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Managing the survey activities at CERN during LS1

The Long Shut-Down 1 (LS1), has been triggered by the repair of the splices in the interconnections of the Large Hadron Collider (LHC) cryo-magnets. The "weakness" of these splices needed to be repaired in order to run the LHC at its ultimate energy of 14TEV to accumulate more luminosity and events to improve the knowledge of the parameters of the Higgs' s boson discovered at CERN in 2012. This long shut down of CERN accelerators gave the opportunity to the survey and alignment team to measure and realign the 27km of LHC magnets but also most of the injector chain components. The Proton Synchrotron (PS), the first accelerator at CERN, its booster (PSB) and transfer lines were not realigned since years. Some parts of the Super Proton Synchrotron (SPS) and the transfer lines to the LHC are known to be geologically unstable since their construction. All these are very good reasons to review the alignment of almost all the components of the CERN complex. The LHC big detectors were also considerably modified and this work was done under the control of the survey team, using the cavern network as a reference, network which was re-measured and linked to the machine network.
This paper gives an overview of the survey activities done during the two years of shut-down, especially from the management and organisation point of view, taking into account the enormous amount of work to be done with tight schedules and by personnel which has considerably changed since the previous measurements campaign in 2008.

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