



# Open Science in the South 2022

**Theme 2** - Management, sharing and dissemination mechanisms: practices, benefits, obstacles

*HPC Infrastructure and Services for African Open Science Communities*

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# Contributors

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# HPC initiatives in West and Central Africa



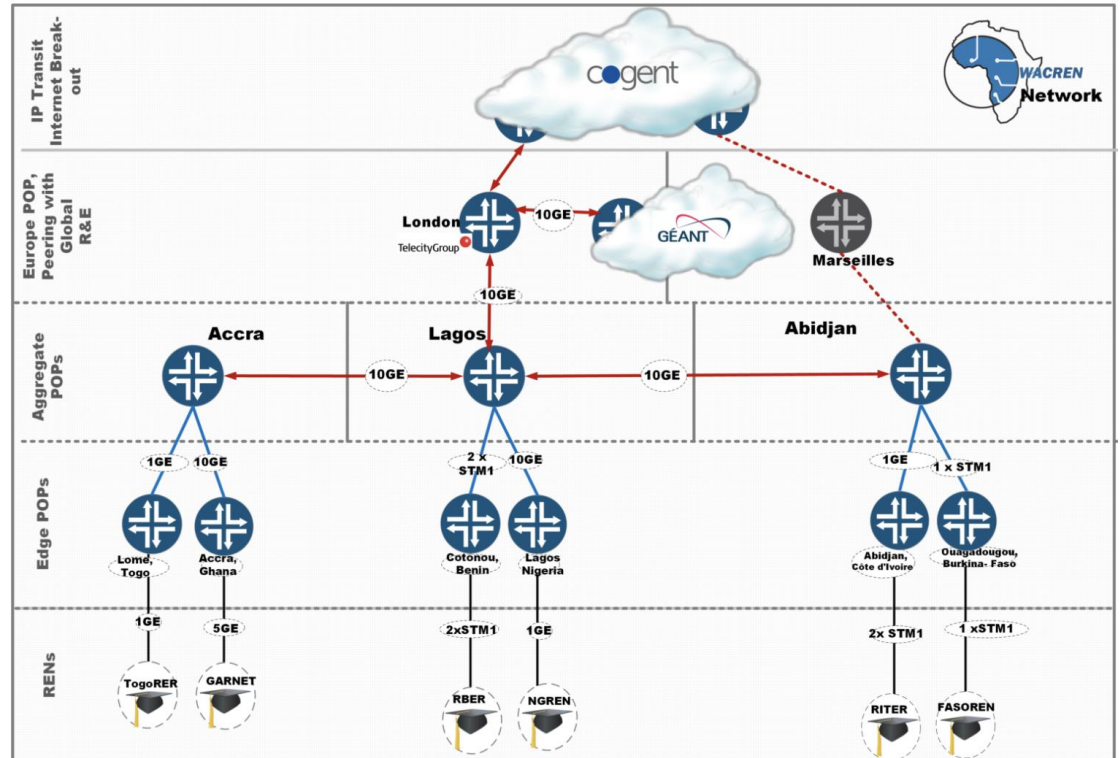
**Coming soon**  
**2nd High-Performance Computing Workshop**  
**on Advanced HPC, 21thNov-02thDec, 2022,**  
**CApIC-ACE, Ota, Ogun State, Nigeria**

# WACREN

The WACREN network connects and interconnects national research and education networks (NRENs) in West and Central Africa.

Co-funded by European Union (EU) through the AfricaConnect 2 and AfricaConnect 3 projects

WACREN has connected three countries to high-speed technology, making it the best means for students to access resources, send and receive data and collaborate for knowledge discovery in those countries.



The WACREN Network and the interconnected NRENs as of July 2021

# DSTN – As part of the ACE Partner project

1. Des réseaux scientifiques d'excellence au service des grands **enjeux du développement**
2. Une **offre d'enseignement supérieur mutualisée** et adaptée aux besoins de l'expertise locale
3. Une **communauté de connaissance** en lien avec le secteur socio-économique

## and how to achieve them:

- Identification of key **scientific priorities** within the thematic networks and development of an inter-CEA scientific programme
- Setting up a shared **training** programme and disseminating it via free and innovative tools
- Sharing of **inter-CEA good practices**: international accreditation, response to competitive calls
- Establishment of a programme for **generating own resources** to ensure the networks' sustainability

# DSTN – Our vision

*How can research, innovation, entrepreneurship and the technology and knowledge transfer, through partnership, respond to the major challenges of sustainable development in Africa?*



# DSTN – Our objectives

Bringing together **ACEs working in digital science and technology** help to address some of the challenges posed by the digital transformation of science, the economy and society as a whole.

The network aims to provide and co-finance **mobility grants, scientific events** and **expertise** in these scientific priority areas with the following four impact objectives:

**Strengthening research capacities and research collaboration** between ACEs and with international research institutions, through thematic workshops and schools, joint research teams, scientific mobility, and PhD co-supervision.

**Strengthening higher education training capacities** through joint training programs, exchange of teachers, students and internships.

**Strengthening innovation capacities and ties with the non-academic sector** through the involvement of relevant socio-economic actors in training and research activities.

**Ensuring the network's sustainability** through application for competitive funding and private funding.

# DSTN - Our members

**ACE MITIC:** Mathematics, Informatics, and TIC – University of Gaston Berger, Saint-Louis, Senegal :

<http://www.ceamitic.sn/>

**ACE SMIA:** Mathematical Sciences, Computer Science and Applications - University of Abomey Calavi,

Benin <https://ceasma-benin.org/>

**ACE ENSEA:** Statistique et Economie quantitative - ENSEA, Côte d'Ivoire <https://ensea.ed.ci/>

**ACE OAK-Park:** OAU ICT-Driven Knowledge Park - Obafemi Awolowo University (OAU), Nigeria

[http://www.ace.edu.ng/ace/centres/oak\\_park/](http://www.ace.edu.ng/ace/centres/oak_park/)

**ACE CApIC:** Applied Informatics and Communication - Covenant University, Nigeria

<https://ace.covenantuniversity.edu.ng/>

**ACE ACETEL:** Technology Enhanced Learning - National Open University of Nigeria (NOUN), Nigeria

<https://acetel.nou.edu.ng/>



# DSTN – Our expertise for the society - Digit4Society

## 6 research and training centers

- Data collection (IoT, Drones, surveys, polling, etc.)
- Data Integration / Interoperability
- Modeling, Data Science and Decision Support
- High-Performance Computing
- Cybersecurity

## in 4 West African countries:

- Nigeria, Senegal, Ivory Coast, Benin

## Digital Science for Sustainable Development

- e-Health
- e-Agriculture
- Digital Mining
- e-Education
- Smart City
- Digital Water

# **DSTN – Core activities**

## **Research-Team**

Promote collaboration between ACEs

## **Thematic workshops**

Identify strengths and weakness of the partners on each topic

Promote networking and collaboration to apply to the call for Research-Team

## **Trainings**

Strengthen education, research and innovation capacities

## **Contributions**

Knowledge production and vulgarisation

**Towards a sustainable  
collaborative regional  
network on high performance  
computing (HPC)**

*Resource sharing mindset and  
following open science  
principles*

# Kickoff



## Regional Workshop on High Performance Computing

*Federated HPC Infrastructure Services for African Open Science Communities*

April 27<sup>th</sup>, 2022 Immeuble IVOTEL, Abidjan, Ivory Coast

# Stakeholders

- Regional organizations
- Universities
- African Centers of Excellence (ACE)
- Private sector
- International partners

# Were present



# Sessions dedicated to feedback, advocacy & networking

- Feedback on HPC initiatives within the DSTN ACE members
- Keynote and Invited speakers
- Showcase of applications on HPC
- Panel on HPCs as a building block for Open Science Infrastructures
- Brainstorming on a collaborative HPC network building

# **Actions expected to support this initiative**

- Co-organization of training and scientific events
- Sharing of human resources, equipment and digital courses on HPC
- Setting up and conducting joint research projects



# The key chapters of the roadmap

- Governance and Regulations
- Infrastructure, Connectivity and Energy (e.g. HPC, NREN, RREN, TELCO)
- Data and algorithm repositories (e.g. educational resources, models)
- Capacity building (System admins, Engineers, Researchers)
- Applications / End usage (e.g. Health, Agriculture, Education, Space)
- Sustainability and Business Plan

# Levels to be considered

- **Governance and Regulations**
- **Applications / End usage** (Health, Agriculture, Education, Space, Mining, etc.)
- **Human Resources** (System admins, Engineers, Researchers)
- **Data** (Open data, Educational resources, etc.)
- **Infrastructure** (HPC, NREN, RREN, etc.)

# What next ?

- Elaborate strategies for building a sustainable collaborative regional network on HPC
- Set up a roadmap guiding the actions for achieving the goals for such a network
- Engage the commitment of the stakeholders (academia, Industry, International partners)
- Need assessment
- Survey for identifying existing HPC





# MERCI THANKS

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