

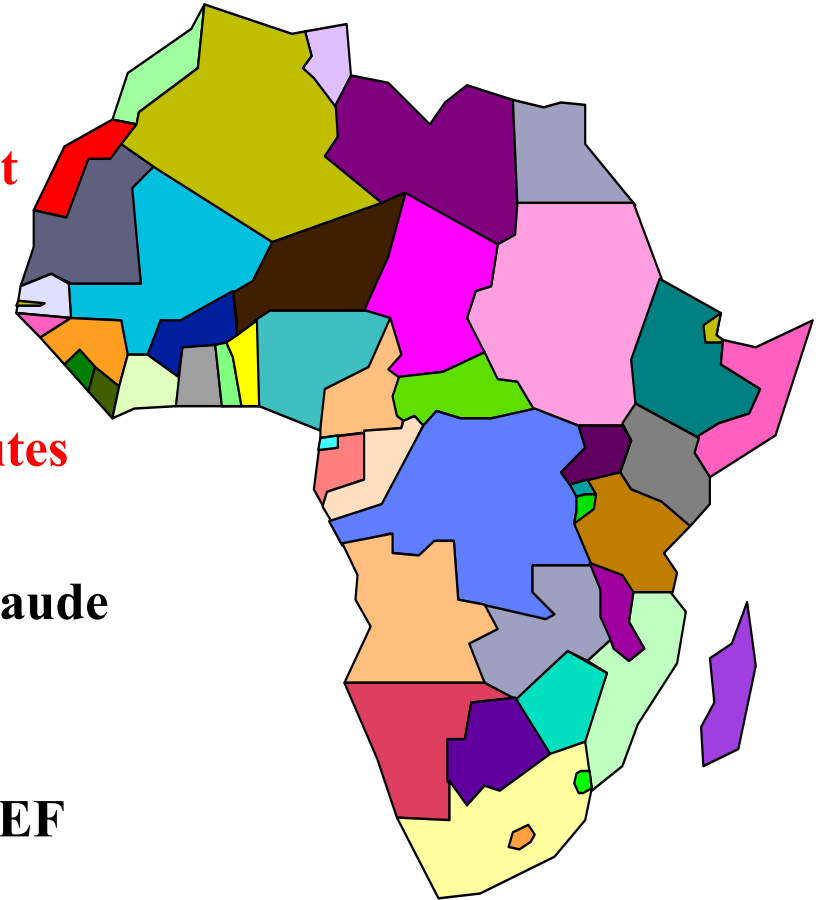
Status of AFREF Project

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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**

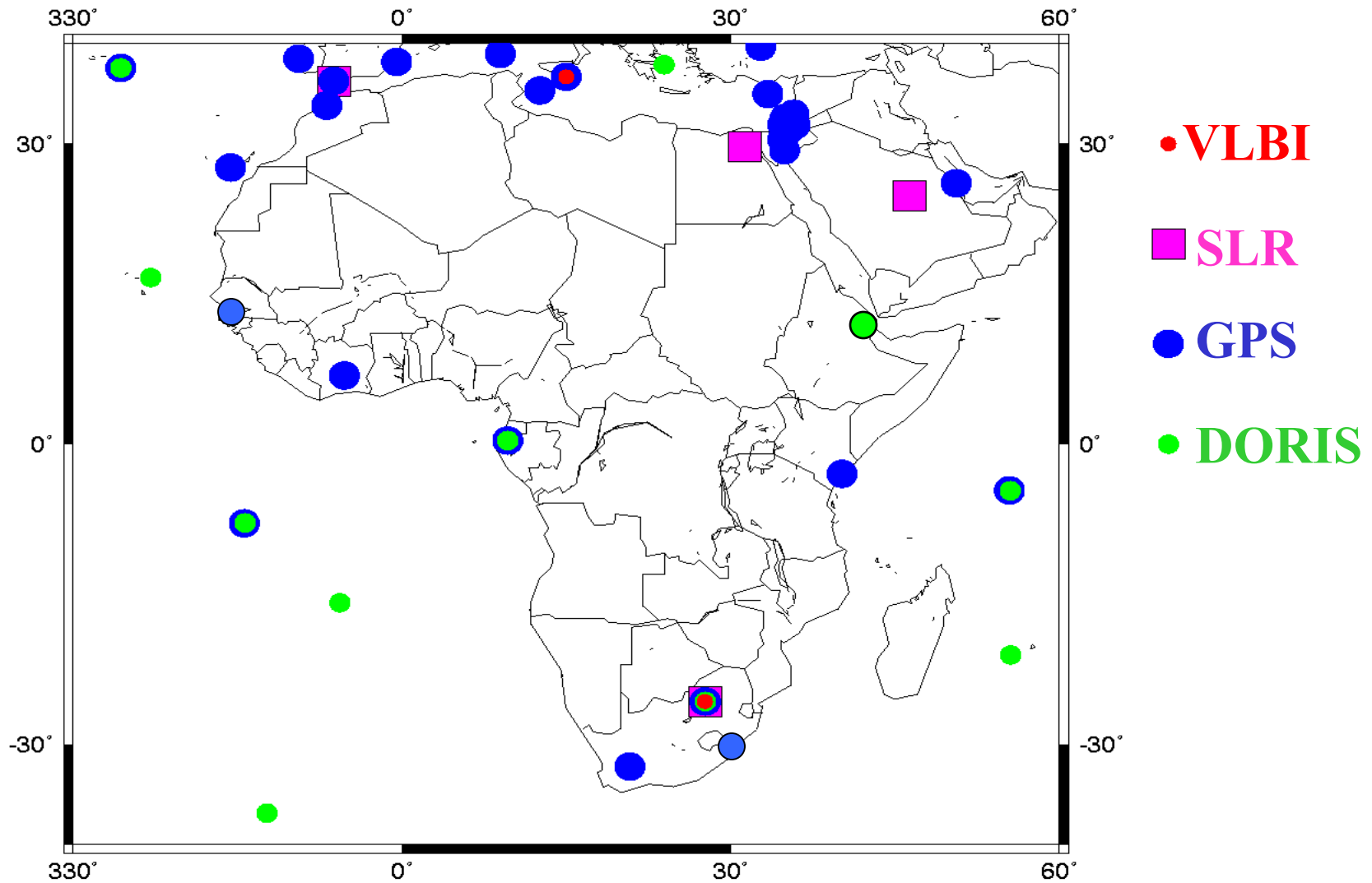
 - **Morocco Octobre 2003 :**

Protocol of Agreement was prepared to be signed

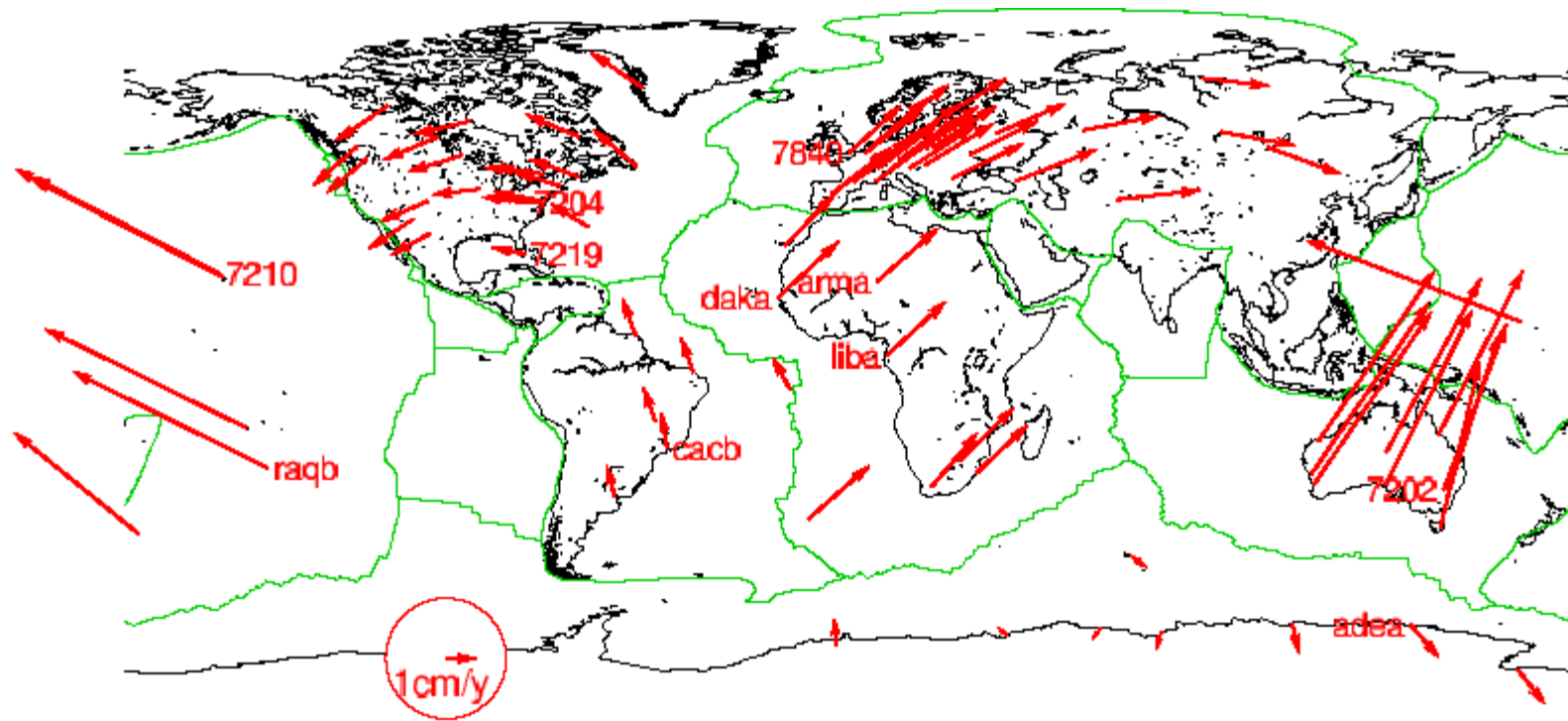
by the 6 countries for a GPS Pilot Campaign

- **Slow progress up to now**

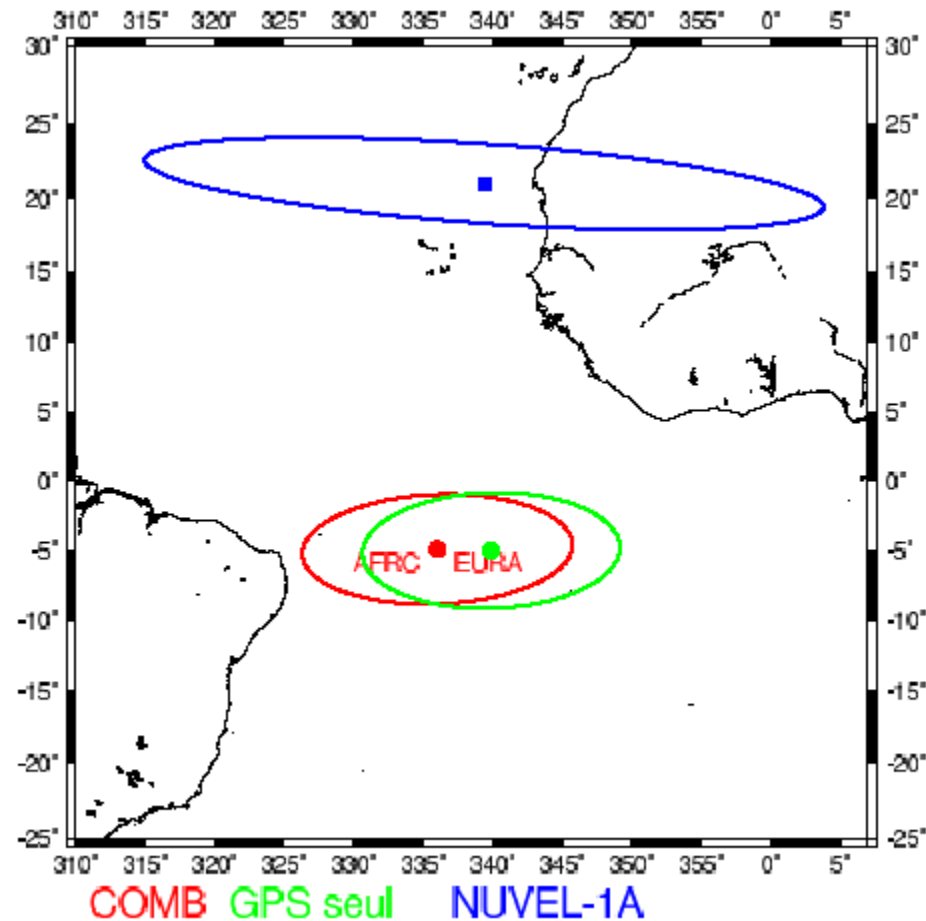
Space Geodesy in Africa



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 ?