The goal of the next generation of particle accelerators is to achieve the highest number of collisions using nano-metric beam sizes. This requires very tight micro-metric pre-alignment tolerances of the components focusing, accelerating and detecting the beam over the entire length of the accelerator. The Compact Linear Collider (CLIC), currently under study at the European Council for Nuclear Research (CERN), is an international collaboration working on a machine to collide electrons and positrons at energies up to 3 Tera-electron-volts (TeV) with a smallest beam vertical dimension of 1nm (at the IP).

PACMAN aims to propose new methods allowing the determination of the reference axis of accelerator components with respect to external alignment targets (fiducialisation process). A test bench, using representative accelerator components of CLIC, will demonstrate the feasibility of the solutions developed, and the achievement of the micrometric accuracy of their fiducialisation procedure.

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