

## 3.3 Analysis Coordinator

### 1. Introduction

In this report we outline the activities of the Analysis Coordinator during 2014. The main activities were running and summarizing the Unified Analysis Workshop (UAW) held in Pasadena, CA, June 27–28, 2014, in conjunction with the IGS Workshop. For a report on the UAW see Section 4. The future of the leap second continues to be addressed with no clear resolution to either retain or do away with them.

### 2. Action items for the Unified Analysis Workshop

Below are the main recommendations for further analysis from the 2014 Unified Analysis Workshop. There were 5 main areas investigated and in each area action items for further study were recommended. For each recommendation below we show in bold the component of the IERS that should take the lead in addressing and resolving the recommendation. It is suggested that small groups should be tasked with addressing the recommendation.

#### (1) Resolving the VLBI/SLR/DORIS scale differences

- There should be a re-assessment of the relativistic formulations for VLBI and satellite based systems. (Explore LLR and interplanetary tracking “scale differences”). **Conventions Center**
- Explore possible systematic height errors from radio telescope deformations. **IVS**
- Explore impact of range biases on SLR height estimates and the potential impact of blue sky (high atmospheric pressure) ranging. **ILRS**
- Explore antenna phase center model for satellite receiving antennas for DORIS system. **IDS**
- Re-accounting of atmospheric delay effects and pressure sensors. **Conventions Center**
- Exam the temporal behavior of the scale behavior within each technique to assess the variability of the scale estimates. **All Technique Centers**

#### (2) Geophysical Fluids: EOP

- Assessment of empirical and tide based models for diurnal and semidiurnal EOP variations. **Conventions Center**
- Assess non-tidal, high frequency EOP variations. Exam hourly estimates of EOP estimates from VLBI and GNSS after removal of tide models to assess the magnitude and consistency between the techniques. **IVS** and **IGS** to coordinate with possible ILRS contributions

**(3) Geophysical Fluids: Loading**

- Development of models for consistent deformation and gravity for atmosphere, hydrology and non-tidal ocean. **Global Geophysical Fluids Center**
- Assessment of error models of different loading models as a function of type and frequency. If possible, error estimates for the “signals” missing from the models should be determined. For example, hydrologic models often have 1-month time resolutions. What could be the magnitudes of the sub-monthly variations that are averaged by the models? **Global Geophysical Fluids Center**

**(4) Analysis methods**

- Determine the impacts of time variable gravity of the satellite-based techniques and make recommendations on how to best implement these types of models for operation data processing. **ILRS** and **IDS** lead; **IGS** to participate
- Re-assess the solid-Earth pole tide model being used in operational processing and make recommendations on how to best implement and update these models in the future. **Conventions Center**
- Gather analysis evidence for the impact of the ocean pole tide on satellite and geometric systems. For the satellite systems, make the assessment as a function of the altitude of the satellites being tracked. **ILRS** and **IGS**

**(5) Monument stability**

- Develop a list of monument site issues from the operators. Collocation and reference frame sites should be highest priority. Repeated site surveys (bar code leveling instrumentation and possibly tilt meter installation) if possible. **ITRS Combination Centers**

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