

Study LLM4Gov

Question	Réponse/Answer
Je suis actuellement en train de créer une entreprise au Luxembourg qui se spécialise dans le domaine de l'intelligence artificielle générative. Cependant, il est probable que l'enregistrement officiel de mon entreprise ne soit pas finalisé avant la date limite de soumission des offres fixée au mardi 19 novembre 2024. À ce titre, je souhaiterais savoir s'il est obligatoire de disposer d'une entreprise enregistrée au moment de la réponse à l'appel d'offres, ou si cela est acceptable au moment de la signature du contrat en cas de sélection. Pourriez-vous également me préciser les timing des prochaines étapes après la soumission des offres, notamment en ce qui concerne la sélection, la signature du contrat et le début du projet ?	Les marchés ne peuvent être adjugés qu'aux opérateurs économiques qui sont au jour de l'ouverture de la soumission juridiquement établis. La sélection sera faite entre le 19 novembre et début décembre 2024. Le début du projet est actuellement planifié pour début 2025.
If we answer to this phase of the project, can we also potentially work on the next phase (deployment phase)?	Submitting an offer for this call for solutions poses no restriction for potentially also working on the deployment phase. However, offers submitted by economic operators will be ineligible for the award of the "Study LLM4GOV" contract should the execution of the contract by said economic operators entail the evaluation of their own product.
From administrative point of view, what other documents must be attached to the application besides the offer with the concept paper, CVs and Criminal records #3 to be considered eligible? Do we need to send extracts from RCS or any other compliance related documents?	The documents needed for an application are the following : -The offer including all elements detailed in the Project proposal; -the CVs of each person who will work on the project; -the criminal records of each person who will work on the project. Any additional documents might be requested during the selection phase.
Could you clarify which specific public sector use cases are prioritized in the survey results that will be shared with the chosen provider?	Use cases include : - Generation of text-based content and summaries - Retrieving information - Analysis of documents - Questions & answers
Are there preferred benchmarks or specific datasets the Ministry wishes to use for evaluating the candidate LLMs, especially regarding risk of hallucination, speed, and accuracy?	Are there preferred benchmarks or specific datasets the Ministry wishes to use for evaluating the candidate LLMs, especially regarding risk of hallucination, speed, and accuracy?
Could you elaborate on the expectations for multilingual support? For example, is there a minimum accuracy level required for Luxembourgish and other target languages?	There is no minimum accuracy level defined at this stage, the differences in accuracy between the different models that will be evaluated should be included in the study results. The model(s) should cover at minima FR, EN, DE and LU.
Will the Ministry provide access to existing models (like employment-specific chatbots) or infrastructure specifications for the integration feasibility assessment?	Access to existing models will not be provided. The CTIE will be involved as architectural consultant to support assessing whether the integration on its infrastructure is possible.
What are the Ministry's data security and privacy expectations for handling sensitive data, especially on sovereign or air-gapped cloud environments?	Data privacy expectations are in line with the following draft law : https://www.chd.lu/lu/dossier/8395 . The national / EU laws and regulations mentioned in the drafted law, and all other applicable laws and regulations.
For cost analysis, could you clarify any assumptions or limitations regarding the Total Cost of Ownership (TCO) evaluation over five years?	TCO should be evaluated with respect to the use cases . TCP should include the total set-up TCO and the total operating costs. Storage, labor and other ancillary items should be taken into consideration if their main purpose is to support operating the LLM.
Are there specific interoperability standards (e.g., OAuth2.0 or OIDC) or integration platforms (e.g., OpenShift) that must be supported by the selected LLM?	cf section 2.1, paragraph "Integration"
Could you outline expectations for the deliverables' format, especially for documentation like methodology, cost analysis, and use-case rankings?	A detailed written report as well as an oral presentation of study results is expected. There are no other specific requirements on the format and it is up to the economic operator to come up with a proposal on how the study results will be presented.
Will there be any penalties or specific terms for adjustments if the actual duration exceeds the projected six months?	There are no penalties foreseen. The requirement is to complete the project within the budget year 2025, therefore the project must be completed at latest in December 2025.
Are there additional preferences for the consultant profiles, such as experience with specific LLM providers or tools?	There are no specific preferences apart from the criteria mentioned in the project specifications.
What is the expected frequency of progress reporting and feedback meetings with the Ministry during the project's six-month duration?	A regular follow-up meeting is expected, at minima on a bi-weekly basis.
Are there specific evaluation metrics or KPIs the Ministry prioritizes for assessing the "versatility" and "ease of onboarding new use cases" for LLMs?	There are no evaluation metrics or KPIs defined. One of the goals of the study is to provide an assessment on these criteria and relevant metrics to use.
Could you provide more detail on the survey format and how the survey results will influence the ranking of LLMs or the selection of use cases?	The survey is not representative but gives a first insight into the needs and potential use cases regarding LLMs within the government. An online questionnaire was used to collect answers from all ministries and administrations. More than 400 responses have been collected via the survey. The highest ranked use-cases should be the ones that the study focuses on.
Is there a preferred approach for model customization or fine-tuning to meet the unique needs of Luxembourg's public sector?	The study should clarify the advantages/disadvantages of different approaches to customize models. There is no prior fixed requirement from our side.
Are there any anticipated challenges or current issues with existing digital infrastructure that the Ministry expects the LLM study to address?	There are no specific issues or challenges that we are aware of at this stage. This study should and can also give clarity on different integration approaches.
Could you clarify if the Ministry requires the inclusion of open-source models or would prefer proprietary models for deployment?	The leading state-of-the-art LLMs should at minima be considered, both proprietary and Open-Source.
Does the Ministry foresee any limitations or considerations regarding long-term model maintenance, such as regular updates or retraining?	It is use case dependant. Proposal may offer to include mid- to long- term strategy to account for the rapidly evolving nature of LLMs.
Could the Ministry outline the primary factors or requirements in evaluating cloud versus on-premises hosting for potential LLM solutions?	The following factors are foreseen : - Data privacy & data security - Integration, maintainability - TCO The economic operator can propose additional factors, as seen fit.
Are there any specific legal or compliance requirements that may affect the integration of third-party APIs or other external services?	Applicable data privacy laws and regulations might affect the integration with such services. Luxembourg's draft law 8395 should also be considered.
Is there flexibility in project milestones or deliverable deadlines if adjustments are needed based on project findings or challenges encountered?	Project milestones and deliverables need to be set before the start of the project. Under certain circumstances, adaptations can be made on mutual agreement of the economic operator and the ministry for Digitalisation.
Does the study only concern the selection of one or more LLMs? Or does the study also concern the use of one or more LLMs in production via an application enabling interaction with the LLM? (Because the tender is mentioning : API development, RAG application, Vectorised data) If so, do we limit the study to the actual choice of a LLM or is the study as broad as a whole AI stack with an LLM as part of this stack as some sentences in the call suggest : API interactions, text generation, code generation, vectorization, vector storage, indexing, chunking, reranking, summarization, etc. The number of parameters to be embedded into the study can grow a lot and will shape the methodology of the study.	The study should primarily focus on assessing the capabilities and integration possibilities of LLMs in the context of selected use cases. It might be necessary to include other elements when they cannot be dissociated from the exploitation of an LLM, especially for TCO computations.
Is it possible for GovTechLab to provide 3 concrete use cases? If not, are the following valid for the tender ? • I want to get a specific answer to a legal question based on the Legilux database • I want to have a summary of the State of the Nation 2021 • I want to generate a newsletter template for the Government Press Information Service • I want to generate a Python script that is connecting to the API data.public.lu and retrieving the dataset https://data.public.lu/fr/datasets/skills-required-in-adem-job-vacancies/ and store all this dataset in a sqLite database.	These prompts are good examples of what we are looking for. The use cases that we have identified in our questionnaire are not as specific as the prompts you have listed. Please check the answer above regarding the use cases as well as the project specifications.
Is it planned to provide the economic operator with one (or multiple) corpora of documents provided by a ministry (or a standard vector database) in order to evaluate them with a real-world use case? If not, is the generation of use cases the responsibility of the chosen economic operator, or will GovTechLab be responsible for collecting the use cases and their documentation?	As this is a study, it will not be asked to put the use cases into practice. Therefore, it is not foreseen to share any database.
Will GovTechLab provide specific criteria that clearly indicate what LLMs cannot be evaluated during the study's inception? (Particularly regarding the licensing scheme, the air-gapped production possibilities, which are narrowing significantly, and the fact that this is more a strategic/political matter rather than a technical one.)	It is use-case dependant as it pertains to the confidential or public nature of the underlying data. Part of the study consists in evaluating the ability to deploy LLMs in various environments, including public cloud, sovereign / air-gapped cloud, and on prem. Excluding LLMs from a thorough evaluation can be done if mandatory criteria (denoted by "should") are not met (for instance non GDPR-compliant models).
Can the compliance part be based on the compliance declaration of the providers or are you requesting a compliance check within the study? (which implies a more thorough legal check of the different solutions)	Concerning the compliance the study should show that the model is GDPR compliant and that the exposure of the LLM to extraction attacks can be prevented.

Can we answer as a consortium? If yes, what are the acceptable forms? If no, is subcontracting accepted for our partners?	Groups of economic operators, including where they have come together in the form of a temporary association, may participate without it being necessary for them to take on a specific legal form. However, groups of economic operators submitting a collective offer will be held jointly and severally liable for the execution of the contract should their offer be selected. In the event of a collective offer, the offer must therefore be accompanied by a declaration of joint and several liability, dated and signed by each economic operator participating in the consortium, in which the economic operators designate a representative from among themselves. The offer must indicate either the proportion assumed in the performance of the contract, and, where applicable, in each of its elements, by each of the operators, or the proportional contribution made by each of them in the performance of the contract as a whole or in that of its various elements. A consortium bid must also fully respect competition law.
What is the expected format for both the proposal and the team members' CVs? Are there specific formatting, content, or presentation guidelines that we should adhere to?	No, there is no specific formatting, content, or presentation guidelines necessary, you only need to add the information asked in section type of offer (i.e. Requirements...)
Could you provide additional details on how the quality of the proposal will be evaluated? For example, are there specific methodologies or approaches that are particularly valued?	The offer will be evaluated on the following criteria: <ul style="list-style-type: none"> • Quality of the offer submitted (approach, structure, level of detail, completeness,) – 40% • Proposed schedule and pricing – 30% • Profiles of consultants (relevant experience) – 30
Given the potential use of multiple research methods, are there specific constraints we should account for, such as timeline, budget, team size, or other limitations?	No
Is proficiency in French a mandatory requirement for the team, or will fluency in English suffice?	Fluency in English is sufficient, but French is beneficial
Will there be government personnel available to support us with knowledge of the existing infrastructure? If so, could you outline their anticipated level of involvement or availability throughout the project?	The level of involvement will be evaluated together at projet start. A regular follow-up meeting is expected, at minima on a bi-weekly basis together with representatives of the ministry and CTIE.
Is collaboration with external partners, such as university labs or high-performance computing providers, encouraged, or is it restricted to the internal research team?	Groups of economic operators, including where they have come together in the form of a temporary association, may participate without it being necessary for them to take on a specific legal form. However, groups of economic operators submitting a collective offer will be held jointly and severally liable for the execution of the contract should their offer be selected. In the event of a collective offer, the offer must therefore be accompanied by a declaration of joint and several liability, dated and signed by each economic operator participating in the consortium, in which the economic operators designate a representative from among themselves. The offer must indicate either the proportion assumed in the performance of the contract, and, where applicable, in each of its elements, by each of the operators, or the proportional contribution made by each of them in the performance of the contract as a whole or in that of its various elements. A consortium bid must also fully respect competition law.
Does the Ministry envision a single, versatile LLM capable of adapting to various use cases easily, or are multiple specialized models preferred to address specific use cases?	Both could be a solution and the study should help us decide on which configuration is best.
Are there priority languages (e.g., French, German, Luxembourgish) that the LLM should perform exceptionally well in, or should all languages be treated with equal priority across models?	There is no minimum accuracy level defined at this stage, the differences in accuracy between the different models that will be evaluated should be included in the study results. The model(s) should cover at minima FR, EN, DE and LU.
Will the LLM infrastructure be designed to serve all Luxembourgish government institutions, only the Ministry of Digitalization, or the general Luxembourgish population?	All the Luxembourgish government institutions that opt to utilise it.
Are there specific requirements or preferences for the computation platform, such as cloud-based solutions with preferred providers, on-premises options, EU-based geo-redundancy for data centers, or a preference for local providers versus hyperscale platforms?	The study is vendor agnostic. Constraints are listed under the "integration" paragraph of the project specifications document.
Is there an existing framework for prioritizing use cases, or should we develop and propose a prioritization methodology?	Please develop and propose a prioritization methodology.
What specific types of content creation might be required? Is it limited to text-based content, or are there other forms (e.g., image generation) involved?	Image creation is not the primary use case at this stage. It is mainly about text-based content.
Will benchmarking be conducted in-house, using publicly available benchmarks, or through a combination of both? If running the experiments falls within our scope, are we be provided with the infrastructure, or should we arrange and cover the associated costs?	No, this should be part of the study and the responsibility of the chosen economic operator.
Beyond the described deliverables, is there an expectation for us to provide reproducible scripts for benchmarking?	No
Are there specific performance metrics (e.g., accuracy, hallucination risk, response time) that are critical for the model's evaluation, or will this be left to our discretion?	No, this should be part of the study and the assignment of the chosen economic operator.
Should the environmental impact, such as energy consumption for hosting and maintaining the LLM, be factored into the proposal, and if so, to what extent?	Yes indeed, the environmental impact should be included as an evaluation criteria. This was not mentioned in the project specifications but it will be an important aspect. Energy consumption should be factored in the TCO.
Pouvez-vous confirmer que l'offre puisse être rédigée au choix en Français ou en Anglais?	Oui
Quel niveau d'implication est attendu de l'équipe du Ministère de la Digitalisation pendant le projet ?	Participant consultatif lors de l'étude.
Avez-vous des milestones déjà identifiés qu'il faudrait prendre en compte pendant la réalisation de l'étude?	Non
Avez-vous des contraintes budgétaires ou des seuils maximaux à prendre en compte lors de la formulation de la proposition?	L'offre doit être inférieure à 79.000€ hors TVA.
Y-a-t-il une structure particulière à respecter lors de la formulation de la proposition?	Non, voir les réponses ci-dessus.
Concernant le plan d'implémentation à définir pendant l'étude, y-a-t-il des contraintes additionnelles à prendre en considération pendant la réalisation de l'étude et dans ce cas faut-il prévoir des ateliers spécifiques pour identifier et collecter ces exigences. Si oui, quels seraient les acteurs additionnels à prendre en compte (CTIE...)?	Non, voir les réponses ci-dessus.
Au niveau des cas d'utilisation, quel sera le niveau de détail de l'enquête auprès des acteurs publics? Est-ce qu'il est souhaitable que ces acteurs public et/ou le ministère soient impliqués pour affiner ces besoins si nécessaire?	Non, l'enquête a été réalisée de manière anonyme.
Des données existe-elles pour effectuer le benchmark des LLMs et dans ce cadre ces données seront-elle transférables vers l'opérateur économique? Avez-vous des exigences particulière sur ce type de transfert de données?	Non
Could the Ministry of Digitalization specify a minimum number of LLMs that the study conducted by the economic operator should cover?	No, not at this stage. This can be an element of the offer, indicating a reasonable number of LLM to be evaluated.
To establish a realistic pricing structure under the requested fixed-price service contract, could the minimum number of use cases to be considered for the study be indicated?	As specified in the project specifications the maximum number of use cases is 8 and we did not define a minimum number.
For this evaluation, will the Ministry of Digitalization be responsible for initiating potential exchanges or providing information with relevant stakeholders in this field in Luxembourg?	Potential exchanges with relevant stakeholders will be a shared responsibility.
With regard to the cost estimation, will the Ministry of Digitalization be responsible for determining the number of potential users and other assumptions to consider, or should this be the responsibility of the economic operator?	Every model should be evaluated using the same metrics to be able to compare the costs of each model. The number of potential users isn't known at this stage.
The project specification states that the "Analysis of survey results and prioritization of different use cases" should be included. Can you confirm that the objective is to identify all the use cases submitted by the public sector organization and establish criteria for their prioritization?	Yes, please be aware that the main goal of the study is the benchmarking of different LLM Models and not the prioritization of the different use cases identified in the survey.
Can you confirm that a maximum of 8 use cases should be considered for the use-case specific capability analysis as specified in Section 2.1 Criteria, under the subsection "Capabilities and Features", second bullet point?	Yes
Will the CTIE be involved in the project, and will they support the economic operator in the evaluation of the feasibility of an implementation in the IT infrastructure of the State? If not, can you confirm that the Ministry of Digitalization will be responsible for collecting and sharing the requested information from, for example, the CTIE?	The CTIE will be involved as architectural consultant.
The project specification indicates "A background check and an extract from the criminal record of each employee working on this project is required". In this context, can you specify if a profile with a valid security clearance will be considered as an advantage?	No, this will not be considered an advantage.
To gain a comprehensive understanding of the parties involved, could you please provide a complete list of these parties?	The Ministry for Digitalisation and the CTIE will be involved.
Will it be limited to the Ministry of Digitalization and the Administration under its control (e.g., CTIE), or will other public sector organizations or private organizations also be involved?	The Ministry for Digitalisation and the CTIE will be involved.
Could you specify whether a digital signature on the submitted offer is a mandatory requirement ?	No
Are there any budget limitations or maximum thresholds that should be taken into account when formulating the proposal ?	The offer needs to be under 79.000€ without VAT. Please note that the proposed pricing is an evaluation criteria.
Regarding the benchmark to perform as part of this study, could you please provide more information on whether the economic provider will have to perform tests for the different use cases on all identified LLM models or can the benchmark also be performed through a desk research approach using publicly available information in order to compare the different LLM models?	This is up to the economic operator. If you think that performing tests is helpful, you are free to do so. We do not impose testing.
In the context of the speedup procurement procedure, could you please specify on whether there are specific limitations to be taken into account by the economic provider for example regarding the maximum budget?	The offer needs to be under 79.000€ without VAT. Please note that the proposed pricing is an evaluation criteria.
As part of the benchmark, is there a specific minimum number of LLM models that should be part of the benchmark?	No, not at this stage. This can be an element of the offer, indicating a reasonable number of LLM to be evaluated.

<p>Could you please confirm that it is possible to participate in this tender procedure as a consortium of different organisations?</p>	<p>Groups of economic operators, including where they have come together in the form of a temporary association, may participate without it being necessary for them to take on a specific legal form. However, groups of economic operators submitting a collective offer will be held jointly and severally liable for the execution of the contract should their offer be selected. In the event of a collective offer, the offer must therefore be accompanied by a declaration of joint and several liability, dated and signed by each economic operator participating in the consortium, in which the economic operators designate a representative from among themselves. The offer must indicate either the proportion assumed in the performance of the contract, and, where applicable, in each of its elements, by each of the operators, or the proportional contribution made by each of them in the performance of the contract as a whole or in that of its various elements. A consortium bid must also fully respect competition law.</p>
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