DEVELOPMENT AND SUSTAINABILITY OF NIGNET

NIGERIAN GNSS NETWORK AND THE RELATION WITH AFREF

SURV. U.R. EDOZIE
SURV. A.A. ADEBOMEHIN

Problem of classical systems

- Each country has its own geodetic reference system

- Mismatch at the national boundaries
Solution

• Move from National Reference Systems to Regional or Global Reference Systems

National Systems

Global Systems

Objectives of NIGNET

• Adoption of a modern geodetic infrastructure full compatible with the actual techniques of georeferencing.
• Low quality of the existing network based in observations carried out using old techniques.
• Lack of geodetic beacons with known coordinates in some areas of the country (destroyed or never implemented).
• Compatibility with the reference frames of neighbouring countries through the collaboration with international projects, namely AFREF and IGS.
CURRENT STATUS
15 (NIGNET COR STATIONS)

with scientific collaboration of

NIGNET DISTRIBUTION MAP
NIGNET DISTRIBUTION MAP

Legend

* CORS

40km 75% coverage
100km 57% coverage
200km 43% coverage

NIGNET COVERAGE

OSGF (Abuja)
http://www.nignet.net

Monitoring NIGNET GNSS Network

OSSG (Office of Surveyor General of Federation) is currently active establishing NIGNET (Nigerian GNSS Reference Network). This network, formed for state-of-art CORS (Continuously Operating Reference Stations) GNSS (Global Navigation Satellite Systems) equipments, intends to implement the new fiducial geodetic network of Nigeria.

NIGNET will serve many different applications at national and continental level: in fact, the first motivation to implement NIGNET is to also contribute to the APREF (African Reference Frame) project (http://apref.africa-research.org/). At national level, NIGNET will serve primarily as the fiducial network that will define and materialise a new reference fully consistent with the modern space-geodetic techniques for Geodesy and Surveying.

Data Holdings (daily updated)
DATA PROCESSING/CONTROL CENTRE

- The data processing/control centre is housed in the Office of the Surveyor General of the Federation.
- Data streaming, quality control and processing is going on in OSGOF.
- Data can be accessed via www.nignet.net.
ABUJA DATA PROCESSING/CONTROL CENTRE

- Data server (4TB) – Backup on Cloud
- Internet facilities.

FUTURE DENSIFICATION

MAP OF NIGERIA SHOWING INSTALLED CORS AND PROPOSED CORS LOCATIONS
## CONCLUSIONS

- Ability to provide reliable data for effective decision making leads to a dramatic growth in the development of GIS.

- The GNSS Technology should be embraced and used for effective decision making by turning the volume of spatial data into useful information.

- This would be achieved by:
  - Proper coordination
  - Proper maintenance
  - Encouraging other users participations
  - Management systems.

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## THANK YOU