This project has received funding from the European Union's Horizon 2020 Research and Innovation programme under GA No 101004730.

IFAST = Innovation Fostering in Accelerator Science and Technology

EU Project May 2021 – April 2025, Coordinator M. Vretenar

WP6: Novel Particle Accelerators Concepts and Technologies – Coordinator R. Assmann

Contains European Network for Novel Accelerators (EuroNNAc4) = Sponsor of EAAC

Agenda EuroNNAc meeting on Thursday SEP 23 (9:00 - 11:30):

09:00 - 09:20	The next four years of EuroNNAC and EAAC: Support from I-FAST and NPACT (R. Assmann, DESY)
09:20 - 09:40	LASPLA: A European roadmap on lasers for plasma acceleration (L. Gizzi, CNR)
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Tasks of WP6 – Novel Particle Accelerators Concepts and Technologies

- Task 1 (RA + M. Ferrario): **Novel Particle Accelerators Concepts and Technologies** (NPACT – EuroNNAc4) M1 – M48
  WP6.1
  Sub-task leaders: ***B. Holzer*** *(CERN),* ***P. Nghie*** *(CEA),* ***A. Specka*** *(CNRS),* ***R. Walczak*** *(Oxford)*
- Task 2 (Leo Gizzi): **Lasers for Plasma Acceleration** (LASPLA) M1 – M48
- Task 3 (Cedric Thaury): **Multi-scale Innovative targets for laser-plasma accelerators** (MILPAT) M1 – M32
- Task 4 (Francois Mathieu): **Laser focal Spot Stabilization Systems** (L3S) M1 – M36

The Theme of WP6

- This is the iFAST WP on **high gradient accelerators (> 1 GV/m)**, involving mainly **plasma-based** technology but also **dielectric** accelerators.
- This includes the development of **laser** features required for driving accelerators and **targets**.
- This WP: Promote and support the development of very high gradient, compact accelerators as a viable technology option!
- Towards HEP but also near-term applications.

WP6.1 (EuroNNAc) Sub-Tasks

1. Strategic forum novel accelerator landscape in Europe *(= EuroNNAc4 and EAAC)*
2. Strategy High Gradient RF Accelerators in Lower Energy Applications;
3. Strategy Plasma Accelerators towards Applications and HEP
4. Strategy Defining and Exploiting the Potential of Dielectric Accelerators.

EUROPEAN NETWORK FOR NOVEL ACCELERATORS

EuroNNAc3

supported by EU via ARIES

Armenia
CANDLE

China
Beijing National Laboratory IOP CAS
IOP, Chinese Academy of Science
Shanghai Jiao Tong University
Tsinghua University

Czech Republic
ELI Beams

France
CEA/CNRS
Ecole Polytechnique
ENSTA Paris tech
IN2P3
LAL
LPGP
LULI
PHLAM Université de Lille
Soleil

Germany
Deutsches Elektronen-Synchrotron (DESY)
Ferdinand Braun Institut
Forschungszentrum Jülich
Frauenhofer ILT
Gesellschaft für Schwerionenforschung (GSI)
Helmholtz Institutes Jena
Helmholtz-Zentrum Dresden-Rossendorf
Karlsruhe Institute of Technology
LMU University Munich
Max-Planck-Institute for Quantum Optics
Max-Planck-Institute for Physics
TU Darmstadt
University Düsseldorf
University Erlangen
University Hamburg
University Jena

Hungary
Wigner Research Center

Italy
CNR, Instituto Nazionale di Ottica – Pisa
INFN Frascati
INFN Milano
INFN Roma1
University of Rome Tor Vergata
University of Rome La Sapienza
University of Pisa

Japan
Kansai Photon Science Institute
KEK
Osaka University
RIKEN Spring-8

Netherlands
Eindhoven Univeristy of Technology

Norway
University of Oslo

Portugal
Instituto Superior Tecnico de Lisboa

Russia
JIHT of Russian Academy of Sciences
Budker Institute of Nuclear Physics
Institute of Applied Physics RAS

Sweden
Lund University

Switzerland
University of Bern
Paul Scherrer Institut

UK
ASTeC
Cockroft Institute
JAI - Imperial College
Lancaster University
Manchester University
Oxford University
Queen's University of Belfast
STFC Rutherford Appleton Laboratory
STFC Daresbury Laboratory
University College London
University of Liverpool
University of Strathclyde

USA
Brookhaven National Laboratory
Fermi National Accelerator Laboratory
Lawrence Berkely National Laboratory
Lawrence Livermore National Laboratory
SLAC National Accelerator Laboratory
University of California Los Angeles

International
European Organization for Nuclear Research (CERN)
ELI Beamlines

International Committtee for Future Accelerators
International Committee on Ultra High Intensity Lasers

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ARIES

WP6.1 (EuroNNAc) To Do‘s

- The Task partners will jointly organise and support **workshops**, in particular the **EAAC**, set up dedicated **schools**, and award a **prize for young scientists** in the field.
- Proposed **strategies** will be published in open access reports.
- Reports on the European **novel accelerator landscape and strategic proposals** will be made available to interested parties in research, industry and funding bodies.
- The **Industry Advisory Board** will contribute to the definition of the strategy.

WP6 Milestones

May 2023

- MS21: Report on the novel accelerator landscape in Europe, facilities, projects and capabilities at the beginning of the 2020's. Lead – DESY, M24, Publication, website (task 6.1)
- MS22: LASPLA Workshop/School. Lead – CNR, M30, Report (task 6.2)
- MS23 Target manufacturing and characterization. Lead – CNRS, M12 Report (task 6.3)
- MS24: Hypothesis on the causes of the instabilities of the focal spot profile. Lead – CNRS, M24 Publication (task 6.4)

WP6 Deliverables

November 2024

Deliverables related to WP6	
D6.1: EAAC workshops and strategies. *Report on the EAAC workshops as strategic forums for international accelerator R&D and resulting strategies*	M42
D6.2: LASPLA Strategy. *Report on a strategy for laser drivers for plasma accelerators.*	M46
D6.2: Electron acceleration experiments with new targets. *Report on electron acceleration with micro-scale target at a kHz repetition rate, and with long targets at the multi-Joule level.*	M24
D6.4: Improvement of the laser intensity stability on target. *Report showing the stability on two laser facilities before and after improvement.*	M36

Next Meetings

-EuroNNAc Special Topics Workshop: 18-24 September 2022

It will be discussed in the EuroNNAc Yearly Meeting
It will include the Simon van der Meer Early Career Award in Novel Accelerators and the Poster Prize

-AAC will take place in 2022 in the US (to be announced) –
we hope to be able travelling there

-EAAC 2023, 17-23 September 2023

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EuroNNAc Special Topics Workshop: 18-24 September 2022 in Elba, Italy

- Prepare **milestone report MS21 to be delivered in May 2023**:
  - Report on the novel accelerator landscape in Europe, facilities, projects and capabilities at the beginning of the 2020's.
- Topics EuroNNAc special topics workshop:
  1. Facilities.
  2. Projects.
  3. Capabilities.
  4. High Gradient RF Acc. in Lower Energy Applications;
  5. Plasma Acc. towards Applications and HEP;
  6. Defining and Exploiting the Potential of Dielectric Acc.

Possible program

5 days = 10 sessions
- 6 sessions see left
- ask session coordinators to draft report from presentations
- 1 session opening
- 1 session summaries
- 2 poster sessions

EuroNNAc Special Topics Workshop: 18-24 September 2022 in Elba, Italy

- Prepare **milestone report MS21 to be delivered in May 2023**:
  - Report on the novel accelerator landscape in Europe, facilities, projects and capabilities at the beginning of the 2020's.
- Topics EuroNNAc special topics workshop:
  1. Facilities.
  2. Projects
  3. [illegible] RF Acc. in Lower Energy Applications;
  5. Plasma Acc. towards Applications and HEP;
  6. Defining and Exploiting the Potential of Dielectric Acc.

Collecting other proposals...

Possible program

5 days = 10 sessions
- 6 sessions see left
- ask session coordinators to draft report from presentations
- 1 session opening
- 1 session summaries
- 2 poster sessions

6th EAAC: 17-23 September 2023 in Elba, Italy

- EAAC with traditional setup: plenary and parallel sessions, covering our full scope
- Proceedings in journal after peer review

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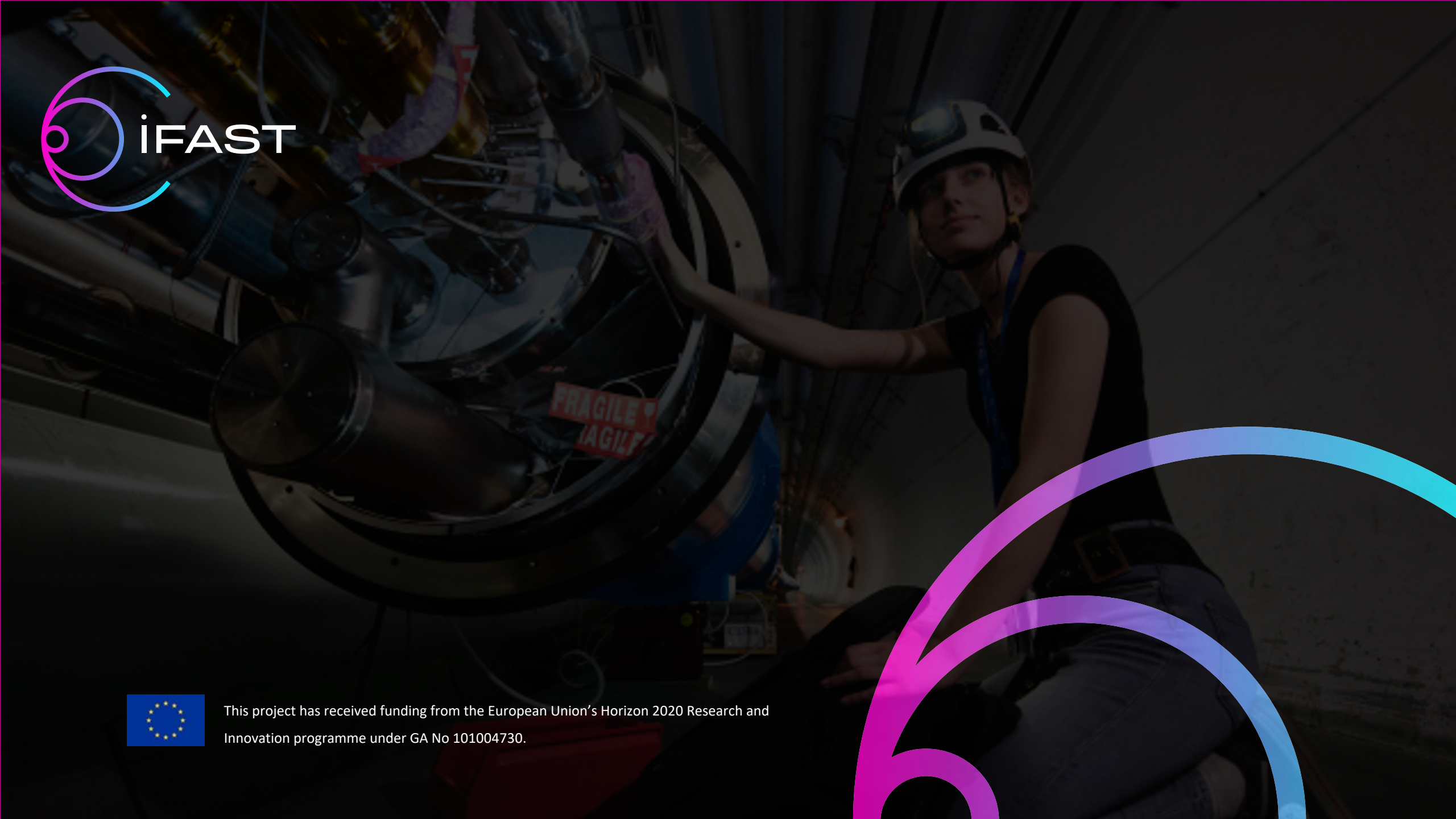
AOB?



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