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Geodesy and survey update

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Building the FCC tunnel, installing and aligning each component and experiment of the machine at the intended location will be a challenging task relying notably on the quality and accuracy of the geodetic infrastructure. A solid geodetic foundation for the planning, construction, alignment and operation of the FCC will be implemented to support the different levels of accuracy required, from the initial decametric coarse placement study to the final and perpetually refined submillimetric alignment. The geodetic infrastructure must be compatible with each phase of the project.

In collaboration with ETHZ, HEIG-VD, IGN and Swisstopo studies are ongoing to update the CERN geodetic infrastructure making it ready for the FCC.

The presentation will cover the status of the development of the CERN Geodetic Reference Frame focusing on the implementation of the primary surface geodetic network covering the FCC area and will give an overview of the remaining challenges requiring new developments like the geoid modelling, the coordinates transfer and the underground geodetic network.

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