Status of AFREF Project

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AFREF

- A Modern Continental Reference System for Africa Using GPS for:
  - Meaningful and cohesive development projects
  - Uniform mapping/environmental programs
  - Resolve international boundary disputes

- Initiated by the former IAG-COM. X (Claude Boucher) and IGS (Ruth Neilan)

- An official letter for contribution to AFREF widely distributed in 2001

- IGS CB continues to support the Project
IAG Sub-Commission 1.3: Regional Reference Frames
Regional Sub-commissions

- SC1.3a Europe (EUREF)
- SC1.3b South and Central America (SIRGAS)
- SC1.3c North America (NAREF)
- SC1.3d Africa (AFREF) (Chair R. Wonnacott)
- SC1.3e South-East Asia and Pacific
- SC1.3f Antarctica (SCAR)
Sub-Commission 1.3: Regional Reference Frames

Objectives

- Develop specifications for the definition and realization of regional reference frames
- Develop and promote operation of GNSS permanent stations
- Encourage and stimulate the emerging development of the AFREF project
- Encourage and assist, within each regional sub-commission, countries to re-define and modernize their national geodetic systems, compatible with the ITRF
SC1.3d Africa (AFREF)

• Sub-regional Structure:
  NAFREF (North), SAFREF(South),
  CAFREF(Center), EAFREF(East), WAFREF(West)

• Installation of Permanent/Semi-permanent GPS Stations

• Densification per country

• Modernisation of National Geodetic Systems compatible with the ITRF

• Geoid model and vertical datum for Africa.
AFREF: Some Activities

• Several Meetings (See IGS CB for details)

• Application to ICSU for Funding (not accepted!)

• ASI to install 3 GPS Permanent Stations in North Africa

• Permanent Station in Dakar by GFZ

• Some NGS activities in Ethiopia (Dave Doyle)
  4-5 CORS would be installed next year!

• UNOOSA (United Nations Office of Outer Space Affairs) recognizes and would support AFREF
NAFREF

North African Reference Frame comprising:
Muritania, Morocco, Algeria, Libya, Tunisia, Egypt

• Work individually

• 3 Workshops so far
  • Tunisia May 2000
  • Algeria May 2001
  • Morocco Octobre 2003:
    Protocol of Agreement was prepared to be signed by the 6 countries for a GPS Pilot Campaign

• Slow progress up to now
Space Geodesy in Africa

- VLBI
- SLR
- GPS
- DORIS
Motion of African Plate
Nubia-Eurasia rotation pole location

Nubia-Eurasia velocity ~50% slower than NUVEL1-A prediction
Conclusions

• Much has been said about AFREF over the past few years
• Need to install permanent/sem-perm. stations
• African Countries need assistance and encouragement!
• Need More outside Agencies to contribute
• Need to integrate existing permanent stations into the IGS Network (Backbone of AFREF)
• More IGS investment in AFREF ? A pilot project as TIGA ?