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## Principles of TT in High Energy Physics (from collaborative research to spin-offing)

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Particle physics (PP) is an environment dominated by very large, extremely complex and demanding projects requiring long and intensive R&D that is a source of innovation, new technologies and know-how. This highly collaborative international open science environment offers top quality education and training from apprentice to post-doctoral, and provides world standard institutions (centres of excellence) with high tech laboratories for accelerators elements, vacuum technologies, magnets, super-conductivity and cryogenics, mechanics and surface treatments, particle detectors, electronics and information technology.

Developments and know-how of fundamental research have strong impact on society. There are amazing track records of dissemination in health (particle therapy for cancer treatment, PET for treatment planning), for IT (World Wide Web, the Grid), for energy and environment (solar collectors using accelerator vacuum technologies) and industrial processes. Many of these industrial achievements concretised thanks to scientists motivated by the challenges to be addressed and to the open science environment in which they operate. Open science is a favourable context for the transfer of know-how and expertise but is somewhat insufficient for formal technology transfer deals. Consequently, many opportunities either failed to materialise or, on the contrary reached very successful results without generating the credits that the PP community deserved.

It is believed that this community could enhance its societal visibility and significantly increase its impacts to industry if a collaborative framework, more favourable to knowledge and technology transfer (KTT) but respectful of the open science principles, could be put in place. This is the purpose of the Technology Transfer Network of institutes active in particle, astro-particle and nuclear physics that was created by CERN Council in March 2008 in the framework of the European Strategy for PP.

The presentation will review the PP context and characteristics that led to the creation of the TT Network, and present the principles aimed at helping PP institutions to adopt a sensible approach for KTT and Intellectual Property matters and support the associated implementation measures while remaining compatible with open science.

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