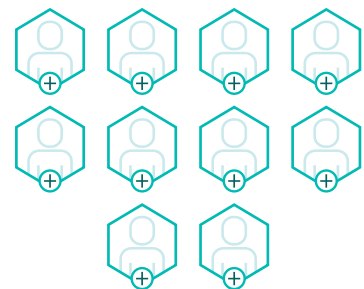
**Joined
Airport City**

at Edmonton International Airport



Advanced
Systems for
Transportation
Consortium

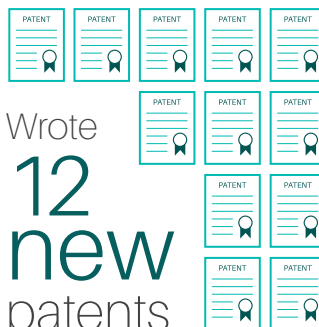
is now at



50
members



A new
client
as far as
**South
Africa**



Wrote
12 new
patents

NORTH AMERICA - Canada

- **Calgary** – Alberta Innovates Inventures Conference.

Western Canada's most innovative platform, where inventors, investors and thought leaders come together for a three-day conference.

- **Edmonton** – The SMART Airports & Regions Conference & Exhibition.

The premier event that focuses on how Smart Airports and their adjacent Regions are leveraging innovation and technology.

- **Edmonton** – Artificial Intelligence Future of Cybersecurity Symposium hosted by Alberta Innovates.

- **Edmonton** – Alberta Clean Technology Industry Alliance Conference.

- **Edmonton** – Alberta-Nevada B2B Matchmaking Program.

Alberta and Nevada business delegates came together for a 1-day conference to foster cross-border collaborations.

- **Edmonton** – Launched Intelligent Autonomous Systems Student Group at the University of Alberta.

WORLDWIDE EVENTS & INITIATIVES

ACAMP participates in multiple events and initiatives each year. In 2018 we were invited to host panel discussions featuring our clients, attended international conferences and launched a student group at the University of Alberta focusing on autonomous systems.

EUROPE

- **Versailles, France** – SIA CESA 5.0 International Conference on Automotive Electronics Systems.

- **Paris, France** – Euripides/Eureka Board meetings made up of 26 members from Europe, Asia and Canada, promoting the collaboration of innovative, industry-driven, pre-competitive R&D projects in the area of Smart Electronic Systems.

NORTH AMERICA - United States of America

- **Las Vegas, Nevada** – Consumer Electronics Show (CES).

Leading Global Conference where next-generation innovations are introduced to the marketplace.

- **Las Vegas, Nevada** – Commercial UAV Expo.

North America's leading trade show and conference for the commercial drone market.

- **San Francisco, California** – Alberta Economic Development Tour.

ACAMP organized tours and meetings with NASA, Samsung Harmon and Facebook.

SOUTH AMERICA

- **Chile** – International Air and Space Fair (FIDAE), Latin America's biggest aerospace and defence show

Advanced Systems for Transportation Consortium

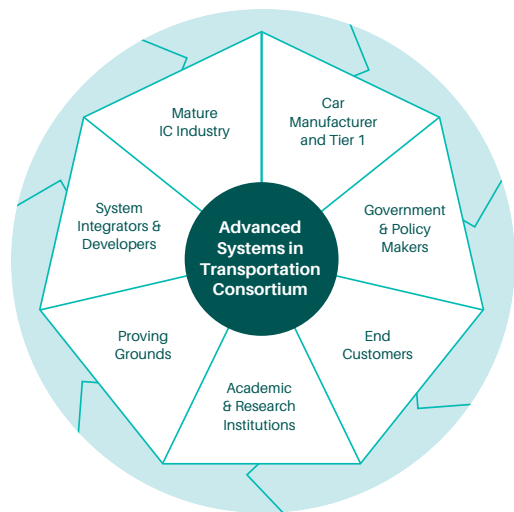
ACAMP founded the AST Consortium in 2016 to tap into the advanced global transportation and connected vehicle systems markets.

A recent report by global management consulting firm, McKinsey & Company, estimated that the application of advanced robotics, advanced driver assistant, and intelligent systems could generate a potential economic impact of \$6 trillion per year by 2025.

The purpose of the AST Consortium is to enable research and innovation in smart infrastructure and transportation markets, and foster collaboration between businesses, government and large multi-national corporations.

Last October we held our 6th annual consortium meeting. The AST Consortium has grown since it started to now 50 members, which include business leaders from well-known large multi-national companies and SMEs.

The 2018 meeting provided an atmosphere for companies to connect, discover potential business opportunities, clients and receive feedback on current projects. With significant support from the Government of Alberta, we can open the door for our small-to-medium size enterprise clients' to greater opportunities.



INNOVATIVE
PARTNERSHIPS HAVE
BEEN CREATED AS A
RESULT OF THE AST
CONSORTIUM

// ACAMP brings together a unique combination of broad industry expertise, technical knowledge and access to specialized equipment that is simply out of reach for most small-to-medium sized companies. With its emphasis on product development, innovation and commercialization, ACAMP has the resources and experience necessary to take ideas to production. //

— Warren Sheydwasser, President, Soltare Inc.

Client Story:

SOLTARE INC.



Increasing Vehicle Safety through Technology

In 2014, NHTSA (National Highway Traffic Safety Administration) reported 63,500 emergency vehicle-related accidents in the United States. With those statistics, Soltare Inc., an Alberta based small business found an urgent need to help decrease these numbers.

Soltare's primary focus since inception has been to increase vehicle safety through the development of innovative technologies. Their first product, iHear™, when placed in a vehicle will automatically detect and notify the driver of an oncoming emergency vehicle and in which direction it is approaching.

ACAMP and Soltare's relationship began in early 2017 as a result of the AST Consortium. With the idea for this new product, Soltare did not have technical staff nor the network to develop and bring iHear™ to market.

ACAMP's staff of experienced engineers assisted in the development of this technology, and also gave Soltare access to our inventory of vehicles and facilities for testing and improvements. ACAMP supported Soltare in securing government funding and business development/marketing activities. We opened the door for them to engage with potential customers such as major cities in Canada. Also, we connected them with Chinese, Japanese and German OEMs (car manufacturers), and large multi-national corporations.

Their technology is so unique that they were granted three original patents. In comparison to its competitors, iHear™ technology is more robust, compact, efficient and easy to implement. In 2018, the City of Leduc approved the installation of the technology on Leduc Transit buses. Future plans include pursuing different market channels to launch this technology, such as transportation departments at different levels of government, and aftermarket vehicle device providers.

Client Story:

LUX MODUS



LUXMODUS

Improving Pipeline Construction

Over the years there has been an increasing demand for more visibility into pipeline construction and a faster turnaround time of the pipeline as-built data and Lux Modus is taking on these demands head first.

Pipelines used to transport and distribute fluids, like natural gas, require a lot of time and investment to build. To be constructed, it must be assembled and welded in sections. Then a surveyor takes measurements of each weld point and records the data. Since this is a manual process, there are always variances in quality, accuracy and timely delivery of the data. Also, after the pipeline is buried, it is hard to go back and assess the construction environment.

Lux Modus, a Calgary based company, developed the idea to build an accurate, easy-to-use, real-time data collection solution to improve pipeline safety and integrity. They approached ACAMP with a product concept that could create a digital twin of pipeline construction and needed to make sure it was feasible. Within a short timeframe, ACAMP was able to turnaround a proof-of-concept design for the client.

Lux Modus was able to secure its first paying client with the proof-of-concept system ACAMP created for them in 2018. Lux Modus plans to continue to work with ACAMP to bring their product to full commercialization and receive support through the AST Consortium.

Client Story:

SMILE SONICA INC.



Dental Device Innovator

Year after year, medical device innovations continue to leap forward. The development and commercialization of these groundbreaking technologies can often arise from universities. That's what happened when Cristian Scurtescu, a former University of Alberta researcher, was in the lab with his team, working on an early technology concept for dental tissue stimulation.

In 2008 Cristian resigned his job at the university to found SmileSonica Inc. to further the development of this early technology. He built a team of engineers, scientists and business staff and turned this technology concept into the company's first product offering, the Aevo System™. This device is regulatory approved to reduce tooth root resorption and to accelerate orthodontic tooth movement, which means that dental patients can wear braces for a shorter time and with improved oral health.

SmileSonica has been ACAMP's client since its founding. We have helped them transform their technology from a concept in a lab to a commercial product now sold in Canada, Europe and Australia. Our engineering staff assisted with the prototyping, design, assembly and testing of the system.

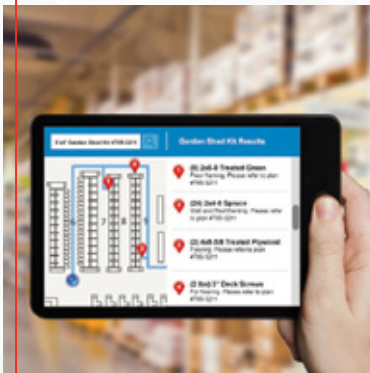
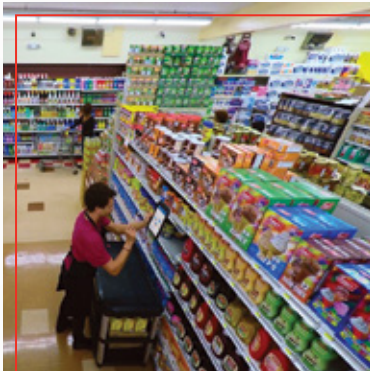
Building on this support, SmileSonica soon established their offices and manufacturing in Edmonton. They now employ about 20 highly skilled personnel and continue to expand as they develop other products to bring to market. We also continue to support and help SmileSonica market their innovation.

// ACAMP has been a helpful partner throughout our growth — from research and development to product and market growth. //

— Cristian Scurtescu, MSc, P.Eng,
Founder and CEO, SmileSonica Inc.

Client Story:

TAKEMETUIT



takemetuit
the intuitive way to find things

A Revolutionary Indoor Positioning Technology

Takemetuit Inc. has developed a precision indoor positioning and localization system that supports navigation through stores, warehouses, indoor parking areas, airports and shopping centres.

Takemetuit uses sound to provide high precision acoustic navigation. Like high precision GPS technology, it directs users in an indoor environment to the exact location of the item or space they are looking for within 10 centimeters in three dimensions. All that is needed are Takemetuit's beacons and a standard smartphone. No location chips or tags are required.

This revolutionary technology will allow users in a retail store to find 100 percent of their items and preferences in half the time. Organizations benefit from Takemetuit's analytics and the ability to update inventory location in real-time. Warehouse and retail staff will also be more efficient with operations and customer service by using the app to instantly locate products for restocking, pricing, internet orders and customer service.

As for indoor parking areas, Takemetuit will navigate users to available parking spaces. When the user leaves a venue, Takemetuit will lead them back to the exact space they left their vehicle. No matter the application, it is designed to make navigating the indoors a lot easier.

ACAMP has supported this innovative technology through hardware development, prototyping, real-world testing, investment and business development. The Takemetuit system is a technology leader in accuracy, reliability and performance in indoor positioning. ACAMP is excited about its participation in the introduction of the next technology innovator in precision indoor navigation.

Client Story:

REDLEN TECHNOLOGIES



Breakthrough Medical Technology

In 2016, Redlen Technologies faced a great opportunity. They had announced a joint development agreement with global technology leader Hitachi Medical Corporation to make a next-generation medical imaging detector.

Their technology is part of a solution to make better imaging resolution scans from an x-ray. To complete the design and prepare it for fabrication, Redlen turned to ACAMP for help.

Since then, ACAMP has assisted them with simulation tools, manufacturing process development, and the high-precision assembly of their product. From developing a prototype, helping them climb Technology Readiness Levels, giving them access to our facilities for testing and more, Redlen is inching closer to release their next product.

ACAMP will often help clients expand their network of contacts, such as through introductions to large corporations who could turn out to be potential clients. Redlen was a part of our B2B Matchmaking Program held at the Wave 2013 Conference in Lake Louise. The conference included presentations and networking events with technology leaders like Corning, General Atomics and Lockheed Martin.

Redlen now employs over 100 skilled professionals who are working hard to commercialize their technology. As they continue to work on this current project and look to enter other industries, ACAMP looks forward to continuing our support of Redlen Technologies.

// Very grateful for the support and access to the facilities. Without ACAMP, Redlen would have failed to deliver on several key programs that are the foundation for Redlen growth. Plan to continue our relationship. //

— Michael Ayukawa, Senior Manager
at Redlen Technologies

Making Strides in Innovation through Artificial Intelligence

Alberta has been an active supporter of innovation for almost 100 years. With the University of Alberta ranking #3 in artificial intelligence, we've never been more excited to take on projects and initiatives that keep pushing advancements in this technology forward.

In 2018, ACAMP developed and delivered an Autonomous Security ATV to the Edmonton International Airport - the first of its kind. This unmanned vehicle was built to secure the perimeter of the airport by identifying any animal and human threats, detecting damage to the fence line and maneuvering around obstacles in its path.

The ATV used technologies developed by AST Consortium members, such as NovAtel.

MEDIA HIGHLIGHTS

The Autonomous Security ATV was featured in news outlets such as Global News, CTV, CityNews, the Edmonton Journal, and BellMTS Business Hub online.



Financial Statements of ACAMP Inc.

ALBERTA CENTRE FOR ADVANCED MNT PRODUCTS

Statement of Financial Position

December 31, 2018, with comparative information for 2017

	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 1,052,408	\$ 1,555,420
Accounts receivable	496,848	271,954
Prepaid expenses and deposits	246,043	94,636
	<u>1,795,299</u>	<u>1,922,010</u>
Capital assets	4,072,385	3,290,579
	<u>\$ 5,867,684</u>	<u>\$ 5,212,589</u>
Liabilities and Fund Balances		
Current liabilities:		
Revolving credit facility	\$ 108,052	\$ -
Accounts payable and accrued liabilities	432,457	291,068
	<u>540,509</u>	<u>291,068</u>
Fund balances:		
Capital fund	4,698,150	3,808,251
Operating fund	629,025	1,113,270
	<u>5,327,175</u>	<u>4,921,521</u>
Commitments		
	<u>\$ 5,867,684</u>	<u>\$ 5,212,589</u>

ALBERTA CENTRE FOR ADVANCED MNT PRODUCTS

Statement of Operations

Year ended December 31, 2018, with comparative information for 2017

	Operating fund	Capital fund	2018 Total	2017 Total
Revenue:				
Grants	\$ 4,800,000	\$ 300,000	\$ 5,100,000	\$ 3,664,006
Customer service fees	1,172,179	-	1,172,179	1,427,393
Other	263,600	-	263,600	10,478
	6,235,779	300,000	6,535,779	5,101,877
Expenses:				
Salaries and benefits	3,667,167	-	3,667,167	3,231,636
Amortization	-	848,590	848,590	924,979
Office and general	589,911	-	589,911	305,835
Consultants	230,337	-	230,337	278,837
Rent	320,225	-	320,225	264,800
Materials and supplies	47,362	-	47,362	172,543
Repairs and maintenance	19,613	191,907	211,520	146,133
Travel	74,549	-	74,549	92,176
Advertising	74,396	-	74,396	72,586
Professional fees	33,370	-	33,370	45,934
Telecommunications	26,344	-	26,344	28,016
Professional development	8,684	-	8,684	5,552
Interest on revolving credit facility	1,316	-	1,316	-
	5,093,274	1,040,497	6,133,771	5,569,027
Other income (expenses):				
Interest income on short-term investments	8,140	-	8,140	21,955
Realized foreign exchange loss	(1,280)	-	(1,280)	(6,018)
Realized loss on short-term investments	(3,214)	-	(3,214)	(9,388)
Excess (deficiency) of revenues over expenses	\$ 1,146,151	\$ (740,497)	\$ 405,654	\$ (460,601)



Thank You to Our Partners

FUNDING

Government of Alberta
Economic Development and Trade
Alberta Innovates
Western Economic Diversification Canada

PARTNERS

Edmonton International Airport
City of Calgary
City of Edmonton
University of Alberta
University of Calgary
nanoFAB
AMIF (Advanced Micro/nanosystems Integration Facility)
Euripides/Eureka - European Smart
Electronics Systems Cluster
SAIT
National Institute for Nanotechnology

EDMONTON

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Edmonton International Airport, AB T9E 0V4
Canada
Phone: 780-468-2443

CALGARY

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