TERMS OF REFERENCE

UNAIDS - Republic of Korea Fellowship Programme - Seoul National University

General Information	
Title/Description	**Fellow – Data Architecture and Interoperability**
Assignment Dates	6 months – March 2027
Duty Station	Bonn, Germany or Geneva, Switzerland (hybrid/remote possible)
Department /Unit	Digital & Technology Solutions (DTS)
Name of Supervisor	Michael MALDONY - Director, Digital & Technology Solutions, a.i. (or designate)

Background and Context

UNAIDS supports the global effort to eliminate AIDS as a public health threat by 2030. In this role, UNAIDS develops, curates, manages, and distributes strategic data, evidence, analysis, and digital knowledge products that promote accountability, transparency, program planning, resource allocation, and monitoring of the HIV response.

UNAIDS bears a unique responsibility to ensure the long-term accessibility, integrity, interoperability, and preservation of its globally important HIV datasets. These datasets include, but are not limited to:

- AIDSInfo and related epidemiological datasets
- Results and Transparency Portal
- HIV financial and resource tracking dashboards
- Programme, indicator, and country-reported datasets underpinning global HIV accountability.

UNAIDS must proactively plan for the future management of these data assets and services. This involves evaluating which data and digital knowledge products should be preserved, how they can stay accessible over time, ways to enhance interoperability, and what technical and architectural changes may be necessary to support potential future transitions.

To prepare for such scenarios, UNAIDS aims to strengthen and develop its data architecture by creating practical solutions such as APIs, export mechanisms, metadata enhancements, and documentation strategies that support interoperability, reuse, and possible migration to other UN or multilateral data platforms, all while ensuring data quality, confidentiality, and institutional integrity knowledge.

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Purpose of the Fellowship

The purpose of this Fellowship is to provide hands-on technical support to develop practical, proof-of-concept solutions that improve the accessibility, interoperability, and portability of UNAIDS datasets.

The Fellow will contribute to building tangible technical assets (e.g. prototype APIs, export tools, data models, and documentation) that demonstrate how UNAIDS data can be more easily accessed, reused, and transitioned if needed.

This role is suitable for recent graduates or early-career professionals with strong technical foundations and an interest in data engineering, interoperability, and digital public goods. The Fellowship emphasizes learning through hands-on prototyping and collaboration with experienced technical teams.

Scope of Work and Key Responsibilities

Under the guidance of DTS technical leads, the Fellow will undertake the following responsibilities:

1. Data Landscape and Architecture Assessment

- Support the review of the current technical architecture of selected UNAIDS data platforms and datasets.
- Help identify key dependencies, data flows, formats, and integration points across systems.
- Contribute to the assessment of readiness for data migration, replication, or interoperability with external platforms.

2. Interoperability and API Development

- Support the design and implementation of standardized, well-documented APIs to enable programmatic access to selected datasets.
- Apply basic interoperability principles (e.g. RESTful APIs, structured data formats, metadata use) under guidance from DTS teams.
- Apply good practices for security and access control in line with UNAIDS policies and technical guidance.

3. Data Export and Migration Tooling

- Develop simple automated data export tools or scripts to support extraction of datasets in open, machine-readable formats.
- Enable downstream use by other UN entities, researchers, and authorized partners.
- Support testing of export approaches against illustrative migration or data-sharing scenarios.

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4. Metadata, Documentation, and Knowledge Preservation

- Support the development of technical metadata and documentation to improve data discoverability and reuse.
- Produce clear documentation covering data structures, APIs, and basic system dependencies.
- Contribute to approaches that help preserve institutional knowledge and reduce risks of information loss over time.

5. Forward-Looking Architecture Inputs

- Assist in identifying gaps and risks related to data accessibility, interoperability, and long-term sustainability.
- Contribute to practical recommendations (e.g. modular design, improved documentation, reusable services) under guidance from DTS.
- Support preparation of materials that can inform future technical work beyond the Fellowship period.

The Fellow will work closely with relevant programme teams, data owners, data stewards, and digital/IT colleagues across UNAIDS. The Fellow may also collaborate with selected external partners, where appropriate.

Deliverables

The Fellow is expected to deliver concrete, reusable technical outputs, including:

- At least one functional prototype API (proof-of-concept level) providing access to a selected UNAIDS dataset.
- Simple data export tools or scripts enabling standardized extraction of selected datasets.
- Technical architecture diagrams and data flow documentation supporting the developed solutions.
- Metadata descriptions and API documentation suitable for internal use and potential external sharing
- A concise technical brief summarizing findings, limitations, and recommendations for next steps

All deliverables will be handed over with source code, documentation, and clear usage instructions. A demonstration (live or recorded) of the proof-of-concept solutions is expected at the end of the assignment.

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Required Qualifications and Experience

Education

- University degree in Computer Science, Information Systems, Data Science, Data Engineering, Information Management, Public Health Informatics, or a related technical field.

Desirable Experience

- Academic or project-based experience with data systems, APIs, or software development.
- Familiarity with open data concepts, interoperability, or metadata (coursework or projects acceptable).
- Exposure to relational databases or structured datasets.
- Experience with cloud platforms or basic deployment concepts is an asset.

Technical Skills

- Programming skills in at least one relevant language (e.g. Python, JavaScript).
- Basic understanding of APIs and data integration concepts.
- Experience working with structured data (e.g. CSV, JSON, SQL-based datasets).
- Familiarity with version control (e.g. Git) is an asset.

Languages

- **Essential:** Proficiency in English.
- **Desirable:** Working knowledge of another UN official language.

Competencies

- Curiosity and strong interest in data, technology, and applied digital solutions.
- Strong analytical and problem-solving skills
- Ability to prototype and iterate in a structured manner.
- Ability to explain technical concepts clearly to non-technical audiences.
- Ability to work independently within a time-bound assignment while seeking guidance when needed.
- Sensitivity to data confidentiality, ethics, and institutional accountability

The selected Fellow will be expected to follow applicable UNAIDS policies and procedures regarding confidentiality, information security, data protection, records management, and ethical standards of conduct.

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Duration and Working Arrangements

The Fellowship is expected to last 3–6 months, with a clearly defined workplan and milestones agreed at the outset. The Fellow will work closely with DTS technical staff and relevant data owners across UNAIDS.

Expected Impact

This Fellowship will support UNAIDS in strengthening the accessibility, interoperability, and long-term usability of its critical HIV datasets. The outputs will provide practical examples and technical foundations that help ensure these data assets remain usable, shareable, and preservable in future institutional or technological scenarios.

In addition, the Fellowship will contribute to building internal understanding of modern, interoperable data approaches within a global health and UN system context.

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