Contribution ID: **939** Contribution code: **THPS48**　　　　　　　Type: **Poster Presentation**

3D integration methodologies of the accelerators at CERN

Thursday, 23 May 2024 16:00 (2 hours)

The 3D design of large accelerators like the Large Hadron Collider (LHC) requires coordination among equipment, services, and infrastructures. As numerous systems are designed, procured, and installed, 3D integration studies are important steps at any stages of a project, starting from the conceptual phase with space reservations, envelopes and interfaces, followed by the technical design phase managing the detailed and simplified 3D models, and finishing by the installation phase with follow-up of discrepancies. While the first phases serve to validate the accelerator configuration and design, the installation phase is followed by a reverse engineering process to verify the 'as-built' configuration, representing the final actual setup of the accelerator. At CERN, the 3D integration office for the accelerators assumes responsibility for collecting, aggregating, centralizing, and checking the 3D models provided by CERN design offices such as equipment owners, electrical, civil engineering, metallic structure, transport, handling, cooling, and ventilation services. This office manages 3D space, avoiding mechanical interferences before and during the installation phase. This paper describes the CAD, PDM and PLM methodologies used for 3D integration of the accelerators at CERN, highlighting their critical aspects and specificities.

Footnotes

Funding Agency

Paper preparation format

Region represented

Europe

Primary author: MAGAZINIK, Anastasiya (CEGELEC SA (Actemium Geneve))

Co-authors: TURSUN, Alparslan (CEGELEC SA (Actemium Geneve)); KOSMICKI, Antoine (European Organization for Nuclear Research); DEL ALAMO, Daniel (European Organization for Nuclear Research); VALCHKOVA--GEORGIEVA, Fani (CEGELEC SA (Actemium Geneve)); GALLEAZZI, Frederic (European Organization for Nuclear

Research); CORSO, Jean-Pierre (European Organization for Nuclear Research); COUPARD, Julie (European Organization for Nuclear Research); MARIDOR, Stephane (European Organization for Nuclear Research); BAROZIER, Vincent (European Organization for Nuclear Research)

Presenter: VALCHKOVA-GEORGIEVA, Fani (CEGELEC SA (Actemium Geneve))

Session Classification: Thursday Poster Session

Track Classification: MC7: Accelerator Technology and Sustainability: MC7.T21 Infrastructures