INTERNET OF FAIR DATA AND SERVICES

THE URGENCY OF AFRICA – EUROPE COLLABORATION

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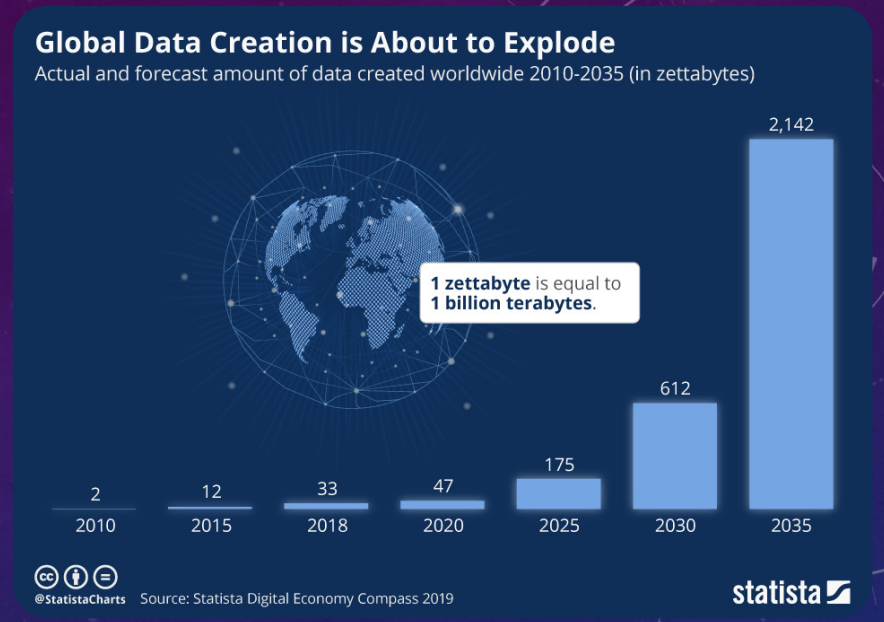
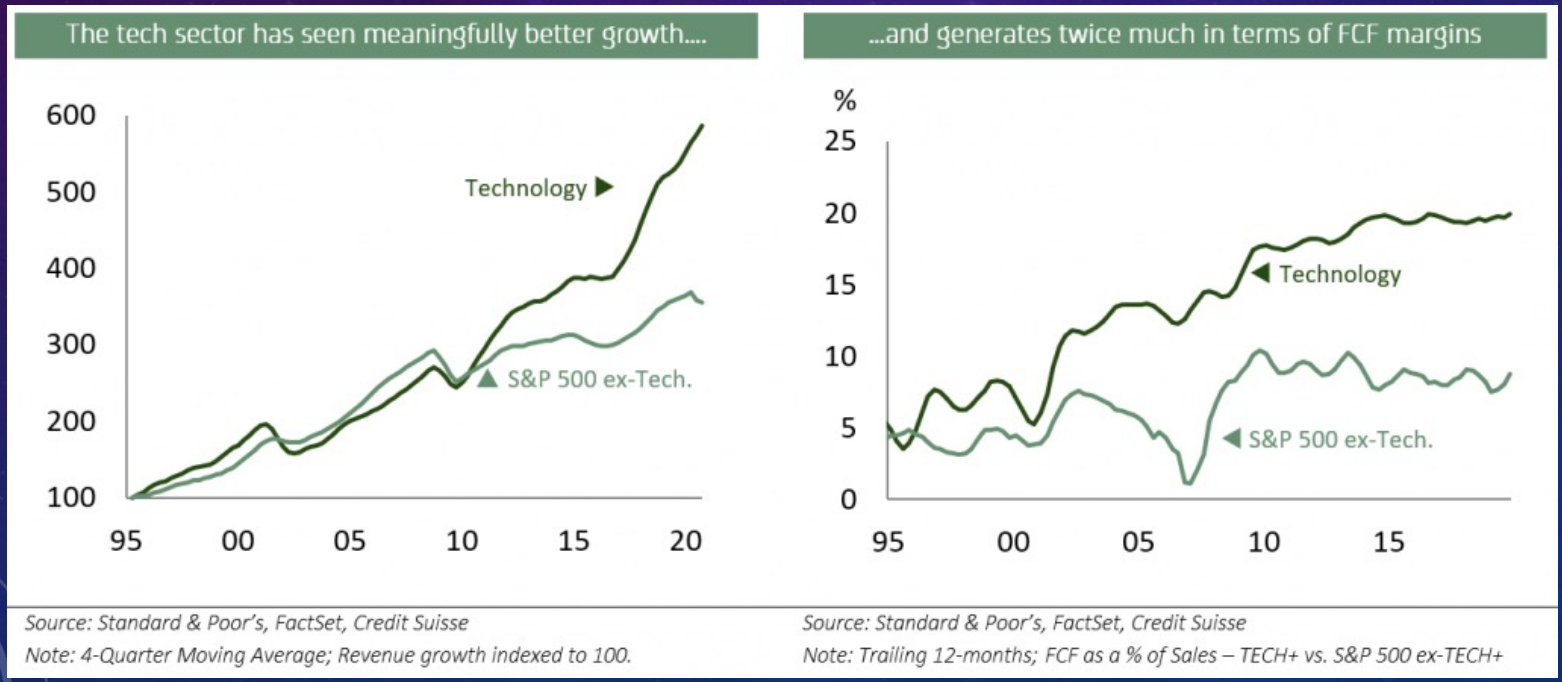
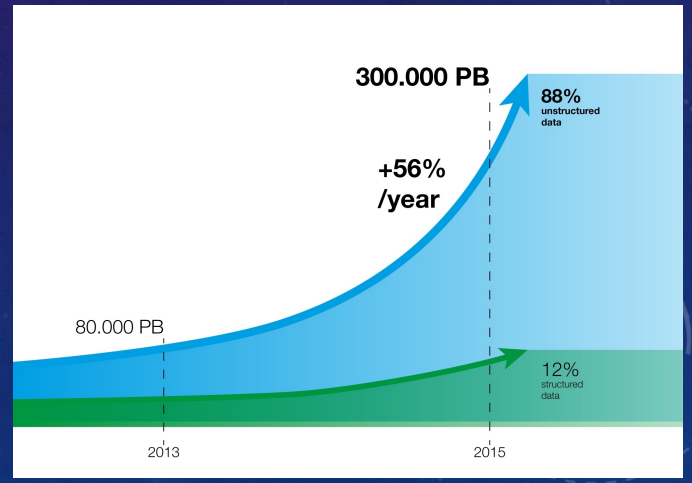
DATA IS THE NEW OIL

The market of data-centric companies has exploded

4 of the 5 largest companies globally see the majority of their revenue from data-oriented services

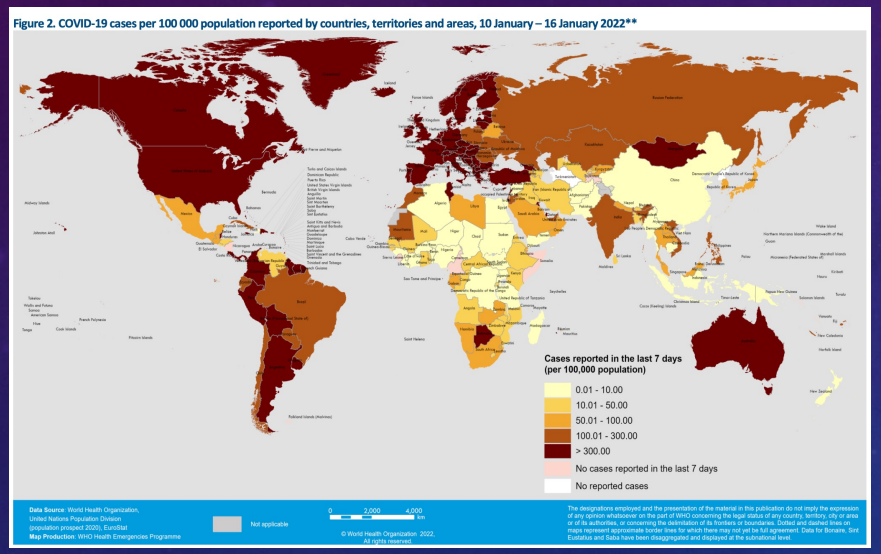


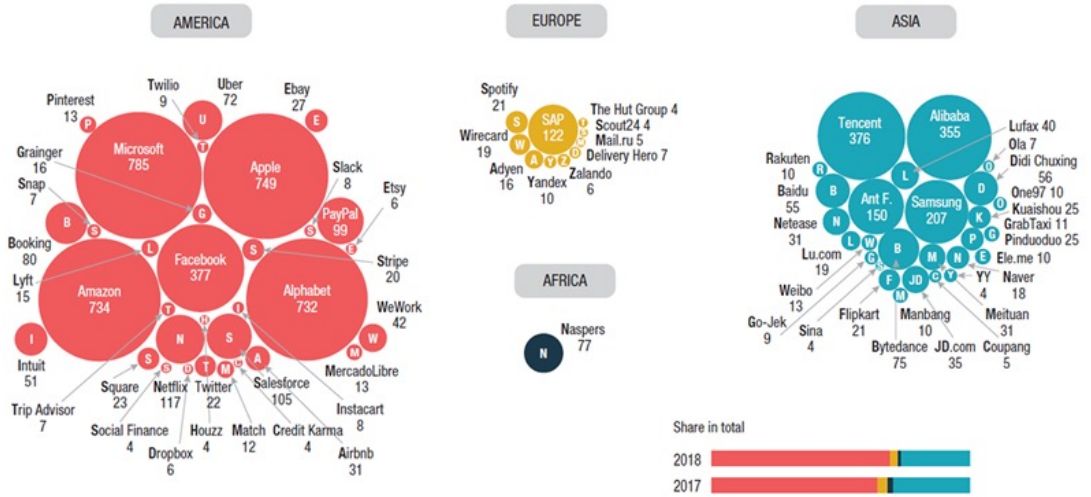




Data creation has exploded, but the majority of data is unstructured

UNEQUAL GLOBAL PARTICIPATION IN THE DIGITAL DATA ECONOMY





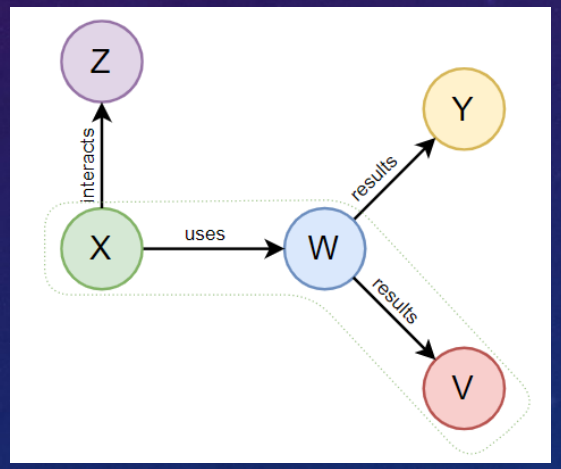
EUROPE LEADING IN SOFT REGULATION

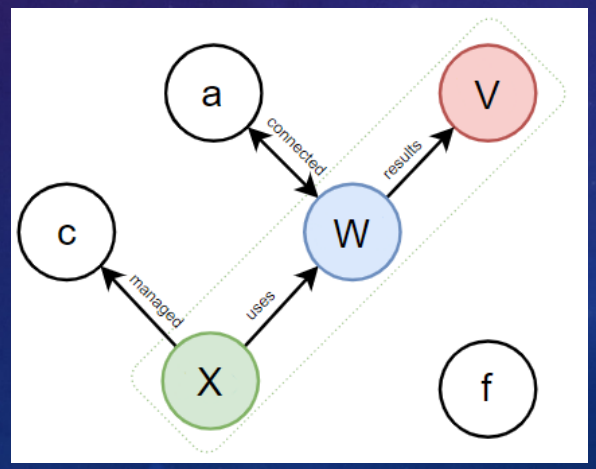
- General Data Protection Regulation (GDPR, 2018)
- Data curation as **FAIR (Horizon, 2020)**
  - **F**indable
  - **A**ccessible (under well-defined conditions and GDPR compliant)
  - **I**nteroperable
  - **R**eusable

THE FAIR FRAMEWORK

- The primary purpose of FAIR is to <u>enable data reuse</u>
  - This is implemented through standardizing data querying, access and formatting with freedom to operate in data-stewardship and re-use
  - The primary vehicle to <u>sustainable, cost-saving</u> scientific research practices
  - Data is structured with knowledge graphs (metadata) which are machine-readable and AI/ML ready

FAIR is central to the **digital transformation** of science, innovation and services





FAIR-OLR creates an ethical, quality data pipeline for reuse in science innovation and services, which is GDPR compliant and respects:

- ✓ **O**wnership of the data
- ✓ **L**ocal provenance of the data
- ✓ **R**egulatory frameworks in locale, and GDPR

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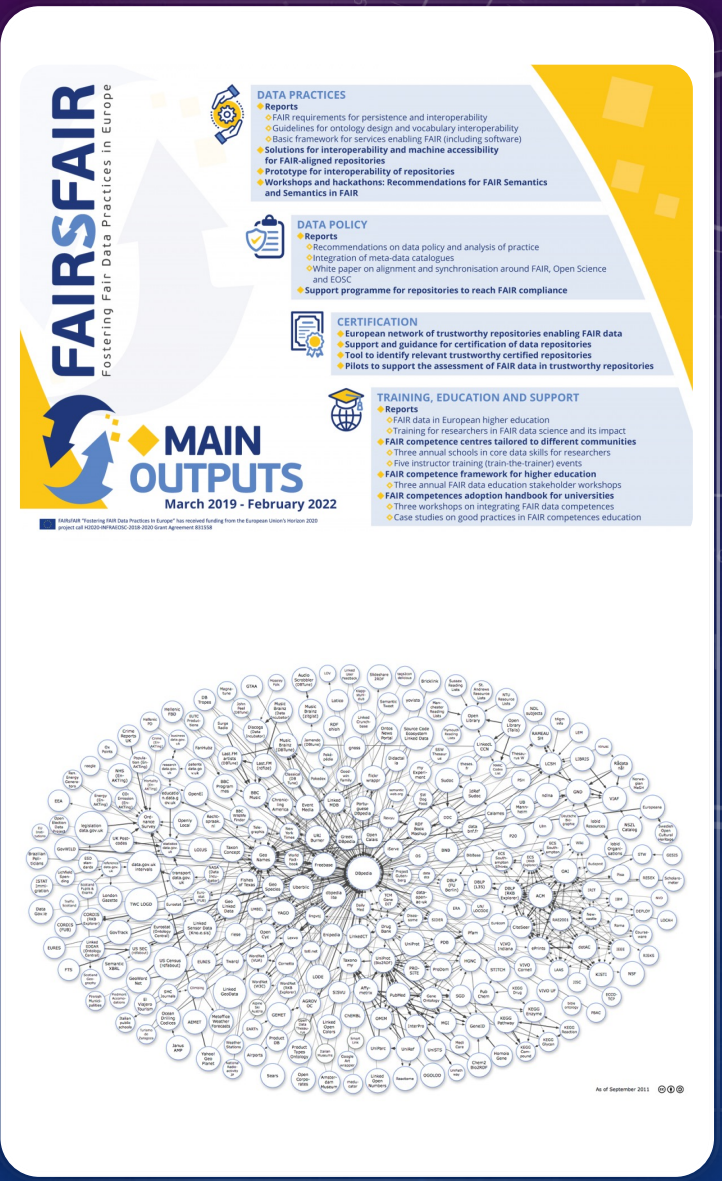
INTERNET OF FAIR-DATA AND SERVICES

There is a need for Fostering FAIR Data Practices in Africa:

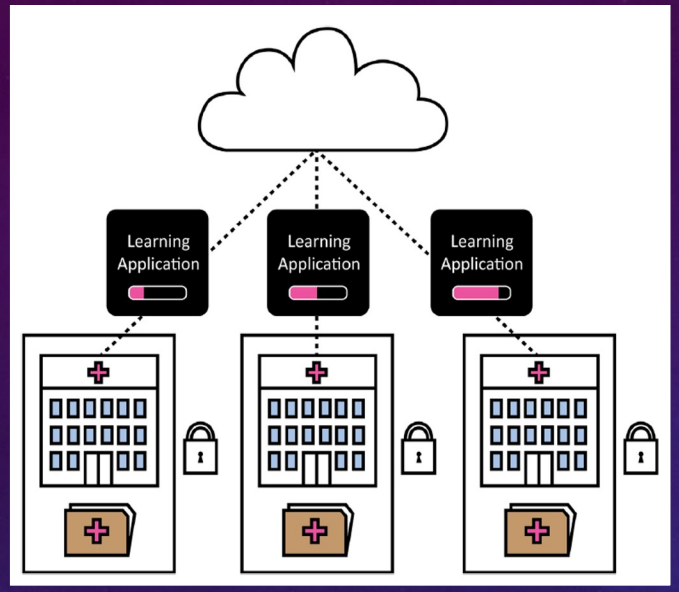
- To **connect African Science**
- To strengthen African Science based **innovation and economic participation**
- To build on **African youth population** and **labour market potential** to serve the **African and European data economy**



AVAILABLE AUN-INFRASTRUCTURE:

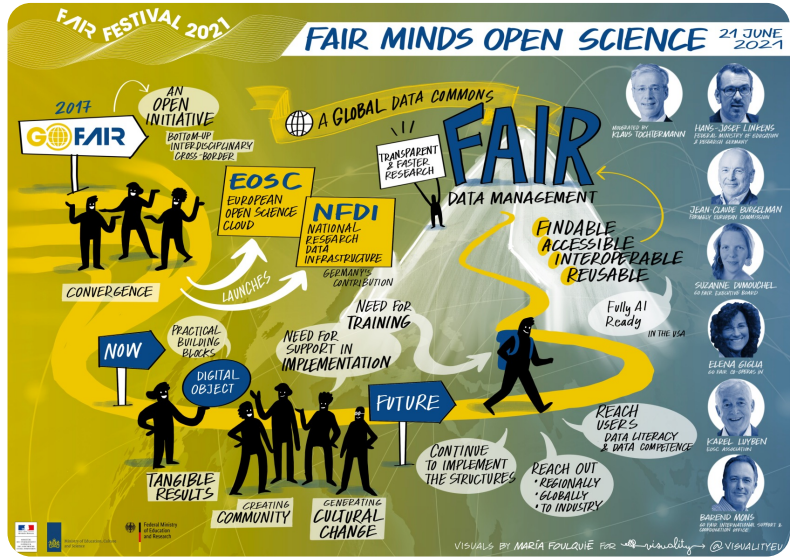
- African University Network for FAIR Open Science (AUN) – demonstrating interest of African universities
  - to embrace FAIR Data Science
- Virus Outbreak Data Network – Africa (VODAN-A) – demonstrating the African capacity
  - to develop and use FAIR-Data for health services to improve quality health at point of care
  - strengthen the availability of digital health data from Africa
  - Strengthen data ownership in localised data repositories that can be queried and computated through data-visiting techniques for interoperability and re-use
- Digital Innovation and Skills Hub (DISH) – demonstrating the involvement of youth in
  - On-line hybrid platform to learn FAIR-data stewardship skills
- Research platform on Globalisation, Accessibility, Innovation and Care (GAIC) – demonstrating the potential of
  - Further development and
  - Integration in the Internet of FAIR Data and Services

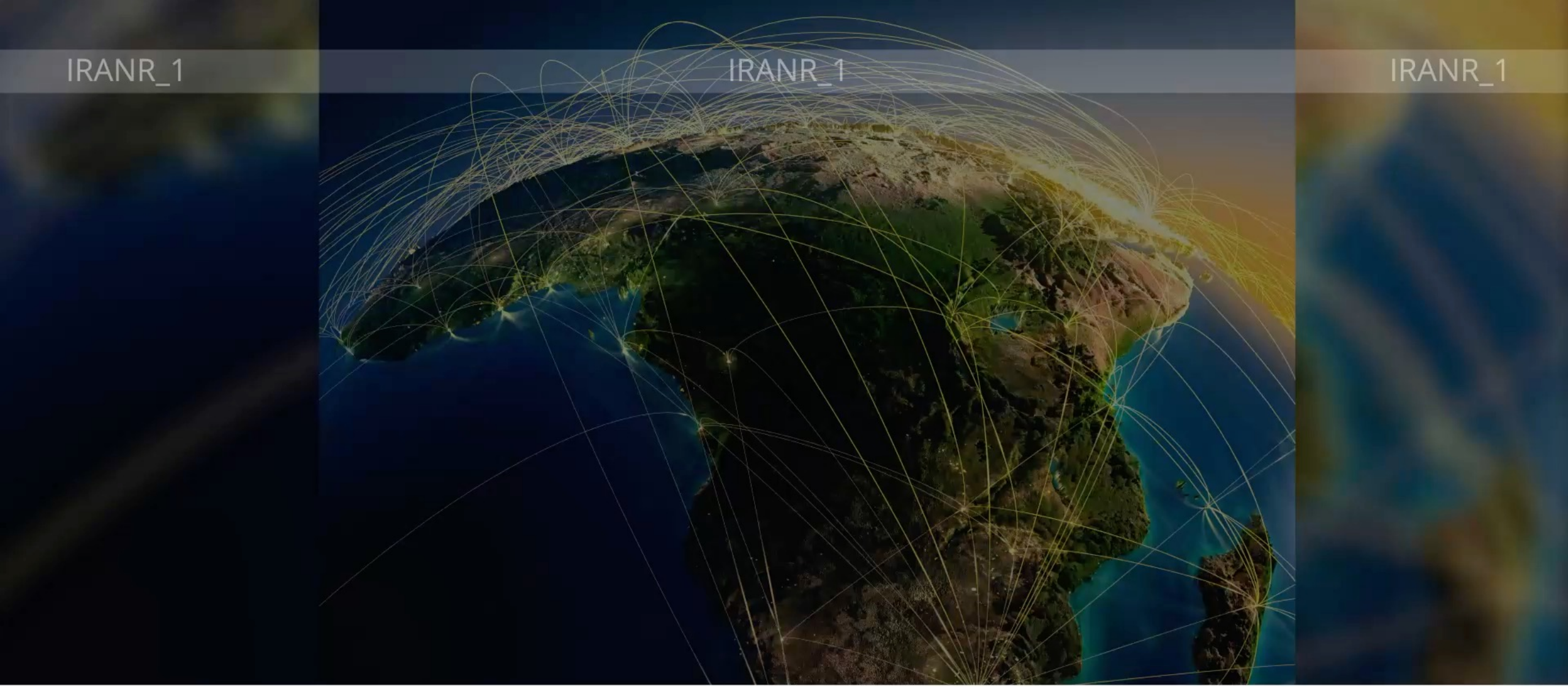
APPLICATIONS



"In the data visiting concept, the questions or analysis algorithms travel to the data. Instead of the data to the analysis. The data visiting solutions speeds up the progress towards earlier diagnosis and new treatments of rare diseases. It avoids double data entry and ambiguity. It standardizes and harmonizes the dataset only once at the source"

(Peter-Bram 't Hoen - Interoperability and FAIRification Work Package Lead)





ADVANCED GENETICS
Open Access

Design of a FAIR Digital Data Health Infrastructure in Africa for COVID-19 Reporting and Research

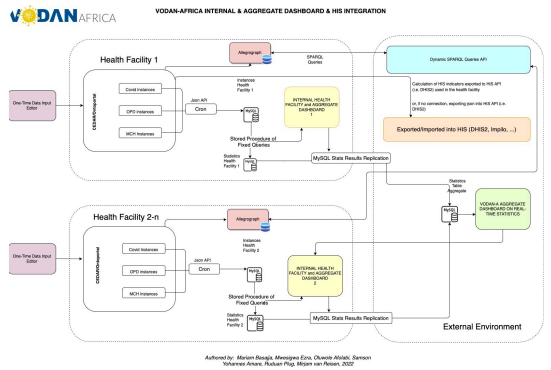
DOI: 10.1002/GGN2.10050

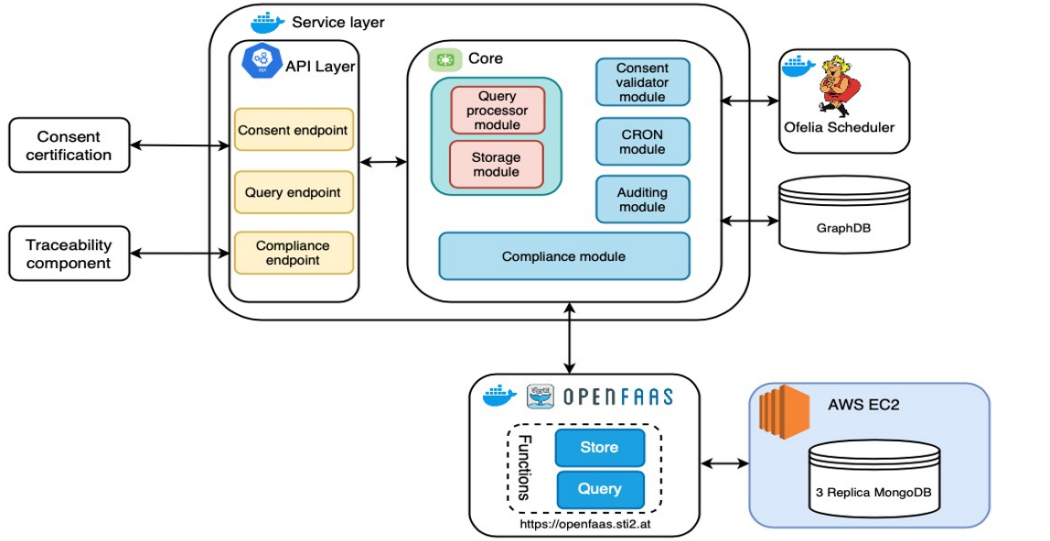
VODAN AFRICA

WILEY

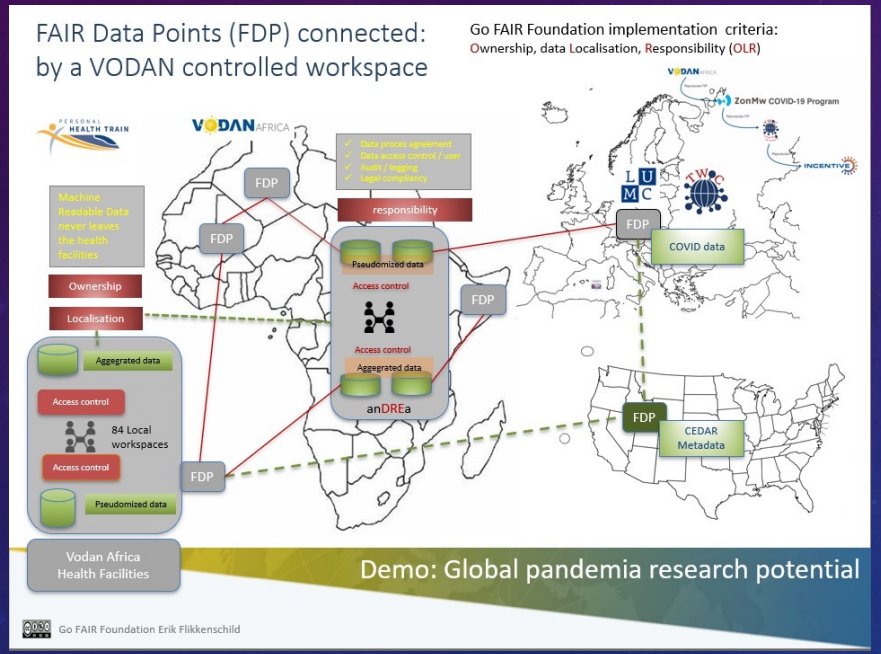
AFRICA-EU COLLABORATION

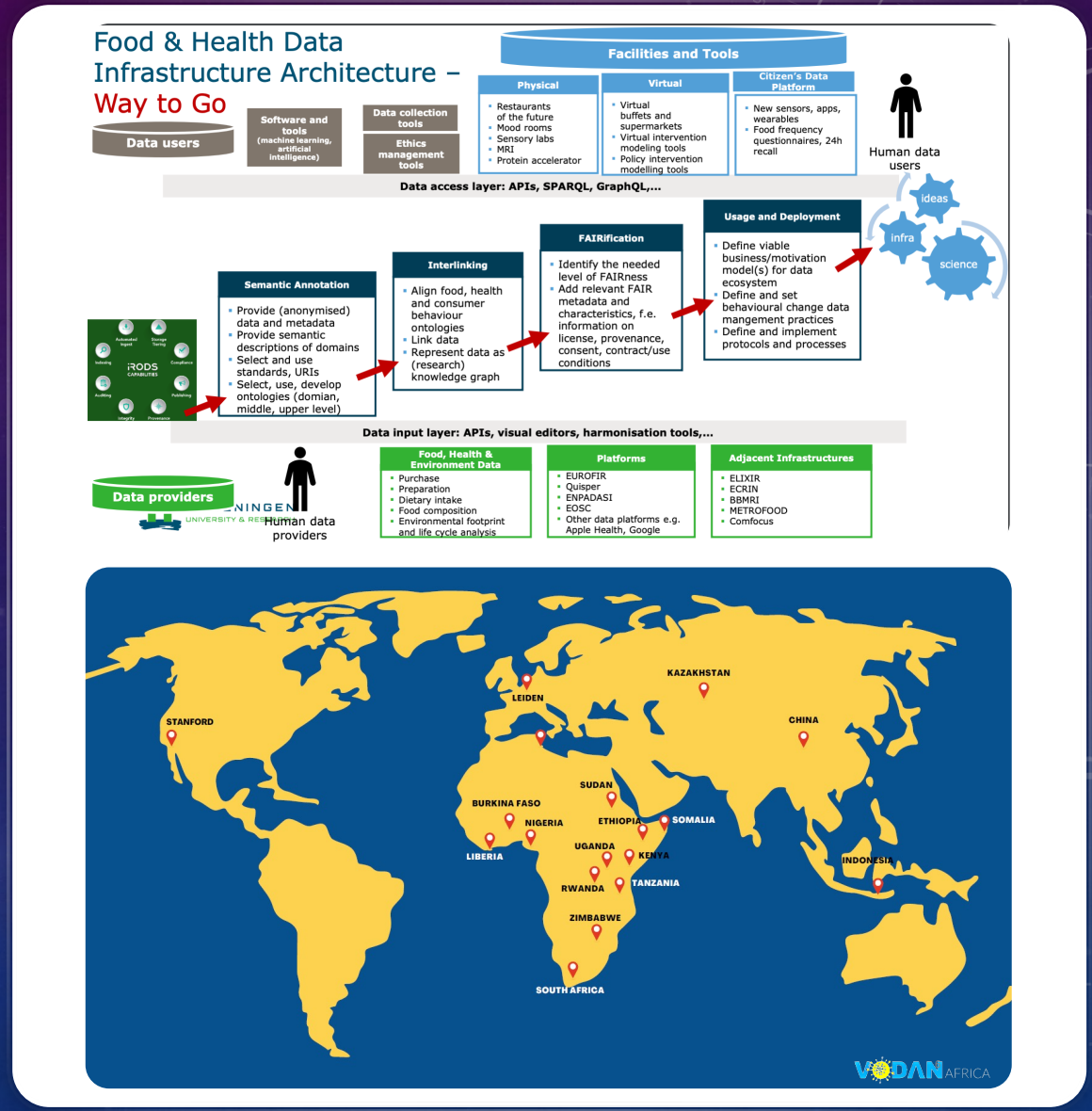
- On FAIR Open Science
- Development of standards
- Training
- Development of (Open Source based) tooling
- Accreditation of certified Data Stewardship Competence Centres
- Integration of African and European Open Science
- Strengthening of data protection and control
- Bussiness development for FAIR Data based services





DATA INTEGRATION ACROSS KNOWLEDGE AND SERVICES DOMAINS





FURTHER LINKS

https://vodan-totafrica.info/vodan-news-page.php?i=59&a=african-fair-open-data-driven-research-and-services

Creating a FAIR Digital Health Information System

https://dish-portal.kiu.ac.ug/2022/06/28/how-dish-is-providing-access-to-digital-technology-skills-and-employment-for-vulnerable-and-affected-communities-in-the-horn-of-africa/

https://vodan-totafrica.info/vodan-news-page.php?i=50&a=vodan-africa-team-wins-most-inspiring-presentation-during-the-global-health-symposium-at-leiden-university-medical-centre