Checklist for VLBI input for ITRF2013

Version 2014-Feb-07

In general the VLBI solution will use the IERS2010 conventions. I refer you to:
http://www.iers.org/IERS/EN/DataProducts/Conventions/conventions.html?__nnn=true

For further information see: http://lupus.gsfc.nasa.gov/IVS-AC_ITRF2013.htm which includes links to all required files.

Station Coordinates

Solid Earth Tide	IERS2010 Conventions
Permanent Tide	No Correction
Love Numbers	h2(freq=0)=0.6078 l2(freq=0)=0.0847 **Corrected 2014-Feb-07**
Ocean loading	TPX07.2 model (recommended by Hans-Georg Scherneck) (The latest release of Calc uses this model.) or FES2004 **Please indicate which model you use in your solution description.**
Pole tides	IERS Conventions 2010
Atmosphere Pressure Loading	**NONE** **In an ideal world we would apply pressure loading since numerous studies have shown that not doing so degrades the solution. However, for the purposes of combination we need to be consistent with the GPS solutions which still do not apply pressure loading corrections.**
Other Loading Effects	NONE.

Troposphere Modeling

Zenith Dry Delay	Modified Saastamoinen (Davis et al, 1985)
Pressure and Temperature	From database or use VMF values interpolated to epoch. It is known that the Mark3 databases have missing or incorrect data. Because of this, the use of VMF values for temperature and pressure is acceptable. Please indicate the source of your met data.
Dry Mapping Function	Dry VMF1
Wet Mapping Function	Wet VMF1.
Gradient	Chen-Herring Gradients.
Gradient a-priori	Latest DAO results. A link to the a priori gradient file is at: http://lupus.gsfc.nasa.gov/IVS-AC_ITRF2013.htm

Antenna & Station Modeling

Axis Offsets	A file in Calc/Solve input format that contains axis offset information only is available at: http://lupus.gsfc.nasa.gov/files_IVS-AC/gsfc_itrf2013.axo
Thermal Expansion	Nothnagel 2008, J. of Geodesy: doi:10.1007/s00190-008-0284-z

	Comprehensive thermal expansion and axis offset information is maintained by Axel Nothnagel and is available at http://vlbi.geod.uni-bonn.de/Analysis/Thermal/antenna-info.txt A few antennas are missing from this file. Do not apply thermal corrections for these missing antennas.
Eccentricities	http://gemini.gsfc.nasa.gov/solve_save/ECCDAT_itrf2013.ecc

Sources

There are three categories of sources and they should be handled differently in the solutions.

ICRF2 Defining sources	Constrain to a priori positions as defined by ICRF2
Special handling sources	Treat as arc-parameters and squeeze out of Sinex solution
Other sources	Either constrain to ICRF2 positions OR treat as arc-parameters and squeeze out. **Indicate what you did in your solution description.**

Earth Orientation Parameters

Tidal Variations in X, Y, dUT1	IERS20010 Conventions Include Hi-freq libration terms
Permanent Tide	No Correction
Nutation	IAU2006 (without Free Core Nutation)

Miscellaneous

Relativistic Scale Shapiro Effect	IERS 2010

Parameterization

TRF	All XYZ components of all sites
EOP (24 hr sessions)	All EOP components: XP,YP, UT1-TAI, XP-rate, YP-rate, LOD Nutation X, Nutation Y
EOP (2-3 station networks)	XP, YP, UT1-TAI

Sessions

There is no 'standard' list of required sessions. Analysts are encouraged to use all geodetic sessions through 2013-Dec-31. All of the R1s and R4s for 2013 have been submitted so make sure to use them.
You do not need to wait for the few remaining other sessions which have not yet been submitted!