



Assist the National Bureau of Statistics of the Republic of Moldova in implementing the revised IAIS to ensure the standardisation of statistical processes

Terms of Reference

Job positions:

- No. 1 Frontend developer (Position A)
- No. 1 Backend developer (Position B)

1. Background information

National Statistical Institutes (NSI) are constantly facing a growing demand for reliable statistics that are produced timely and disseminated in an appropriate electronic format. Having a statistical integrated information system (IAIS) is becoming crucial for any NSI, to reduce time, costs, response burden and increase quality, dissemination speed and reliability of the data produced. Automation of the processes and component sharing reduces time and resources needed for each statistical production phase. Normally, this kind of system also reduces response burden by limiting the number and length of surveys a responded must answer. Raw data versioning and consistency check against different sources are some of the features of this system, that can further increase data quality.

2. Preliminary assessment of the current IAIS adoption at NBS

A preliminary task has been carried out to define the technical specifications of IAIS that are based on the technical solutions commonly adopted by other NSIs, taking into consideration the national circumstances of Moldova. The IAIS technical specifications relies on a metadata driven statistical information system that manages all data and metadata.

A statistical metadata system is a system that deals with all data related to a statistical process. It is used to document all phases of a statistical survey from questionnaire design and versioning to output and indicator's definition. It is the appropriate system to store information about quality and attributes of the data. It keeps reference and definitions of raw data, aggregated data, and indicators. All statistical data becomes meaningful only when connected to a proper metadata system.

Goals of IAIS:

- Facilitate the process of modernisation of all the processes behind the acquisition and management of the statistical information.
- Facilitate the reuse/sharing of solutions and services and the standardization of processes and thus, a reduction in costs of production.
- Increase interoperability of systems and processes.
- Provide a basis for flexible information systems to accomplish their mission and to respond to new challenges and opportunities.
- Enable national and international collaboration initiatives of NBS for building common infrastructures and services.
- Align with existing industry standards such as the GSBPM and GSIM.

Technologies:



Category	RDBMS	Programming Language/Framework
Backend (Server-side)	Postgres	Java 11 (SpringBoot)
Frontend (Client-side)	N/A	Javascript (Vue.js, CoreUI)

3. Objectives and scope of the work

The main objective of this consultancy is to assist the National Bureau of Statistics of the Republic of Moldova in implementing the revised IAIS to ensure the standardisation of statistical processes.

The main expected outposts will be the following:

- Development of the IAIS metadata component.
- Development of the IAIS processing component.
- Design of the IAIS Registers and Administrative data component.

4. Main activities and tasks

Position A – Frontend Developer	<ul style="list-style-type: none">- Together with the IT project key expert and NBS staff, the expert will support the following tasks:- Support the IT project key expert in the preparation of a detailed work plan of activities.- Plan and prototype the new frontend (client) structure of the IAIS according to the required functionalities.- Design the architecture of the specific components of the IAIS client.- Implement the development tasks assigned by the IT project key expert and NBS IT staff.- Test the implemented tasks thoroughly.- Test the frontend new features in different browsers.- Review team members code, refactor and optimize existing code.- Meet regularly with team members for progress updates.- Use the API web services provided by the server.- Document the source code.- Participate to the weekly technical meetings with the NBS and project experts.- Produce technical documentation and monthly reports in coordination with the Project Manager.
Position B – Backend Developer	<ul style="list-style-type: none">- Together with the IT project key expert and NBS staff, the expert will support the following tasks:- Support the IT project key expert in the preparation of a detailed work plan of activities.- Plan and prototype the new IAIS server-side components according to the designed structure and the background information, objectives and scope of work defined above in this ToR.- Design the architecture of the specific components of the IAIS server.- Implement the development tasks assigned by the project IT key expert and NBS IT staff.- Test the implemented tasks thoroughly.- Run performance benchmarking tests.



	<ul style="list-style-type: none">- Review team members code, refactor and optimize existing code.- Meet regularly with team members for progress updates.- Document the source codes and the Application Program Interfaces (APIs) for data exchange.- Participate to the weekly technical meetings with the NBS and project experts.- Produce technical documentation and monthly reports in coordination with the Project Manager.
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5. Expected results and implementation approach

The main expected result is to have the revised IAIS implemented and the standardisation of statistical processes ensured.

Specific tasks:

- Development of Referential and Quality Metadata System.
- Development of Process Metadata System.
- Development of Structural Metadata System.
- Development of standard processes for data editing and imputation for two statistical surveys.
- Implementation of specific methods to estimate statistical values from two statistical surveys.
- Implementation of all defined standards and methods into IAIS.
- Design of Statistical Registers System.
- Design of Administrative Data System.

6. Timetable of activities¹ and deliverables or phases

Deliverable / Phase	Indicative date	Expert
1. Development of Referential and Quality Metadata System	End of month 3	A, B
2. Development of Process Metadata System	End of month 6	A, B
3. Development of Structural Metadata System	End of month 9	A, B
4. Development of standard processes for data editing and imputation for two statistical surveys	End of month 9	A, B
5. Implementation of specific methods to estimate statistical values from two statistical surveys	End of month 9	A, B
6. Implementation of all defined standards and methods into IAIS	End of month 10	A, B
7. Design of Statistical Registers System	End of month 12	A, B

¹ Indicative. A detailed work plan should be prepared by the experts A and B during the first month of the consultancy.



8. Design of Administrative Data System	End of month 12	A, B
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7. Payment

Payments will be disbursed every month after the successful completion of each phase, based on the signature of monthly timesheets.

8. Place of performance and travel requirements

The place of performance is Chisinau, Moldova. No travel is required. A probation period of 1 month will be applied to the selected candidates. These are full time positions.