IGS Analysis Centre
Workshop
Potsdam - 2019
UAW IGS reps: Oct 2 – 4

- Benjamin M, Tim Springer, Rolf Dach, Felix Personaz, Mayra Oyola
- IGS-ACC rep to be confirmed
- Potentially Arturo Villiger
Timeline

- End of April: Attitude format example from Sylvain FES2014c coefficients
- End of April notification on availability of gspm for glonass
- End of April test upload location (IGN) provide a google sheets
- May 31: Nadir dependent variations for GPS+GLONASS, robot + chamber calibrations for GNSS, Glonass offset comparison with Florian D
- PR to give PCO estimation for new sat from repro2
- Decision on HF EOP from WG June 1 no later
- June 1 HF EOF TVG decision
- June 9: NEW ANTEX released + preference list
- July 29th: GPS, GLONASS, Galileo Processing 2017 and 2018
- August 19: Combination Analysis/Results check ANTEX consistency
- August 26: Final ANTEX + reference frame update
- September 8: 2014 System Test finished (2 weeks) provide modelling updates in google excel
- September 23: Results checked, Repro3 begins
- 2020 March 1: Repro3 1994 – 2019 ACs solutions due
- 2020 August: Switch to repro3 standards for operational products
- 2020 Sept: repro3 2020 solutions due
## Orbit Modelling - SRP

<table>
<thead>
<tr>
<th>Satellite Type</th>
<th>Minimum modelling</th>
<th>Preferred (philosophical)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GPS IIA</td>
<td>ECOM-2,GPSM-Rock</td>
<td>Box wing + empirical</td>
</tr>
<tr>
<td>GPS IIF</td>
<td>ECOM-1,GPSM-Rock</td>
<td>&quot;</td>
</tr>
<tr>
<td>GPS IIR</td>
<td>ECOM-2,GPSM-Rock</td>
<td>&quot;</td>
</tr>
<tr>
<td>GPS III</td>
<td>ECOM-2,GPSM-Rock</td>
<td>&quot;</td>
</tr>
<tr>
<td>GLONASS</td>
<td>ECOM 1 GSPM for glonass from JPL</td>
<td>&quot;</td>
</tr>
<tr>
<td>Galileo</td>
<td>ECOM 2</td>
<td>&quot;</td>
</tr>
</tbody>
</table>
Orbit Modelling

• Earth Albedo – same as repro2
• Antenna thrust – values as stated in SLEEP metadata file
• Daily arcs are no longer mandatory
  – Recommended: Coordinates and ERPs must be within the day boundary
  Galileo eccentric satellite orbits need to be provided at 5 minute intervals
Recommendation to HF-EOP WG

• No strong evidence that Desai-Sibois or Gipson are superior when applied to GPS
• Preference for Desai-Sibois as this has been derived from an external source.
System Testing - Qualification

- 2014 – has a good mix of IIA, IIF, IIR
- confirm HF-EOP has been applied
- Confirm linear mean-pole has been applied
- GLONASS – time variable PCO values
- Check quality of clocks
- Provide Attitude in orbex format
# Ionosphere

<table>
<thead>
<tr>
<th>Ionosphere</th>
<th>2\textsuperscript{nd} order Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandatory</td>
<td></td>
</tr>
<tr>
<td>Try it out</td>
<td>Use GIM from CODE (homogeneous product) to help correct for higher order terms for the early periods</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Biases</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommendation</td>
<td>Use accumulated biases provided by Stefan on CODEs ftp server</td>
</tr>
<tr>
<td></td>
<td>Estimating your own biases is fine (IFLC and L1 C1W9 but they need to be provided</td>
</tr>
</tbody>
</table>
Troposphere

- Tropo SINEX 2 please
- 7 degree or lower elevation please
- ZTD + gradients please.
- Start and stop on Oh00 and 24h00
- GPT2 or more modern
- Minimum of 1 hour, prefer 5 minutes
TVG/Tides

- Awaiting response from IDS, ILRS can you agree on the lower order values
- Current preference for ILRS model
- What is the parametrisation on C(2,0) going to be?

Tidal

Something more modern the FES2004
- Clarify access to FES2014c (for non-Europeans)
- Goto4p8convdelta+opole_30.txt
Workshop

- MGEX combination – keep going collaborate with GFZ
- Combined clock is E1-E5a with biases provided for others
- Beidou needs to be resolved with clock working group needs to be resolved by MGEX or clock WG
- Attitude info in ORBEX ITRF to body-frame
RINEX 3

• Recommendation to IC
  – Acs no longer need RINEX2 duplicate files

  – Antennas check the consistency of the receiver antennas for GPS and galileo and correct if necessary

  – Ask for attitude quaternions from providers latency is fine
Workshop Feedback