



Ordering party	Ministry for Digitalisation
Objectives of the call for solutions	<p>The MM-AET tool of the Ministry for Economy is an application for managing establishment permits and financial aids. The tool, coded in Java, has evolved significantly over the years, and the documentation is not always complete or extensive, making the work increasingly complex when adding new features or debugging, due to the time required to understand the connections and impacts between various parts of the code.</p> <p>The purpose of this challenge is to use artificial intelligence technologies to document the source code of the MM-AET software comprehensively and intelligently. The idea is to use an AI system to read and understand the source code, conduct in-depth syntactic and semantic analysis to extract the structures, architectures, and links, to generate functional and technical documentation.</p>

Type of solution required	<ul style="list-style-type: none"> - Production of technical and functional documentation for software source code
Selection criteria	<ul style="list-style-type: none"> - Quality of the proposal (approach, level of detail, completeness, etc.) - Experience in the field - Proposed timeline
Standards to be met	CTIE Documentation standards
IP and other details	Documentation IP remains with the owner of the current software solution
Deadlines for submission of the offer	November 11th 2024
Schedule	<ul style="list-style-type: none"> - Deadline for questions: November 6th 2024 - Optional information meeting: October 15th 2024 15:00h (via TEAMS)
Contact for questions	cciop@digital.etat.lu

Description of the problem / challenge

The project expectation is the creation of detailed technical documentation using AI analysis tools, including:

- Description of functions, classes, and modules
- Explanation of control flow and algorithms
- Identification and explanation of dependencies
- Original source code enriched with comments
- Generation of UML diagrams (classes, sequences, components) and architecture diagrams
- Production of a contextual technical glossary
- Analysis report on code structure and complexity
- Code quality analysis and improvement suggestions
- Traceability of links between different parts of the code

Technical specifications of the software:

- Code in Java – approximately 700,000 lines
 - o Java 8 (limited version with Websphere 9)
 - o Main frameworks and libraries used: see Appendix
 - o Front end based on Struts, JSP Page, jQuery, Vue.js technologies and frameworks
- Versioning in GitLab 17.1 (CTIE version)
- Database in DB2, 134 tables

General information

Deliverables include:

- Complete technical documentation
- Original source code with added comments
- Set of UML and architecture diagrams
- Analysis report on code structure and complexity
- Code quality analysis and suggestions for improvement

Type of offer:

The offer should be a fixed-price offer, indicating a maximum number of person-days to be provided and the rates per person-day for the various profiles who will be involved. A CV of the people who will be working on the project, indicating their background and experience on the subject, should also be provided. Only person-days spent on the project will be invoiced. Consequently, not all person-days will necessarily be used, nor invoiced.

The offer must include a concept describing the approach to be followed, the various stages, the different deliverables, and the reasons and arguments for the chosen approach. Based on this description, an initial assessment of the person-days that will be required for the various deliverables is to be provided. The purpose of this initial estimate is to assess the maturity of the service provider's thinking in relation to what needs to be done in the study, and to check whether the total number of person-days proposed corresponds to the approach proposed and the deliverables identified.

This initial assessment and approach can, however, be corrected, supplemented, and adapted during the course of the project, as the needs and scope of the study become clearer.

Documents should be sent to the following address, by e-mail, by November 11th 2024 at the latest:

CCIOP (Centre de compétences pour l'interopérabilité)

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Only offers received or submitted by the deadline will be considered.

Digital documents may be submitted in the following formats: PDF, DOC/DOCX, PPT/PPTX, JPG.

Questions can be sent by e-mail until November 6th 2024. Representatives of the Ministry for Digitalisation will answer your questions sent by e-mail concerning this tender. An optional information meeting will be held October 15th 2024 at 15:00 via Teams. Please express your interest by e-mail to cciop@digital.etat.lu if you wish to attend the meeting.