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Straight Line Reference System - Status Report on Poisson System Calibration

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For the Alignment of the European XFEL, a Straight Line Reference System will be used for minimizing refraction effects that affect the geodetic reference network. In recent years, a SLRS has been developed at DESY that is based on Poisson Alignment principles. A prototype has been built, and first tests have been performed. However, a decisive factor for system performance is a good system calibration.

Several calibration methods, setups and algorithms have been developed and tested. The presentation will outline our calibration efforts that are mainly based on a combination of Laser Tracker measurement, Photogrammetry and manual processing. The calibration process is explained step-by-step and first results are presented and interpreted.

Primary author: Mr SCHWALM, Christian (DESY)

Presenter: Mr SCHWALM, Christian (DESY)

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