

# European Plasma Research Accelerator with excellence In Applications

# EuPRAXIA



Horizon2020

Horizon 2020 Design Study for a future large Research Infrastructure

EU funded preparation of Conceptual Design Report

Duration  
**11/2015 – 10/2019**

2<sup>nd</sup> such study in Horizon2020



European Network for Novel Accelerators

**EuroNNAc<sub>2</sub>**

supported by EU via EuCARD2

- Tasks:
  - Management  
*No major worries so far – or tell us → see next slide*
  - Parameter, Layout and Cost Committee  
*Plenty of discussion. Deliverable 10/2016. Full time person appointed: A. Walker. Input from WP's agreed.*
  - Quality Assurance Plan  
*No discussions yet.*
  - Governance Model and Site Study  
*Several sites being looked at as interesting options. Still time but we should start organizing now. Activities being started.*
  - Radiological Impact  
*No discussions yet.*

# Working on the Conceptual Design Report



**DRAFT**  
**Conceptual Design Report**  
**for a European Research Infrastructure**  
**for an European Plasma Accelerator**  
**with Excellence in Applications\***  
**(EuPRAXIA)**

*This document provides the conceptual design report for the worldwide first 3 GeV plasma-based accelerator with industrial beam quality and user areas. A consortium of 16 associated rics and universities from 5 EU member states has prepared this proposal. 16 associated rics and universities from 5 EU member states has prepared this proposal. The partners from 6 countries joined with in-kind commitments and contributed to this report. The scientists involved represent world-class expertise from accelerators like LHC and Soleil, advanced and HEP, design and construction of leading accelerators like CLF, CELESTINE and ELL. EuPRAXIA is the required infrastructure step between proof-of-principle APOLLON and ELL. EuPRAXIA is the required infrastructure for science, industry, medicine or the energy frontier ("plasma linear collider"). The presented design includes innovative experiments and ground-breaking, ultra-compact accelerators for science, industry, medicine or the energy frontier ("plasma linear collider"). The presented design includes innovative concepts and cutting edge components from the fields of accelerator technology, high power lasers, plasma sources, diagnostics, digital feedbacks, as well as laser detectors and user equipment. Industry has been involved in the design work and will be the supplier of the required high tech equipment. A European implementation model is being proposed with distributed construction of compact and cost estimates have been worked out. EuPRAXIA is designed in Europe have been studied and cost estimates have been worked out. EuPRAXIA is designed to make optimal use of past investments in European scientific infrastructure and will develop these investments into ground-breaking applications for multiple fields. EuPRAXIA will support or establish international technological and scientific leadership for novel accelerators and their applications.*

*This conceptual design report provides the decision makers in Europe with the required information for a decision on the construction of such a highly innovative research infrastructure for European science, industry and society.*

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**EuroNNAc and EuPRAXIA Workshop on a European Plasma Accelerator**



We are organizing a workshop in Pisa inviting the communities of conventional facilities, lasers and novel accelerators, discussing the unique opportunities for our fields from such a design study. We will bring together the initial EuPRAXIA project team, EuroNNAc network participants and interested scientists to collect input from all parties and to base this effort deeply into the interests of our communities.

The EuroNNAc and EuPRAXIA Workshop on a European Plasma Accelerator will take place June 29 to July, 1, 2016 at INO-CNR/INFN, Pisa, Italy.

- Received some comments, will implement them. More comments welcome.
- Diagnostics & instrumentation: Additional section to expose it more clearly?
- Participation of Japanese colleagues:
  - Produce additional section in CDR on ImPACT program and Japanese strategy.
  - Coordinated by Dr. Sano. Thank you very much.
  - Text can serve as reference and source for other sections (highlights can be mentioned in relevant sections and then referenced to special ImPACT section).
- Will follow up with more names, contributions, etc.
- Oct yearly meeting: Parameter table + CDR outline with more specific details (what/who/when).