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1.4 SLR measurements and their importance for Galileo

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This presentation by the European Space Agency will demonstrate the importance of SLR measurements for ESA and in particular for the Galileo project, to independently validate operational products. SLR measurements are used routinely in the frame of the Orbit Validation Facility (OVF), which is part of the Time and Geodesy Validation Facility (TGVF) of Galileo. The OVF is responsible for the generation of the Galileo Terrestrial Reference Frame (GTRF) and the provision of Galileo validation products such as orbit and clock solutions of the highest possible accuracy.

SLR measurements offer the possibility to independently validate the L-band based orbit and clock products and to reveal remaining orbit and clock modelling problems. Thus, SLR measurements are very well suited for the development, analysis and validation of satellite force models. In this presentation SLR measurements will be used to demonstrate the correlation of radial orbit and clock errors and, referring to the work of Flohrer et al., to prove the validity of the Galileo Box-Wing model, which is used to correct for the effect of the solar radiation pressure acting on the satellite surface.

Finally the presentation will address the differences between Galileo IOV and FOC satellites and give an overview of the next steps in the Galileo development and different upcoming ESA studies, for which the availability of SLR measurements would mean a great benefit.