

VODAN AFRICA

Africa Health Data Space



May 2024

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Supporting neglected communities to have voice, digital presence and rights

Foreword

As we look forward to achieving our strategic goals for 2024-2030, we in VODAN, reach out to partners with confidence in our ambition to advance the African Health Data Space.

The African Health Data Space provides a foundational layer to ensure patient data is used to a maximum to improve data insights at Point of Care. The foundation layer ensures patient data is digitalised and contributes to enhanced care conditions, by ensuring the data is Findable, Accessible (under well-defined conditions), Interoperable and Reusable.

Working with the 70 health facilities in which we as VODAN assisted to deploy the assessment, our work has shown amazing results. All of the health facilities reported that a dashboard giving insights on the basis of the data from the facility was often not new to them, and that they found it incredibly important, informative and useful to help improve care for patients.

This experience showed us that digital data insights can be crucial to improving health care, but only if it puts the needs within the health facilities at the centre. The interoperable layer of the FAIR patient data creates important efficiencies, and ensures above all that data insights are based on quality data, that is structured, findable, for which there is clear provenance and metadata to help develop insights that are transparent.

We have also learned that the interoperability of health data is powerful to gain relevant insights across facilities within different regions and across borders. The potential for surveillance is enormous and so is the potential for building on powerful models developed in one place and applied and used in other places. The federated analytics is only in its infancy but we are convinced that it has incredible potential. We will show in the coming two years that third party users of the data can access these - under well defined conditions, and respecting data sovereignty in Africa.

The potential of AI for health in Africa, really depends on data being curated as federated assets, that link back to the locale where it is produced, is compliant with the regulation in that place and above all, with clearly recognized ownership. We call this quality data: FAIR-OLR Federated AI Ready with clear ownership, localisation and regulatory compliance of all operations. African researchers of VODAN have paved the way towards this innovation. The Africa Health Data Space is ready to attract support and we welcome you to join us on the journey!



Prof. Dr. Mouhamad Mpezamihigo, VODAN President



Origins

In order to establish the Africa Health Data Space, VODAN-A started in March 2020 and developed a Proof of Concept, which was successfully carried out in the same year.

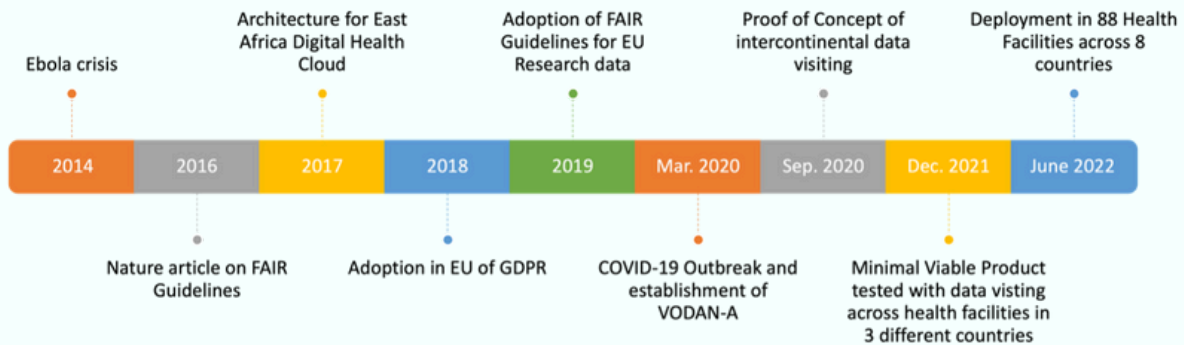
In the subsequent period, the specification and requirements were established on the basis of which an architecture for a Minimum Viable Product was established.

African engineers worked with stakeholders of the health community to develop an architecture that was flexible and trustworthy.

Objective: Data Equity and Ethical Inclusive AI and Voice
Goal: Creation of an Africa Health Data Space

A policy for trusted data access permission was also developed. This included data visiting of health facilities located in different jurisdictions. We then narrowed down on fewer health facilities, with focus on quality AI ready data. In December 2023 the architecture generated a data space inclusive of 20.000 digital patient records from 12 facilities in Uganda, Kenya, Ethiopia and Nigeria, in secure stores in each facility.

In 2024, VODAN will be realising a quality data space inclusive of 16 health facilities in seven countries, focusing on data of Mother-Child Health and general surveillance of Outpatients..



Africa Health Data Space

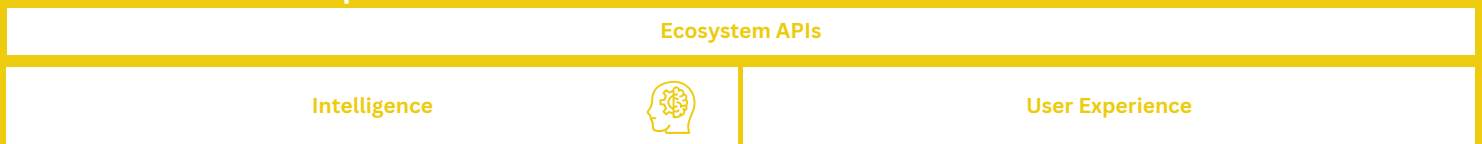
An Africa Health Data Space is based on health data curated as Findable, Accessible (under well-defined conditions), Interoperable and Re-usable (FAIR) that is machine-actionable, and creates a space for strong high quality and ethical data for analytics, with the following characteristics:

VODAN-Africa has already built the architecture that can produce the data for the Africa Health Data Space that is compliant with regulatory and ethical provisions.

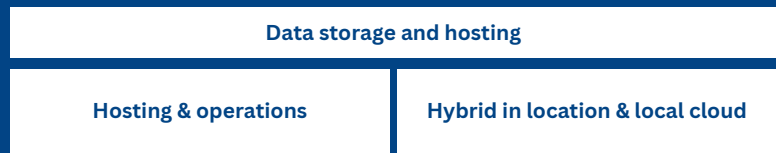
- 01** Data can reside in the health facility where the data is produced (just as the patient records do), or held under control of the facility;
- 02** Data is useable for analytics within the health facility and can contribute to quality health services at point of care;
- 03** Data can be visited for deidentified computational analytics across health facilities and across borders through algorithmic data visiting;
- 04** The creation of an inclusive data pipeline across larger and smaller areas and facilities in connected and remote areas will increase representativity of the data, and remove poverty-based bias and assist in pandemic preparedness;

The creation of interoperable health data will increase the relevance of digital health innovations and assist in the horizontal integration of these innovations.

Generic connective capabilities - users



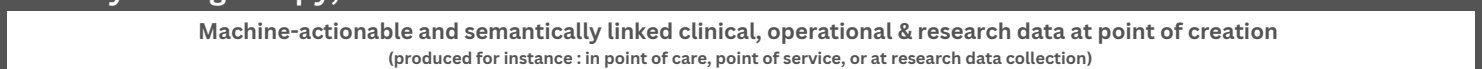
Infrastructure services



Generic Data Capabilities - services



Data layer-single copy, machine actionable data creation



Principles (FAIR-OLR)

The innovation of the Africa Health Data Space (AHDS) is a pioneering federated data architecture (Findable, Accessible - under well-defined conditions, Interoperable and Re-usable data, strictly adhering to Ownership, Localisation, and Regulatory compliance (OLR). We call this concept FAIR-OLR. The vision is to create a robust, integrated health data infrastructure in Africa that leverages data analytics to improve health outcomes, particularly in vulnerable and poverty-stricken communities. By empowering healthcare providers with real-time, context-specific risk analytics at the point of care, the project aims to transform clinical decision-making, strengthening health systems. This collaborative effort is driving innovation in health data management and promoting Africa health data sovereignty. The project develops scalable and sustainable health data solutions adaptable to various African settings; establish a global benchmark for ethical and effective health data management.

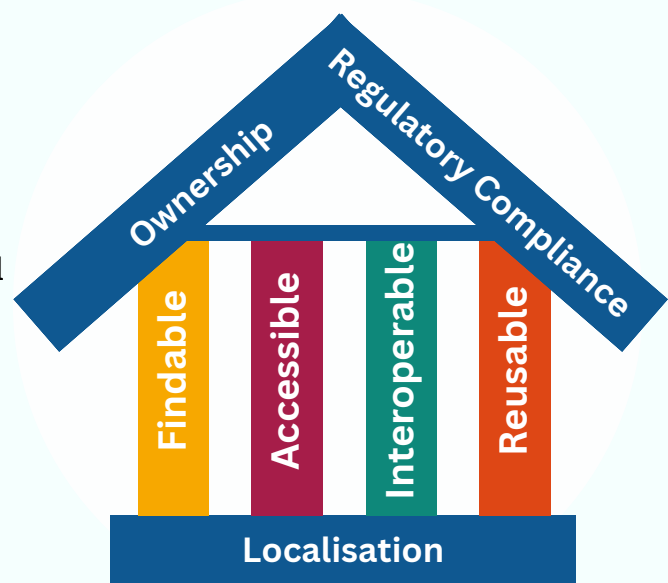
What is FAIR OLR?

Data is

- **Findable** for Machines and Humans
- **Accessible** under well-defined Conditions
- **Interoperable** with other federated containers
- **Re-usable** depending on permission and ethical considerations

and

- **Ownership** of data federation in residence is promoted
- **Localisation** promoting data visiting federated architectures
- **Regulatory Compliance** within locale where data is produced



Vision

The Africa health Data Space is a robust and integrated health data infrastructure across the African continent, leveraging advanced data analytics to significantly improve health outcomes. It leaves no one out, it is tested in vulnerable, low-connectivity and impoverished communities. By empowering healthcare providers with real-time, context-specific risk analytics at the point of care, the project aims to transform clinical decision-making processes, thereby strengthening overall health systems. This collaborative effort is driving substantial innovation in health data management. This is a critical step towards promoting African health data sovereignty.

The project focuses on developing scalable and sustainable health data solutions that can be adapted to various African settings. By ensuring these solutions are versatile and effective, VODAN Africa aims to address the unique challenges faced by different regions within the continent. The initiative also places a strong emphasis on establishing a global benchmark for ethical and effective health data management, ensuring that the data is handled with the highest standards of integrity and security.

In addition to its technical objectives, VODAN Africa is committed to fostering a collaborative environment where local and international stakeholders can work together to enhance health data systems. This cooperation is essential for driving forward the vision of improved health outcomes and ensuring that the benefits of advanced data analytics reach even the most remote and underserved communities. By building a strong, integrated health data infrastructure, VODAN Africa not only aims to improve individual patient care but also to enhance public health strategies and policies, leading to better health outcomes across the continent.



Enable Ownership, Localization & Regulatory Compliance (OLR) through machine-actionable semantic data



Resolve digital black holes



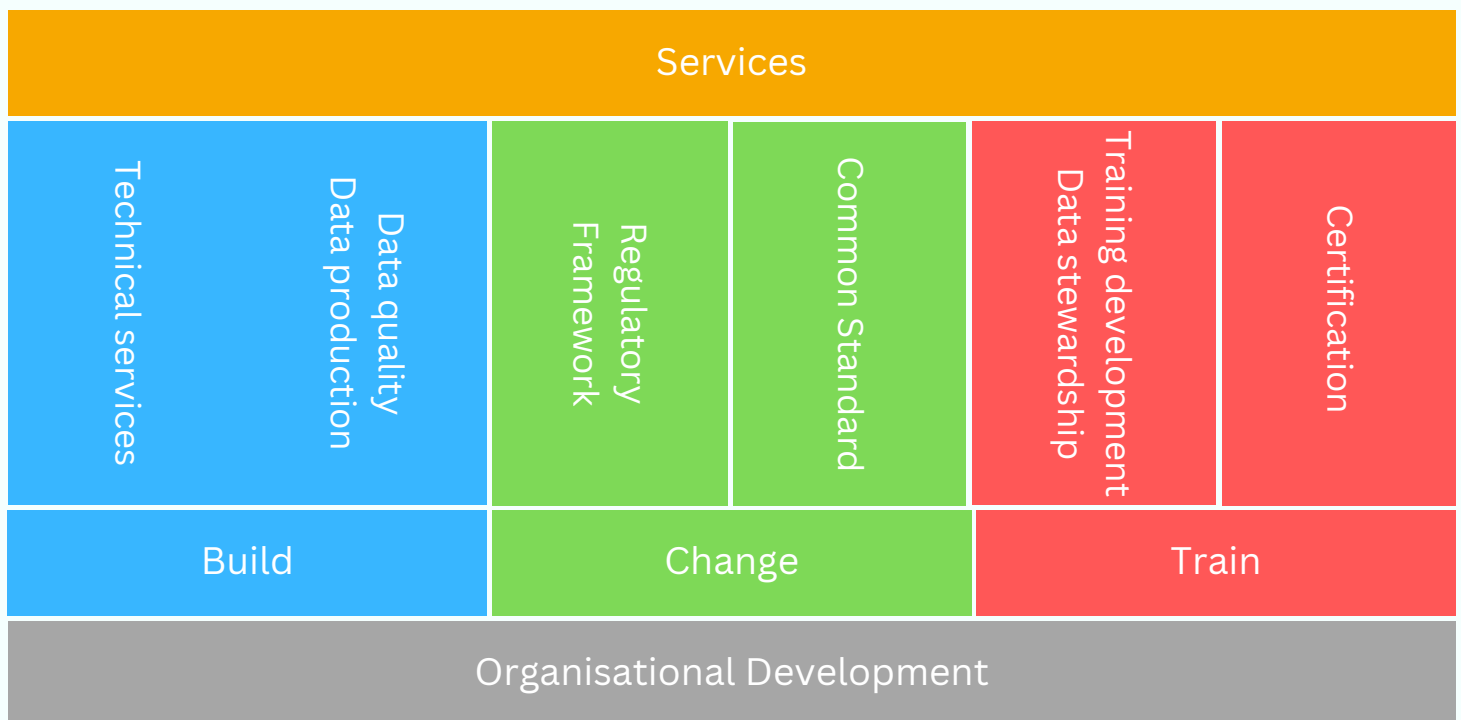
Use FAIR-OLR data for responsible AI



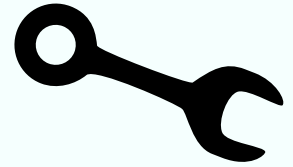
Strengthen global digital equity

Objectives

Based within the original orientation of FAIR, the mission of the Africa Health Data Space is anchored on three core pillars: BUILD, CHANGE, and TRAIN. Each pillar focuses on a critical aspect of establishing and maintaining a federated network that adheres to FAIR (Findable, Accessible, Interoperable, Reusable) principles. BUILD emphasizes the creation of a FAIR federated network, ensuring data usability and local ownership through standardized tools and languages, a feat VODAN has already successfully demonstrated. CHANGE aims to foster a regulatory environment that integrates FAIR principles into data management frameworks, setting standards for interoperability and collaboration and to make sure that all operations are adapted to an African setting. TRAIN is dedicated to developing the necessary skills and expertise to sustain the federated architecture, ensuring ongoing support and competence in managing the network. Together, these pillars provide a comprehensive approach to enhancing data interoperability and accessibility while maintaining stringent data governance. These will contribute to establish clear services. This is founded in a strong orientation on the organisational development of the Africa Health Data Space.



Build



BUILD an Africa Health Data Space: this is the first mission pillar. It focuses on creating a FAIR federated network that uses the same standard, languages, and tools to enhance usability of data while maintaining local ownership. VODAN has already succeeded in achieving this on its own. It has a proven concept on how FAIR federated interoperability can be established. In the process of creating VODAN, a lot of expertise, and many solutions, has been generated using existing tools and infrastructure. This expertise now needs to be leveraged to help expand VODAN's network, create broader interoperability with other networks, and help ensure that more data becomes available for use.

BUILD consists of two objectives:

1. Work towards improving the tools, data production and data quality
2. Provide technical expertise and services in FAIRIFYING data - according to FAIR-OLR principles

Improve tools and data:

VODAN started out as a network to bring different organizations together in the Africa Health Data Space, and build a common platforms of tools that are dynamic. This work continues. While VODAN has built a proof of concept using existing tools, standards, and languages, technology keeps improving. VODAN will remain on top of these new developments and keep updating its ontologies, explore the use of new possibilities for tools, and update the infrastructure that VODAN uses. Building on this network and technical expertise remains the core aim of VODAN. The technical expertise is what provides VODAN with legitimacy, and a capacity to achieve aims beyond building a data space.

VODAN is committed to enhancing the quality of accessible data. As an integral part of the VODAN infrastructure, efforts are dedicated to increasing the value of data for users, all the while upholding compliance with the FAIR principles. Likewise, it is important to explore methodologies that facilitate the generation, collection, or creation of data, aligning inherently with FAIR and ownership principles from inception.

Build



Providing Technical Expertise:

As VODAN continues to advance its mission of making data FAIR, VODAN is looking to leverage its the extensive expertise. VODAN aims to offer specialized support to other organizations in their journey towards data FAIRification. This initiative represents a significant step in our commitment to fostering a more open and collaborative data ecosystem while ensuring the sustainability and growth of our organization.

Empowering Organizations through FAIR Data Practices

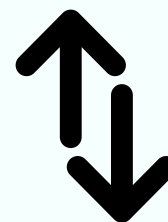
By providing tailored FAIRification services, we aim to enable organizations in the Health Data Space to maximize the impact of their data resources, create local data spaces, and enhance the accessibility and utility of their data.

Value Proposition

- 1. Expertise and Experience:** VODAN has developed a robust framework and a wealth of experience in implementing FAIR principles.
- 2. Creating Local Data Spaces:** We will assist organizations in establishing local data spaces that align with the FAIR principles. These data spaces will facilitate better data management, sharing, and utilization, ultimately contributing to more informed decision-making and greater societal impact.
- 3. Enhanced Data Accessibility:** By making data FAIR, we help organizations unlock new opportunities for research, collaboration, and innovation. Improved data accessibility ensures that valuable information can reach a broader audience, driving progress in various fields.
- 4. Sustainable Revenue Stream:** This strategic move also introduces a new revenue stream for VODAN. By monetizing our expertise, we can ensure the financial sustainability of our organization, allowing us to continue our work in promoting data fairness and accessibility.



Change



CHANGE a FAIR-data architecture to the African context. This is the second mission pillar. It focuses on creating a regulatory environment that promotes a federated architecture, using the FAIR principles as a cornerstone of such a framework. By embedding these principles into regulations, VODAN seeks to set standard for data management and catalyze a broader cultural shift towards more transparent and collaborative practices. CHANGE also seeks a convergence on standard and norms by developing interoperability guidelines, data exchange formats, and technical specifications that facilitate integration and data interoperability across disparate systems and platforms. It must work with authorities and other companies towards setting a common standard that can be adopted by others.

CHANGE consists of two objectives:

1. Work towards adapting regulatory frameworks.
2. Work towards setting a common standard for FAIR

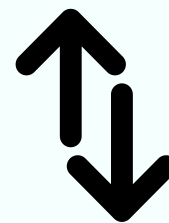
Adapting regulatory frameworks

Incorporating the principles of Findability, Accessibility, Interoperability, and Reusability (FAIR) into regulatory frameworks serves as the cornerstone for advancing VODAN's mission. By embedding these principles into regulations, VODAN not only sets a standard for data management but also catalyzes a broader cultural shift towards more transparent and collaborative practices. This strategic alignment not only enhances VODAN's effectiveness but also sets a precedent for other networks and organizations to follow suit, thereby amplifying the impact of FAIR data practices on a broader scale.

Integration of FAIR into regulatory frameworks: Firstly, the integration of FAIR principles into regulatory frameworks lays down a solid foundation for VODAN's growth trajectory. By mandating adherence to FAIR standard, regulations create a level playing field where data accessibility and interoperability become non-negotiable factors. This compels other networks and organizations to adopt similar systems, effectively expanding the reach and influence of FAIR practices beyond VODAN's immediate sphere.

Partnerships : Regulatory backing provides VODAN with opportunities for strategic partnerships and resource-sharing. By positioning itself as a leader in FAIR data practices, VODAN becomes an attractive partner for organizations seeking to comply with regulations or enhance their data management capabilities. This, in turn, fuels VODAN's growth by enabling access to funding, expertise, and technological resources necessary to further its objective to strengthen the Africa Health Data Space.

Change - Common standard



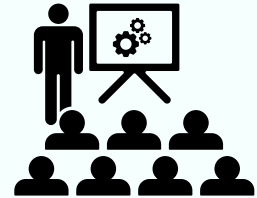
Work towards setting a common standard for FAIR

The Africa Health Data Space requires the adoption of FAIR interoperability guidelines, data exchange formats, and technical specifications that facilitate integration and data interoperability across disparate systems and platforms. Authorities and other companies should be compelled towards setting a common standard that can be adopted by others. This can be done by establishing common ontologies, tools and harmonisation based on a common standard. Through strategic partnerships, the Africa Health Data Space can pool resources, share best practices, and coordinate efforts to develop interoperable solutions and promote the adoption of FAIR standard across different sectors and domains.

To effectively promote interoperability and the adoption of FAIR standard, the Africa Health Data Space must undertake a multifaceted approach that involves collaboration with authorities, companies, and other organizations. Here's an expanded version of the strategy:

- 1. Developing Interoperability Guidelines and standard:** the Africa Health Data Space needs to take a proactive role in developing clear and comprehensive interoperability guidelines. These guidelines should outline best practices for data exchange, integration, and compatibility across various systems and platforms. By establishing clear standards, the Africa Health Data Space provides a roadmap for organizations to follow, ensuring seamless data interoperability.
- 2. Creating Data Exchange Formats and Technical Specifications:** Alongside interoperability guidelines, VODAN works on defining standardized data exchange formats and technical specifications. These formats ensure that data can be shared and utilized efficiently across different systems, regardless of their underlying technologies. By developing universal formats, VODAN simplifies the process of data exchange and integration, reducing barriers to collaboration.
- 3. Advocates the adoption of:** VODAN promotes the adoption of its standard by collaborating with authorities, and other stakeholders. This involves actively engaging with regulatory bodies and standard-setting organizations to promote the adoption of FAIR principles and the Africa Health Data Space interoperability common standard. By demonstrating the benefits of the common standard and the alignment with broader data governance objectives, the Africa Health Data Space can garner support for widespread adoption.
- 4. Assisting Organizations in Implementation:** VODAN can support other organizations in implementing the interoperability common standard by providing guidance, technical assistance, and training programs.

Train



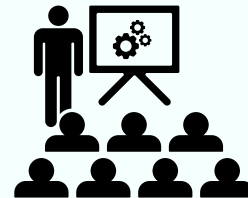
TRAIN stakeholders into a secure, privacy preserving, interoperable Africa Health Data Space, that is understandable for all concerned. This is the third mission pillar, focuses on developing the skills and stewards needed to maintain a federated architecture. It aims to provide courses and certifications to build these competencies. Establishing a comprehensive training program for data stewards is crucial for effective data management and governance. The training program is structured to cover various aspects of FAIR data management, ensuring that participants gain a deep understanding of the principles and practices required. By cultivating a technically skilled and certified workforce, VODAN ensures that data stewards are equipped to implement and uphold these standards.

Additionally, VODAN aims to establish a robust certification system that underpins its framework. This system will verify that both data stewards and institutions comply with requirements of the Africa Health Data Space, ensuring a high level of trust and reliability within the network. Certification will demonstrate proficiency in the necessary protocols, fostering mutual confidence in the implementation of standards. This approach not only supports the integrity of the system but also promotes information exchange and collaboration among institutions. By investing in training and certification, the Africa Health Data Space strengthens its network and enhances the overall effectiveness of its federated architecture.

TRAIN consists of two objectives:

1. Expand the existing curriculum towards the different stakeholders in the Africa Health Data Space
2. Create a system of certification on trainees with different capabilities

Train – Data Stewards

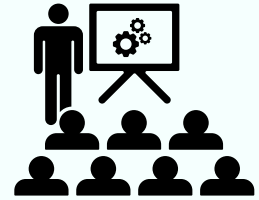


Providing Technical Expertise:

Establishing a comprehensive training program for data stewards within the framework of VODAN is crucial for ensuring the effective management and governance of data. By implementing an elaborate and extensive training course structured along the following lines, VODAN cultivates a technically skilled and certified workforce of data stewards capable of implementing the Africa Health Data Space and the principles of FAIR-OLR data management.

- **Foundational Knowledge:** The course should cover foundational concepts in data management, including data ethics, privacy, security, and standard compliance. Participants need to grasp the fundamental principles underlying responsible data stewardship to make informed decisions in their roles.
- **Technical Proficiency:** Data stewards should acquire technical skills necessary for data handling and manipulation. This may include proficiency in data cleaning, transformation, and interoperability techniques. Moreover, familiarity with data management tools and platforms relevant to the Africa Health Data Space infrastructure is essential for effective stewardship.
- **Data Governance and Compliance:** Participants should understand the principles of data governance frameworks and compliance requirements applicable to the Africa Health Data Space. This includes protocols for data sharing, access control mechanisms, and procedures for handling sensitive data. Certifying data stewards in these areas ensures adherence to regulatory standards and minimizes the risk of data breaches.
- **Practical Exercises and Case Studies:** Incorporating hands-on exercises and real-world case studies enables participants to apply theoretical knowledge to practical scenarios. This experiential learning approach enhances comprehension and retention while preparing stewards to tackle diverse challenges they may encounter in their roles.
- **Continuous Learning:** Data stewardship is an evolving field, characterized by rapid technological advancements and regulatory changes. Therefore, VODAN offers ongoing training opportunities and professional development resources to ensure that data stewards stay abreast of emerging trends and best practices.

Train - Certification



Create a system of data certification:

In order to ensure that a flow and exchange of information can take place between different institutions, it is important to establish trust. Both between different institutions, but also in the methods. To ensure this, one of the most effective manners is to create a system of certification that allows both institutions and data stewards to prove that they comply with the Africa Health Data Space system requirements and that they have passed the necessary checks to prove their understanding or their compliance. Two different types of certifications must be established.

Firstly, one focused on the certification of new data stewards. The data stewards must be able to prove that they not only understand the system, but also that they can maintain and Fairify their data. This certification is provided following the completion of a training course, and successfully passing an exam.

The second is focused on institutions and data stores. It is important that within a federated system, different organisations can trust each other and have confidence that other institutions are implementing the same rigorous checks and architecture that they are implementing. It is also vital for the credibility of the system. It is important that not everyone can automatically claim that they have implemented a Africa Health Data Space approved system. This is especially relevant to filter out those that have not properly implemented it. That would undermine the reputation of the system, and the network as a whole. Ensuring that the agreed upon standard is properly implemented by all., is at the core of the Africa Health Data Space.

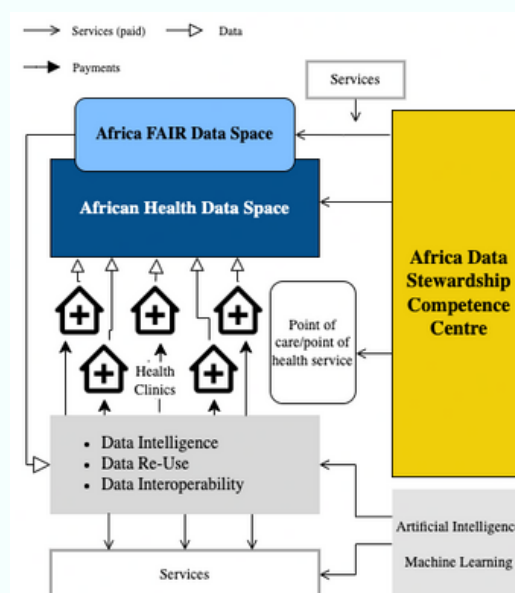
Organisational structure

The Africa Health Data Space is an initiative by VODAN, which is establishing the necessary support and services for its realisation.

The Africa Health Data Space brings together patient data from health facilities.

The health facilities are at the center of the organisation, under the regulatory oversight provided by the Ministries of Health.

Service providers can contribute to the realisation by offering specialised services, including data-stewardship training, quality control, generation of insights in the data, and enabling the re-use of the data.



VODAN’s mission is to provide tailored services to enable the creation and expansion of the Africa health Data Space. It was established in 2020 by a senate decision under the Kampala International University (KIU) in Uganda. It is governed by the VODAN-Africa Presidency.

The Executive Board includes overseas partners to VODAN-Africa and is responsible for project implementation. The Africa Health Data Space is an initiative by VODAN, which is establishing the necessary support and services for its realisation. VODAN is established in 2020 by a senate decision under the Kampala International University (KIU) in Uganda. It is governed by the VODAN-Africa Presidency. The Executive Board is responsible for implementation.

In 2021 VODAN-Africa established a foundation under Belgian law, which is responsible for administrative support and is endowed with the power to handle administration and finance under the supervision of the VODAN-Africa Executive Board.

VODAN support the Africa Health Data Space through the services necessary for data production and data insights.

Timeline

In order to realise the African Health Data Space, VODAN has established a ten-year time frame with milestones, against which to measure progress from the development of a Proof of Concept in 2020 to the full fledged integration of the Africa Health Data Space in the Global Data Space in 2030, which will serve public and private sector customers. This timeline aligns with the establishment of the Internet on FAIR Data and Services during the 2020-2030 decade.

2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Proof of Concept	Minimal Viable Product and adoption assessment	Africa Health Data Space - Africa data Space with selected partners		Professional Service Organisation linked to the Africa University Network on FAIR Open Science to root capacities			Integration of domains in the Global Data Space with private sector customers			
LUMC-KIC	8 countries in Africa, 88 health facilities, research data	Partnership of 10 countries in Africa, 2 countries in Asia, 3 countries in the EU and US		Africa-based HQ			Leader for service development with new content domains			
Go-FAIR tooling	CEDAR-based tooling, business proposition	VODAN software, test of business model, strengthen permission control, security and protection		Administrative independent business operation			VODAN software, test of business model			
Philips Foundation	Philips, Philips Foundation and Invest International	Philips, IMS, Microsoft, Achmea, Accenture, ..		Soft loan and investment partnerships and strengthening of market position			Solid products and strengthening of market position			
Article advanced genetics	Special Issue & Datastewardship manual	Book FAIR Data Science in Africa, research group established in GAIC Research Network		6 dissertations published by PhDs			20 dissertations published by PhDs			
2 Datastewards	30 Datastewards and technical data science team	40 Datastewards, software engineering team, data quality assessment team, data analytics capacity, permission and security capacity		Leadership available in all business domains, and specialised data-stewardship service			Integration of interoperable services in data production and data analytics and services provision			

VODAN's 10-year timeframe.

In order to achieve this VODAN needs to invest in a range of areas:

- development of the federated software of mini services to be more user friendly and adapted to context;
- to facilitate the input of data in the foundational layer of interoperable data:
- expansion of tools in key areas, such as automated permission; federated data analytics and integration of legacy systems;
- development of use cases to demonstrate the value of the data curation;
- building up of the sustainable business case;
- establishment of a service oriented organisation;
- the creation of a high-level consortium to support the governance of the Africa health data space;
- ensuring that tools across geographies are FAIR and standards are established and agreed to support this.

Budget

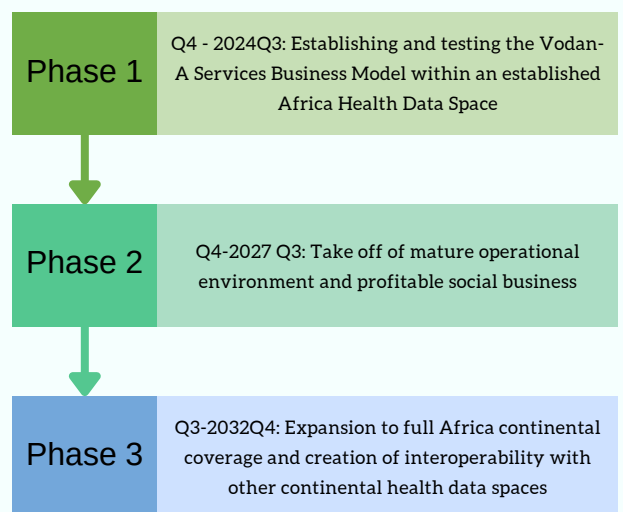
Expenditure		Year 1 Q4	Year 2	Year 3 Q1-3	
Africa Health Data Space					
	Personnel Costs	30.000	120.000	90.000	
	Material	20.000	10.000		
	Connectivity and Cloud	10.000	40.000	30.000	
	Travel	4.000	20.000	10.000	
	Audits, legal provisions	10.000	40.000	30.000	
	Misc	6.000	14.000	11.000	
	Sub-Total	80.000	244.000	171.000	495.000
VODAN-A					
	Personnel Costs	50.000	200.000	150.000	
	Material		60.000	40.000	
	Connectivity and Cloud	20.000	80.000	60.000	
	Travel	3.500	22.500	15.000	
	Audits, legal provisions	7.500	15.000	12.000	
	Misc	7.500	20.000	18.000	
	Sub-Total	88.500	397.500	295.000	781.000
	Total	168.500	641.500	466.000	1.276.000
Revenue services					
Africa Health Data Space					
VODAN-A					
	Research Data Steward	20.000	40.000	50.000	
	Services to partners		30.000	80.000	
	Training	10.000	40.000	50.000	
	Tooling services		20.000	20.000	
	Tooling development		20.000	20.000	
	Advise & consultancy		15.000	15.000	
	Research projects		25.000	20.000	
	Total Estimated income	30.000	190.000	255.000	
	Total Estimated income				475.000
Business Investment grant		138.500	451.500	211.000	801.000

The budget requested is for €801.000.

The Budget serves Phase 1 covering two financial years.

The Budget focuses on the investment in the creation of a Business environment with a foundation (Africa Health Data Space Foundation) and VODAN-A Services.

In Q4 2022 investment is planned for transition and expansion which is consolidated in 2023. Revenue is expected to take off from 2023 and consolidating with sustained growth in 2024.



What people say about us



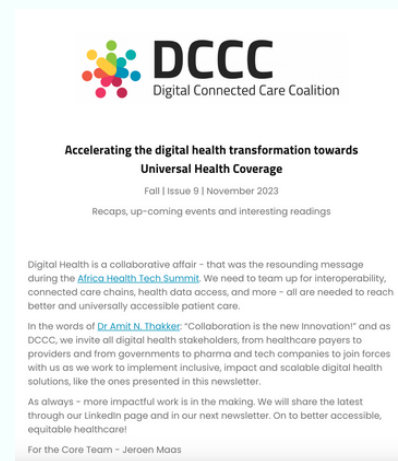
UNESCO (2021)

"For instance, the principles underlying research at the Kampala International University in Uganda, centre around 'collaboration within context', bolstering its lead in the multi-country Virus Outbreak Data Network (VODAN) to manage African COVID-19 pandemic data within the precepts of data sovereignty."

DCCC (2023)

"VODAN Africa -which aims to unleash the full potential of health data - currently deployed in 90 healthcare facilities across 8 African countries."

"According to Africa CDC's Jean Philbert NSENGIMANA (Phil) , government's biggest responsibility is to now create an enabling environment for public-private partnerships in digital health, to foster meaningful collaboration without hindering innovation."



Hon. Fortune Charumbira, President of the Pan-African Parliament (2022)

"How the need for COVID health data from Africa encouraged African computer science and data science. New design was developed by the VODAN-Africa. It was carried out with understanding of African sovereignty on digital data. This development was linked to European ethical and regulatory frameworks of data protection."

EPC (2024)

"Therefore, it is recommended to set up close collaboration between the development of an Africa Health Data Space and the EHDS to make rapid progress towards respectful partnerships based on the FAIR data principles."



Acknowledgements

VODAN-Africa presents appreciation for support obtained from

Kampala International University
 Mekelle University
 Addis Abeba University
 Olabisi Onabanjo University
 Tangaza University
 East Africa University
 Eastern College
 Tangaza University College
 Great Zimbabwe University
 University of Sousse

Accenture
 Achmea
 CordAID
 DCCC
 Go-FAIR Foundation
 Nuffic - OKP
 Invest International
 IMS
 Philips
 Philips Foundation
 Microsoft
 and other partners

DISH - Digital Innovation and Skills Hub

Globalisation, Accessibility, Innovation and Care Research network - GAIC

Africa University Network on FAIR Open Science

LUMC & Leiden University
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