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ESA's efforts for more consistent geodetic products

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The importance of an accurate global geodetic reference frame and associated Earth orientation parameters is undisputed and has been recognised by the UN resolution 69/266. Given the importance of global geodetic references, ESA is actively contributing to the IAG services: IGS, ILRS, IDS and the contribution to the IVS is in preparation.

ESA's activities can be divided into four main areas: the operation of Ground Infrastructure (ESTRACK, EGON, ...), the establishment and improvement of inter-technique ties, the operation of a scientific data archive (GSSC) and the generation of geodetic products and services.

This presentation will focus on the activities performed by the Navigation Support Office. The Navigation Support Office at ESA/ESOC is responsible for providing the Geodetic Reference Frame for all ESA missions and is also the Consortium Coordinator of the Galileo Geodetic Service Provider (GGSP) that generates the Galileo Geodetic Reference Frame (GTRF). Within its responsibilities, the Navigation Support Office is continuously working on improving the consistency of its geodetic products. The possibility to perform a Combination On the Observation Level (CoOL) for all geodetic observations is an excellent tool to identify inconsistencies. Over the recent years, significant improvements have been implemented in the data processing in order to enhance the consistency of the delivered products. As the status of the inter-technique ties remains a limiting factor in this context, ESA is currently investigating the possibility of using space ties, e.g. combining GNSS, SLR, DORIS and VLBI in space.

This presentation will give an overview of the geodetic products and services generated by ESA's Navigation Support Office and outline the associated processing setup. In particular, it will report on the analysis performed to improve the consistency of the results provided by the different observation techniques and outline the recent improvements and ongoing activities.

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