# AI and Emerging Technologies at Employment and Social Development Canada

RIAL Workshop, Bogotá, Colombia

Employment and Social Development Canada (ESDC)

September 11, 2025

**This presentation provides an overview of ESDC's Artificial Intelligence (AI) and Automation adoption, with a focus on:**

- The Canadian context

- AI-based tools and applications at ESDC

- Strategies to overcome challenges and leverage advantages

**PURPOSE**

# Government of Canada Context

**Canada's 2023-2026 Data Strategy for the Federal Public Service** - strengthening data-driven results and outcomes, driving the federal public service to consider data by design, to use data effectively in decision-making and service delivery, and to be empowered with the talent and tools it needs to do so.

**Canada's Digital Ambition 2024-2025** provides direction on the modernization and adaptation of service delivery to better meet the needs of Canadian citizens. The ambition is grounded in user-centric design that leverages artificial intelligence and data to support policies, tools, resources, and a digitally savvy workforce.

**AI Strategy for the Federal Public Service 2025-2027** supports the adoption of artificial intelligence to maximize the efficiency, effectiveness and productivity of service delivery and decision making in the Canadian public service.

**Ministry of Artificial Intelligence and Digital Innovation** – aimed at balancing regulation with innovation as part of a pro-growth agenda aligned with G7 commitments on AI that support Canadians with the infrastructure, tools and training required to meet the growing demand for efficiency.  Builds on the Pan-Canadian AI Strategy.

**Mandate Letter from the Prime Minister of Canada** - Spending less on government operations so that Canadians can invest more in the people and businesses that will build the strongest economy in the G7 (Mission 7).

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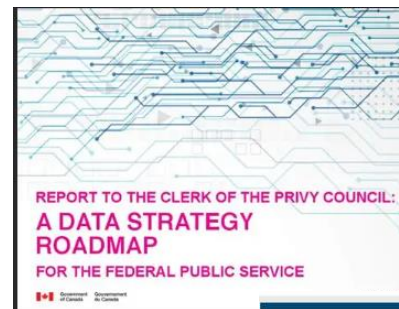
# Ministry for AI and Digital Innovation

Balancing regulation with innovation as part of a pro-growth AI agenda

## Scale the Domestic AI Industry

**Government contracts and support for startups**
- AI Compute Challenge
- AI Compute Access Fund is providing up to $300 million for affordable access to compute power for small and medium-sized enterprises
- $2.4 billion package of measures to secure Canada's AI advantage in Budget 2024

## Build Trust with Smart Regulations

**Smart regulations focused on privacy and safety that helps departments understand and manage risk.**
- The Directive on Automated Decision Making
- The Guide and Generative AI, Canada

**Canadian Artificial Intelligence Safety Institute**

## Adopt AI Broadly

**Encourage use by government and business**
- AI Strategy for the Federal Public Service (2025-2027)
- AI Assist to enable small and medium sized enterprises to adopt AI

## Ensure Sovereignty

**Invest in Canadian infrastructure**
- Canadian Sovereign AI Compute Strategy
- Pan-Canadian Artificial Intelligence Strategy (2017) – commercialization, standards, talent and research
- 3 National Institutes - Alberta Machine Intelligence Institute (Amii); Quebec Artificial Intelligence Institute (Mila); Vector Institute, Toronto

# Government of Canada Guidelines*

| Potential Challenges | Best Practices |
|---|---|
| **Protection of information** | Clear responsibilities, training and terms of use for employees about permissible information for each service. ESDC access to GenAI services is limited to approved solutions. |
| **Bias** | Emphasis on the importance of employee reviews of AI output to confirm accuracy, alignment with GC commitments, values and ethics, legal obligations, and bias detection. Bias detection is supported by mandatory training for employees. |
| **Quality** | Emphasis on reviewing AI output to confirm accuracy by someone with expertise as well as on reviewing sources of training data. Reference material for employees supports the generation of prompts that improve output accuracy. |
| **Public servant autonomy** | AI is presented to employees as a tool to assist them, but not to be solely relied upon. Messaging on the importance of reviewing for bias and quality reinforces this notion. |
| **Legal risks** | Legal services is consulted on Terms of Use for AI solutions. Employees are directed to monitor for potentially copywritten content in AI output. Account for values & ethics concerns. |
| **Distinguishing humans from machines (transparency)** | AI solutions have not yet been applied to public-facing ESDC services. Standard practice for declaring the use of AI is evolving and still being determined internally. |
| **Environmental impacts** | Impacts are accounted for during the procurement process, which favors low-energy, high-efficiency models. Use of AI tools is recommended only when relevant to program objectives and desired outcomes. |

*Led by the Treasury Board Secretariat (TBS) of Canada.

# Enhancing our productivity, effectiveness & efficiency by scaling data and AI capabilities

## 1. DOCUMENT DIGITIZATION
Automated data extraction converting images of text into machine-readable format.

### Accelerate information extraction
- Automate processing and triaging of service requests
- Search through vast quantities of previously inaccessible data
- Use natural language processing techniques to extract value out of previously inaccessible data

### Execution
- Expand access to pre-built OCR tooling (e.g. Azure Document Intelligence in EDFP)
- Deliver on ESDC built OCR solution
- Scale ESDC built OCR solution to more ESDC forms

### Initiatives In-Flight
- Electronic SIN Automation
- d@Scribe for Pensions Automation
- d@Scribe for OAS on Cùram
- d@Scribe for CPP-D Medical Notes

## 2. TEXT CLASSIFICATION AND GENERATION
Leveraging advanced algorithms, methods and models to extract value from large volumes of text and data.

### Expedite insight generation
- Categorization or classification of texts and documents into categories, for automation or analysis
- Summarization of large quantities of text and generate insight for policy and outcomes
- Identification of common groups in large quantities of textual information and allow for content filtering

### Execution
- Use and align existing AI capabilities available in the enterprise infrastructure
- Expand access to publish AI solutions via the enterprise infrastructure
- Expand access to proprietary Large Language Models for use by ESDC developers (e.g. Azure OpenAI in EDFP)

### Initiatives In-Flight
- d@Media
- Record of Employment Comments (Operationalized)
- New Horizons for Seniors Program screening project
- Labour Program Complaint Form Automation

## 3. EVA CHAT & DOMAIN ASSISTANT
ESDC's Virtual Assistant to Unlock AI at work — with Accessibility and Security at Heart

### Enabling employees to:
- Generate ideas and brainstorm
- Respond quickly to complex queries
- Synthesize information
- Digitize and multi-lingually translate documents
- Navigate lengthy documents and procedures

### Execution
- Complete development and assessments - EVA pioneering the path for AI applications (security, accessibility, enterprise architecture)
- On-board backlog of virtual assistant requests

### Initiatives In-Flight
- HRSB Virtual AI Assistant
- Foreign Correspondence Translation
- Early Resolution Internal Chatbot (Labour)
- BDM Assist Me in Curam
- EI Jurisprudence (BDM)

# Robotic Process Automation – Roll Up

ESDC is a leader in Robotic Process Automation (RPA) in the Government of Canada, improving services, processes, introducing efficiency and generating savings.

## 28
**Automated processes in operation**

## 7
**Programs or functional areas using RPA**
- Canada Pension Plan (CPP)
- Employment Insurance (EI) Call Centres
- Financial Management & Advisory Services
- Integrated Corporate Accounting & Accountability
- Integrity Services Branch (ISB)
- Canada Summer Jobs
- Temporary Foreign Worker Program (TFWP)

## 8+
**Million automated transactions since 2019**

## 84
**Millions in cost avoidance to date**

# RPA Initiatives

The Department is advancing a range of RPA initiatives that are streamlining and increasing operational capacity.

## Pensions

**CONTEXT**
Pension programs required increased capacity to fulfill transactions for Canadians.

**SOLUTION**
9 automated processes are in production with 5 more expected to be launched this fiscal year, contributing to a more timely and accurate delivery of pension benefits to Canadians,

**IMPACT**
- 4.4M automated transactions since 2019, leading to a reduction in processing time.
- 155K hours saved annually by regional CPP and OAS Processing staff through enhanced processing efficiency.
- $81.6M in cost avoidance in support of CPP and OAS Operations since 2019.

## EI Call Centres

**CONTEXT**
Employment Insurance (EI) Call Centres required to achieve response times to citizens.

**SOLUTION**
6 automated processes, improving the response time to citizens' inquiries by automating common tasks and activities performed by Payment Services Officers (PSOs).

**IMPACT**
- 4M automated transactions since September 2023 with a 98.6% success rate, streamlining operations in Call Centres.
- 6.2K hours saved with the use of RPA attended bots by 2,236 Payment Service Officers in EI Call Centres in FY 2023-24.
- $2.8M in cost avoidance in support of EI Call Centre operations since September 2023.

## Chief Financial Officer Branch

**CONTEXT**
Streamlining efficiency for the Chief Financial Officer Branch (CFOB) at ESDC.

**SOLUTION**
12 automated processes in production with four more expected to launch this fiscal year to increase numbers of transactions for the CFOB branch.

**IMPACT**
- 60K transactions since the inception of the first automation in July 2022.
- 100K annual average transaction count when the ten automations are leveraged at full capacity.
- $400K projected annual cost avoidance in support of internal financial operations.

*Figures as of September 4, 2025

# Artificial Intelligence – Roll Up

ESDC is making progress in adopting AI, implementing solutions and introducing employee tools that are guided by enterprise AI strategy and governance that is also evolving to effectively navigate the complexities of AI in the foreseeable future.

**139**

Encompasses AI enabled solutions that leverage:
- Machine learning
- OCR
- Natural language processing
- Generative AI

**AI solutions registered**

**10k+**

**Daily instances of use of Gen AI by employees**

**54**

**Millions of dollars in projected cost avoidance**

# Leveraging AI for Efficiency, Productivity and Effectiveness

The Department is advancing a range of initiatives that improve productivity, efficiency and effectiveness, driving cost savings while enabling employees to focus on higher-value, more complex tasks.

## Record of Employment Comments (ROEC)

**CONTEXT**
The Record or Employment form previously required manual review of open-text fields upon application of EI benefits.

**SOLUTION**
- An NLP solution was developed to analyze open-text fields, determining relevance to the application without manual review.

**IMPACT**
- The AI component is fully integrated in the automated process
- Estimated $166k annual efficiency gains realized.

## d@Scribe for Pensions Automation

**CONTEXT**
ESDC processes a very large volume of forms and applications, which is resource intensive.

**SOLUTION**
- A custom OCR tool that converts printed or handwritten text into machine-readable text for integration with Pensions systems and processes.

**IMPACT**
- The tool is set to automate the processing of multiple forms in OAS, CPP, and CPPD with total annual efficiency gains estimated at $851K.

## eSIN Automation

**CONTEXT**
Online SIN applications require agents to manually validate the documents submitted by applicants.

**SOLUTION**
- eSIN automation will use OCR to validate a portion of the documents automatically.

**IMPACT**
- The online SIN application processing time will be reduced from five days to five minutes.
- $8.5 million in efficiency gains may be realized.

## ESDC Virtual Assistant (EVA)

**CONTEXT**
Employees are increasingly looking to leverage gen AI chatbots in their work.

**SOLUTION**
- A secure, internal-facing conversational AI service.
- EVA Chat was designed for internal use by ESDC employees to ensure compliance with security, privacy, accessibility, and governance requirements.

**IMPACT**
- Currently used by over 10,000 employees
- Replaces use of ChatGPT, providing a more secure environment for AI use.

# Building on Successful Implementation of Responsible AI

ESDC has made strides in policy and infrastructure development,
and will continue to scale successful AI initiatives and tools for enterprise-wide adoption.

## Infrastructure Developments

The **Enterprise Data Foundation Platform** provides tools that allow employees to experiment with AI and advanced analytics in a secure environment. It enables an orchestrated, data-driven approach to advanced analytics and AI.

**ESDC Virtual Assistant (EVA)** is the Foundational technology for future enterprise AI Solutions, including Service Canada's future "AI Concierge" service.

**EVA Accelerator** enables experimentation with an AI tool supported by specialist prompt engineers and tailored to ESDC business information and needs.

## Guidance and Policy

**Policies, guidance and frameworks** support employees in leveraging AI and advanced analytics responsibly, such as:
- Departmental Policy on Information and Data Management
- Directive on Data Management and Analytics for the Enterprise Data Foundations Platform
- Data Accountability Framework
- Human Rights Impact Assessment
- Fairness Assessment Service
- Ethical Review Service

## People &Processes

Through the establishment of **departmental governance,** ESDC developed the structures and practices required to assign decision-making authorities, define how decisions are to be made, and establish the organization's strategic direction.

As part of supporting the required cultural shift, engagement and awareness initiatives and the **Data & AI Literacy Program** build data and AI capacity through training and professional development

# Investing in Employee Training

Canada

## Advancing employee data and AI skills through the Data and AI literacy program

**The Data and AI Literacy Program is a key enabler of ESDC's Data Strategy and Data Maturity.**

**It supports data and artificial intelligence (AI) capacity building through a user-focused approach that includes training and professional development.**

**It empowers employees to grow their data and AI knowledge and skills, and adapt to emerging technologies.**

### ACCOMPLISHMENTS

**Implemented a one-year pilot with the Western Canada and Territories (W-T) Region**

- ✓ Validated assumptions from Databilities assessment
- ✓ Identified improvements for the Data and AI Literacy Program
- ✓ Developed and tested data literacy measurement tools and solutions scalable at enterprise-level
- ✓ Delivered 30 learning events and presentations

**Enhanced the ESDC Data and AI Literacy Program**

**Incorporated AI:**
New training and resources, including a new AI Learning Path and a revamped Data Literacy Toolkit.

**Created New Data Course: The Basics Series**
New self-paced learning content to provide foundational data knowledge for ESDC employees.

**Created Data Literacy Videos (4):**
To boost awareness of the Program and benefits.

### FISCAL 2023-24

**192**
Average Program visits per month

**485**
Data and You Quiz completion

**462**
Learning Plans recommended

**118**
Data: The Basics course registrations

### SINCE LAUNCH

**40 +**
Program demos and presentations (internal & external)

**16,000 +**
Program visits

### Contributed to GC Data and AI Literacy efforts

- ✓ Shared expertise with over 20 departments and agencies

- ✓ Contributed to development of new GC courses and products, including:

  - AI Toolkits and Primers
  - GC Data Competency Framework
  - GC Digital Competencies Playbook
  - GC Data Ecosystem Project
  - 4 new CSPS courses
  - 3 new StatCan courses

# Conditions for Successful AI Implementation

| FOUNDATION | REQUIREMENTS |
|---|---|
| **Data** | • Data that is curated and fit for use<br>• Access to the right data sources at the right time (e.g. timely trusted data to increase accuracy and performance of AI models) |
| **Technology** | • Tools readily available and foundational infrastructure in place for use across the enterprise |
| **People** | • Access to skilled professionals (multidisciplinary - data scientists, engineers, subject matter experts, legal etc...)<br>• Workforce strategy for leaders and employees to support mindset shift (from silos to horizontality), adoption of new tools and the transition to new ways of working.<br>• Data and AI literacy, awareness and skills development that enables employees to understand and use AI innovatively and responsibly |
| **Process** | • Support for the assessment and prioritization at enterprise level<br>• Agreement and execution on streamlining processes to gain efficiencies<br>• Use of robust methodologies and processes to enable incremental progress and continuous improvement<br>• Timely security assessment on the technology components and data privacy considerations.<br>• Strengthened strategic planning and approvals |
| **Funding** | • Sustainable funding to scale and achieve the desired future state and operationalize for the long-term<br>• Clear decision making on what happens with savings gained by leveraging data and AI for efficiencies. |

# What's Next?

Continuing to mature our strategic approach to AI including:

- Scaling successful tools and applications.

- Continuing to advance employee data and AI skills.

- Refining assessment of the impacts and returns on AI.

# Canada's G7 AI Commitments

## Public Sector Innovation

- Launch of the G7 GovAI Grand Challenge and G7 AI Network (GAIN) to scale responsible AI in government.

## SME Empowerment & Economic Growth

- Rollout of the G7 AI Adoption Roadmap to help SMEs adopt AI responsibly and competitively.

## Workforce &Talent Development

- Implementation of the 2024 G7 Action Plan for human-centered AI in the workplace

## Energy & Sustainability

- Ministers tasked with delivering a workplan on AI and energy by year-end.

## Global Partnerships & Inclusion

- Canada is committed to operationalizing Data Free Flow with Trust (DFFT) through trustworthy, cross-border data flows, and affirming its value in enabling trusted AI development and use

## Trust & Governance

- Build trust in AI through toolkits, standards, and the Hiroshima Process International Code of Conduct for Organizations Developing Advanced AI Systems (HAIP) Code of Conduct.

# Foundations of the ESDC AI Strategy

## VISION

ESDC will be an AI-enabled organization where employees are empowered to leverage AI responsibly to generate insights, drive operational efficiency, and improve programs and services through a human-centric approach that upholds our commitment to human rights, inclusivity, fairness and transparency in service to Canadians

| HUMAN-CENTERED | COLLABORATIVE | READY | RESPONSIBLE |
|---|---|---|---|
| Human needs and values are foremost in deciding where we adopt AI and how we integrate it into our work. These needs and values reflect the diversity of the clients we serve as well as the public servants. | We work together on AI adoption by aligning across ESDC business lines, and with Indigenous partners and Canadian partners, other Canadian and international jurisdictions, and our GC colleagues. | We have the infrastructure, tools, data, people, and policies we need to mature as an AI-enabled organization. | Canadians and public servants trust that our use of AI is responsible, ethical, safe, and secure. We involve humans in critical decisions, explain and communicate how we use AI, and are proactive in identifying and mitigating AI-related risks. |

## OBJECTIVES

- Provide a holistic view and approach to the evolution of ESDC's AI ecosystem
- Foster responsible innovation through robust AI governance
- Enable and empower our workforce
- Integrate the right AI tools and technologies
- Improve insights and efficiency across the policy -service continuum