Workshop 6 - Horizon Europe Photonics & Quantum Technology

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Horizon Europe – 2021 - 2027

- Budget: **95.5 Billion€**
- Adoption of the next WP 23-24, late November 2022
- Deadline in Cluster 4, digital:
  29 March 2023

EU Brokerage Event

on Industrial KET* in Horizon Europe

*Key Enabling Technologies

10th November 2022 • Strasbourg

Conference & Bilateral/B2B Meetings | Calls 2023 - 2024

HORIZON EUROPE

SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

Exclusive focus on defence research & development

- Research actions
- Development actions

SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT*

Exclusive focus on civil applications

Pillar I
EXCELLENT SCIENCE

- European Research Council
- Marie Skłodowska-Curie
- Research Infrastructures

Pillar II
GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters:
- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Joint Research Centre

Pillar III
INNOVATIVE EUROPE

- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation & Technology*

WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

- Widening participation & spreading excellence
- Reforming & Enhancing the European R&I system

EURATOM

- Fusion
- Fission
- Joint Research Center

* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme

European Commission

HORIZON-CL4-2023-DIGITAL-EMERGING
European Innovation Leadership in Photonics

Objective

- Strengthen current leadership in photonic technologies and applications, and to secure access in Europe to cutting-edge photonic technologies:
  - **The topics of this heading are under the co-programmed Partnership 'Photonics'**

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- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-51: Pervasive photonics - multi-technology integration for digital infrastructure, sensors and internet of things (RIA)**
  3 to 5M€ per project – 4 projects funded (18M€)
  - Improved key metrics for communications or for sensing, making photonics ubiquitous in digital systems
  - New photonic-enabled sensing functions or computing paradigms enabling new systems architectures

- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-53: Versatile light sources and systems as tools for manufacturing and medical application (RIA)**

3 to 5M€ per project – 4 projects funded (18M€)

- Increased manufacturing productivity or increased quality and speed of diagnosis results;
- Increased accuracy and/or reduced size in microelectronics production (integration of photonic and electronic);

- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-56: Photonic Strategies and Skills Development (CSA)**
- 1 to 3 M€ per project – 2 projects funded (2M€)
  - Reinforced value chains and deployment of photonics technologies: stronger cooperation stakeholders, clusters and end-users;

- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-57: Advanced imaging and sensing technologies (IA)**
- 5 to 7 M€ per project – 4 projects funded (20M€)
  1. Development of next generations sensory systems based on photonic technologies
  2. Technology leadership in autonomous vehicles, robots and sensory systems.

HORIZON-CL4-2023-DIGITAL-EMERGING

5 - Flagship on Quantum Technologies: a Paradigm Shift

Objective

- Develop quantum technologies and their applications in the areas of :
  - **Quantum computing,**
  - **Simulation,**
  - **Sensing and**
  - **Communication**

- Eligibility to participate in restricted quantum topics is limited to specific entities

- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-40: Quantum Photonic Integrated Circuit technologies (RIA)**
  - 4 to 6M€ per project - 2 projects funded (12 M€)
  - Enhancement of Quantum Photonic Integrated Circuits (QPIC) performance, fabrication and miniaturization

- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-41: Investing in alternative quantum computation and simulation platform technologies (RIA)**
  - 7 to 12M€ per project - 2 projects funded (20 M€)
  - Further mature alternative and promising quantum computation and simulation platforms - scalability & programmability

- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-43: Framework Partnership Agreement for developing large-scale quantum Computing platform technologies (FPA)**
  - 1 project funded
  - Establish a stable and structured partnership between the Commission and the institutions and organisations in quantum computing enable for the completion of the research roadmap

- **HORIZON-CL4-2023-DIGITAL-EMERGING-01-50: Next generation quantum sensing and metrology technologies (RIA)**
  - 2 to 3M€ per project - 3 projects funded (10 M€)
  - Demonstrate the feasibility of next generation quantum sensing and metrology technologies and devices

Next steps: European Commission Info Days

- Monday 12 December 2022 : Destinations 1 & 2 would be covered (am and pm respectively)
- Tuesday 13 December 2022 : Destinations 5 and 3-4 (am and pm respectively)
- Wednesday 14 December 2022 : Destination 6 and cross-cutting issues (am and pm)