CNES-CLS Analysis centers current activities (for IDS/IGS/CRC)

DORIS:

- DORIS Participation to ITRF2008 via IDS :
Envisat / Spots (2,3,4,5) / Topex Doris observation processed and delivered from 1993 to 2008
- IDS 2009 activities : first half of 2009 processed for Spot -4,-5 / Jason2 , in progress for ENVISAT and spot 2)

Products : SINEX solutions with loose constraints (removable) with Xp Yp and stations coordinates.

-GPS :

Analysis center in evaluation by IGS since 2007
(2 years of weekly GPS SINEX solutions delivered)

-CRC experiment : For both technics (GPS/DORIS): 2 years (2007-2008) of processing with SINEX Normals EQUATIONS containing EOP (Nutation, Pole, UT1), Stations coordinates (few weeks with zenithal tropospheric delays) .

Standards for common modeling and **parameterization:**

We have to agree on these points before starting the experiment. (and certainly others…)

Main points for parameterization :

Which parameters ? EOP / EOP Rate / Stations / Zenithal Delays / choice of common mapping function ?

Which interval ? (1 EOP set each day / 1 station set per week ?)

Which SINEX form for COL ?

Type I : Solution + Covariance (+additional constrain information)
Type II : Normal matrix + Normal vector

The two types are exchanged in the geodetic word today and some combinations centers handle the two types. (E.g. IDS / ITRF Realizations).

The first step of combination process is to convert from TYPE I to TYPE II before making the conversion (as it s done in CATREF for ITRF for example).

SINEX Usages

- **Type I** (SOLUTION ESTIMATE / SOL. A PRIORI + MATRIX COVARIANCE)
- **Type II** (SOL. A PRIORI +NORMAL MATRIX + NORMAL_VECTOR)

	Type of SINEX	**Parameters**
GRGS - CRC experimen	**-Type II** (SOL. A PRIORI +NORMAL MATRIX + NORMAL_VECTOR)	- EOP (6 hour) (no rate) -Station coordinates / week - One month with TZD
IDS	-**Type II (ESA/GSC)** **-Type I (others)**	-Pole * / LOD - Station coordinates / week
IGS	**- Type I**	-Pole + Pole Rate*/ LOD -Station coordinates / week
IVS	**-Type I** **- Type II**	-EOP + EOP_rate -Station coordinates
ILRS	**-Type I**	-Pole + Pole Rate* -Station coordinates / week

*= no Nutation parameters

Pole rate are ou are not present in the individuals centers SINEX solutions.

Standards for common modeling and parameterization: **some answers….**

Main points for parameterization :

Starting with usual parametrization of the Acs is the simplest .
But

- we may attempt higher resolution for EOP than 1 set per day.
(for example 1 Nutation set per day + 1/hour for Xp/Yp/UT1)

- If troposphere zenithal delay exchanged we have to agree before on a priori models
and mapping function : allow to combine tropospheric parameters at collocated sites
and to compare the tropospherics delay of each solution.

Standards for common modeling and parameterization: **some answers….**

Which SINEX form ?

Type I : Solution + Covariance (+additional constrain information) and
Type II : Normal matrix + Normal vector

Are equivalent in a sense that with can go from one to the other form by inversion.

But it is easier to manage Type II :

- No constraint matrix to manage as in Type I…
- Simple to provide normals equation for parameters that cannot be inverted by a single technics (e. g. Nutation parameters can be in the GNSS normals even if not inverted).