

**IDS Analysis Working Group minute of meeting**  
**Paris, March 23-24<sup>th</sup>, 2009**

**AGENDA:**

**IDS combination for ITRF 2008**

Curent status: Z. Altamimi, JJ. Valette  
 Sumary of models used  
 Results of each AC  
 Jason2 first results  
 Conclusion

**MAIN DECISIONS :**

- Deadline for IDS-2 new IDS combination submission: April 17<sup>th</sup> 2009
- Next AWG meeting : spring 2010 in Darmstadt / ESOC (TBC)

**ATTENDEES:**

Governing Board: Participants:  
 Zuhier Altamimi, Luca Cerri, Pascale Ferrage, Marie Line Gobbindass, Sergey Kuzin, Frank Lemoine, Jean Michel Lemoine, Michiel Otten, Laurent Soudarin, Petr Stepaneck, Jean Jacques Valette, Pascal Willis, Philippe Yaya.

<p><b>Perspective on IDS combination and ITRF2008</b></p>	<p>Presentations are available on IDS website at:  <a href="http://www.ids-doris.org/report/meeting-presentations/ids-awg-03-2009.html">http://www.ids-doris.org/report/meeting-presentations/ids-awg-03-2009.html</a></p> <p>See presentation of Z. Altamimi:          Current status of the contributions to the ITRF2008:  <b>ILRS</b> still waiting,  <b>IVS</b> prelimination combination (1980-2009) with 4 of 7 IVS AC. An annual scale of about -0.5 to -1 ppb wrt ITRF2005 is observed. GSFC has provided solutions with and without atmospheric loading correction. There is no significant difference on the annual scale between both solutions with respect to ITRF2005. The impact of the atmospheric loading correction is of 0.2 mm/yr maximum on site Up velocities, less than 0.5 mm on site positions for the East and North components, and less than 1.5mm on vertical.  <b>IGS</b> combination submitted on February 12 (2000-2009 period). Good level of repeatability with WRMS of 1.5mm E/N and 4.5mm Up.  <b>IDS:</b> IDS1 combination delivered on Feb 24<sup>th</sup> 2009, which includes 7 AC contributions!  <u>Main comments on IDS-1 combination:</u></p> <ul style="list-style-type: none"> <li>- Significant improvements since ITRF2005. AC have worked ardently and produced a very good work.Thanks to all of them.</li> <li>- accuracy is clearly improved with the number of satellites. Since 2002, more than 4 satellites → weekly WRMS decrease (less than 10 mm E/N/Up)</li> <li>- IDS combination is better than each AC solution itself</li> </ul>	
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	<p>Nevertheless, changes (discontinuities, peaks, trends,...) in time series of the weekly wrms, scale and TZ need to be explained: end 2001/early 2002 (may be related to the period of solar activity maximum), late 2004 (Topex mission end and/or change of Envisat/DORIS programming), 2008 (Spot 5 solar panel orientation change, less Spot2 data, other events?)</p>	
<p><b>Presentation of IDS Combination: Processing &amp; Results</b></p> <p><b>1st weekly combination for ITRF2008</b></p>	<p>See presentation of JJ. Valette:</p> <p>Bias on scale factor for the GAU and GSC. To be investigated.</p> <p>Addition of Jason2 measurements (ESA, LCA) shows a significant improvement on scale factor: measurements number increases (7 channels on DGXX):</p> <p><b>P.Willis suggests to show the same comparison wrt IDS cumulative combination (instead of ITRF2005) as reference.</b></p> <p>Even if lca results with or without atm. loading are equivalent: LCA shall deliver a solution <b>without atm. loading</b> in order to be compliant with IERS conventions.</p>	<p>LCA</p>
<p><b>IDS Analysis Results - and Comparisons</b></p> <p><b>Models synthesis</b></p>	<p>See Frank Lemoine's presentation:</p> <p>BC will put on ids web a summary of models used by each ACs, ACs are invited to send to the BC their corrections wrt the table of this presentation.</p>	<p>ACs</p>
<p><b>Validation of IDS combination at colocation sites and other analysis</b></p>	<p>See Philippe Yaya's presentation.</p> <p>Perturbations observed at the end of 2001 up to March 2002 are linked to solar &amp; geomagnetic activity (same signature).</p>	
<p><b>Analysis Centers' report</b></p>	<p>See ACs' presentations.</p> <p>Ina: A new solution with Gipsy version 5.0 will be submitted before end of 2009</p> <p>Gsc: JJ Valette suggests to provide one week with 1 satellite <i>mais là je sais plus sur quoi?</i></p>	
<p><b>Jason2 POD results</b></p>	<p>presentations of first results with Jason2</p> <p>See presentations at:</p> <p><u>Main results:</u></p> <ul style="list-style-type: none"> <li>• (CNES POD, Luca Cerri): Use of phase measurements: =&gt; allows to build charts of residuals of phase. =&gt; better observable and more robust orbit</li> <li>• (FLemoine, N. Zelinski) Ja2 Doris antenna Z-offset is sensitive to troposphere model</li> <li>• (P. Willis, Jason2 in GYPSY/OASIS) ...</li> <li>• (L. Soudarin, Jason2 /lca)</li> </ul>	

<p><b>conclusion</b></p>	<p>A new combination IDS-2 will be submitted, it will have to take account of the following recommendations :</p> <p><b>Recommendation 1: ACs are invited to re-process the period 2001/09-2002/03 estimating more frequently the atmospheric drag coefficients.</b></p> <p><b>Recommendation 2: Each AC should check the “DORIS system events” file prepared by Laurent Soudarin and find links with perturbations on their solutions</b></p> <p>- Deadline: April 17<sup>th</sup> 2009</p> <p>- remove jason1 if possible</p> <p>...</p>	
<p><b>Next AWG meeting</b></p>	<p>It is planned to change place for the next meetings. One proposes to hold the next meetings in the various cities of the various ACs.</p> <p>The next AWG is envisaged in the first quarter 2010 in Darmstadt / ESOC if possible. Michiel Otten will check the opportunity.</p> <p>Toulouse/CNES is also a possibility.</p>	