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PROJECTS AT A GLANCE

Automation

Optimizing Hyper-Eye: Assessing the Fertility and Gender of Pre-Incubated Eggs

Led by Montreal-based MatrixSpec Solutions Inc., the Hyper-Eye project uses a non-invasive blend of hyperspectral imaging, artificial intelligence, and machine learning to determine the fertility and gender of pre-incubated eggs.



Agricultural Autonomous Controls Framework

Led by JCA Technologies, this project seeks to apply an autonomous framework on which to build customized machines, thereby helping OEMs overcome the innovation barrier impeding the development and adoption of their technology.

Artificial Intelligence (AI) Development for Autonomous Agriculture Application

Led by Raven Industries, the project team will work to advance the OMNiPOWER™ Platform by researching and creating various software and AI functions.

Development of Automated Smart Device for Pork Marbling Assessment

Led by MatrixSpec Solutions, this project will develop an upgraded prototype of Marbling Meter, a proprietary automated loin chop marbling assessment tool.

Evaluation and Improvement of Economic, Environmental and Logistical Benefits of Autonomous Agricultural Equipment Operation for Broad-Acre Crop Production

Olds College is testing the Raven Industries' OMNiPOWER™ Platform in real-world conditions to demonstrate and validate its viability in Western Canadian agronomic conditions.



Harvesting Automation: Reducing the Requirement for Highly Skilled Labour During the Harvest of Broad-Acre Cash Crops

This project aims to automate much of the functionality of MacDon Industries' combine harvesters, freeing farmers for more important tasks, and increasing their overall productivity and profitability.



Feasibility of an Autonomous Solution for Optimized Application of Livestock Manure

Led by Haggerty AgRobotics Co., this project will design, test, and document the Raven OMNiPOWER™ autonomous farming system to apply liquid livestock manure in bare/standing fields to enhance efficiency and demonstrate a marketable made-in-Canada solution for handling high volumes of livestock waste.

Project ANT: An Innovative Approach to a Fully Autonomous Greenhouse Mobility Platform

This project aims to validate the design of the ANT logistics mobile platform to solve the complex technical challenges in using multiple classes of robots that cooperate to efficiently delegate tasks and relocate tools around a greenhouse.

Autonomous Tractor Kit for Enabling Autonomous Farm Implement Operation

Mojow is developing the Eye-Box™ Autonomous Tractor Kit, which allows the conversion of conventional tractors to autonomous vehicles, or can be integrated into ready-to-market farm machinery, such as Barnstorm's swarm capable autonomous tractor, to enhance functionality.

Using Automation, Data and Insights to Improve Meat Quality and Safety

Led by Ontario-based P&P Optica, this project seeks to connect the practices of pork producers and processors to the quality of meat produced. This will be done by integrating a wide variety of variables from the plant, the farm, and publicly available sources using artificial intelligence (AI) and machine learning algorithms and analytics to identify predictive and prescriptive trends that will optimize production and improve the quality and safety of meat products in Canada.



PROJECTS AT A GLANCE

Data-Driven Decision-Making

Automating Traceability, Creating a Digital Manifest, and Providing Transport Assurance Via Generic Data Enablers

Led by Transport Genie, this project will introduce accessible, scalable technology offering simple, integrated tracking and reporting to the Canadian live-haul transportation industry.

Advancing Agronomy through Hyperlayer Data Collection and Analytics

Led by Olds College, this project's overarching goal is to collect data and develop a robust repository of different, validated, high-resolution, geospatial agronomic datasets.

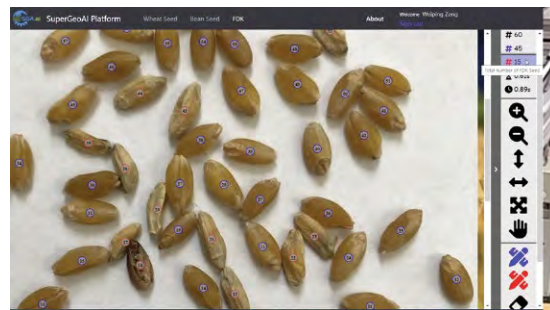
VeriGrain™ Development, Validation, and Commercialization

The goal of this project is to further develop key elements of the VeriGrain tool and validate overall system functionality and integrity, paving the way to eventual widespread commercial application. VeriGrain's technology provides digital tracking and verification of grain samples, affording all parties certainty in the form of a traceable electronic record.



GeoAI Platform for Automating Manual Observation Associated with Wheat Production (Phase 1)

Led by Super GeoAI, a team of agri-food companies and academic institutions will employ diverse technologies to develop a geospatial artificial intelligence (GeoAI) platform proof-of-concept that automates manual wheat-production observations.



GeoAI Platform for Automatically Digitizing and Modernizing Wheat Grain Grading (Phase 2)

This project aims to leverage deep learning, machine vision, geospatial, and high-performance computing technologies to digitize grain grading and automate the laborious manual observation required for wheat production.

Digitizing Fomite Contact Tracing to Mitigate Pathogen Spread in Agriculture

Led by Farm Health Guardian, this project will compare features and capabilities of existing technologies to identify a cost-effective sector-wide technological solution capable of generating real-time track-and-trace data to mitigate the effects of disease outbreaks in the livestock and poultry industries.

Precision Ranching for Improved Reproductive and Grazing Efficiencies

Led by Lakeland College, this project will use sensing technology to identify and evaluate location, activity, temperature, and behaviours that determine cattle fertility.

The Utilization of 3-D Real-Time Multispectral Cameras to Identify the Liveweight, Optimal Slaughter Weight, and Carcass Weight in Pre-Slaughter Cattle

Led by Alpha Phenomics, this project will evaluate and validate the use of various new technologies to provide accurate, real-time assessment of cattle growth, body fat, carcass composition, and industry-specific information on the health and wellbeing of cattle.

Field to Glass - The Next Generation of Barley Traceability

Led by Grain Discovery, this project seeks to build an end-to-end digital system that uses blockchain technology to trace Canadian-grown malt barley through every stage of the value chain. This dovetails with CFIA requirements for food traceability and transparency, and will provide information to increase public awareness and trust by educating shoppers on the products they buy. Lessons learned could be applied to provide similar tracking technology to other agri-food products.



F3: Farm to Factory to Farm - Pea Protein Quality and Traceability

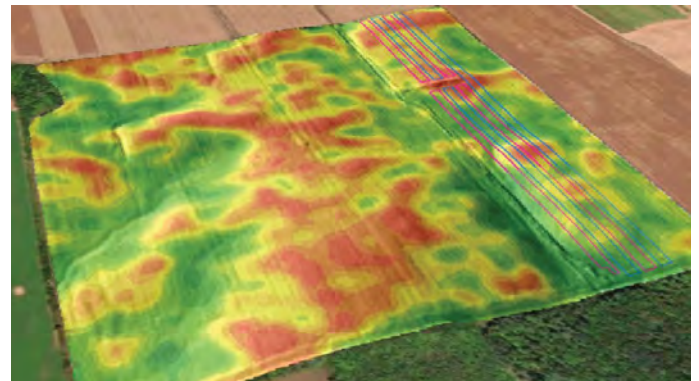
Led by PIP International, this project will build a detailed vendor management and data connecting exchange mechanism between farm, flour mill, and a pea fractionation facility to create an AgTech circular ecosystem that connects farms to the factory and back to the farms.

SoilOptix, Advancing Processes to Predicting Soil Organic Carbon

This project will quantify Soil Organic Carbon by employing topsoil mapping technology that uses the natural emission of gamma radiation from the ground along with standard soil sampling practices within agriculture to build high-resolution soil nutrient, texture, and other property maps.

Automation and Scalability of SWAT MAPS to Advance Canadian Agriculture

Led by Cromptimistic, this project will see academic and on-farm researchers, industry players, and smart farm staff collaborate to expand SWAT MAPS's capacity and develop scalable analytics and agronomic validation solutions supporting the widespread adoption of precision agriculture.



Commercialization of IOT and AI for Carcass Cooling to Improve Meat Profitability, Quality and Food Safety

Led by mode40, this project will make use of a Meat Quality Management System using artificial intelligence, mobile technology, and smart sensors for real-time adjustment of the carcass-cooling process.



PROJECTS AT A GLANCE

Smart Farms



Pan-Canadian Smart Farm Network Development

Led by Alberta's Olds College, this project will use a growing network of smart farms across Canada to provide geographically-diverse, real-world validation of the latest agricultural technology.

CAAIN Program Funding Summary

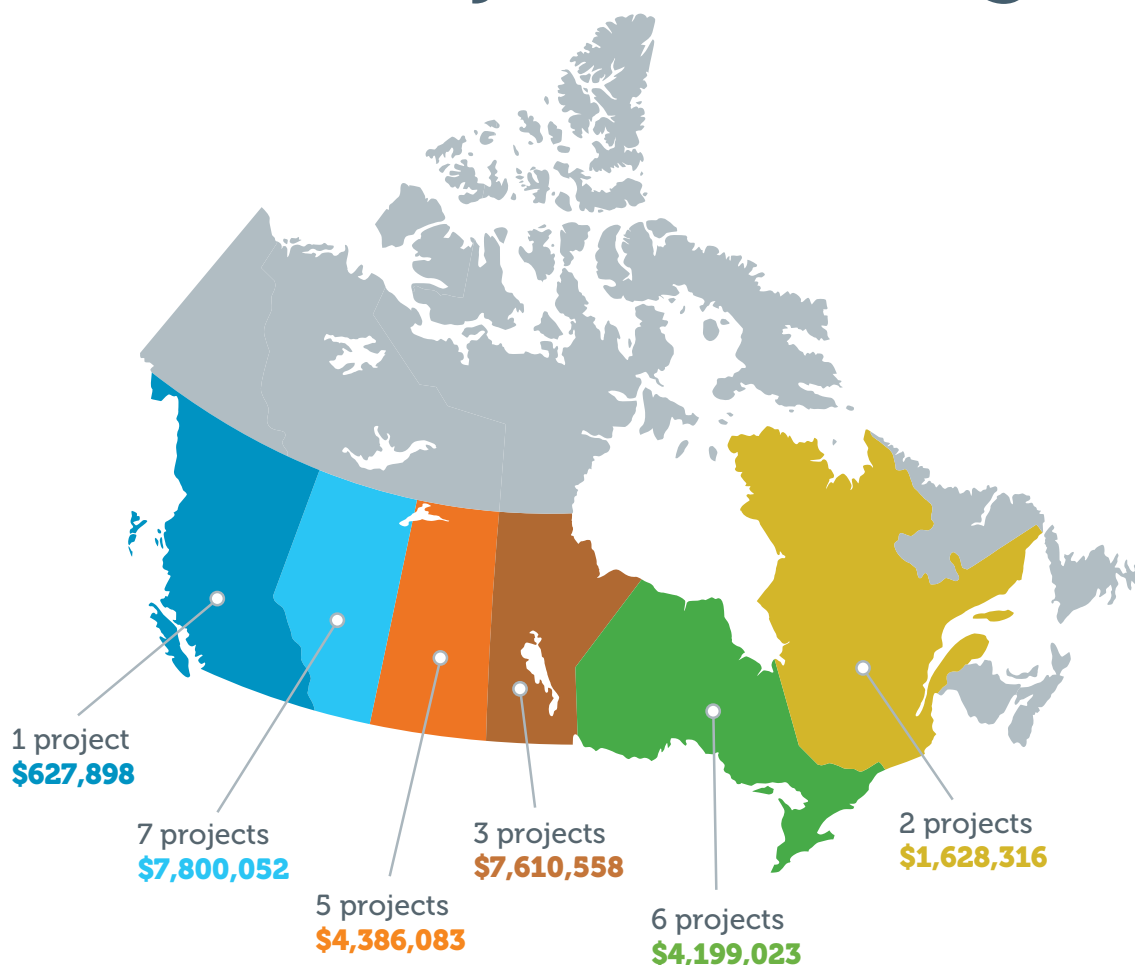
As of April 20, 2023

Program Status	Program Name	Projects	CAAIN \$	Industry \$	In-Kind	Project Management (4%)	Eligible Not Supported & Ineligible Costs	Total Project Value
In progress	2020 CLOSED	9	\$14.3M	\$13.3M	\$4.1M	\$0.5M	\$4.2M	\$38.6M*
In progress	2021 OPEN	7	\$2.9M	\$4.2M	\$2.8M	\$0.3M	\$1.1M	\$11.3M
In progress	2022 OPEN	6	\$5.6M	\$8.4M	\$0.5M	\$0.6M	\$3.0M	\$18.1M
In progress	Beef & Pork Primary Processing	2	\$3.5M	\$5.2M	\$0.6M	\$0.4M	\$1.3M	\$11.0M
Full Project Proposal	Livestock Innovation	10	\$5.0M	\$7.5M	\$0M	\$0.5M	\$0M	\$13.0M
TOTALS		34	\$31.3M	\$38.6M	\$8.0M	\$2.3M	\$9.6M	\$92.0M

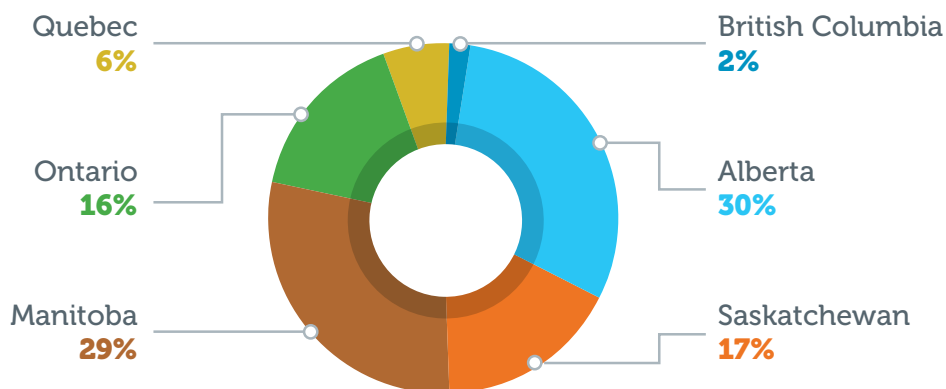
*Includes \$2.2M contribution of funds from public programs

Estimated CAAIN contribution, etc. and total project value if all proposed projects are approved

Geographic Distribution of Project Funding



Aggregated Project Investment by Province (\$)







CAAIN  **RCAIA**

connect
create
cultivate

connecter
créer
cultiver

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