4 IERS Workshop and Retreat

4.1 Workshop on Local Surveys and Co-locations

The Workshop was organized by the IERS with a strong support of the ITRS Centre of the Institut National de l'Information Géographique et Forestière (IGN) at the Laboratoire de Recherche en Géodésie (LAREG) headquarter located at the University Paris-Diderot (<http://iersworkshop2013.ign.fr>). It took place on May 21–22, 2013, right before the IERS Retreat and the IERS DB meeting that took place in the following days.

The workshop was organized in three main thematic sessions, eventually divided in 6 working slots on i) Site survey and computation (two slots), ii) Tie vector surveying, guidelines and specifications, iii) Space geodesy instrumentations and their systematic biases, iv) Technique systematic errors and v) Combination of space geodesy solutions and local ties.

A total of 46 participants (<http://iersworkshop2013.ign.fr/?page=participants>) contributed to the excellent scientific presentations and discussions that took place during the workshop. A total of 25 talks were scheduled over the two days workshop (<http://iersworkshop2013.ign.fr/?page=program>) and their abstracts can be downloaded at the workshop web page, following the proper link available at the workshop's programme page.

The workshop represented an excellent opportunity for space geodesy specialists, surveyors, engineers and students to discuss the main topics still unsolved in local tie surveying, tie vector estimation and the combination of space geodetic solutions. The discussion was further enhanced by a splinter meeting organized at the end of the scientific sessions of the workshop. The meeting represented an opportunity to debate the details of the local site surveying approaches, data reduction and analysis, tie vector estimation, data storage and exchange options. Tie vector ancillary data such as local values of the deflection of the vertical, geoidal undulations, ancillary and episodic local GPS surveys and others were also taken into consideration and their saving options discussed with the purpose of identifying a suitable set of metadata that can form a real, permanent, open access repository with standardized format and entries.

During the discussion, many surveyors agreed on the complications introduced by site-dependent features (e.g. radomes over space geodetic instruments, intervisibility and separation of space geodetic instruments, geological settings, local ground control network peculiarities) that often demand *ad hoc* solutions to be adopted locally and prevent the identification of standardized methods and guidelines having a general validity. The identification of standards and guidelines further complicates when terrestrial observations are concerned (e.g. triangulation, trilateration, levelling) since terrestrial surveying approaches also strongly depend on the expertise and habits of the surveying crews.

Finally, the discussion clearly highlighted that a stronger cooperation between surveyors and space geodesy experts and data analysts is required. Consequently, the working group should incessantly pursue this action keeping in mind that scientists involved in the compound process of terrestrial system realization should be aware and understand each of the different step required: tie vector surveying and estimation, space geodetic data analysis and combination of solutions. It should be made extremely clear that coarse and careless procedure in one of the different steps may affect the final frame accuracy.

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