



BACKGROUND

Backgrounder: Canadian and Israeli Tech Companies Join Forces to Compete in Global Markets

The Canada-Israel Industrial Research and Development Foundation (CIIRDF) Announces Eight New Bilateral R&D Projects Valued at Almost \$14 Million

1/ Creating the First Commercial Multi-Arm Fresh Fruit Robotic Harvester

Canadian Company: [Linamar Corporation](#), a publicly-traded and diversified global manufacturing company of highly engineered products for vehicle powertrain and driveline systems, and mobile products for the industrial and agriculture markets.

Israeli Company: [FFRobotics Ltd.](#), a start-up that has a patented robotic fruit harvester that emulates hand harvesting in an efficient, cost-effective manner.

Canadian Partner: [Vineland Research and Innovation Centre](#) is a research centre dedicated to horticultural science and innovation, addressing the needs of the horticultural industry through production solutions.

Project Summary: Valued at more than CDN\$1.7 million, this CIIRDF-supported project will combine the technologies and expertise of Linamar Corporation (Guelph, Ontario, Canada), Vineland Research and Innovation Centre (Vineland Station, Ontario, Canada) and FFRobotics (Emek Hefer, Israel) to create the first robot of its kind that automates fresh fruit harvesting. Featuring multiple mechanical arms, this robot will complete the harvesting work that several farm employees perform in three days within 24 hours, generating significant cost-savings and improving farm safety. As global apple and orange production reached 126 million tons in 2016, with the harvesting cost of apples totaling \$8 billion alone, this Canada-Israel innovation has the potential to generate billions of dollars in savings.

2/ Developing New Broadband Communications Technology for Low Orbit Satellites

Canadian Company: [Telesat](#), a leading global satellite operator, providing reliable and secure satellite-delivered communications solutions worldwide to broadcast, telecom, corporate and government customers.

Israeli Company: [Gilat Satellite Networks Ltd](#) (NASDAQ: GILT, TASE: GILT) is a leading global provider of satellite-based broadband communications. With 30 years of experience, Gilat designs and manufactures cutting-edge ground segment equipment, and provides comprehensive solutions and end-to-end services, powered by its innovative technology.

Project Summary: Valued at more than CDN\$1.6 million, this CIIRDF-supported project will combine the technological capabilities and expertise of Telesat (Ottawa, Ontario, Canada), and Gilat Satellite Networks Ltd. (Petah Tikva, Israel) to create new broadband communication technology for Low Earth Orbit (LEO)

satellites that operate about 1,000 kilometres above the Earth's surface. This Canada-Israel innovation will reduce latency or the time it takes for data to travel from one point to another point on earth. The companies expect to generate more than \$200 million in revenue within five years of market launch, serving the enterprise market such as transportation, government, internet service providers, and remote broadband operators.

3/ Extracting Energy, Capturing Nutrients and Reclaiming Water from Goat Cheese Production

Canadian Company: [BluMetric](#), a diverse Canadian water, earth, and energy company providing solution-oriented consultation, design, products, and construction services to clients with complex environmental issues in more than 60 countries.

Israeli Company: [Atlantium](#), an Israeli company that provides the world with safe and sustainable water treatment solutions based on UV disinfection, fiber-optics, and hydraulics, without the use of chemicals.

Other project participants include [CCI BioEnergy](#) Inc., a pioneer in the development of organics processing solutions using Anaerobic Digestion and [Mariposa Dairy Ltd.](#), a leading Canadian goat cheese manufacturer.

Project Summary: Valued at more than CDN\$770,000, this CIIRDF-supported project will leverage the R&D strengths of BluMetric (Ottawa, Ontario, Canada) and Atlantium, (Har Tuv, Israel) to create a novel process that enables the recovery of energy and other useful agricultural by-products from goat cheese production. This innovative Canada-Israel methodology will recover energy from the methane-rich biogas produced during the treatment of the whey by-product; repurpose waste water into clean water for other food processes; and produce nutrient-rich by-products for horticultural and agricultural soil health applications. As the global market for milk products exceeds \$10 billion, the companies expect to generate more than 10 million dollars in revenue within the first few years of market entry.

4/ Bolstering the Real Time Monitoring, Quality and Security of Online Ads

Canadian Company: [Sortable](#), a Canadian company that combines a full monetization platform with robust analytics to surface actionable insights and empower publishers to make data-driven decisions.

Israeli Company: [GeoEdge](#), an Israeli provider of ad security and verification solutions for the online and mobile advertising industry. The company guards against non-compliance, malware, inappropriate content, data leakage, operational, and performance issues.

Project Summary: Valued at more than CDN\$2.3 million, this CIIRDF supported project will combine the expertise and experience of Sortable (Kitchener, Ontario, Canada) and GeoEdge (Tel Aviv, Israel) to create a technology that improves the security, performance and impact of online advertising. This Canada-Israel innovation will enable content publishers to better protect, monitor and analyze revenue from different ad streams in real time. The emerging product will target publishers that employ at least \$1,000 of online advertising per day, generating through various ad software in their websites. The companies expect to generate several millions of dollars in new revenues within the first few years of product release.

5/ Employing Machine Learning to Enable Precise Weed Identification and Elimination in Agriculture

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Canadian Company: [Veritas Farm Management](#), a comprehensive Canadian farm management service company with expertise in precision agriculture, and a team of specialists who focus on the core needs of the progressive farmer.

Israeli Company: [Green-Eye Technology](#), an Israeli based start-up company who utilizes machine learning and A.I. to revolutionize the current pest control process. The company analyze and identify weeds down to the species level using its proprietary machine learning capabilities, and provide a custom spray plan and precise herbicide application for every field, optimizing weed-control for farmers, decreasing the usage of herbicides and increasing yield.

Project Summary: Valued at more than \$CDN 1.5 million, this CIIRDF-supported project will leverage the R&D and sector strengths of Veritas Farm Management (Chatham, Ontario, Canada) and Green-Eye Technology (Ramat Gan, Israel) to create new software that significantly reduces herbicide use on farm fields. The Canada-Israel precision agriculture innovation will effectively analyze and pinpointing weed location, enabling precise herbicide application. This will eliminate the need to apply blanket treatments across the entire field with herbicides and other chemicals that eliminate weeds that damage crops, and reduce farmer yield, productivity and profitability. Initial target are farmers that grow row crops with significant market shares of land. With field trials planned for 2018, the collaborating companies will target farmers with large fields, as well as vegetable processors, crop protection companies, and farm equipment manufacturers who could benefit from the emerging product. Revenues are expected to exceed \$3 million by 2020.

6/ Creating New Super Foods to Power Super Human Health

Canadian Company: [POS Bio-Sciences](#), a Canadian company that has worked closely alongside entrepreneurs, multinational corporations, and governments to develop innovative processes and technologies recognizable in hundreds of market-leading products around the world.

Israeli Company: [InnovoPro Ltd.](#) of Israel is committed to bringing unique vegan protein ingredients to the global food market to create nutritious, affordable, tasty, safe, and sustainable food products. InnovoPro's chickpea protein is the best choice for the growing vegan protein market.

Project Summary: Valued at more than CDN\$2 million, this CIIRDF-supported project will combine the innovation, ingenuity and expertise of POS Bios-Sciences (Saskatoon, Saskatchewan, Canada) and InnovoPro Ltd. (Rishpon, Israel) to create four new protein-based superfood products derived from chick peas. Considered a super-food with substantial health benefits, chick peas are an excellent source of dietary fibers, vitamins and minerals. The new Canada-Israel superfoods that emerge from this project will offer healthy, nutritious, and tasty additions to the global vegetable market. The value of the global vegetable protein market expected to exceed US\$10 billion by 2020, creating a lucrative commercial opportunity for the collaborating firms. The team expects to generate tens of millions of dollars in new revenues within the next four years.

7/ Leveraging LED Innovation to Increase the Yield of Medical Cannabis

Canadian Company: [MedReleaf](#), a Canadian company that sources and delivers premium cannabis products cultivated from state of the art ICH-GMP/ISO 9001 certified facilities in Ontario, Canada to the global medical market. The company strives to serve the therapeutic needs of our medical patients and provide compelling brands and products for the adult-use recreational consumer.

Israeli Company: [FloraFotonica](#), an innovative Israeli company that provides indoor farmers and growers with a revolutionary lighting system that increases bio mass and quality of crops, while significantly reducing production costs.

Project Summary: Valued at more than CDN\$480,000, this CIIRDF-supported project brings together the expertise, technologies and resources of MedReleaf (Ontario, Canada) and FloraFotonica (Modi'in, Israel) to create new LED lighting systems for cannabis growing facilities. This Canada-Israel solution hopes to improve the overall quality and yield of cannabis crops, and significantly reduces energy costs compared to traditional LED crop lighting. Valued at just under US\$1 billion, the horticulture LED market is estimated to grow 22.6 percent a year. The companies aim to sell the emerging product to end customers directly, and leverage third-party distributor, integrators and partners to access larger global markets

8/ Increasing the Safety of Unmanned Aircraft Systems in Icy Conditions

Canadian Company: [Marinvent Corporation](#), a privately held advanced aerospace R&D company headquartered near Montreal, Quebec, Canada, provides consulting, services, training, tools and IP to help customers reduce risk and innovate quickly. Marinvent clients include aircraft OEMs, integrators, tier 1s, tier 2s and Government customers around the world.

Israeli Company: [Elbit Systems Ltd.](#), an international high technology company that develops and supplies a broad portfolio of airborne, land and naval systems and products for defense, homeland security and commercial applications. This includes: military aircraft and helicopter systems; helmet mounted systems; commercial aviation systems; unmanned aircraft systems (UAS) and surface vessels; land vehicle systems; command, control, communications, computer and intelligence (C4I) systems; electronic warfare and signal intelligence systems; cyber and intelligence systems.

Project Summary: Valued at more than CDN\$1.5 million, this CIIRDF-supported project combines the technologies, expertise and experience of Marinvent Corporation (Quebec, Canada) and Elbit Systems (Haifa, Israel) to develop an Airfoil Performance Monitor (APM) solution for Unmanned Aircraft Systems (UAS) to help prevent stalls and loss of control and when icing occurs in winter conditions. Marinvent's patented Airfoil Performance Monitor (APM) is currently the only technology that provides real-time information to pilots regarding the state of the airflow over the aircraft's wings and tail. This information is critical to prevent aircraft stalls and loss of aircraft control due to icing. The Canadian and Israel firms will work together to create a custom APM solution that addresses the unique needs of UAS structures, technologies and systems. The resulting product will help increase the safety of these autonomous airborne vehicles, and enhance their use in civilian applications such as inspection, resource management, and search and rescue.

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