



17th Meeting of the International Committee on Global Navigation Satellite Systems

15–20 October 2023

Madrid, Spain

Dodo Joseph Danasabe

National Space Research and Development Agency (NASRDA)

Centre for Geodesy and Geodynamics (CGG)

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GNSS ACTIVITIES IN NIGERIA

Dodo Joseph Danasabe





National Space Research and Development Agency (NASRDA)

- The National Space Research and Development Agency (NASRDA) under the auspices of the Federal Ministry of Science and Technology was established in May 1999
- NASRDA has a broad objective to pursue the development and application of space science technology for the socio-economic benefits of the Nation.





NASRDA CENTRES

- Centre for Geodesy and Geodynamics
- National Centre for Remote Sensing
- Centre for Satellite Technology Development
- Centre for Basic Space Science
- Center for Space Transport and Propulsion
- Centre for Space Science and Technology Education
- Center for Atmospheric Research (CARS)





NASRDA GNSS at the Centre for Geodesy and Geodynamics, Toro.

Activity 1: IGS Station



IGS INTERNATIONAL GNSS SERVICE

Search Filter Projections Layers

Site Name	Country/Region	Receiver	Antenna - Radome	S
● CAGS00CAN	Canada	TRIMBLE NETR8	TRM59800.00 - NONE	G
● CAS100ATA	Antarctica	TRIMBLE ALLOY	LEIAR25.R3 - LEIT	G
● CCJ200JPN	Japan	TRIMBLE ALLOY	TRM59800.00 - SCIS	G
● CEBR00ESP	Spain	SEPT POLARX5TR	SEPCHOKE_B3E6 - NONE	G
● CEDU00AUS	Australia	TRIMBLE ALLOY	LEIAR25.R4 - NONE	G
▲ CGGN00NGA	Nigeria	JAVAD TRE_G3TH DELTA	ASH701945B_M - NONE	G
● CHAN00CHN	China	ASHTECH UZ-12	ASH701945C_M - NONE	G
● CHIL00USA	United Stat...	TPS NET-G3A	TPSCR.G3 - SCPL	G
● CHOF00JPN	Japan	JAVAD TRE_G3TH DELTA	TRM57971.00 - NONE	G
● CHPG00BRA	Brazil	TRIMBLE ALLOY	TRM59800.00 - NONE	G
● CHPI00BRA	Brazil	SEPT POLARX5	TPSCR.G3 - NONE	G
● CHTI00NZL	New Zealand	TRIMBLE ALLOY	TRM115000.00 - NONE	G

Show 25 stations

1 2 3 ... 21

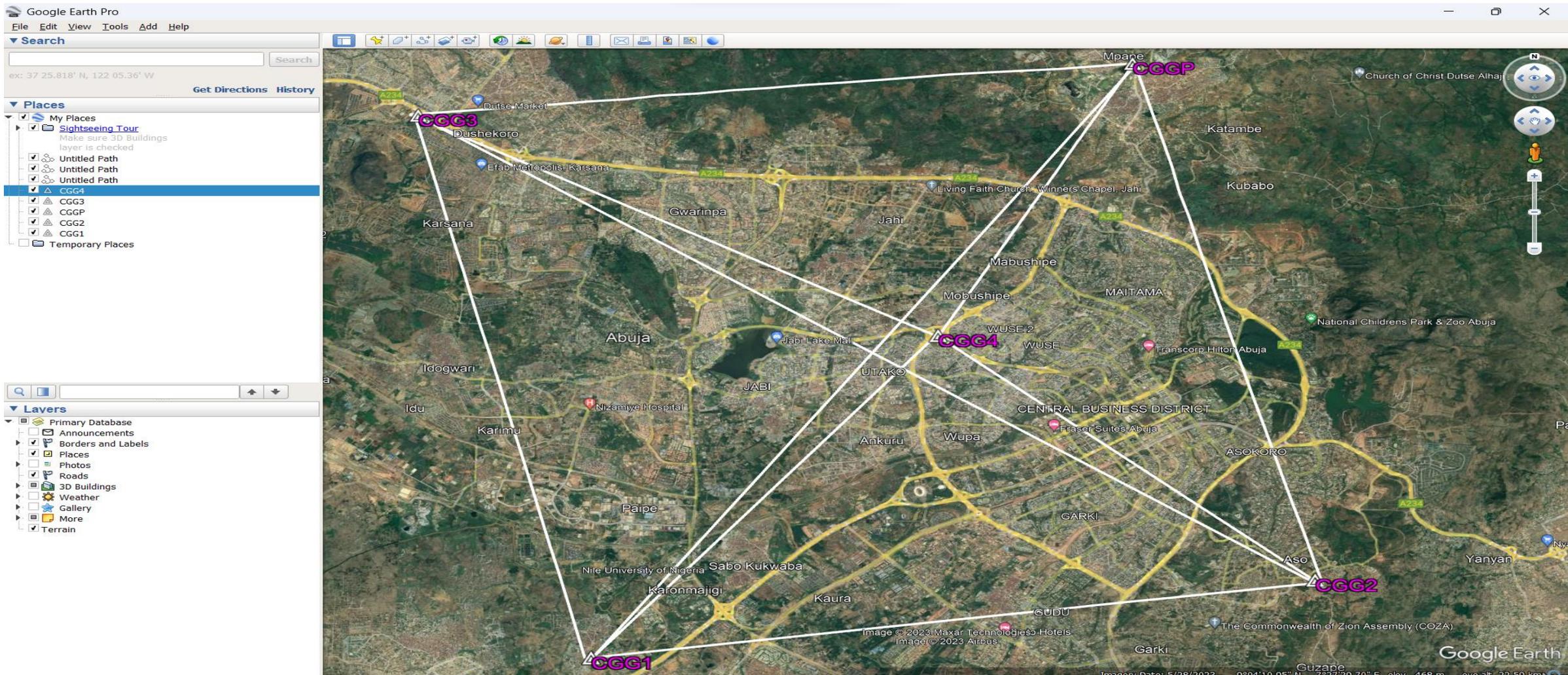




NASRDA GNSS at the Centre for Geodesy and Geodynamics, Toro.

Activity 2: Integrated Earthquake Monitoring Project

Establishment of GNSS Monitoring Stations in Abuja, FCT

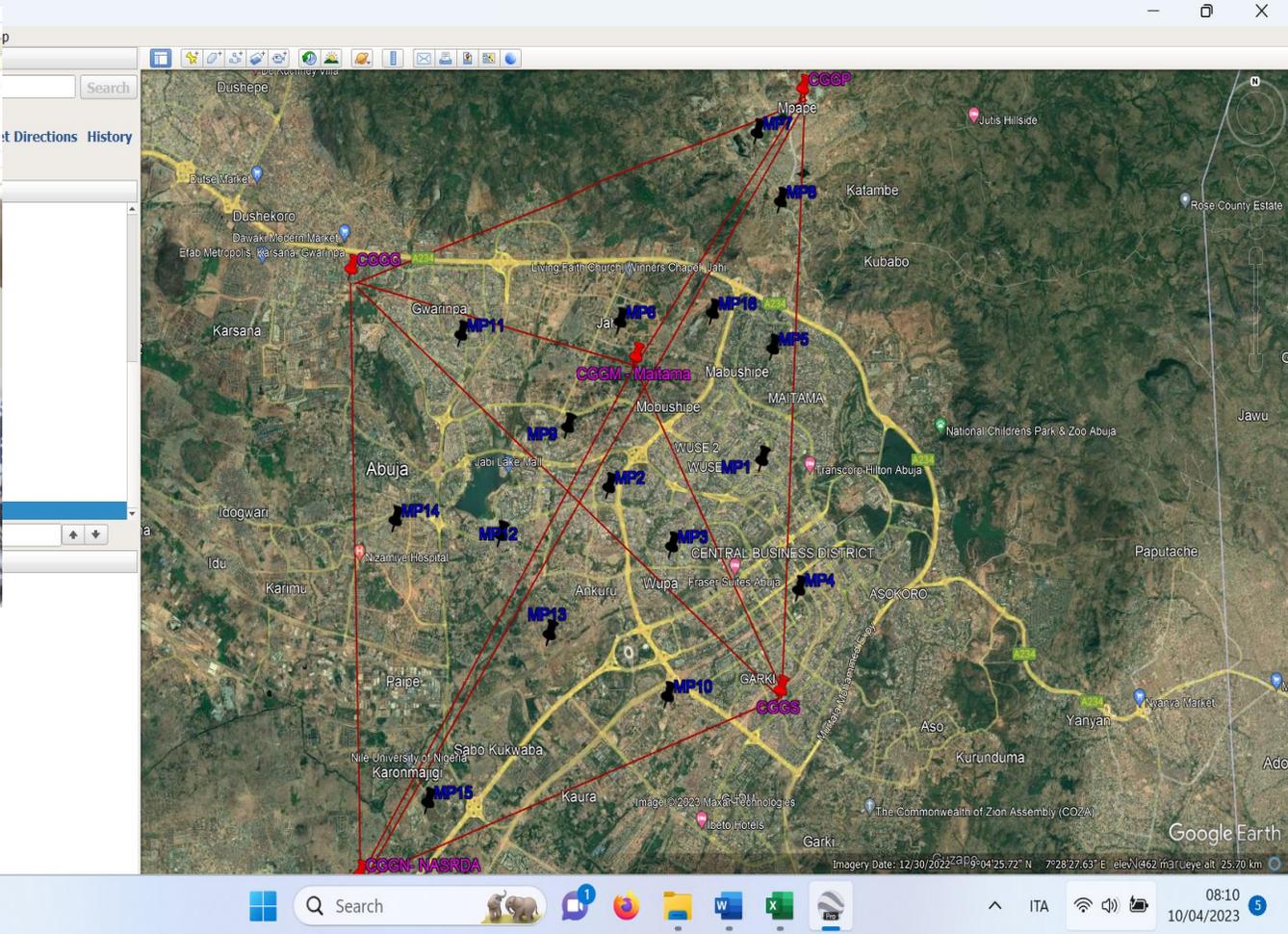




NASRDA GNSS at the Centre for Geodesy and Geodynamics, Toro.

Activity 2: Integrated Earthquake Monitoring Project

Establishment of GNSS Monitoring Stations in Abuja, FCT
Acquired and installed 3 GNSS Trimble R750





NASRDA GNSS at the Centre for Geodesy and Geodynamics, Toro.

Activity 2: Integrated Earthquake Monitoring Project

Installation of Trimble R750 CORS at Monitoring Site





NASRDA GNSS at the Centre for Geodesy and Geodynamics, Toro.
Activity 2: Integrated Earthquake Monitoring Project
Installation of Trimble R750 CORS at Monitoring Site



CGG Integrated Observatory in NASRDA





NASRDA GNSS at the Centre for Geodesy and Geodynamics, Toro.

Activity 3: GNSS Data Archiving and Analysis Center – Integrated Monitoring Center





NASRDA GNSS AT

ACTIVITY 5: Training and Capacity Building



INSTITUTE OF SPACE SCIENCE AND ENGINEERING (ISSE)

An Affiliate of African University of Science and Technology (AUST)

OBASANJO SPACE CENTER

KM 17, Airport Road, Lugbe, Abuja, Nigeria

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- Systems Engineering

NEWS

DEPLOY INNOVATIVE TECHNOLOGY FOR SUSTAINABLE NATIONAL DEVELOPMENT – SHABA

SUPPLEMENTARY ADMISSIONS FOR 2022/2023 MSC PROGRAMMES ARE ONGOING ADMISSION TO PHD PROGRAMMES IS Open – ALL YEAR ROUND

The Provost, Institute of Space Science and Engineering (ISSE) DR. Festus Olatoyinbo was in attendance as NASRDA partner with Network of Research on the Chemical Emergence of Life (NoRCEL) on ASTROSCIENCES

DG NASRDA TASKS GOVERNMENT ORGANIZATIONS ON INCREASED INVESTMENTS IN TRAINING AND RETRAINING PROGRAMME

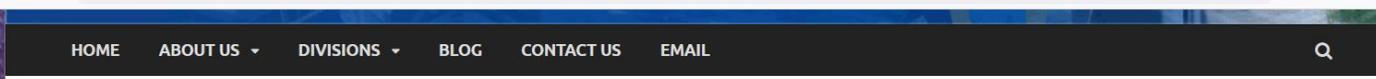
<https://isse.edu.ng/academics/>





NASRDA GNSS AT

ACTIVITY 5: Training and Capacity Building



SHORT COURSES: GLOBAL NAVIGATION SATELLITE SYSTEM

This course is designed to those who would like to learn about GNSS from the basics. We recommend to attend this course if your work is related with one of the following fields – Surveying, Mapping, GIS, Remote Sensing, Telecommunications, Safety and Security services, Geodesy, Transport, Logistics, Agriculture, Marine, Aviation, Location Based Services (LBS).

SN	MODULE TITLE	COURSE DESCRIPTION	ADMISSION REQUIREMENTS	DURATION
1.	FUNDAMENTALS OF GNSS	<ul style="list-style-type: none"> Introduction, background and concepts of GNSS; Conventional Navigation, GNSS Biases, Evolution of GNSS, Regional Navigation Satellite Systems, GNSS Augmentation Systems. Satellites Orbits: Orbital parameters, Orbital motion, determination of satellite position, visibility and ground tracks. 	<ul style="list-style-type: none"> WASC, ND.HND, NCE, Undergraduate and Graduate Applicants 	4 Weeks
2.	GNSS APPLICATIONS	<ul style="list-style-type: none"> Fundamental of GNSS Reference Systems Position Determination techniques Geospatial databases: Open Source Databases and My SQL GNSS Navigation: professional and personal, GIS/mapping, surveying, natural hazards management and Earth Sciences. Integrated applications: Navigation and communication, Communication, navigation and surveillance. GNSS applications for remote sensing of the atmosphere and space weather. 	<ul style="list-style-type: none"> Possess GNSS Certificate Course for Beginners and Intermediate Professionals; Previous experience of GNSS at ND/HND, NCE, Undergraduate, Postgraduate and Graduate levels; Engineers, Scientist in both public and private organization 	12 Weeks
3.	Satellite-Based Positioning for Surveyors	<ul style="list-style-type: none"> Fundamentals of GNSS Reference systems: Terrestrial, celestial and orbit coordinate reference system. Height Systems. Geoid. Transformations between coordinate reference systems. International Terrestrial Reference Frame (ITRF) Position determination techniques 	<ul style="list-style-type: none"> Working Experience 	3 Weeks

GMES PROJECT



Acquisition and Processing of Drone Data and Application
August 18, 2021



TRAINING WORKSHOP ON FLOOD MONITORING AND FORECASTING MODELLING
August 18, 2021



TRAINING WORKSHOP ON API DEVELOPMENT FOR DISSEMINATION OF DATA PRODUCT AND SERVICES
August 15, 2021

WORKSHOPS/CONFERENCES



LOW-COST AIR QUALITY SENSOR CHALLENGE
June 3, 2023

Nigeria Institute of Physics confers Fellowship on UN-ARCSSTEE Executive Director

May 15, 2023





NASRDA GNSS AT



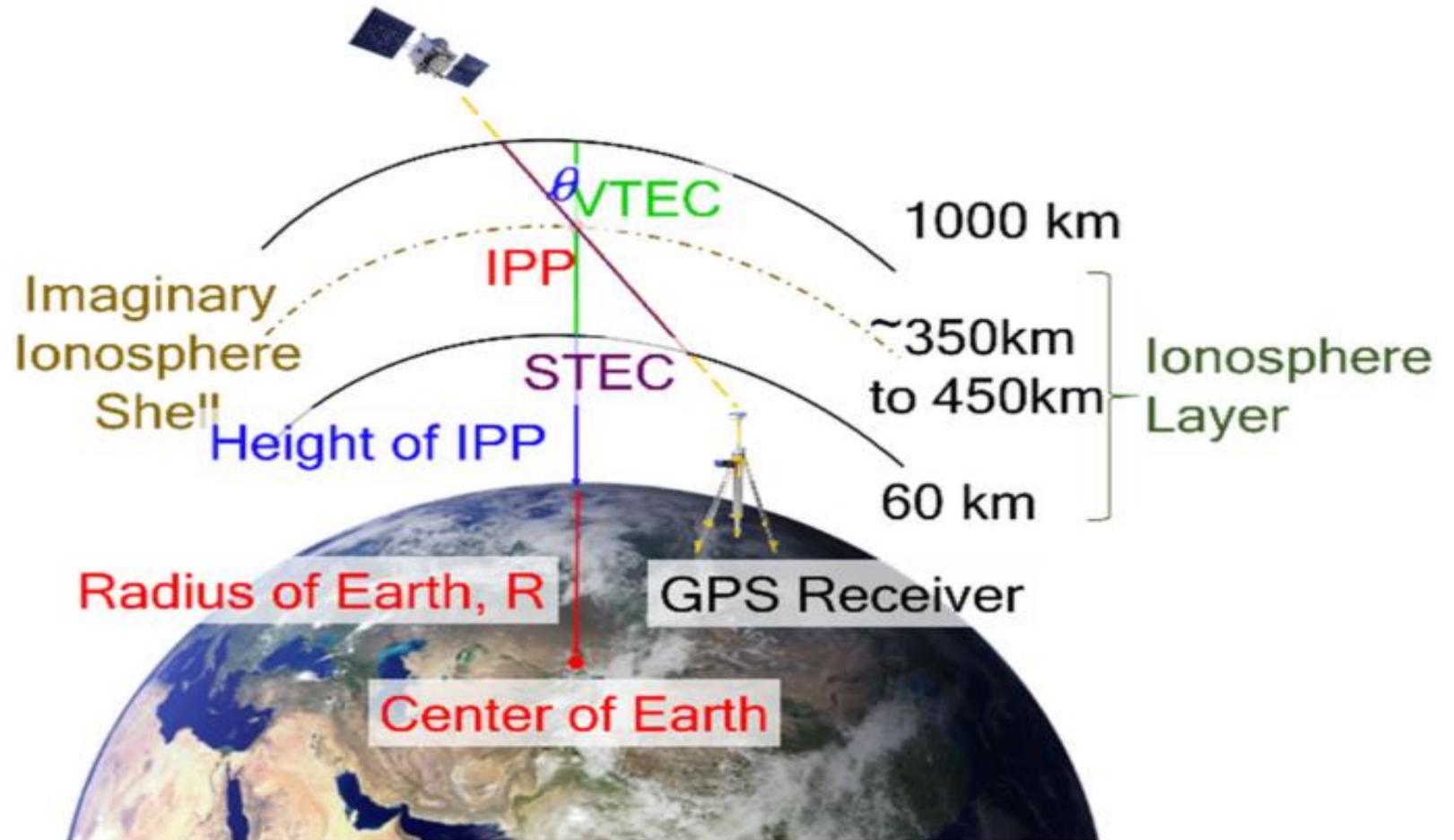
Centre for Atmospheric Research
National Space Research and Development Agency
CAR-NASRDA



Centre for Atmospheric Research Federal Ministry of Science, Technology and Innovation

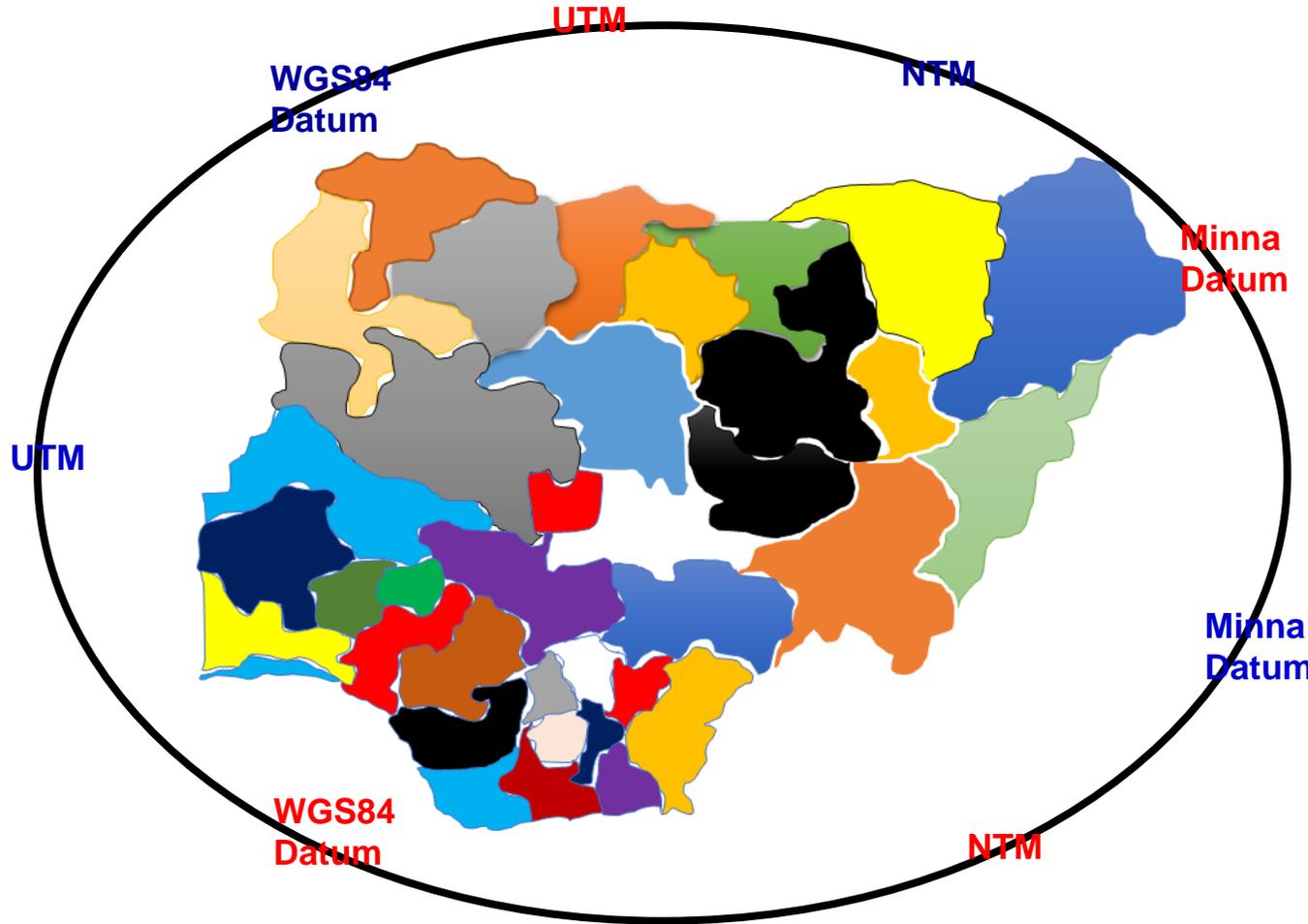
Activity 6: GNSS ATMOSPHERIC RESEARCH

- Ionospheric Research
- Scintillation
- Tropospheric Research





Activity 7: Reference Frame



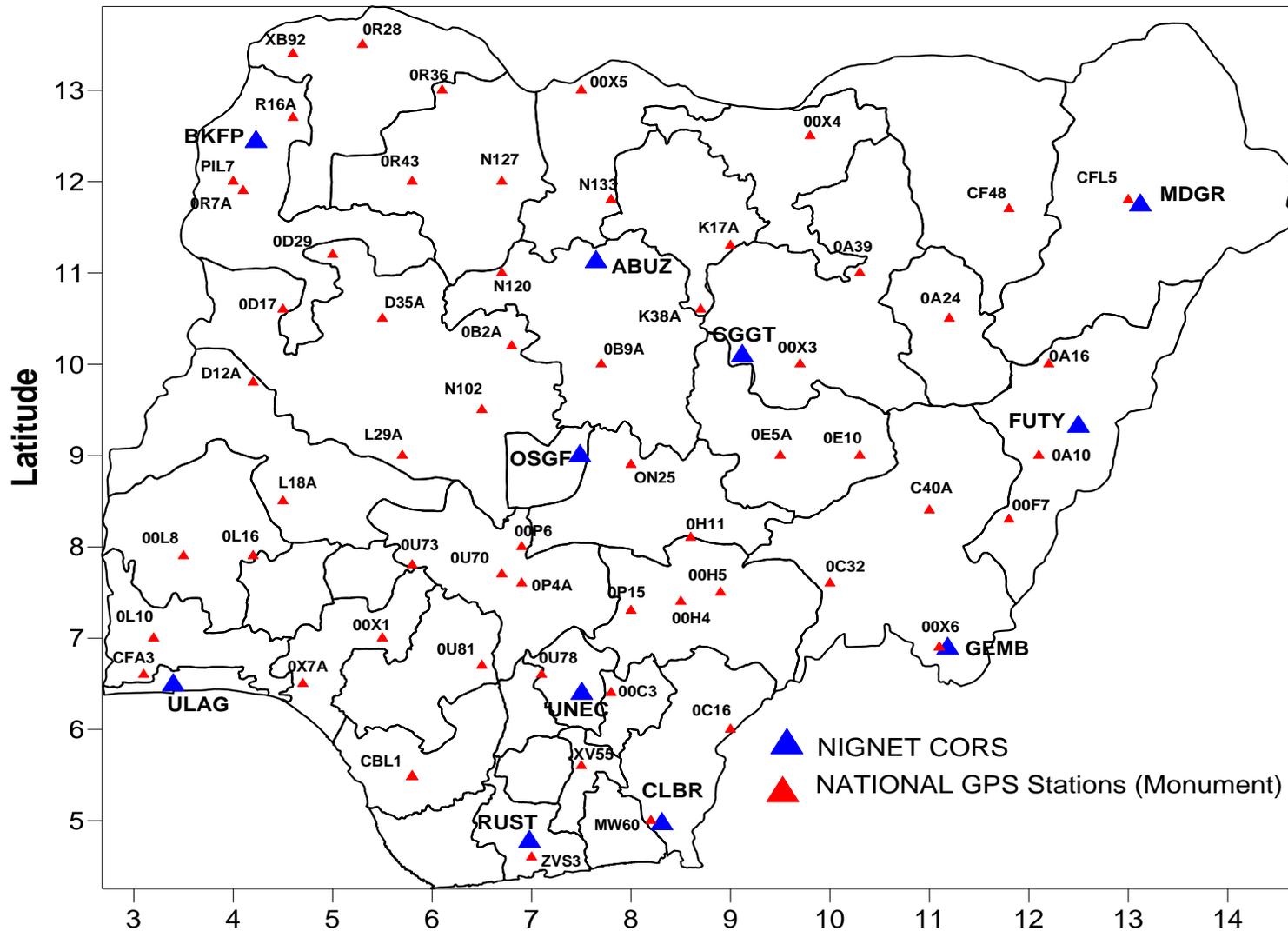


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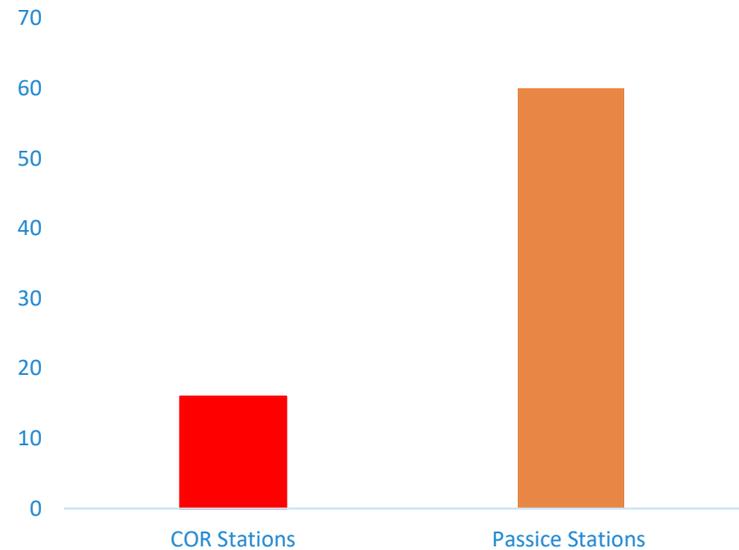
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Activity 7: Reference Frame





sgor@osgor.gov.ng



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Activity 7: Reference Frame

THE NIGERIA GEOCENTRIC DATUM NGD2014

THE REALIZATION OF THE NIGERIA GEOCENTRIC DATUM

Office of the Surveyor General of the Federation
No.8 Yawuri Street, P.M.B. 5203 Wuse, Garki II,
Abuja, Nigeria

Version 2-1
March 1, 2023

OSGOF & NASRDA



THE NIGERIA GEOCENTRIC DATUM NGD2023

TECHNICAL REPORT

Office of the Surveyor General of the Federation
No.8 Yawuri Street, P.M.B. 5203 Wuse, Garki II,
Abuja, Nigeria



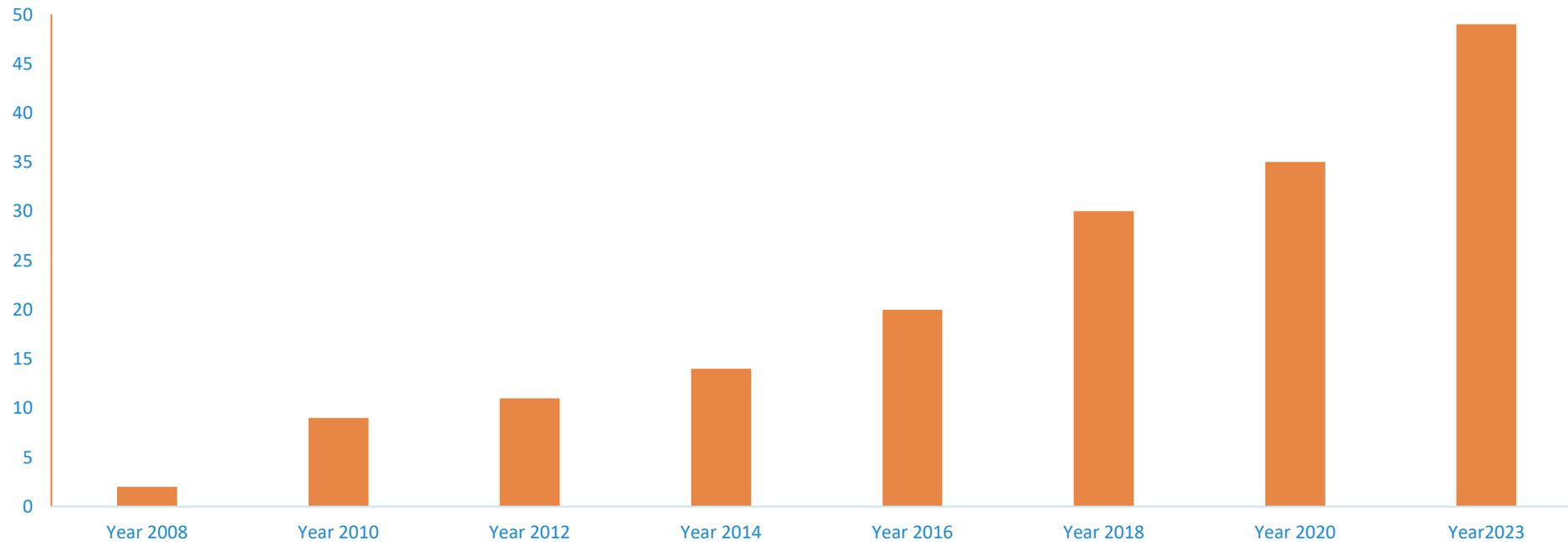


NIS Nigerian
Institution
of Surveyors

Activity 8: Surveying and Mapping

Nigerian GNSS COR Station Infrastructure

Establishment of CORS Station Infrastructure





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of Surveyors

Activity 8: Surveying and Mapping

Nigerian GNSS COR Station Infrastructure

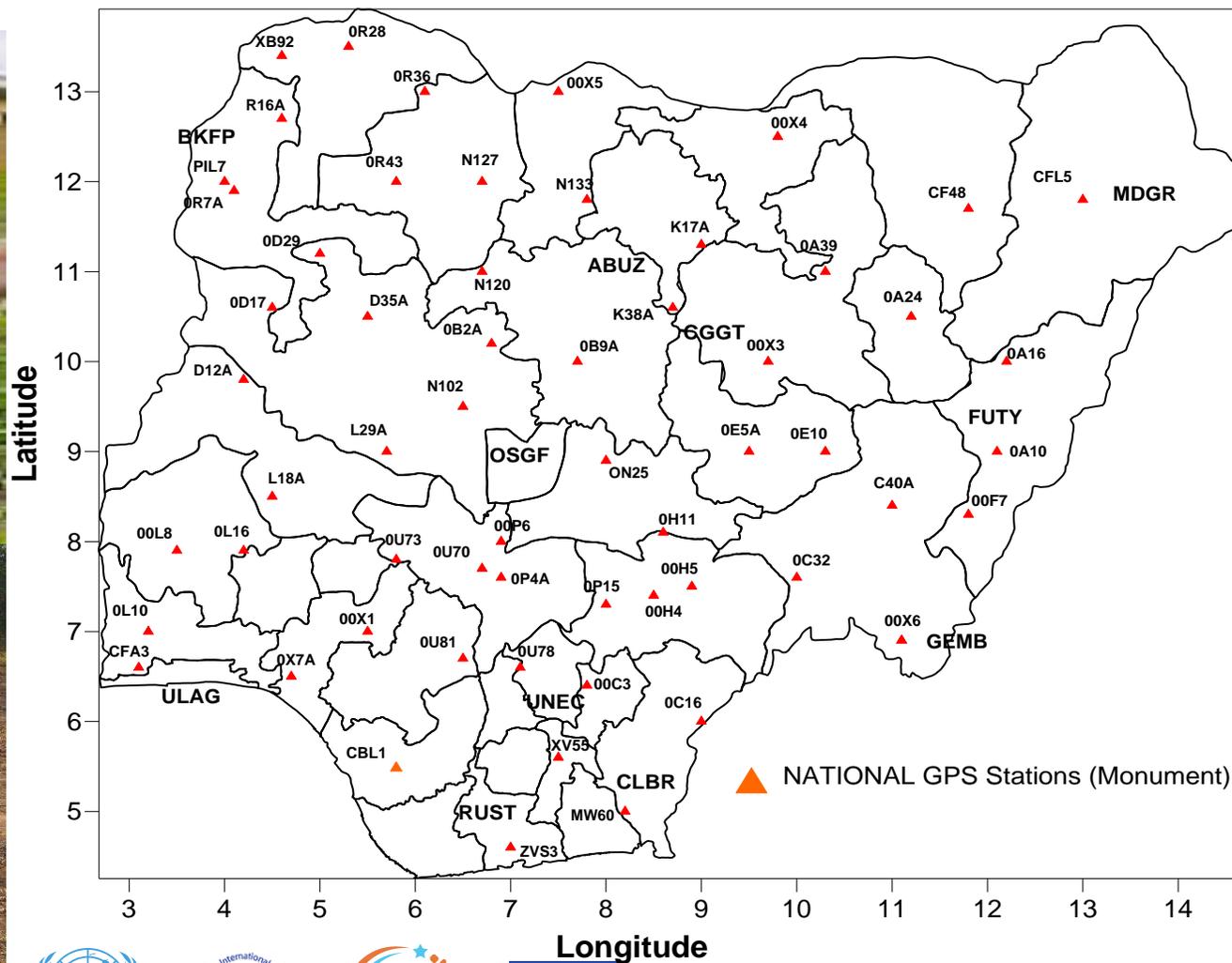
Distribution of GNSS CORS Infrastructure





NIS Nigerian Institution of Surveyors

Activity 8: Surveying and Mapping

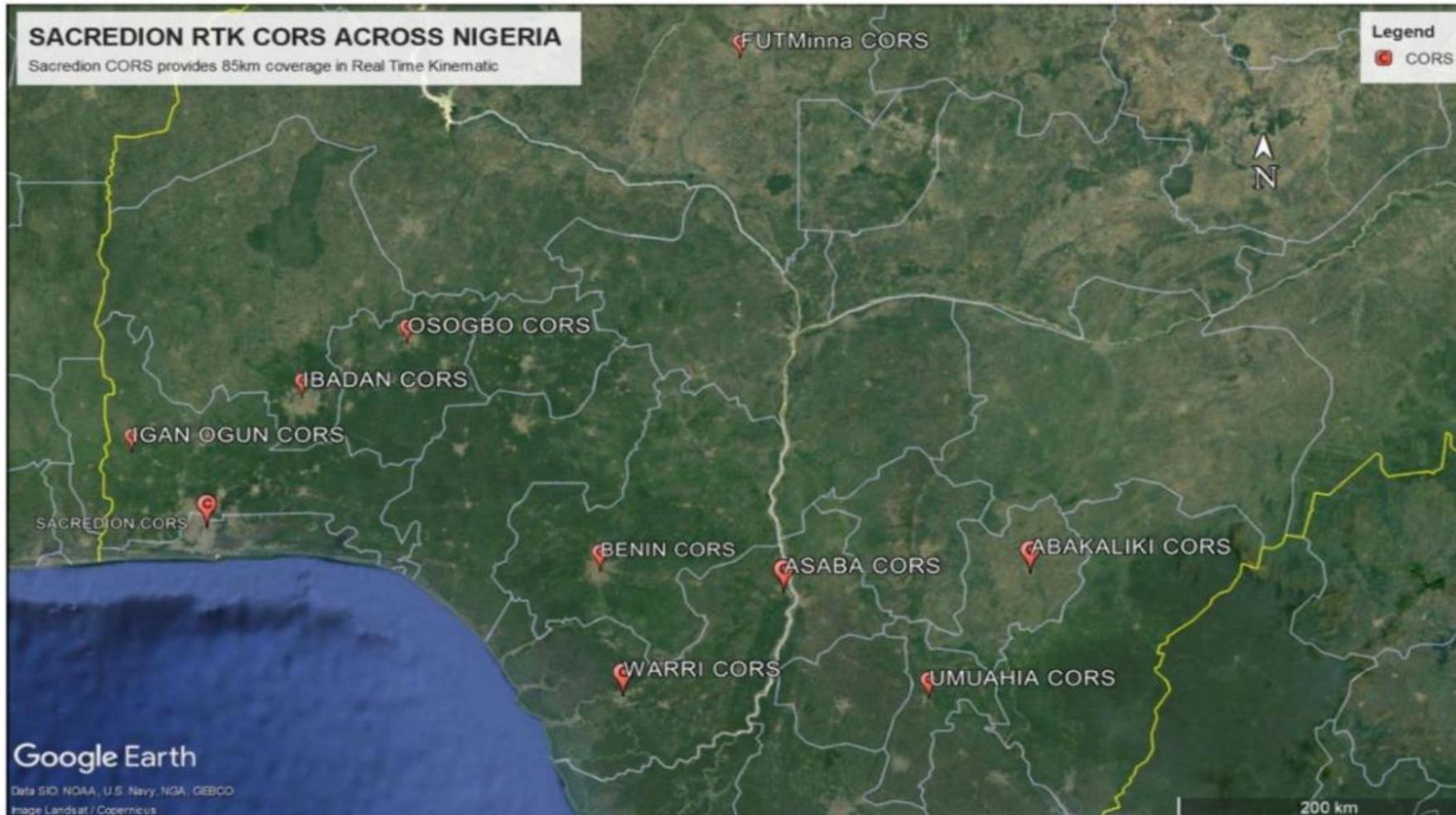




NIS

Nigerian
Institution
of Surveyors

Activity 8: Surveying and Mapping - Private Sector





Location Base Service

Activity 9: Logistics





Precision Agriculture

Activity 10: Food Security



CENTRAL BANK OF NIGERIA

ANCHOR BORROWERS PROGRAMME
Intervention For Agriculture





Thank you!



Together we will make the world a better place

If you have any question regarding this content, don't hesitate to contact us at : jd.dodo@gmail.com

