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[IGSMail-5455]: IGS05 Fine Tuning

- *To:* <igsmail@igs.cb.jpl.nasa.gov>
- *Subject:* [IGSMail-5455]: IGS05 Fine Tuning
- *From:* Ferland, Rémi <RFerland@NRCan.gc.ca>
- *Date:* Fri, 3 Nov 2006 10:50:57 -0500
- *Sender:* owner-igsmail
- *Thread-index:* Acb/X9ojtMdvK2pyS5qs30wGskjTCg==
- *Thread-topic:* IGS05 Fine Tuning

 IGS Electronic Mail 03 Nov 07:51:01 PST 2006 Message Number 5455

Author: R. Ferland

Dear colleagues,

Following several feedbacks received the last couple of weeks, I am proposing minor last minute "fine tuning" to the IGS realization of ITRF2005. 4 stations are affected:

Addition:
 =====

CORD: This station was in earlier proposed realizations. It had been removed because the station was decommissioned. The station will be recommissioned and the same equipment will be reinstalled! (D. Stowers). This is conditional to the coordinates time series resumes without discontinuity.

LHAZ To replace LHAS (a few meters away) suggested by R. Stoeger. At the site all ACs have been using one or the other. 2 ACs have been using LHAZ regularly.

Deletion:
 =====

GOUG Data problems. Likely difficult to improve in the short term due to the remoteness of the station.

FAIR Due to the gradual degradation of the residuals (mainly in the North/South component). The cause is likely related to non-linear motion due to post-seismic effects caused by the Delani earthquake.

Those deletions are very unfortunate as the two stations have some very desirable characteristics.

Other Stations:
 =====

The coordinates & velocity changes of the other stations between the current and updated proposed realization are unchanged (<< 0.1mm & << 0.1mm/y). This applies to both versions of the realization IGS05 & IGT05. The total number of stations in remains 132.

The update can be found at the usual location:

```
ftp      macs.geod.nrcan.gc.ca
cd       /pub/requests/sinex/IGS05
```

Transformations:

=====

For those of you who may want the transformation from IGS05 (with absolute antenna phase center) and IGB00 (relative antenna phase center) they are (at epoch 2000.0):

```
R X (mas)   :      -0.0070
R Y (mas)   :       0.0340
R Z (mas)   :      -0.0069
T X (m)     :      -0.0003
T Y (m)     :      -0.0015
T Z (m)     :      -0.0061
SCL (ppb)   :       0.7125
d R X (mas/y) :    0.0033
d R Y (mas/y) :   -0.0001
d R Z (mas/y) :   -0.0161
d T X (m/y)  :   -0.0004
d T Y (m/y)  :    0.0007
d T Z (m/y)  :   -0.0018
d SCL (ppb/y) :    0.1748
```

Note that the transformation of the IGS realization, using relative phase center only, they have been provided in the earlier e-mail (Sect. 4-1):

<http://igsb.jpl.nasa.gov/mail/igsmail/2006/msg00170.html>

A comparison of the two sets of transformations indicates that the phase center change causes variations in the transformations:

```
Rotations      < 0.02mas,
Translation    < 1mm,
Scale          < 0.2ppb
```

The effect on the rates is negligible.

Starting with GPS week 1400, the "parallel" solutions using the absolute phase center provided by the ACs will become the official solutions. This implies that there won't be any combination for those parallel solutions posted at the usual ftp.

The cooperation of all those that have been contributing to this long transition phase is very much appreciated!

Thanks also to all of those that have been providing feedback on the various versions of the proposed realization!

Sorry for any inconveniences,

Best Regards,

Remi,

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