



Fact Sheet

CAAIN Announces Five Funded Projects

About CAAIN

- The Government of Canada’s [Strategic Innovation Fund](#) (SIF) is managed by [Innovation, Science and Economic Development Canada](#).
- The [Canadian Agri-Food Automation and Intelligence Network](#) (CAAIN) was announced in July 2019 as one of the winners of SIF’s Stream 4 “Automation and Digital Technologies in Canada’s Agriculture and Agri-food Sector” competition.
- CAAIN was created by eight founding partners across five provinces—British Columbia, Alberta, Saskatchewan, Ontario, and Quebec:
 - [Alberta Innovates](#)
 - [DOT Technology Corp \(now Raven Industries\)](#)
 - [Lakeland College](#)
 - [Linamar Corp.](#)
 - [MDA](#)
 - [Olds College](#)
 - [TrustBIX](#)
 - [Vineland Research and Innovation Centre](#)
- CAAIN is a not-for-profit company launched in July 2019 with a \$49.5-million SIF contribution and a mission to create technological solutions for the most challenging problems facing Canada’s agri-food sector.
- To date, CAAIN has announced over \$14 million in funding for nine projects through a closed competition, restricted to submissions involving at least one of the eight founding partners.
- Two pan-Canadian open competitions—launched in October of 2020 and 2021, respectively—were available to teams based in Canada.
- Each team applying for CAAIN funding must include at least two small or medium enterprises (SMEs), and all project participants must be Canadian entities operating in Canada. SMEs are defined as businesses with 499 or fewer employees. Collaboration with academia and research organisations is encouraged but not required.
- Funded projects will fit into one or more of three areas of focus:
 - Automation and robotics
 - Data-driven decision-making, and
 - Smart farms
- The intellectual property (IP) and research data resulting from CAAIN-supported project remain with the applicants.
- CAAIN funding takes the form of reimbursement for clearly defined eligible expenditures and range from 20 per cent to 40 percent of a project’s cost, depending on various factors, including:

- Optional inclusion in CAAIN’s high-level IP catalogue, accessible by CAAIN members
- Agreeing to have project data sets referenced in the CAAIN data catalogue, accessible by CAAIN members
- Potential economic, social, and/or environmental benefit to Canada
- Interested parties are invited to visit the CAAIN website, caain.ca for more information or to download the Program Guide. If you don’t find what you’re looking for, email your query to info@caain.ca.

Summaries of the Newly Announced Projects

Project

Name: **Advancing Agronomy through Hyperlayer Data Collection and Analytics**

Summary: Globally, smart digital technologies have been recognized as the future of sustainable agricultural production. Electronic, computerised technologies such as sensors, satellite-generated digital imagery, unmanned aerial vehicles (UAVs), and robotics are among that agri-food enablers of the future. Success will require producers to access the tools to efficiently manage and use data for farm management decisions and for innovators to have access to training data sets to validate and streamline the development and optimisation of digital technologies. The overarching goal of this project is to collect and develop a robust repository of different, validated, high-resolution, geospatial, agronomic datasets. These will reliably support the ensuing development of field- and site-specific decision-making tools to reduce risks, ensure cost savings, and optimise production for farmers.

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Contribution: \$2,236,673

Contact: Joy Agnew, PhD
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Project

Name: **Agricultural Autonomous Controls Framework**

Summary: The development of autonomous machines for use in agriculture is gaining momentum, facilitated by recent technological advancements and by a driving need for more efficient farm operations. Many original equipment manufacturers (OEMs) of agricultural machinery have the vision to develop new and unique autonomous or highly automated agricultural equipment of real value to producers. However, these same OEMs often face barriers when it comes to integrating their complex technologies in real world environments. JCA Electronics’ project seeks to apply an autonomous framework on which to build customised machines, thereby helping manufacturers overcome the technology barrier impeding their development of advanced agtech.

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Contribution: \$3,305,866

Contact: Darcy Cook, P.Eng.
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Project Name: Harvesting Automation—Reducing the Requirement for Highly Skilled Labour During the Harvest of Broad-Acre Cash Crops

Summary: Harvesting is a seasonal activity which, in the case of cash crops like cereal grains, canola, soybeans, and corn, requires the use of combine harvesters to cut and separate the seed from the plant material. The need to maximise yield, minimise losses, and ensure the top product quality means harvesting machinery is typically some of a farm’s most sophisticated, performance-oriented equipment. This project aims to increase automation in the harvesting sector. Given a harvest’s small, intense window, many farmers lack the time and focus to drive maximum performance from their equipment. The appropriate application of new technology offers the potential to support Canadian producers and improve the quality and quantity of their crops.

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Contribution: \$3,850,613

Contact: Ben Foster
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Project Name: Artificial Intelligence (AI) Development for Autonomous Agriculture Application

Summary: Dot Technology Corp. has been working to complete a solution for the current labour shortage and inefficiencies present in dryland farming today. A Canadian Agricultural Human Resource Council (CAHRC) found 26,400 agriculture-related jobs went unfilled across Canada in 2014. The same study predicted that number will increase to 114,000 by 2025, which represents more than 25% of the nation’s entire agricultural labour force. This shortage must be addressed as it results in millions of dollars in lost productivity annually.

DOT is a U-shaped autonomous power unit that performs more efficiently those farm-related functions associated with a traditional tractor. DOT connects with any farm implement designed as “DOT-Ready” and will collaborate with any shortline manufacturer wanting to enter the autonomous agriculture industry.

The objectives of this project are to research and create DOT software and AI functions that include a classification model, autonomous implement loading, computer/camera-assisted vision, multi-unit operation, field mapping, and the collection and processing of data.

This technology will benefit the agricultural sector by mitigating the effects of labour shortages, managing soil compaction, and dealing with fuel costs and high emissions.

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Contribution: \$1,507,408

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Project

Name: VeriGrain™ Development, Validation, and Commercialization

Summary: There is a fundamental worldwide problem restricting the optimal use of grains: Growers, buyers, and processors cannot be sure of the quality of the product they are looking at, nor can they truly know its provenance. VeriGrain ensures samples are representative and securely stored, so characteristics can be accurately determined and certified. The grower and buyer have certainty in the form of a digital record that offers complete traceability. Buyers can trust what they are receiving and are more likely to pay an optimal price. The VeriGrain solution offers real value in dealing with this significant global issue.

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Contribution: \$438,905

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