

AI Use Case Risk Assessment– This questionnaire is meant to assist staff in assessing the risk profile of an AI use case. The risk level will inform planning for the level of the risk mitigation efforts, estimated timeline for safety, quality and performance verification, and resources required.

WHAT & WHY?

<p>1. Describe the AI or ML use case being proposed, include information about what function will be enhanced or automated through AI, what improvements are expected, or what specific capability would be added?</p> <p>We are proposing a computer vision-based search engine for the LOC's Geography & Maps (G&M) division. This search system will be able to search across visual features of an image that the AI model encodes and makes searchable in advance, rather than the current limitations to search across metadata.</p>	<p>2. What is motivating your team to introduce AI or ML into this process? (Check all that apply)</p> <p><input checked="" type="checkbox"/> Directive from leadership</p> <p><input type="checkbox"/> To achieve a strategic or operational goal currently out of reach</p> <p><input type="checkbox"/> High volume of existing backlog of work or cases</p> <p><input type="checkbox"/> Improve overall quality of output or service</p> <p><input type="checkbox"/> Lower time of completion for an existing process (time saved)</p> <p><input type="checkbox"/> The enhancement could perform tasks that humans could not accomplish in a reasonable period of time (scale)</p> <p><input type="checkbox"/> Use of innovative approaches, want to try something new.</p> <p><input type="checkbox"/> Opportunity to collaborate with internal or external partner.</p> <p><input type="checkbox"/> Other (please specify):</p>
<p>3. Is the proposed enhancement in an area with an existing high degree of oversight, regulation, or litigation?</p> <p><input type="checkbox"/> A: Yes</p> <p><input type="checkbox"/> B: Could be</p> <p><input type="checkbox"/> C: I don't know</p> <p><input checked="" type="checkbox"/> D: Probably Not</p> <p><input type="checkbox"/> E: No</p>	
<p>4. How will the proposed AI capability or service ultimately function?</p> <p><input checked="" type="checkbox"/> A: Fully automatically with no human review or oversight</p> <p><input type="checkbox"/> B: Partially automated with limited review of all outputs</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Partially automated with regular review of a sample of outputs</p> <p><input type="checkbox"/> E: Partially automated with review of all outputs</p> <p><input type="checkbox"/> Other, describe:</p>	<p>5. Human and AI tools both introduce error into workflows. What is the tolerance for error in this proposed use case?</p> <p><input type="checkbox"/> A: No tolerance</p> <p><input type="checkbox"/> B: Low tolerance for error</p> <p><input type="checkbox"/> C: I don't know</p> <p><input checked="" type="checkbox"/> D: Some tolerance</p> <p><input type="checkbox"/> E: High tolerance</p>
<p>6. Is the capability operational in other systems internally or externally?</p> <p><input type="checkbox"/> A: No</p> <p><input checked="" type="checkbox"/> B: Not that I know of</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Yes, at a different organization</p> <p><input type="checkbox"/> E: Yes, at my organization</p> <p><input type="checkbox"/> F: If yes, where and what is it?</p>	<p>7. What is the status of planning for the use case?</p> <p><input type="checkbox"/> A: Would be nice to have</p> <p><input checked="" type="checkbox"/> B: Is a strategic investment or improvement</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Affects a critical function</p> <p><input type="checkbox"/> E: Affects a critical function that only this organization performs</p>
<p>8. What would the consequence of not deploying the case or enhancement be?</p> <p><input type="checkbox"/> A: Use case or enhancement could not be delivered at all</p> <p><input type="checkbox"/> B: Use case or enhancement would not be timely and/or costs would be too high</p> <p><input type="checkbox"/> C: I don't know</p> <p><input checked="" type="checkbox"/> D: Use case or enhancement quality would not be as high</p> <p><input type="checkbox"/> E: Use case or enhancement would not improve or meet expectations</p> <p><input type="checkbox"/> F: Other, please specify</p>	<p>9. How do you currently assure high quality outcomes or do quality review for this capability (or related task)?</p> <p><input type="checkbox"/> A: None, outcomes from this workflow are not reviewed</p> <p><input checked="" type="checkbox"/> B: This is a new capability, so no review process exists yet</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: We have expert staff review</p> <p><input type="checkbox"/> E: We have expert staff review and there are written policies and/or standards for the capability</p> <p><input type="checkbox"/> F: Other, describe:</p>
<p>10. What is the cost or impact of mistakes or errors in this use case?</p> <p><input type="checkbox"/> A: High – mistakes would result in catastrophic failures of critical workflows</p> <p><input type="checkbox"/> B: Moderately high – mistakes would be very costly to resolve and fix</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Moderate – mistakes would cause some disruption</p> <p><input checked="" type="checkbox"/> E: Low – mistakes would have little impact</p>	<p>11. Are the impacts resulting from the AI capability in the use case reversible?</p> <p><input type="checkbox"/> A: Cannot reverse</p> <p><input type="checkbox"/> B: Difficult to reverse</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Likely reversible</p> <p><input checked="" type="checkbox"/> E: Easily reversible</p>

WHO?	
<p>12. Who are the stakeholders to consult, keep informed, and gather input and feedback from on the proposed AI use case? Geography & Maps Division staff, LOC Labs staff</p>	
<p>13. If successfully implemented, could this enhancement have major impacts on staff, either in terms of their numbers or their roles?</p> <p><input type="checkbox"/> A: Yes, many staff will be impacted</p> <p><input type="checkbox"/> B: Yes, some staff will be impacted</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Yes, a few staff will be impacted</p> <p><input checked="" type="checkbox"/> E: No staff will be impacted</p>	<p>14. What is the current level of skill or experience relevant staff have in AI or ML?</p> <p><input type="checkbox"/> A: Complete beginner</p> <p><input type="checkbox"/> B: Novice</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Moderately experienced</p> <p><input checked="" type="checkbox"/> E: Highly experienced</p>
<p>15. Will end users directly interact with the AI or ML enhancement?</p> <p><input type="checkbox"/> A: Yes</p> <p><input type="checkbox"/> B: Yes, with staff support</p> <p><input type="checkbox"/> C: I don't know</p> <p><input checked="" type="checkbox"/> D: Not directly, staff will mediate access</p> <p><input type="checkbox"/> E: No</p>	<p>16. Are end users or those impacted by the enhancement particularly vulnerable?</p> <p><input type="checkbox"/> A: Yes, end users are in multiple vulnerable groups</p> <p><input type="checkbox"/> B: Yes, end users are in at least one vulnerable group</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: End users are not vulnerable now but could be</p> <p><input checked="" type="checkbox"/> E: No</p>
<p>17. Will the proposed capability create or exacerbate barriers for persons with disabilities?</p> <p><input type="checkbox"/> A: Yes</p> <p><input type="checkbox"/> C: I don't know</p> <p><input checked="" type="checkbox"/> D: No</p> <p><input type="checkbox"/> E: No, it will help break down barriers</p>	<p>18. Are there disclosure or permission-requesting requirements for using data that people are depicted in?</p> <p><input type="checkbox"/> A: Yes</p> <p><input type="checkbox"/> C: I don't know</p> <p><input checked="" type="checkbox"/> D: Not applicable</p> <p><input type="checkbox"/> E: No</p>
<p>19. Are people or groups who are potentially impacted by the proposed AI process represented in the training data set?</p> <p><input type="checkbox"/> A: No</p> <p><input type="checkbox"/> C: I don't know</p> <p><input checked="" type="checkbox"/> D: Not applicable</p> <p><input type="checkbox"/> E: Yes</p>	<p>20. Will the AI enhancement impact the rights, wellbeing or dignity of individuals?</p> <p><input type="checkbox"/> A: Yes, negatively</p> <p><input type="checkbox"/> B: Yes, positively for some people</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Yes, positively for all people</p> <p><input checked="" type="checkbox"/> E: No</p>
Data	
<p>21. Will the enhancement use data that contains personal information at any point in the automated system?</p> <p><input type="checkbox"/> A: Yes</p> <p><input type="checkbox"/> B: Yes, a limited amount</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Yes, but it is removed</p> <p><input checked="" type="checkbox"/> E: No</p>	<p>22. Will the enhancement use copyrighted or otherwise restricted information at any point in the proposed AI system?</p> <p><input type="checkbox"/> A: Yes</p> <p><input type="checkbox"/> B: Yes, a limited amount</p> <p><input type="checkbox"/> C: I don't know</p> <p><input type="checkbox"/> D: Yes, but we have permission</p> <p><input checked="" type="checkbox"/> E: No</p>
<p>23. Will your organization be supplying data to train, validate or fine tune the automated system? These data usually consist of machine-readable digital content with the accompanying metadata or labels at the granularity, specificity, or standard you want the model to recognize. For example, e-book files with their corresponding MARC catalog records would train a model to create MARC records from e-books.</p> <p><input type="checkbox"/> A: No, we will use a pre trained system</p> <p><input type="checkbox"/> B: No, we will need to create training or validation data</p> <p><input type="checkbox"/> C: I don't know if we have training data for this use case</p> <p><input type="checkbox"/> D: Yes, but we still need to assemble it</p> <p><input checked="" type="checkbox"/> E: Yes, we have it identified and ready to transfer</p> <p><input type="checkbox"/> F: Other, describe:</p>	
<p>24. All data contains some type of bias or unbalance. Do you have a process to test or review datasets against biases or other unbalanced or unexpected outcomes?</p> <p><input type="checkbox"/> A: We are not aware of biases and do not review for imbalanced outcomes</p> <p><input type="checkbox"/> B: We are aware of biases and do not review for imbalanced outcomes</p> <p><input type="checkbox"/> C: I don't know</p> <p><input checked="" type="checkbox"/> D: We are aware of biases and have expert staff review for imbalanced outcomes</p> <p><input type="checkbox"/> E: We are aware of biases and have expert staff and balanced datasets to benchmark against</p> <p><input type="checkbox"/> Other, describe:</p>	

Assessment:

Count and add up your marked answers in the chart below:

Section	A	B	C	D	E	subtotals
What & Why	1	3	0	3	2	9
Who?				4	4	8
Data				1	3	4
Subtotals	1	3	0	8	9	21

Mostly As - Very high-risk use case. Plan for significant research, development and testing before implementation. Performance must meet the current state of the art for AI safety, trustworthiness, and quality. Quality benchmarks and controls need to be developed and thoroughly tested for even and consistent performance.

A lot of Bs - High risk use case. Experiment, test and pilot these solutions prior to implementation. Baseline quality metrics need to be established.

Primarily Cs - More information and detail are needed prior to moving forward.

A lot of Fs - Moderate risk use case. If you want to buy or acquire AI services for this risk level, verify published performance metrics are achievable with your data and use case.

Mostly Es - Low risk use case. It is likely appropriate to research and purchase tools or services available in the marketplace that meet quality standards.

A mix? Where do you have the most As and Bs? That will tell you where to focus risk mitigation efforts. Your Ds and Es will point to where the conditions for risk are lowering.

These scores are not final nor are they exact. They are meant to inform a first level assessment of risk, feasibility, and prioritization for proposed AI use cases. The discussion and reflection this questionnaire facilitate are more significant than the score. There are a range of risks and costs involved in the implementation of AI. A higher risk level generally signifies higher costs and resources required for implementation¹.

¹ Risk categories are inspired by the FADGI evaluation parameters. Many of the questions are based on the Algorithmic Impact Assessment (Canada): <https://canada-ca.github.io/aia-eia-js/>