Title: Digital Object Container Identifiers (DOCiD™) : An Africa-Originated Persistent Identifiers infrastructure for Equitable Global Research Partnerships

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Introduction

- Global research infrastructures depend on persistent identifiers (PIDs) for discoverability, interoperability, and long-term access.
- Most existing PID systems are designed and governed outside Africa, limiting African agency over research outputs, indigenous knowledge, and innovation data.
- The Africa PID Alliance was created to address these structural imbalances.
- It develops Africa-originated PID infrastructure grounded in equity, sovereignty, and contextual relevance.
- The Digital Object Container Identifier (DOCiD™) is designed to represent complex, multidimensional African research outputs.
- DOCiD™ is particularly suited for indigenous knowledge and cultural heritage while enabling equitable global research partnerships

Challenges of Africa's underrepresentation and lack of ownership in global research

- Limited Visibility of African Research Outputs
- Insufficient Research Funding and poor Infrastructure
- Lack of Persistent Identifiers (PIDs) for African Research Outputs
- Poor policy implementation.
- Overdependency on Foreign Infrastructure
- Helicopter Science or extractive science

Project Objectives

- Increase the visibility of African research outputs in global research databases through persistent identifiers.
- Assign DOCiD™ to African research outputs, including articles and datasets.
- Directly link research outputs to involved researchers, institutions, and funders.
- Promote African-originated persistent identifiers to ensure ownership and recognition of African research.
- Tailor DOCiD™ to Africa's specific research, heritage, and data needs.
- Strengthen collaboration among universities, museums, and research institutions.
- Link publications, collections, and artifacts to improve discoverability and partnership opportunities.
- Foster strategic partnerships that advance African data sovereignty.

Project Approach

Introduction to the Digital Object Container Identifier (DOCiD™)

The Project: Africa PID Alliance

- Africa PID Alliance is an open infrastructure program of the Training Centre in Communication (TCC Africa).
- It develops African-originated Persistent Identifiers (PIDs) to strengthen the representation, sovereignty, and global visibility of African research.
- The program addresses unequal access to DOIs across African institutions.
- It ensures visibility and recognition of African research outputs, including: Grey literature, Indigenous knowledge, Cultural heritage, Patents
- The goal is to integrate African knowledge more equitably into global scholarly ecosystems.

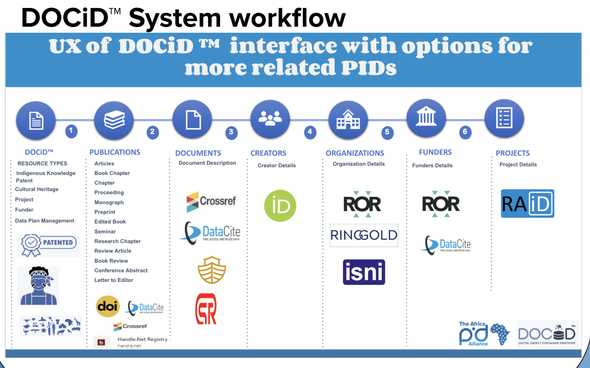
Why is this important?

- Limited digitization of research outputs remains a major challenge in Africa.
- The Africa PID Alliance addresses this through innovative, open research infrastructure services.
- The initiative expands access to knowledge and metadata on digital objects for wider communities.
- It includes indigenous knowledge, cultural heritage and patent metadata, originating from Africa.
- The solution is the production of persistent, accessible, and affordable African-originated Persistent Identifiers (PIDs).

The System: Digital Object Container Identifie (DOCiD™)

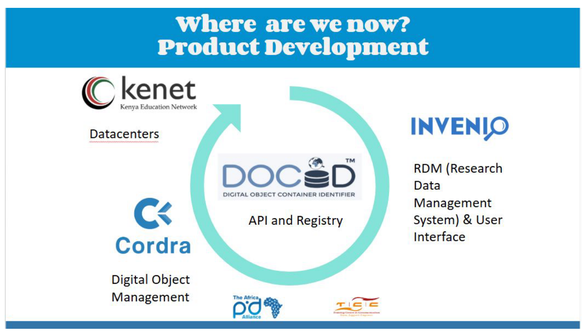
- DOCiD™ (Digital Object Container Identifier) is a Persistent Identifier (PID) developed by the Africa PID Alliance.
- It was created to improve the discoverability and reuse of African research outputs, including: Indigenous knowledge, Cultural heritage, Patents
- DOCiD™ is a multilinear system that supports multiple PID types, including DOIs, Handles, ARKs, ROR, RAiD, CSTR
- It integrates seamlessly with the DOI ecosystem, allowing multiple identifiers to be linked to a single original object.
- Unlike traditional PIDs, DOCiD™ enables institutions to Assign and manage multiple identifiers per object,Track outputs and associated identifiers within the institution
- DOCiD™ connects research outputs to People, Organizations, Funders, The original source
- It benefits researchers and knowledge managers by enabling richer metadata and improved bibliometric analysis.
- Institutions with DataCite or Crossref memberships can easily pull existing identifiers into DOCiD™.
- As a member of the DOI Foundation, DOCiD™ supports interoperability with global DOI systems, including those in Japan and Korea.

DOCiD™ System workflow



- Primary Data Centre- KENET (Kenya Education Network).
- Digital Object Management - CORDA.
- Research Data Management & User Interface - Invenio.

DOCiD™ System Interface



- Resource Types - Core focus areas of DOCiD™.
- Publications - Integrates diverse African research outputs.
- Documents -Includes datasets, audio, video, images, and more.
- Creators - researchers and their outputs – ORCID ID
- Organizations- Assigns PIDs to research institutions and organizations- ROR
- Funders- Integrates research funding bodies -ROR
- Projects- Assigns IDs to research-Raid

Use case Partners From South Africa

- Stellenbosch University
- Rhodes University
- North West University
- University of Capetown

Capacity Building

- Focus on Open Data Management to enhance research transparency, accessibility, and collaboration.
- Provide in-depth DOCiD™ training to use-case partners, e.g. Stellenbosch University, Rhodes University, North West University,National Museum of Lagos, National Musem of Namibia etc

Focal Areas

- Workforce Development - Building skills to support FAIR scholarly infrastructure.
- Digital Registration Management -Training on digital object registration and related
- Services.
- Skills Empowerment- Equipping individuals to implement and manage research infrastructure effectively.

Foundational Course on Open Data Management for African Librarians

- Free four-week online course by AfLIA, in partnership with Figshare and the Africa PID Alliance.
- Objective- Strengthen research data management capacity of African librarians.
- Key topics -Open data principles, FAIR data management, data sovereignty, and open research infrastructures.
- Impact -Launched in 2024, reaching 800 library and data managers from 21 African countries.

Project Results

- DOCiD™ assigns unique PIDs to African research outputs, especially indigenous knowledge, cultural heritage, and patents, ensuring proper attribution.
- Enables seamless integration of African research into the global research ecosystem.
- Prevents misappropriation by uniquely identifying and protecting indigenous knowledge and cultural heritage.

What stages are we in?

DOCiD™ 1.0 is live, with active use cases underway.
Working across key personas - Researchers, Librarians,Museum Collections Managers / Curators

Partner Institutions Include

Stellenbosch University, North West University ,Rhodes University, University of Lagos, Thomas Sankara University, National Museum of Burkina Faso, National Museum of Tanzania, Kigulu Cultural Museum, Wethemba, Africa Digital Heritage

Goal: Promote preservation, attribution, and global visibility of African knowledge.

Conclusion

Africa PID Alliance is transforming how African knowledge is owned and represented globally by enhancing research visibility, promoting data sovereignty, and securing Africa's intellectual assets.

Call To Action

Stakeholders are invited to join the initiative and prioritize African data sovereignty.
https://africapidalliance.org/sign-apa/

AFRICA PID ALLIANCE CALL TO ACTION