Una década de colaboración en Eureka entre Canadá y España

(Presentación en inglés)

National Research Council of Canada
Industrial Research Assistance Program

CCCE Jornada de Innovación – 2022-09-29

Canada has a Strong Foundation for Innovation

Higher Education System

- **Most educated workforce in the OECD with 60% of the population aged 25-64 having a tertiary education**
- **Higher education expenditure on R&D as a % of GDP ranked 7th out of 32 OECD countries in 2020**

Venture Capital Ecosystem

- **3rd in the world for VC investment as a percentage of GDP (2019)**
- **2021 saw a record-breaking level of annual VC investment, with $14.7B invested over 752 deals, more than doubling the previous record year in 2019**

Early-Stage Entrepreneurial Activity

- **Maintained its leading position amongst innovation-led economies for its total early-stage entrepreneurial activity in 2020 (Global Entrepreneurship Monitor)**

THE NRC DELIVERS VALUE TO CANADA IN TWO WAYS

1. National network of research centres performing research and technical services with partners
2. National funding program • the Industrial Research Assistance Program

A CENTURY OF INNOVATION

1916
The NRC is created

1920s
Concrete for a harsh climate

1930s
Redesigned steam locomotive

1940s
Wartime innovations: radar, atomic energy

1950s
Pacemaker, electric wheelchair

1960s
Canadian flag red colour

1970s
Anti-counterfeiting technology, Canola

1980s
Canadian Astronaut Program, Canadarm

1990s
Synthetic meningitis C vaccine

2000s
Simulated brain surgery

2010s
100% biofuel test flights

2020s

R&D locations across Canada

CHARLOTTETOWN, PE	Natural product development
EDMONTON, AB	Nanotechnology
FREDERICTON, MONCTON, NB	Cybersecurity • Software development
HALIFAX, KETCH HARBOUR, NS	Natural product chemistry and bioprocessing
LONDON, ON	Additive manufacturing and automotive
MISSISSAUGA, ON IN PROGRESS	Advanced materials
MONTREAL, QC	Advanced biologics analytics • Advanced sensor systems • Biomanufacturing pilot plant • Digital health • Environmental monitoring and remediation • Intelligent machining • Medical Devices • Microfluidics • Polymer and composites • Powders for additive manufacturing • Robotics • Thermal spray coatings
OTTAWA, ON	Aerospace • Battery abuse testing • Big data analytics • Construction • Materials testing • Metrology • Quantum • Photonics • Transportation • Vaccines
SAGUENAY, QC	Aluminium materials and manufacturing
SASKATOON, SK	Plant biotechnologies
ST. JOHN'S, NL	Ocean engineering
VANCOUVER, BC	Batteries and fuel cells
VICTORIA AND PENTICTON, BC	Optical and radio telescopes
WINNIPEG, MB IN PROGRESS	Emerging manufacturing technologies • Medical Devices

OCEAN COASTAL AND RIVER ENGINEERING

Ejemplo

Researching engineering solutions in harsh marine environments such as ice, waves, cold, and wind

Key research areas • Arctic research • Digital waterways • Flooding • Marine and coastal infrastructure • Ocean engineering

NRC AND UNIVERSITY COLLABORATION CENTRES

Ocean science
with Memorial University

Cybersecurity
with the University of New Brunswick

Microfluidics
with the University of Toronto

Mathematical sciences
with the Fields Institute

Green Energy Material
with the University of Toronto

Artificial intelligence, Internet of things, and cybersecurity
with the University of Waterloo

COLLABORATION:
CANADA'S GLOBAL INNOVATION CLUSTERS

Business-led innovation hubs to accelerate growth in key industries

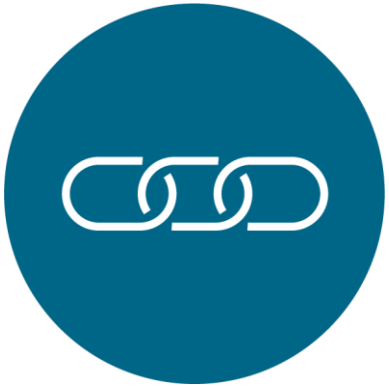
Connect innovators, investors, academic institutions, not-for-profits, companies and researchers.

- ADVANCED MANUFACTURING
- DIGITAL TECHNOLOGIES
- OCEAN
- PROTEIN INDUSTRIES
- SCALE.AI

Industrial Research Assistance Program • NRC IRAP

PROVIDE ADVICE, CONNECTIONS, AND FUNDING
to help Canadian small and medium-sized businesses increase their innovation capacity and take ideas to market

SERVE OVER 8,000 CLIENTS ANNUALLY
(advisory services + funding) across all industry sectors and fund over 3,000 clients



LINK INNOVATIVE CANADIAN SMES TO GLOBAL VALUE CHAINS
and support their growth by providing access to current technology and business market intelligence on priority industry sectors

SUPPORT YOUTH
with employment programs


NRC IRAP OFFICES
RESEARCH FACILITIES AND NRC IRAP OFFICES

Industrial Research Assistance Program • NRC IRAP

* Thereabouts, at 29 Sept.2022 CAD-EUR exchange rate.

Industrial Technology Advisors (ITAs)

- Private sector experience
- Later in career cycle (typically 20+ years experience)
- Senior managers and entrepreneurs
- Most have an engineering or science background
- >265 advisors across Canada

Helping SMEs succeed globally

IRAP CONNECTS SMEs TO THE GLOBAL VALUE CHAIN

- Large enterprises networking
- National sector experts teams
- Matchmaking / Partners Search
- Tools to support international growth

PROGRAMS

- International Co-innovation Action Plan
- **Eureka / Eurostars / Clusters → Europe+**
- GAC:CIIP → Brazil, India, Israel, South Korea
- Bilateral Calls: **Spain**, France, Germany…
- CanExport reference

EUREKA innovation across borders

eurostars™

CANADIAN INTERNATIONAL INNOVATION PROGRAM
PROGRAMME CANADIEN DE L'INNOVATION À L'INTERNATIONAL
R&D PARTNERING ABROAD
PARTENARIATS EN R-D À L'ÉTRANGER

CanExport

Eureka Network

Calls for international collaborative R&D projects

Typically 2-3 participants

All civilian (non-military) tech/market sectors

Funding type varies per country (Canada: →SMEs, grant type)

Bi/multilateral Calls, thematic or not.

- Eureka Canada - España 2022 (*EOI closed; call us*.)
- Eureka Canada w/partners from any Eureka country: TBD soon.

Eurostars

Typically 2-3 participants from at least 2 different countries

All civilian (non-military) tech/market sectors

SME-led projects (leadership, 50%+ of project work)

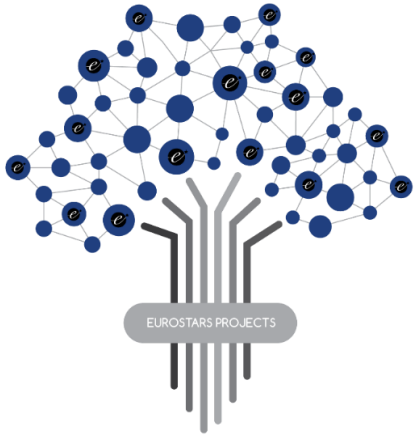
~34 Eureka member countries reserve funds

Funding always grant-type (Canada: →SMEs)

Fast decision (3-4 months)

Next application deadline: March 2023

www.eurekanetwork.org



Eureka Clusters

Large precompetitive projects: 5-6+ (12, 15, 20…) participants

Sectors: Software, Electronics, Telecom, Low-carbon, Advanced Manufacturing*

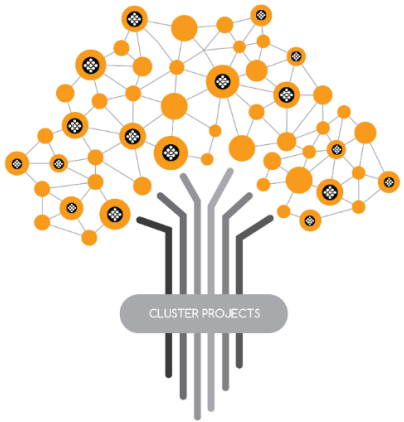
Typically at least one MNE/project; global value chains

Funding availability and type varies per country

- Canada supports all Clusters with grant-type.

Evaluation by Clusters; cluster fees.

New calls in Fall 2022



* Eureka SMART Cluster office in San Sebastián, Spain.

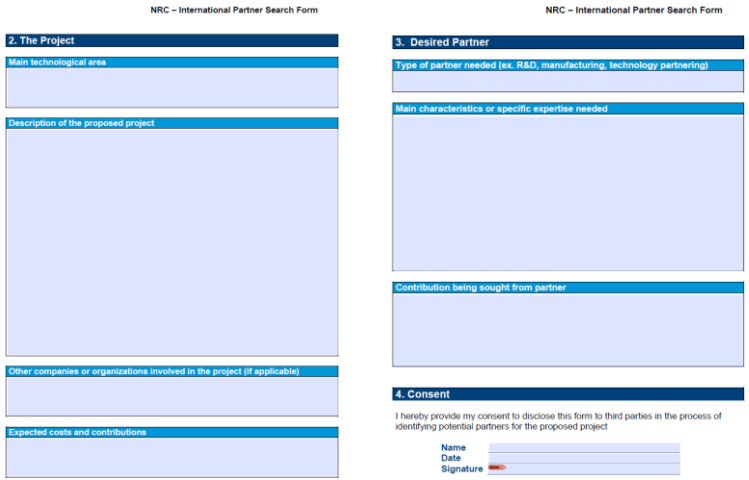
Co-Development Partners Search

256+ NRC IRAP Industrial Technology Advisors, locally embedded

200+ Research and business orgs in Canada, part of IRAP's network

Yes, we have a form. It's painless.

Hint: The more nitpickingly precise you are, the higher the chance of finding a match.



NRC – International Partner Search Form

2. The Project

Main technological area

Description of the proposed project

Other companies or organizations involved in the project (if applicable)

Expected costs and contributions

NRC – International Partner Search Form

3. Desired Partner

Type of partner needed (ex. R&D, manufacturing, technology partnering)

Main characteristics or specific expertise needed

Contribution being sought from partner

4. Consent

I hereby provide my consent to disclose this form to third parties in the process of identifying potential partners for the proposed project

Name

Date

Signature

OFMS

Optical-based fuel monitoring system for aerospace applications

- Eureka Network, 2020-2023, budget €1.8M*
- **Canada**: Opsens Solutions
- **Spain**: TEMAI Ingenieros, S.L.

*“This (…) represents a major breakthrough as it offers high accuracy and reduced weight, resulting in lower fuel consumption and contaminant emissions, is inherently safe and immune to electromagnetic interference, is easier to install in the aircraft with fewer components and less complex wiring, and is expected to reduce maintenance costs.”**

** From Eureka projects database*

CATSET

CATtle Satellite Ear Tag Platform

- Eurostars, 2021-2023, budget €1.86M
- **Canada**: Laipac
- **France**: Kinéis
- **Spain**: Digitanimal

*“This unique device has cellular connectivity with satellite fallback whenever animals roam outside of terrestrial networks. This ear tag is self-powered with a solar cell for self-autonomy. It can detect cattle's health, location, and the estrus phase to apply for the insemination.” **

**From NRC IRAP proactive disclosure*

CyberFactory#1

Addressing opportunities and threats for the Factory of the Future (FoF)

- Eureka ITEA Cluster, 2018-2022, Budget €24.6M
- **Canada**: Bluewrist
- **Spain**: Airbus Defence & Space; Eneo Tecnología; PAL Robotics; S21Sec; Trimek
- **Finland, France, Germany, Portugal, Turkey**.

"*Project CyberFactory#1 has designed, developed, integrated and demonstrated a set of key enabling capabilities to foster the optimisation and resilience of the Factory of the Future. The impact is expected to reach around €150M additional revenues for the project partners and 450 extra jobs by 2025.*"
ITEA Award of Excellence 2022 for Business Impact!

Merci - Thanks
¡Gracias!

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