

EuPRAXIA laser requirements and current conceptual design issues

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EuPRAXIA is the first European project that develops a dedicated particle accelerator research infrastructure based on novel plasma acceleration concepts and laser technology and one of the projects on the European Strategy Forum on Research Infrastructures (ESFRI) Roadmap of 2021. The EuPRAXIA preparatory phase project is now underway, with the beam driven site at LNF-INFN in Frascati under construction and the laser-driven site being selected and its specifications and options being finalized.

The project foresees a two-steps laser performance to enable outstanding user operation at day one of implementation with 20 Hz repetition rate, and successive upgrade to final performance of 100 Hz. In this paper we will discuss the requirements of the laser driver and the existing conceptual design. Open technical design issues and main developments needed will also be outlined in view of current industrial capabilities and planned R&D at relevant user facilities.

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