

Geodesy Education at AFRIGIST

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African Regional Institute for Geospatial Information Science and Technology (AFRIGIST)

Under the Auspices of United Nations Economic Commission for Africa) (UNECA)

Obafemi Awolowo University (OAU) Campus, Ile-Ife, Nigeria

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07 October 2026

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Presentation Outline

- ⌚ **About AFRIGIST**
- ⌚ **AFRIGIST Training Programmes**
- ⌚ **Geodesy Contents in AFRIGIST Programmes**
- ⌚ **Regional Geospatial/Geodesy-related Services and Support by AFRIGIST**
- ⌚ **Concluding Remarks**

ABOUT AFRIGIST

- The African Regional Institute for Geospatial Information Science and Technology (AFRIGIST), formerly known as Regional Centre for Training in Aerospace Surveys (RECTAS).
- Established in 1972 under the auspices of the United Nations Economic Commission for Africa (UNECA) as:
 - an educational “one-stop” solution institution that trains highly skilled manpower, and conducts research in **aerospace surveys/geospatial information science and technology, and its applications, as well as the strengthening of essential national mapping capacities for the sustainable development of Africa.**
- A bilingual (**English and French**) intergovernmental institution for Africa, with full diplomatic accreditation in the Federal Republic of Nigeria, and membership is open to all African countries.
- AFRIGIST is located on the campus of Obafemi Awolowo University, Ile-Ife, Nigeria.

The Origin of the Institute

- ◇ In 1963, the UN Cartographic Conference for Africa recommended the creation of Cartographic Centres in Africa, and with the hope that a close cooperation would be established between developed countries and such centres to enable them efficiently to fulfil their missions.
- ◇ The UN resolution 125 (VII) of 22 February 1965 and Economic and Social Council resolutions 1033 (XXXVII) and 1127 (XLI) adopted the proposal of the Executive Secretary for establishment of:
 - a. *An institute for research and training in natural resources, inventory and management;*
 - b. *A regional institute for research into all aspects of aerial surveys;*
 - c. *Training centres in photogrammetric techniques, the interpretation of aerial photographs and airborne geophysical surveys;*
 - d. *Joint centres for specialised surveying and cartographical services;*
- ◇ The resolution led the establishment of RECTAS in 1972, with attendant financial and technical assistance from the United Nations, bilateral assistance agencies, *The Netherlands, Switzerland, Canada, United Kingdom and Finland, etc.*, that made her offer training of International Standard for over two decades.

Vision

To be a leading Institution of Excellence providing one-stop solution for quality geospatial science training, education and research to generate critical capacity for sustainable development in Africa.

Mission (The Mandate)

To contribute to rapid **sustainable development of member states in particular, and Africa in general**, through the **development of critical capacity for timely delivery and responsible use of appropriate geospatial information**

Objectives of the Institute

- i. Provide **theoretical** and **practical education, research, and training** in the fields of Geospatial Information Science and Technology, including:

Photogrammetry & Remote Sensing;

Cartography

Geographic Information Science;

Geodetic Science;

Hydrography and Marine Science, &

Applications in:

- ◇ *geodetic mapping,*
- ◇ *land administration,*
- ◇ *geophysical surveys,*
- ◇ *Health and epidemiology,*
- ◇ *agriculture and water*
- ◇ *population and settlement,*
- ◇ *environmental monitoring*
- ◇ *climate change,*
- ◇ *natural resources management,*
- ◇ *infrastructure mapping,*
- ◇ *security and safety*
- ◇ *geohazard & disaster management,*
- ◇ *transport, navigation, etc.*

Objectives (cont..)

- ii. Conduct seminars and courses to provide an opportunity for government officials, and researchers in the region to exchange information and experiences in the field of Geospatial Information Science and Technology (GIST).
- ii. Conduct research and carry out studies in GIST
- ii. Provide consultancy and advisory services in geospatial data and information production, management, and dissemination to member states, other African Countries, and relevant stakeholders.

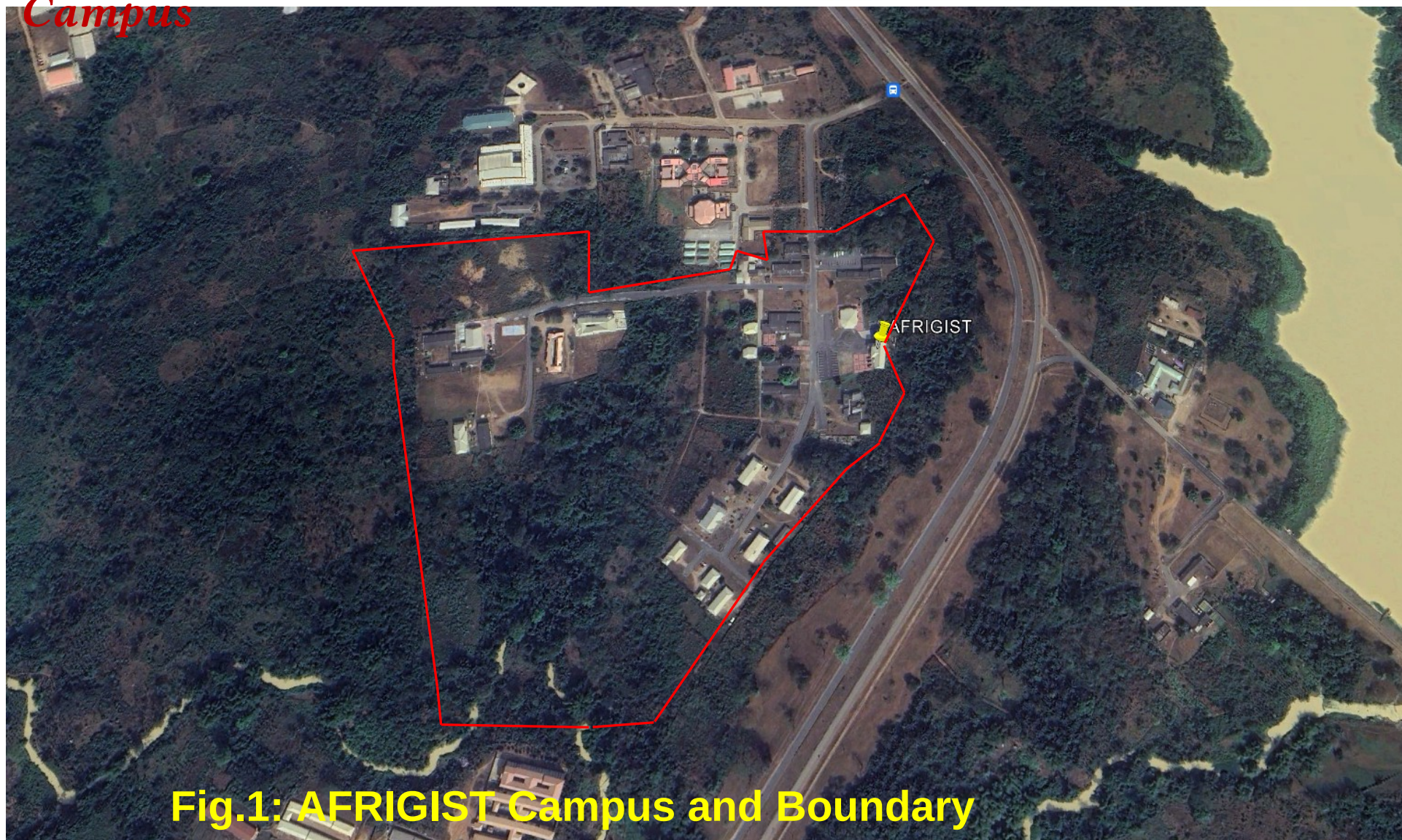


Fig.1: AFRIGIST Campus and Boundary

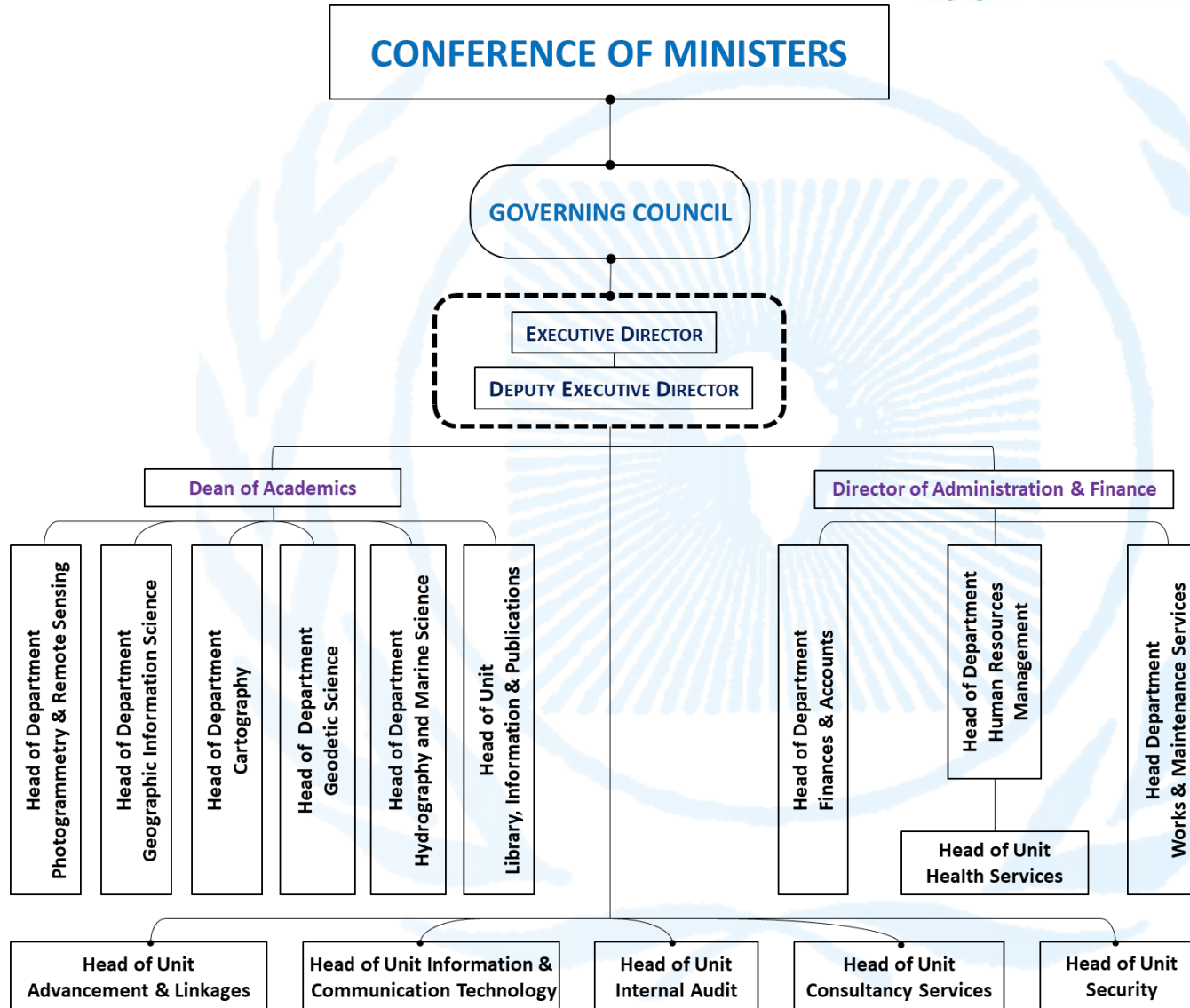


**Fig.2: AFRIGIST
ORGANISATIONA
L CHART**

AFRIGIST: Membership

Current Members:

- Benin⁽¹⁾,
- Burkina⁽²⁾,
- Cameroon⁽³⁾,
- Ghana⁽⁴⁾,
- Mali⁽⁵⁾,
- Niger⁽⁶⁾,
- Nigeria⁽⁷⁾ (Host)
- Senegal⁽⁸⁾

Prospective Members:

- Cote-d'Ivoire⁹,
- Guinea-Bissau¹⁰,
- Liberia¹¹, &
- South Africa¹²



Potential Member:

The membership is open to all other African Countries

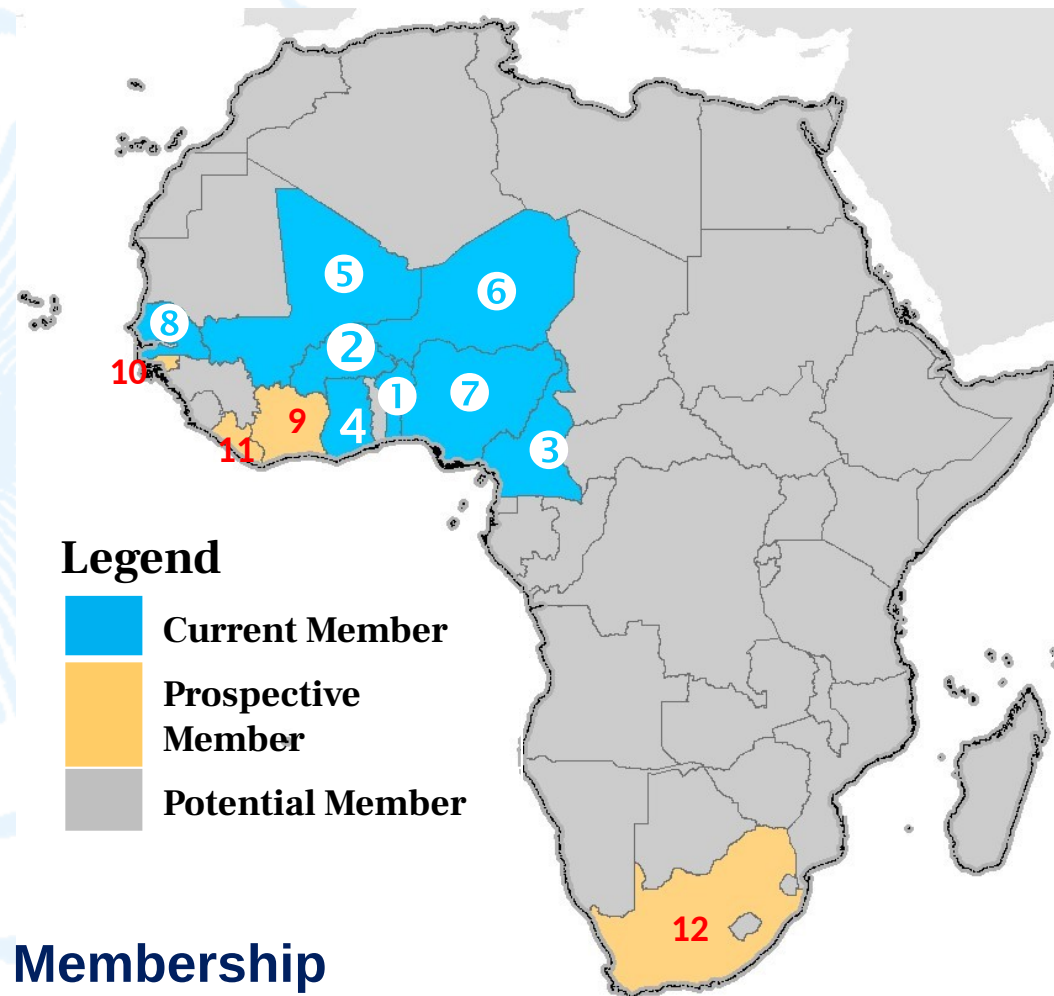


Fig. 3: AFRIGIST Membership

Benefits and Opportunities for Country Membership	Procedure to becoming a Member State	Obligations & responsibilities of a Member State
a) Membership of AFRIGIST Governing Council and qualified to hold other positions in the Governing Council, including the Chair. b) Employment of country's nationals at the Institute as Professional Staff c) AFRIGIST's full training fellowship/ scholarship for annual country's admission quota and reduced cost for private candidates (where applicable). d) Advisory and support to country's government e) Participation in various AFRIGIST workshops and conferences f) Full logistic support for members, when invited for Governing Council/Statutory Meetings	i. Expression of interest through a letter written to AFRIGIST Governing Council Chairman, by the Minister of Foreign Affairs of the Country. ii. The Representative of the Country will be invited as an Observer to an AFRIGIST Governing Council meeting to familiarise with AFRIGIST activities. iii. Payment of membership fee estimated at \$100,000 USD by the country iv. Calculation by the UNECA of the annual contribution of the country into AFRIGIST budget, based on the GDP of the Country. v. Signing of the Agreement Establishing the Institute by the Country. vi. Official ceremony of the installation of the Country Flag at AFRIGIST (The Ambassador of the Country and/or the Representative can be in attendance)	Having fulfilled all the conditions above, the following are expected from the country as a member: (i) Regular participation of the country representative in AFRIGIST Governing Council and its statutory meetings (ii) Active participation in AFRIGIST activities (nomination of country candidates into AFRIGIST various academic programmes, workshops attendance, etc.) (iii) Regular payment of annual contribution

AFRIGIST TRAINING PROGRAMMES

- ❑ The capacity building and trainings in AFRIGIST are mainly postgraduate (PGD, M.Sc. & PhD), in addition to **short-term modular specialised trainings** in geospatial information science and technology in different areas of endeavour.
- ❑ The Institute's specialised diplomas and degrees are accredited by the **African and Malagasy Council for Higher Education** (French: *Conseil Africain et Malgache pour l'Enseignement Supérieur-CAMES*) or offered in collaboration with universities.
- ❑ The academic programmes consist of departments and units:
 - i. **Geographic Information Science (GIS);**
 - ii. **Cartography;**
 - iii. **Photogrammetry & Remote Sensing (PRS);**
 - iv. **Geodetic Science**
 - v. **Hydrography & Marine Science;**
 - vi. **Library & Information Publication Unit**
 - vii. **ICT Unit**



S/n.	Programme	Title	In Collaboration with:	Duration	Tuition -USD(\$)	
					Member State	Non-member State
1	Technologist Diploma (TD)	Geospatial information Production and Management (French and English)	None	18 months	2,524	3,030
2	Postgraduate Diploma (PGD)	Geospatial information Production and Management [Specialisation: Remote Sensing, Photogrammetry, Geographic Information Science] (French & English)	None	12 months	2,216	2,670
3	Professional Masters (PM)	Geospatial information Production and Management, [Specialization: Remote Sensing, Photogrammetry, Geographic Information Systems] (French and English)	None	12 months	2,216	2,670
4	Professional Masters (PM)	Geospatial Information Science and Land Administration (French and English)	None	12 months	2,216	2,670
5	Master of Science(M.Sc.)	Geospatial information Production and Management (French and English)	None	24 months	3,768	4,524
6	Masters (MGIT)	Geo-information Technology (English)	Federal University of Technology Akure, Nigeria	24 months	3,768	4,524

Academic Training Programmes

S/n.	Programme	Title	In Collaboration with:	Duration	Tuition -USD(\$)	
					Member State	Non-member State
7	Master of Science (M.Sc.)	Geo-information Science (French)	University of Abomey Calavi, Benin Republic	24 months	3,768	4,524
8	Masters of Science (M Sc.)	Geospatial Information Production and Management (English)	Obafemi Awolowo University (OAU), Ile-Ife, Nigeria	24 months	3,768	4,524
9	Masters of Science (M Sc.)	Geospatial Information Science and Land Administration (English)	Obafemi Awolowo University (OAU), Ile-Ife, Nigeria	24 months	3,768	4,524
10	PhD	Geospatial Information Science and Technology, and Sustainable Development (French and English)	University of Abomey Calavi, Benin Republic	3 – 4 years	6,998	7298
11	*M.Sc./PhD	Geodetic Science (English)	*University of Lagos	24 months/ 3 – 4 years	3,768/ 6,998	4,524/ 7298
12	*M.Sc./PhD * Yet to finalise the MoU	Hydrography and Coastal Management (English)	*University of Lagos	24 months/ 3 – 4 years	3,768/ 6,998	4,524/ 7298



- ❑ AFRIGIST currently has 25 Academic Staff, including 4 Professors and 2 Associate Professors.
- ❑ This number of lecturers is independent of those available at the collaborating Universities and Institutes.



AFRIGIST Management Staff/Academic Board

Original: Mr. L. Geodesy Education at AFRIGIST: ECOS Africa Workshop.

Theme: Building the Foundation for Geodetic Excellence in Africa.. October 5 - 7, 2026 Nairobi, Kenya





A Cross-Section of the Graduands

Ojigi, M. L: Geodesy Education at AFRIGIST. GGOS Africa Workshop.
Theme: Building the Foundation for Geodetic Excellence in Africa.. October 5 - 7, 2026 Nairobi, Kenya

Graduation 2026

The graduation ceremony for the 2025/2026 academic session was held on **28th August 2026**, and the Institute graduated a total of **59 students**:

Programme	No . of graduands
M.GIT & MSc	29
PM & PGD	25
DUT (Technologist Diploma)	5
Total	59



GEODESY CONTENTS IN AFRIGIST PROGRAMMES

Geodesy-related course units/components are embedded in the relevant parts/modules of the respective programmes.

Trained over 4000 persons across Africa, to-date (made up of civil/public servants, military, para-military, etc.).

New Academic Programmes

- MSc/PhD in Geodetic Science
 - MSc/PhD in Hydrography & Marine Science
- The collaboration arrangements for these programmes are being discussed with Department of Surveying & Geoinformatics, Faculty of Engineering, University of Lagos, Nigeria.



Some Geodetic Equipment for the New Joint Programme

❑ The prominent geodetic contents taught at basic and intermediate levels of the various AFRIGIST programmes include the following, amongst others:

- Map projection and Cartography,
- Coordinates Geometry and Reference Systems,
- Basic and Applied Mathematics (Algebra and Calculus),
- Photogrammetry and UAV Mapping,
- Geometric Geodesy/Map Datum,
- Physical Geodesy(Figure of the Earth, Earth Gravity fields, Height Systems, etc),
- Space and Satellite Geodesy (GNSS),
- Adjustment Calculus and Spatial Analysis (Least Squares, Least Squares Collocation),
- Geodetic Data Processing (GNSS CORS, UAV, HIRES-Imagery, Signal, GCP-Georeferencing, etc),
- Control Surveying and Mapping Project Management, Atmospheric Analysis and Climate Change, environmental geodesy/geodynamics and disaster management.
- Hydrography and Marine geospatial intelligence, International/National Boundary/Border Delineation, Demarcation and Management,
- Practical use of Total Station, Geodetic Levels, Differential GPS Receivers, GNSS-RTK, etc..

❑ The contents for the newly designed **geodetic science** and **hydrography and marine science** programmes have the full relevant core contents for **all aspects of Geodetic Science and Mapping**.



Scientific/Proprietary Software/Models being explored:

- Bernese
- GAMIT/GLOB-K
- GIPSY
- LGO, Leica Infinity
- TBO/TBC
- *AI/Machine Learning. Platforms*
- Software for RINEX to TEC
- Other GNSS Software Solutions

AFRIGIST GNSS Laboratory (upgrade ongoing)

Ojigi, M. L: Geodesy Education at AFRIGIST. GGOS Africa Workshop.
Theme: Building the Foundation for Geodetic Excellence in Africa.. October 5 - 7, 2026 Nairobi, Kenya

Stations	Average Observational data rate		Average Navigational data rate		Average complete data rate	
	MB/Hr	KB/s	MB/Hr	KB/s	MB/Hr	KB/s
AFR1	17.23	4.90	0.28	0.08	17.51	4.98
AFR2	3.04	0.86	0.07	0.02	3.10	0.88
RECT	0.13	0.04			0.13	0.04



AFRIGIST GNSS CORS

INFRASTRUCTURE

Ojigi, M. L: *Geodesy Infrastructure for Africa* Workshop.
Theme: Building the Foundation for Geodetic Excellence in Africa.. October 5 - 7, 2026 Nairobi, Kenya



AFR1

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          TRSAX3702      NONE
6304423.1898 498858.7220 827636.9378
          0.0540      0.0000      0.0000
          1.000
G 8 C1C L1C D1C S1C C2W L2W D2W S2W
R 8 C1C L1C D1C S1C C2C L2C D2C S2C
C 8 C1I L1I D1I S1I C7I L7I D7I S7I
E 12 C1B L1B D1B S1B C7Q L7Q D7Q S7Q C5Q L5Q D5Q S5Q
2026 6 3 9 24 28.2500000 GPS
2026 6 5 1 31 58.0000000 GPS
18
C1C 0.000 C1P 0.000 C2C 0.000 C2P 0.000
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PGM / RUN BY / DATE
MARKER NAME
MARKER NUMBER
OBRVER / AGENCY
REC # / TYPE / VERS
ANT # / TYPE
APPROX POSITION XYZ
ANTENNA: DELTA H/E/N
INTERVAL
SYS / # / OBS TYPES
SYS / # / OBS TYPES
SYS / # / OBS TYPES
SYS / # / OBS TYPES
TIME OF FIRST OBS
TIME OF LAST OBS
LEAP SECONDS
GLONASS COD/PHS/BIS
END OF HEADER

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United Nations AFR2

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GNSS      GNSS
AFR2      AFRIGIST
GNSS      AFRIGIST
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XH11390574 SLGVBASE
6304427.2464 498869.6034 827626.6729
          0.0000      0.0000      0.0000
G 16 C1C L1C D1C S1C C2L L2L D2L S2L C2W L2W D2W S2W C5Q
L5Q D5Q S5Q
R 12 C1C L1C D1C S1C C2C L2C D2C S2C C3Q L3Q D3Q S3Q
E 16 C1C L1C D1C S1C C5Q L5Q D5Q S5Q C7Q L7Q D7Q S7Q C8Q
L8Q D8Q S8Q
C 20 C2I L2I D2I S2I C1P L1P D1P S1P C5P L5P D5P S5P C7D
L7D D7D S7D C6I L6I D6I S6I
          10.000
2026 6 3 0 0 20.0000000 GPS
2026 6 4 0 0 10.0000000 GPS
18 0 0 0
RINEX VERSION / TYPE
PGM / RUN BY / DATE
MARKER NAME
MARKER NUMBER
MARKER TYPE
OBSERVER / AGENCY
REC # / TYPE / VERS
ANT # / TYPE
APPROX POSITION XYZ
ANTENNA: DELTA H/E/N
SYS / # / OBS TYPES
SYS / # / OBS TYPES
SYS / # / OBS TYPES
SYS / # / OBS TYPES
SYS / # / OBS TYPES
INTERVAL
TIME OF FIRST OBS
TIME OF LAST OBS
GLONASS SLOT / FRQ #
GLONASS COD/PHS/BIS
LEAP SECONDS
END OF HEADER

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Data rate
consideration
in building
processing
pipeline

RECT

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RECT
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          1 1
          4 C1 L1 P2 L2
          30.000
2026 06 03 06 03 30.0000000 GPS
2026 06 03 23 59 30.0000000 GPS
18
55
RINEX VERSION / TYPE
PGM / RUN BY / DATE
MARKER NAME
MARKER NUMBER
OBSERVER / AGENCY
REC # / TYPE / VERS
ANT # / TYPE
APPROX POSITION XYZ
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WAVELENGTH FACT L1/2
# / TYPES OF OBSERV
INTERVAL
TIME OF FIRST OBS
TIME OF LAST OBS
LEAP SECONDS
# OF SATELLITES

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Ojigi, M. L: Geodesy Education at AFRIGIST. GGOS Africa Workshop.

Theme: Building the Foundation for Geodetic Excellence in Africa.. October 5 - 7, 2026 Nairobi, Kenya



Benin



Burkina Faso



Cameroon



Ghana



Mali



Nigeria

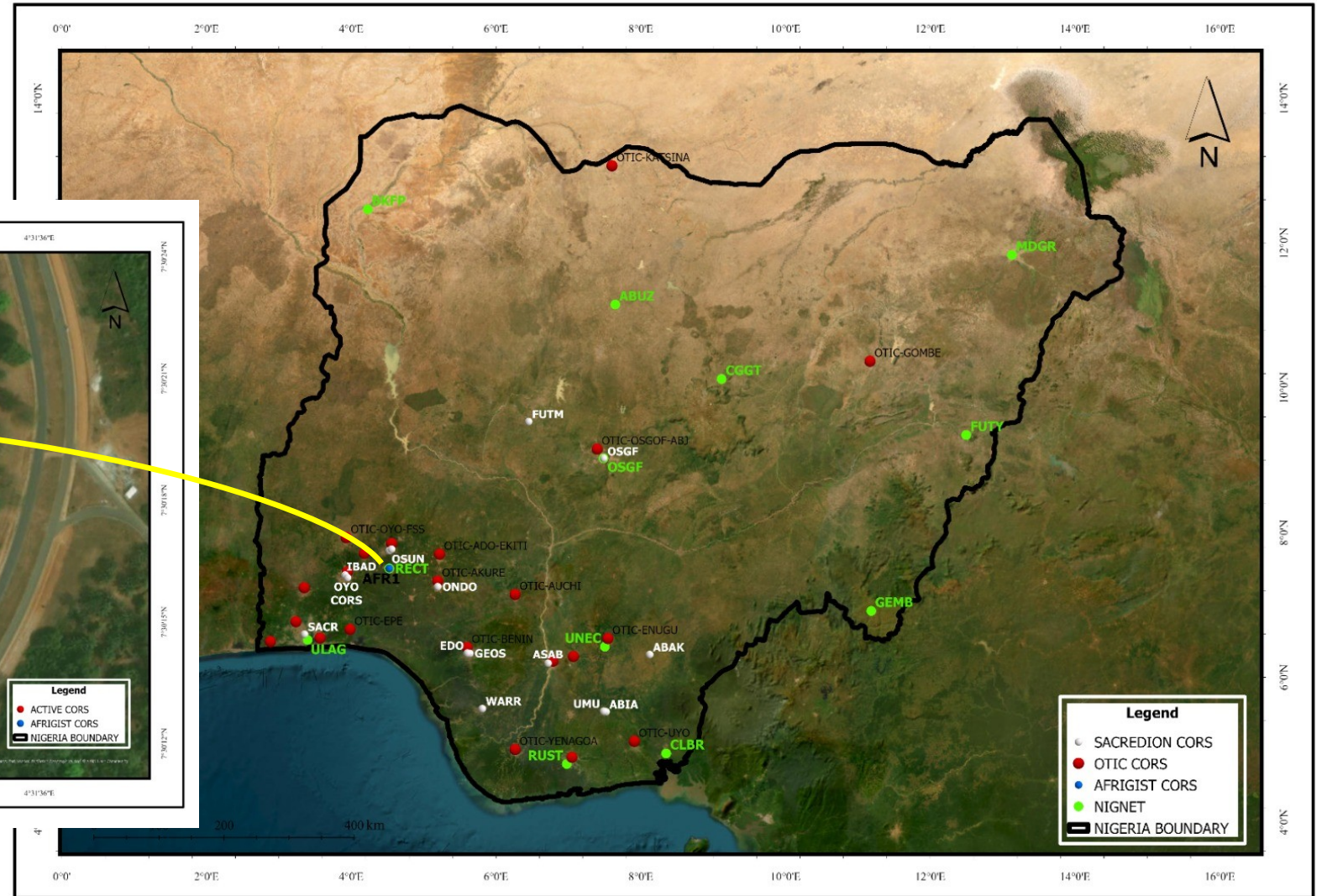


Niger



Senegal





GNSS CORS Network (Red) with Data Sharing Collaboration with AFRIGIST for Training & Research.

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Geodesy/GNSS Practical Training Session

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Geoinformation Technology Training Laboratory

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Academic Training Programmes (cont.):



Field Exercise (dry season) on the
AFRIGIST Campus with V200 Hi-Target
GNSS Receivers



Space Geodesy/GNSS

Other Training Facilities:



Sokkia GNSS Receivers (Base & Rover)

DJI Phantom 4 RTK



Ebee Fixed Wing

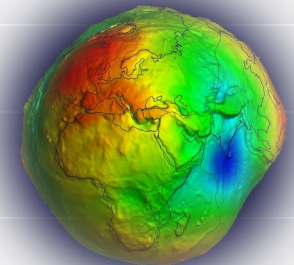


**High Precision Hi Target
V200 GNSS RTK System**

Training data in other aspects of Geodesy (Physical Geodesy, Marine Geodesy, etc):

- In the absence of **relevant infrastructure** for collecting local or in-situ big geodetic datasets, the Institute rely on global geodetic data, particularly from data services coordinated by **International Gravity Field Service (IGFS) of the IAG**, & those of **NASA /ESA Satellite Radar Altimetry & InSAR databases**, etc. for training and research.

Logo	Name of IGFS Data Centre/Services
	International Centre for Global Earth Models (ICGEM), GFZ Potsdam Germany (Ince et al., 2019). https://icgem.gfz.de/home
	Bureau Gravimetrique International or International Gravimetric Bureau (BGI), Toulouse, France
	International Service for the Geoid (ISG), Politecnico di Milano, Italy
	International DEM Service (IDEMS), EOST Strasbourg, France
	International Geodynamics and Earth Tide Service (IGETS), ESRI, Redlands, CA, USA



*Specialised
Short-term
Training
Programmes*

Training Programmes	Duration
▪ Global Navigation Satellite Systems and Applications ▪ Cadastral Information System (CIS) and Land Info. Management ▪ Reference Frame and Datum Transformation ▪ Basic training in Digital Cartography and Production ▪ Fundamentals of Geospatial Information Science (GIS) ▪ GIS in Geohazard and Disaster Management ▪ Boundary and Border Management ▪ GI in e-Marketing, Trade and Commerce ▪ Election Administration and Management ▪ Geospatially Enabled Government ▪ Digital Image Processing and Analysis ▪ Security, Defence and Peace-keeping ▪ Topographic Mapping and Analysis ▪ Geospatial Applications in Civil & Environmental Engineering ▪ GIS in Transport and Logistics ▪ Geospatial Information in Public Accounting ▪ UAS/ Photogrammetry	2 - 6 weeks

Specialised Short-term Training Programmes

Training Programmes	Duration
- Remote Sensing and Digital Mapping - Internet GIS and Web Mapping GIT Applications in: - Health Care and Epidemiology - Agriculture and Livestock Management, - Coastal and Marine Resources/Oceanography - Land Use and Forest Resources Inventory - Demography/Population Census - Planning and Physical Development - Geology, Mining and Mineral Resources Mapping - Land Administration, etc. - Geospatial Data Science (AI/Machine Learning/Deep Learning) - Hyperspectral Sensing, & LiDAR Mapping - Sea Level Change Monitoring and Mapping with Satellite Radar Altimetry - Electronic Surveying & Mapping, - Geoid Development	2 - 6 weeks

Academic and Technical Partnerships/Collaborations

The Institute currently collaborates with the following universities and organisations

- ◆ **Federal University of Technology, Akure (FUTA), Nigeria:** The master's degree programme in Geoinformation Technology (MGIT) being jointly run by the two institutions since 2011 has produced over 240 graduates,
- ◆ **University of Abomey-Calavi (UAC), Benin Republic:** The joint MSc GIS programme started in the 2010/2011 Academic Session and has trained more than 80 students since its inception. The joint PhD programme in ***Geospatial Information Science and Technology, and Sustainable Development*** is doing well, and enrolled 12 PhD candidates in the 2025/26 academic programme
- ◆ **Obafemi Awolowo University (OAU), Ile-Ife, Nigeria:** Under this collaboration with the host University, there are two distinct programmes, namely:
 - (a) Master of Science in Geospatial Information Production and Management (GIPM), and
 - (b) Master of Science in Geospatial Information Science in Land Administration (MSc GISLA).

Academic and Technical Partnerships/Collaborations

- ◆ **University of Lagos (UNILAG), Nigeria:** Admissions into the **Geodetic Science and Hydrography & Coastal Management programmes** will commence after the Memorandum of Understanding (MoU) is signed between AFRIGIST and University of Lagos/Department of Surveying & Geoinformatics. **The joint curricula for the programmes have been finalised by the two institutions.**
- ◆ **Other Collaborations:** other collaborations and partnerships within and outside of the member countries (**e.g. ITC, University Twente, The Netherlands & others**), are being explored to boost the technical and academic standard of the Institute..
- ◆ **Collaboration with the Industry and Practice:** The institute is in collaboration with:
 - i. Digital Earth Africa-Geoscience Australia,
 - ii. United Nations Global Geodetic Centre of Excellence (UNGGCE), Bonn Germany,
 - iii. Satellite Navigation in Africa Joint Programme Office (SatNav-Africa JPO), Dakar, Senegal,
 - iv. African Union Border Programme (AUBP), Addis Ababa, Ethiopia.
 - v. Dev-Afrique,
 - vi. Sacredion Nig Ltd, etc.

Recent Regional Geospatial/Geodesy-related Services & Support by AFRIGIST

Some of the recent regional/institutional support services by AFRIGIST include the following, amongst others.

- ☐ Geological Mapping of the Birimian Region, Southern Mali (1/50,000) in collaboration with Eureka Geo Geoscientist Consultants
- ☐ Capacity Building & Training on Border Delimitation, Demarcation and Reaffirmation for Technicians in Charge of Border Governance in The Gambia, In collaboration with GIZ and AUBP
- ☐ Spatial Data Infrastructure (SDI) support services in the development of prototype country-level action & risk management plans for SDI and Integrated Geospatial Information Framework (IGIF) implementations in Africa (a prototype for member states)
- ☐ Topographic Surveys and Mapping of OAU, Ile-Ife Staff Housing Land (123.8 Hectares) Using Drone and GNSS Techniques
- ☐ Training workshop for Nigeria Customs Service (NCS) on the roles of Geospatial Technology in cross-border trading activities
- ☐ Specialised geospatial capacity building for Nigeria Geological Survey Agency (NGSA):
- ☐ Continuous advisory services to ministries, agencies and commissions in AFRIGIST member countries in relevant areas of geodetic and geospatial needs



United Nations
Economic Commission for Africa



Training on Border Delimitation, Demarcation
and Reaffirmation for Technicians in Charge
of Border Governance in The Gambia, In
collaboration with GIZ & AUBP.
(24-27 Nov. 2025)

Geodesy Education at AFRIGIST. GGOS Africa Workshop.

Theme: Building the Foundation for Geodetic Excellence in Africa.. October 5 - 7, 2026 Nairobi, Kenya



- On the 30th of June, 2026, AFRIGIST and the African Union Commission (AUC) officially signed a Memorandum of Understanding (MoU) between the two organizations **to:**
 - ▮ strengthen the geospatial capacities of border stakeholders, a central requirement for the delimitation, demarcation, and reaffirmation of inter-state boundaries in Africa.



AFRIGIST, represented by the Executive Director, **Prof. Lazarus M OJIGI** and the AUC represented by **Amb. Bankole ADEOYE**, the Commissioner for Political Affairs, Peace and Security



AFRIGIST and Nigeria Customs Service Capacity Building Workshop on the role of Geospatial Technology in Trans-Border Trade



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Benin



Burkina Faso



Cameroon



Ghana



Mali



Nigeria



Niger



Senegal

Concluding Remarks

- The cutting-edge technology advancements in geodesy, in the areas of GNSS, precision UAS, global geodetic big data services, VLBI, SLR, *Earth observation techniques, geospatial data analytics, and applications in geosciences, engineering and environmental monitoring*, etc. have created a new requirement or threshold for geodetic science capacity development and training in Africa.
- With the establishment of two new GNSS CORS (AFR1 and AFR2) at the institute in May 2026, AFRIGIST is set to make relevant contribution of data for the solutions of AFREF initiative.
- AFRIGIST is trying to meet up with the new realities of modern geospatial contents and training, **but funding challenges shortage of relevant manpower, and inadequate laboratory equipment are still major limiting factors.**

Concluding (cont.)

- The Institute is relentless in providing geospatial mapping, land administration and specialised capacity building consultancy, advisory and support services to government organisations, institutions, universities, states/local governments and relevant geospatial stakeholders within the region.
- There is the critical need for universities, geospatial training institutions, geodesists and the industry in Africa to collaborate and deploy innovative strategies for optimal impact, attract and train a diverse workforce in the essential fields of geodesy, Earth science and engineering.

References

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Thank You !

