Radiation safety for particle accelerator – synergies between Research Infrastructures and Industry

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What will the world of tomorrow be like with respect to technical progress?

As we face growing challenges in our society, science and industries are evolving. Technological innovations have been capturing the essence of scientific discoveries and became part of our quotidian thanks to industrialization. Modern societies are technology driven!

The understanding of fundamental physics and of matter reflects the quest of humanity, allowing us to better understand nature and to improve the world in which we live. Pursuant to this goal, large scale instruments using particle accelerators have been developed. Still, to build and operate such tools, requires the supply of state-of-the-art components following stringent regulations and resistant to large dose of radiation.

Based on the construction and operation of the Large Hadron Collider (LHC) at CERN, the Tevatron in Chicago and the European Spallation Source in Lund, we will review the radiation safety aspects and requirement driving the procurement and integration of specific components, which constitute to their success.