**Introducing**

**Multi-GNSS products**

Year 2015 corresponds to a significant evolution on our daily products generation. To avoid the maintenance of two redundant & different processing chains, it was decided to merge IGS Finals & Multi-GNSS processing together. On GPS week 1945 (12-Apr. 2015) we started a new common processing including the three GPS GLONASS & Galileo constellations (see figure 1 and Table 1). This change was also associated to a complete revision of the tracking network we were using.

The total number of stations used is also indicated on this figure; we decided to exclude the network from 1200 to 1230 stations to compromise the extension of the number of measurements and parameters. The number of measurements reaches now around 8 billion of ionosphere free observations for a one day arc at a 20 seconds sampling clock generation step.

Reduction in computation time were needed to include more satellites or stations. A significant part of these stations are from the new-Multi-GNSS network. We made our best to keep well distributed sub-networks as well as a good link to IGSB reference frame (see figure 2).

This prepared us for the transition to a true multi-GNSS IGS in the future.

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**High rate clocks**

Some integer PPP applications for which receivers have rapid and erratic motions (like GNSS receivers on trucks or trains) need high rate integer clocks. Interpolation of 30 s clocks at higher rate being not sufficiently accurate we need in this case at least 5 seconds clocks.

We are now able to produce such dense clock solutions at 5 seconds interval for GLONASS & GPS using the high rate IGS network delivering 1Hz data and available at IGS data centers.

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**Receiver types dependant Wide Lane biases**

Recently we studied the receiver dependent part of GPS wide lane satellites Biases (WLB). These biases are derived from the Melbourne-Wilds Isaac combination (eqn. 1) of the code and phase observables and are used to fit the wide lane ambiguous at the unambiguous level. They are needed for our Analysis Center orbit and clock products computation and are also useful for various user-side applications.

As presented during the second workshop on GNSS biases in Bern last autumn, we observed noticeable receiver type dependent biases. Constant offsets are visible between individual series (see figure 8). The receiver families can be easily detected on figure 9 that plots all together the differences observed between all receivers of the MGEX network (available in the first part of 2015). Moreover two receivers can be seen for the Trimble receivers: this is not understood today.

The maximum discrepancy is around 0.13 RMS in WL cycles. A logical consequence is to maintain and use receivers type dedicated values. But our tests shown that there is no noticeable gain on fit, fitting of these dedicated values instead of mean values. This clearly depend on the robustness of the algorithms used. Such behavior could be more problematic for others GNSS signals as GALILEO L1/L5's for example.

(1) see the poster "A review of integer PPP applications", Félix Peronaz et al., in Use of IGS Products/ Tide Gauge session; (2) Receiver type dependant part of observed satellite wide lane delays, S. Loyer, 2015, www.lesia.obspm.fr