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## **INFN Input on the update of the European Strategy for Particle Physics: Computing**

Computing plays a crucial role in High-Energy Physics experiments and, to deal with the large amount of data that will be collected in the HL-LHC era and beyond, substantial changes are needed both in the software and computing models of the experiments and in the computing infrastructure. The HEP community can't rely only on the current High-Throughput Computing infrastructure and has to take advantage of the large computing power offered by the High-Performance Computing centres that are playing a strategic role in the scientific and industrial innovation in Europe and around the world. These centres, together with the existing Tier-1 and Tier-2 WLCG centres, which are to continue to host data from the experiments, will form the combined computing infrastructure for High-Energy Physics of the future.

In addition, Artificial Intelligence and Quantum Computing are taking on an increasingly important role for High-Energy Physics. Artificial Intelligence tools are required to analyse and fully exploit the physical potential of data and High-Performance Computing centres are ideal structures to handle the workloads massive computational demands. Quantum Computing is still at the level of research and development but is an emergent field of cutting-edge computer science that promises to revolutionize the High-Energy Physics computing horizon. This document presents some input from the INFN National Computing Coordination Steering Committee (C3SN) to the update of the European Strategy for Particle Physics.

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