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Title - Sujet Artificial Intelligence Solution	
Solicitation No. - N° de l'invitation B8607-180311/A	Date 2018-04-19
Client Reference No. - N° de référence du client B8607-180311	GETS Ref. No. - N° de réf. de SEAG PW-\$\$\$E-017-33462
File No. - N° de dossier 017ee.B8607-180311	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2018-05-10	
Time Zone Fuseau horaire Eastern Daylight Saving Time EDT	
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input type="checkbox"/> Other-Autre: <input type="checkbox"/>	
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Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: DEPARTMENT OF CITIZENSHIP AND IMMIGRATION 9TH FL. 300 SLATER ST OTTAWA Ontario K1A1L1 Canada	

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Artificial Intelligence Solution

Immigration, Refugees and Citizenship Canada
Employment and Social Development Canada
Department of Justice

Request for Information

April 2018

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1 Background and Purpose of this Request for Information

Objectives of the RFI

Through this Request for Information (RFI), Immigration, Refugees and Citizenship Canada (IRCC), Employment and Social Development Canada (ESDC) and the Department of Justice (DOJ) are seeking to understand how each respective department could leverage the benefits of

artificial intelligence (AI)¹, machine learning (ML) and predictive analytics (PA) technologies to support decisions involving legal considerations, support the development of litigation strategies, and generate new insights and efficiencies in the delivery of legal services and litigation support to the Government of Canada.

There are two separate pilot projects being explored. IRCC and the DOJ are partnering to develop an AI/ML powered solution for immigration law. ESDC and the DOJ are partnering to develop an AI/ML powered solution to support work under the [Government Employees Compensation Act \(GECA\)](#). Specifically, AI/ML powered solutions leveraging data-driven insights are sought to assist and inform three activities:

- legal research and development of legal advice/legal risk assessments;
- prediction of outcomes in litigation; and
- trend analysis in litigation.

Information is also sought in relation to whether use of any AI/ML powered solutions could be expanded, in future, to users such as front-end decision makers.

While IRCC and ESDC are pursuing separate projects, the two departments share the objectives of using this RFI to receive feedback, ideas and suggestions from industry respecting AI/ML technologies and solutions that will meet their needs. Information provided by industry will inform procurement(s) to support these pilot projects, should a procurement be pursued.

Information provided in response to this RFI need not respond to both pilot projects and may be limited to responses in relation to an AI/ML powered solution for either immigration law or the *GECA*.

The list of questions in section 5 are meant to allow industry to:

- a) share views and inform the direction that IRCC, ESDC and the DOJ may take with respect to AI/ML;
- b) comment on the risks associated with AI/ML powered solutions and mitigation strategies for reducing those risks;
- c) inform the parameters that IRCC, ESDC and the DOJ may consider in determining scope and when or if an AI application is appropriate for achieving desired business objectives; and
- d) provide ideas and suggestions as to how IRCC, ESDC and the DOJ could position their respective security and privacy frameworks in light of AI.

The information provided will aid in increasing the understanding of the capability, viability and commercial availability of AI/ML technology solutions and services. The industry perspective on the approach, business and general requirements, cost of development, viable business models and related contract and intellectual property considerations are of particular interest.

¹ Recognizing that there is not a consistent agreement as to what constitutes artificial intelligence, including whether or not certain types of machine learning fall within the AI spectrum, for the purposes of this RFI respondents are asked to provide their responses considering a broad and inclusive approach to AI, including machine learning technologies.

Background

The Government of Canada has been exploring data analytics for a number of years in an effort to understand developments in the field and its implications for federal departments and the legal industry.

IRCC, ESDC with the DOJ are pursuing two separate pilot projects that will use AI/ML powered solutions leveraging data-driven insights to aid in:

- research and development of legal advice/legal risk assessments;
- prediction of outcomes in litigation; and
- facilitating trend analysis in litigation.

It is expected that the primary users of these two solutions would include the respective IRCC and ESDC departmental officials and DOJ counsel involved in litigation support.

Information is also sought to inform potential expansion of AI/ML powered solutions to other uses/users in these domains such as front-end administrative decision makers. Such a solution could be used to assist and provide additional information for front-end decision making.

While the business needs for each department, articulated in section 2, are focused on different sets of program activities, one set for immigration law and one set for *GECA*, the information obtained from this RFI will help inform each department's broader AI/ML plans and further initiatives.

2 Business Requirements

This RFI seeks information in relation to two separate solutions, one for IRCC/DOJ and one for ESDC/DOJ. Each AI/ML solution is sought to help enhance: analytical capacity; speed, accuracy and effectiveness of legal research; speed, comprehensiveness and accuracy of answers to legal questions; prediction of litigation outcomes; and trend analysis in litigation. The additional objective is to streamline and find efficiencies in a number of different legal and business activities taking place within IRCC, ESDC and the DOJ.

2.1 IRCC Decisions, Litigation and Trends

IRCC is seeking a solution to assist in legal research, assist in the development of legal advice/legal risk assessments using predicted outcomes in litigation and to provide litigation trend analysis. There are many different areas of immigration law where IRCC officials make administrative decisions that are litigated. DOJ counsel and paralegals, together with IRCC Litigation Analysts, review, respond to and manage the volume of litigation.

Administrative decisions made at IRCC are subject to judicial review before the Federal Court. The DOJ has litigation counsel, DOJ Departmental Legal Services Unit (IRCC DLSU) litigation support counsel acting as in-house counsel to IRCC and paralegals who are variously involved from the point at which an application for leave for judicial review of an IRCC decision is filed through to its conclusion. Depending upon the complexity of the file, DOJ counsel, located either in regional offices across Canada or in Ottawa, may spend several hours per file researching, analyzing and

advising as part of the management of the litigation. Litigation Analysts at IRCC also spend several hours per file reviewing, analyzing, and liaising with program and policy areas and coordinating a departmental approach as the instructing client. This combined DOJ-IRCC effort includes time spent working together to determine the position(s) to be taken in the litigation, along with assessing implications and risk in relation to the litigation. Concerning the current environmental context, the DOJ and IRCC conducts the legal research and legal analysis functions manually. On a preliminary basis, IRCC has areas of immigration law where it seeks to pilot AI/ML solutions: Pre-Removal Risk Assessment applications and Humanitarian & Compassionate consideration applications (both made from within Canada). The high-level functionality sought is as follows:

- Allow users to conduct detailed research of case law relevant to a particular legal question and factor(s);
- Use historical data to predict the likelihood of a case being successfully litigated;
- Provide an analysis or narrative explaining which factors about a specific case are most relevant for predicting the likelihood of successful litigation; and
- Identify/summarize the relevance of similar cases within the existing case law history.

Optional functionality sought is as follows:

- Allow users to conduct exploratory data analysis of trends in immigration case law and the factors influencing these trends; and
- A solution that could also be used by front-end administrative decision makers to predict litigation outcomes as a consideration in their decision-making process.

A solution is sought to assist in the analysis of trends in immigration litigation/case law - a broad-based solution that can analyze large volumes of immigration litigation data (i.e., case law) to assist in the development of policy positions, program decisions and program guidance relevant to decision making and litigation would be ideal. For example, the capacity to analyze trends in case law, such as key facts that are influencing outcomes in litigation, would be valuable to IRCC and the DOJ.

Users of the solution(s)

The users of a possible AI solution would be IRCC Litigation Analysts, DOJ Departmental Legal Services Unit counsel and regional DOJ litigators and paralegals who are involved in litigation management. With the responses to this RFI, IRCC will explore the possibility of whether or not the AI/ML powered solution(s) could also be used by front-end IRCC administrative decision-makers across the domestic and international networks to aid in their assessment of the merits of an application before decisions are finalized. This could entail separate client interfaces or functionality depending upon the user group.

Available Data

The data to be used by the AI/ML solution(s) would include published court decisions and general case factors, and, in future, possibly departmental applicant records (both structured and unstructured) contained in its system/database of record.

2.2 ESDC Decisions, Litigation and Trends:

ESDC delivers a range of programs and services that affect Canadians throughout their lives such as providing Canada Pension Plan and Old Age Security pensions and related benefits, supporting unemployed workers, helping students finance their post-secondary education, and assisting parents raising young children. The Labour Program fosters safe, healthy, fair and inclusive work environments and cooperative workplace relations in the federal jurisdiction.

ESDC is in the midst of a Service Transformation Plan which includes a number of service solutions that will leverage artificial intelligence and machine learning to deliver client-specific service insights and support. Likewise, ESDC's Benefits Delivery Modernization initiative seeks to improve e-service and automation to streamline the processing of Canada Pension Plan, Old Age Security, and Employment Insurance claims, facilitate interactions with Canadians, and enable self-service for low complexity requests.

ESDC's Legal Services Unit provides legal services to support the programs, operations and key initiatives, including legislative and regulatory initiatives of ESDC, Labour Program, Service Canada, and Veterans Affairs Canada. The Legal Services Unit also provides litigation and litigation support services, which includes:

- appearing before the Social Security Tribunal and Federal Courts of Canada on appeals and judicial reviews respecting the Canada Pension Plan, the [Old Age Security Act](#) and the [Employment Insurance Act](#);
- seeking settlement recoveries related to the *Government Employee Compensation Act* program, managed by the Labour Program.

It is within this context that ESDC is pursuing information on AI/ML solutions which support early legal risk assessment, informs litigation strategy, and the identification of potential efficiencies in the delivery of legal services.

The high-level functionality sought is as follows:

- Allowing users to conduct detailed research of case law relevant to a particular legal question and factor(s);
- Determining the probability that a given fact scenario meets the threshold for benefit eligibility, or is a viable claim (e.g. likely to result in a settlement);
- Identifying what information may be missing in order to meet this threshold;
- Identifying the dollar range of the settlement that could successfully be negotiated; and
- Identifying/summarizing the relevance of similar cases within the existing case law history.

Should there be suitable tools available, ESDC would likely explore opportunities to pilot a solution for a select program area, in order to assess the potential for scaling the solution in other contexts.

ESDC Potential Use Case: Government Employee Compensation Act (GECA) program

When an employee of the public service of Canada suffers an injury resulting from an accident or an occupational disease in the course of their employment, they are eligible for the benefits provided by the [Government Employees Compensation Act](#) (GECA) (<http://laws-lois.justice.gc.ca/eng/acts/G-5/>).

Where a third party is liable for the injury, the Labour Program seeks to recover the Crown's costs from that third party. Once assigned a case by the Labour Program, the Legal Services Unit leads the early assessment of claim viability, and leads the negotiation of settlements with the third party. Viable claims for which ESDC has not been able to negotiate a settlement, and higher value claims that have insufficient information to assess before the Statute of Limitation date, are sent to the DOJ for litigation. DOJ counsel, located either in regional offices across Canada or in Ottawa, then assume carriage of the file, and may spend several hours per file researching, analyzing and advising as part of the management of the litigation.

Available Data

The data (structured and unstructured) to be used by the AI/ML solution and model includes published court decisions, an administrative *GECA* database, and additional administrative records.

Users of the solution(s)

Dispute resolution advisors, paralegals, and counsel within the ESDC Legal Services Unit would use this solution as a research aid in developing their strategy in settlement negotiations, as well as a resource in the determination of which claims to send to DOJ counsel for litigation.

3 Instructions to Respondents

Nature of request for information

This is not a bid solicitation. This RFI will not result in the award of any contract. As a result, potential respondents of any goods or services described in this RFI should not reserve stock or facilities, nor allocate resources as a result of any information contained in this RFI, nor will this RFI result in the creation of any source list. Therefore, whether or not any potential respondent responds to this RFI will not preclude that respondent from participating in any future procurement. Also, the procurement of any of the goods or services described in this RFI will not necessarily follow this RFI. This RFI is simply intended to solicit feedback from industry with respect to the matters described in this RFI. IRCC, ESDC and the DOJ are interested in technology and solutions that would enhance the efficiency and effectiveness of the litigation management and front-end decision-making processes.

Format of Responses Requested

- a) **Format:** Respondents are requested to submit one soft copy of their response in Portable Document Format (PDF).
- b) **Cover Page:** If the response includes multiple volumes, respondents are requested to indicate on the cover page of each volume the title of the response, the solicitation number, the volume number and the full legal name of the respondent.
- c) **Title Page:** The first page of each volume of the response, after the cover page, should be the title page, which should contain the:
 - a. title of the respondent's response and the volume number;
 - b. name and address of the respondent;
 - c. name, address and telephone number of the respondent's contact;

- d. date; and
 - e. RFI number.
- d) **Part A should include the Proposed Solution with references to the Business Requirements as depicted in Section 2 and the General Requirements in Section 4.**
 - e) **Part B should include answers and feedback to the questions listed in Section 5. Please identify which department/pilot project the responses relate to.**
 - f) **Numbering System:** Each question has its own unique number. It is a sequential number prefixed with a “Q”. Respondents are requested to prepare their response using the numbering system corresponding to the one in this RFI, and to repeat the question prior to their response for ease of reviewer reference. All references to descriptive material, technical manuals and any brochures included as part of the response should be clear both in the citation and on the referenced document. All should be referenced accordingly.

Response Costs

The Government of Canada will not reimburse any respondent for expenses incurred in responding to this RFI.

Treatment of Responses

- a) **Use of Responses:** Responses will not be formally evaluated. However, the responses received may be used by the Government of Canada to develop or modify procurement strategies or any draft documents contained in this RFI. The Government of Canada will review all responses received by the RFI closing date. The Government of Canada may, in its discretion, review responses received after the RFI closing date.
- b) **Review Team:** A review team composed of representatives of IRCC, ESDC and the DOJ will review the responses. The Government of Canada reserves the right to hire any independent consultant, or use any government resources that it considers necessary to review any response. Not all members of the review team will necessarily review all responses.
- c) **Confidentiality:** Respondents should mark any portions of their response that they consider proprietary or confidential. The Government of Canada will handle the responses in accordance with the Access to Information Act.
- d) **Pre-Submission Industry Day Sessions:** The Government of Canada may, in its discretion, host one or two industry day sessions for the purpose of explaining its requirements and to allow industry to ask questions and seek clarifications.
- e) **Post-Submission Review Meetings:** The Government of Canada may, in its discretion, hold a single Post-Submission Review Meeting with all interested vendors or request individual Post-Submission Review Meetings with selected respondents to provide clarity on information provided, or to invite a presentation about some or all of the proposed solution. If required, these will be held at the most appropriate location, to be determined at a later date. The intent of these meetings will be to provide an opportunity for a face-to-face discussion with respondents. Although respondents may request a meeting, and their request will be considered, the Government of Canada will determine whether or not it requires additional information from

any given respondent and will schedule meetings accordingly. All such requests, by respondents, should be forwarded to the Contracting Authority identified herein. Note that a maximum of two (2) hours will be set aside for any meetings with respondents.

Enquiries

Because this is not a bid solicitation, the Government of Canada will not necessarily respond to enquiries in writing or by circulating answers to all potential respondents. However, respondents with questions regarding this RFI may direct their enquiries to the Contracting Authority identified herein.

Submission of Responses

- a) Respondents should send responses electronically via e-mail to the Contracting Authority's e-mail address identified herein by the date specified on the front page of the RFI.
- b) All requested information is to be provided to the Contracting Authority on or before the closing date of the RFI.

Contracting Authority

The Contracting Authority for this RFI is:

Contracting Authority: Heather Ferrier
E-mail Address: heather.ferrier@tpsgc-pwgsc.gc.ca
Telephone: 613-720-7986

4 General Requirements

Availability requirements

The solutions may be made available to officials of IRCC, ESDC and the DOJ nationally (across Canada). The number of users will vary between activities. The user base may be extended to IRCC officials stationed overseas in possible future deployments of the solution(s).

Language

The [Official Languages Act, R.S.C., 1985](#), c. 31 (4th Supp.) requires that regularly and widely used work instruments be made available in both English and French to government officers and employees. Consequently, the solution will require a bilingual user interface. Training documentation and user manuals will also need to be made available in both English and French. A desirable feature would be for the users to be able to toggle on-the-fly between English and French within the solution.

Support

The respondent should indicate their organization's approach to the management of incidents and problems and illustrate how issues are escalated and resolved.

Maintenance

The respondent must be prepared to illustrate their problem/change management procedures for ongoing updates to the solution(s), their maintenance procedures for the solution(s) and explain their approach concerning emergency fixes and problem escalation procedures and resolutions. The frequency of solution updates/releases and the downtime, if any, associated with updates/releases to the solution would be helpful to know.

Training

The respondent must provide a training strategy and approach to the creation and dissemination of user education material.

Security

The solution(s) must secure solicitor-client privileged information and data and must achieve a minimum of a Protected B level of security. Protected B is the federal level of security that applies to information and assets that, if compromised, could cause serious injury to an individual, organization or government.

The respondent must be aware that, at this time, IRCC, ESDC and the DOJ assume that the security profile for Protected B information will be mid-integrity and mid-availability as per the Government of Canada's ITSG-33 policy and procedures (as contained at the following link: <https://www.cse-cst.gc.ca/en/publication/itsg-33>).

It should be noted that for user access controls, the solution(s) need(s) to accommodate users from multiple departments (IRCC/DOJ and ESDC/DOJ for the respective solutions).

It is desirable to implement Single Sign-on (SSO) using services such as Active Directory and other Public Key Infrastructure solutions to allow for remote access to Government of Canada networks.

Access rights can or will be set for the DOJ, IRCC and ESDC or third parties as required.

Reporting capability

The respondent must describe the reporting capabilities of the solution(s) and any reports and data visualization provided with the solution(s) (e.g., ad hoc reporting, canned reports, visualization and drill down capabilities for analyzing algorithm decisions, etc.).

5 List of Questions

Company Overview

1. Please provide a short description of your firm, its facilities and locations and the types of products and services it provides.
 - i. In which country/countries are your facilities located?
 - ii. In which country/countries does your firm conduct business?
 - iii. How long has your firm been in business?
 - iv. Has your firm previously received security clearance to work with the Government of Canada?
2. Have you provided AI/ML solutions or developed prototypes for public sector or private sector organizations in Canada or elsewhere? If so, what were the objectives and the high-level functionality of the solution(s), and what are some lessons learned from the experience(s)?

The Solution

3. Please provide detailed information about a potential solution, including a description of:
 - i. How the general business requirements could be addressed by the solution;
 - ii. Significant gaps in the identified requirements or how they could be improved;
 - iii. The nature of the analysis and the supporting information the solution will provide to users for the three activities identified being research, prediction and trend analysis;
 - iv. Whether or not the legal questions to be answered by the solution need to be discrete and fact-based;
 - v. Conceptually, how the solution would take the facts of an individual case and arrive at a predicted outcome of the litigation;
 - vi. How the solution would be adapted to address changes in the law (case law or legislation);
 - vii. How the algorithm or neural network is trained;
 - viii. The volume or nature of training data (e.g., applications/claims/facts/judicial decisions) that would be required to allow for accurate predictions of legal outcomes and why that volume is needed.

Viewpoint on AI/ML Technology, Maturity & Limitations

4. What challenges do you foresee in developing and implementing AI/ML solutions and what solutions exist to overcome those challenges? What are the unique considerations in the government setting?
 - i. How would industry address the challenge of demands to make AI/ML models transparent to ensure that the predicted outcomes can be reviewed and the rationale understood (e.g., which factors were the most important in influencing the predicted outcome, and how was the predicted outcome developed)? What would be the consequences in this context of releasing such information?
 - ii. What are the pitfalls, weaknesses and critical dependencies in AI solutions for the identified requirements?
 - iii. How can AI/ML models be developed to ensure biases or potential biases are not introduced? How are biases detected?
5. How would you characterize and define the different types of AI/ML technologies?
6. What solutions do you consider to be mature, developing or in the early stages of implementation that are appropriate for the identified requirements? Are solutions available to meet the identified requirements or could solutions be customised or configured to meet these requirements? Should solutions not be available to meet identified requirements could a solution(s) be developed with available AI/ML technology? Please explain.
7. Whether a Commercially Off The Shelf (COTS) products exists or a solution needs to be developed to meet identified requirements:

- i. What level of client capacity and involvement is required to develop a solution or to support the use of COTS (including customization and configuration) for AI/ML solutions?
- ii. Would any solution developed or COTS products allow for AI/ML models to be developed, re-trained or adjusted as required for more than one area of the law or to answer more than one legal question? That is, how reusable/transferrable is the technology such that a solution could be adapted for use for multiple areas of the law or to answer multiple legal questions?
- iii. Is it possible that a solution could accommodate requirements and users from different departments (IRCC/DOJ and ESDC/DOJ for the respective pilot projects) or are separate solutions required to accommodate their respective requirements and users?
- iv. Are there design considerations in an AI/ML solution that would allow it to have the widest range of potential applications/uses beyond the identified requirements? If yes what are the major design considerations? What are the key elements to consider in terms of such reusability and transferability?

Approach to Developing and Implementing AI/ML Solutions

8. What are the major considerations and critical components that need to be taken into account with respect to developing and operationalizing AI/ML solutions? For example:
 - i. Are there complementary software or hardware dependencies that need to be in place for an AI/ML model to function correctly?
 - ii. What interoperability capacity would your solutions have with other commonly used products (such as Microsoft SharePoint, OpenText document management, Customer Relationship Management (CRM), case management solutions, Statistical Package for the Social Sciences (SPSS), SAS, Oracle, etc.)?
 - iii. Are there any special CPU, memory, storage, network or database requirements?
 - iv. How is OS, server patching and third party middleware upgrades handled? (i.e., schedule, frequency, on demand)?
9. What are the industry's standards, best practices or measures that can be used to assess the efficiency, accuracy, reliability and performance of such AI/ML solutions?
 - i. Explain how efficiency, accuracy and reliability of such solutions would be ensured and measured? Please explain including in relation to the solution's analytical and predictive capabilities?
 - ii. Can you measure accuracy of predictions of outcomes/trends such as by a margin of error? If yes, what is the margin of error?
 - iii. Can you measure accuracy of the solution's other outputs (information/analysis) such as by margin of error? If yes, what is the margin of error?
 - iv. What is the performance of such solutions (e.g., response time for a research/prediction of outcome/trend analysis including the supporting information provided by the solution)?

10. Please advise of any other industry standards or best practices that should be followed for the development or deployment of AI/ML solutions that were not already addressed in your previous responses.
11. With an AI/ML solution development and deployment, what is the role of clients? For example:
 - i. Can client users train and re-train the AI/ML models, or would this require additional customization, support or permissions?
 - ii. Can clients configure data, rules, algorithms and fine-tune decisions? If yes how?
 - iii. Can data/rule configuration be done by the client in production or does it need back-end technical support/release management?
 - iv. Are any specific programming and scripting skills/training required or additional professional services required?
 - v. How can users review the algorithm decisions?

Training & Support

12. Please provide an overview of the training and support services available, including considerations for implementing the solution across Canada, potentially across different government departments and possibly overseas in future iterations.

Additional Technical Considerations

13. Please explain:
 - i. the languages and/or character sets supported for the import, export and manual entry of data into the solution;
 - ii. any dependencies on third party software components necessary to deploy the solution;
 - iii. details related to the support of any third party components (e.g., source of support, method of delivery, maintenance, etc.);
 - iv. integration points between requirements, where applicable, and any value-added software products/solutions;
 - v. the level of Government of Canada IT resources required to support the solution (e.g., hardware, software, etc.);
 - vi. How many minor and major releases are planned in a year? Are there solution outages associated with the different types of releases? If there are solution outages, what is the average time of the outage based on release type?
14. What are the various hosting options available for the proposed solution(s) that allow for data to reside and remain within Canada (e.g., Software as a Service (SAAS), Infrastructure as a Service (IAAS), Platform as a Service (PAAS), on-premise instances, etc.)?
 - i. For each option, please describe the security architecture and how it meets the Government of Canada security standards and protocols (<http://www.tbs-sct.gc.ca/pol/topic-sujet-eng.aspx?ta=27>). The Treasury Board Secretariat (TBS) Cloud Adoption Strategy is also included for reference: <https://www.canada.ca/en/treasury-board->

[secretariat/services/information-technology/cloud-computing/government-canada-cloud-adoption-strategy.html](#).

- ii. If cloud-based, how is tenancy security implemented?
 - iii. Describe the business continuity plan to address unforeseen circumstances.
 - iv. Please identify any other hosting considerations that should be taken into account by the Government of Canada. It should be noted that any off-premises hosting solution must meet the data sovereignty requirements for data to be hosted in Canada.
15. What would be the expected length of time required to provide a solution that meets the aforementioned requirements?

User Accessibility & Usability

16. How does the potential solution address the following:
- i. What mechanisms are in place to meet Web Content Accessibility Guidelines (WCAG)?
 - ii. How are input data sets entered into the system (e.g., manual data entry, spreadsheet imports, graphical)?
 - iii. How are decisions reviewed (e.g., lists, graphical, reports)?

Data

17. What data sources would you recommend for use to develop such a solution to meet the identified requirements i.e. for the three activities identified being research, prediction and trend analysis?
18. How can industry leverage and integrate public information repositories in AI/ML models? How can information repositories internal to government departments be integrated?
- i. How would you solve the challenge of working with and analyzing large volumes of unstructured data?
19. Should IRCC or DOJ databases be required, what is involved in leveraging or integrating an AI solution with existing databases and what data requirements/inputs would need to be developed for an AI solution, whether it includes internal data and/or publicly-available data?
20. Are industry data standards used for the specification of inputs and decisions?
21. Are industry-standard AI/ML algorithms used (e.g., Bayesian, Decision Trees, Neural Networks, Linear Regression)?

Privacy & Protection of Information

22. How does industry ensure that privacy and confidentiality are protected when applying AI/ML technologies to personal information holdings?

- i. What best practices can be used to address privacy concerns and the requirements in the [Privacy Act](http://laws-lois.justice.gc.ca/eng/acts/p-21/) (<http://laws-lois.justice.gc.ca/eng/acts/p-21/>), [Personal Information Protection and Electronic Documents Act](http://laws-lois.justice.gc.ca/eng/acts/P-8.6/) (<http://laws-lois.justice.gc.ca/eng/acts/P-8.6/>), and Part IV of the [Department of Employment and Social Development Act](http://laws-lois.justice.gc.ca/eng/acts/H-5.7/FullText.html) (<http://laws-lois.justice.gc.ca/eng/acts/H-5.7/FullText.html>)?
23. When analyzing sensitive data in an AI/ML model, how is confidentiality ensured for information that must be protected (e.g., solicitor-client privileged information)?
24. How does the potential solution address IT security?
 - i. Application: What mechanisms/processes are in place
 - a) To prevent unauthorized access or data integrity compromise?
 - b) For logging and auditing user events, rule / algorithm changes and AI algorithm decisions?
 - c) To handle access control and at what level of granularity (e.g., field level, case level, decision level)?
 - ii. Information Management: What mechanisms/processes are in place:
 - a) To protect the input data?
 - b) For data retention and disposition?
 - c) To package and transfer data back to the Government of Canada if the solution is discontinued?
 - d) For reporting security incidents and violations?
 - e) For disaster recovery and business continuity?

Intellectual Property (IP)

25. Please describe the options for the intellectual property rights, taking into account the viable business models for the solutions, such as vendor-owned and Government of Canada-owned.

Cost Model

26. Please describe the options for the pricing model for a vendor-owned solution (e.g., perpetual licence, subscription-based licence, user licence, device/CPU/server licence, entity/enterprise licence, other model)? What is the estimated cost to develop and maintain such products and services?
27. Where a Government of Canada-owned solution is developed because a vendor-owned solution is not viable, what would be the estimated cost for the products and services? What is the estimated cost to develop and maintain such a solution?