FAQ for EuroHPC JU Call: Large-Scale Photonic Platform (PQC) (HORIZON-JU-EUROHPC-2026-PQC-06)

Q1: What technical or scientific reasoning led to the definition of a processor with ≥ 100 photonic qubits as headline expected outcome for 2028?
A1: Please observe that the EuroHPC Governing Board has concluded in its decision 15/2026 amending the 2026 Work Programme (cf. 60f0d033-ca92-4aab-aea0-c5e572a2b04c_en, page 28 ff) to transfer the respective call from the Horizon Europe Cluster 4 Work Programme (cf. 7. Digital, Industry and Space, page 168 ff.) including expected outcomes and scope. The EuroHPC Joint Undertaking is kindly referring to the Horizon Europe Cluster 4 Programme Committee for any inquiries related to scientific bases and roadmap alignments.

Q2: How do evaluators intend to compare substantially different photonic architectures in case where physical qubit count is not directly comparable and may not track usable computational performance?
A2: Please note that the evaluation of the proposals will follow the evaluation processes established for the Horizon Europe calls for proposals. As indicated in the call conditions, the proposals will be evaluated for operational capacity and award criteria (see Annexes C and D of the HE General Annexes) by an evaluation committee composed of independent external experts and then ranked according to their quality score. Please also observe that the Granting Authority cannot provide at this stage any information that may serve as an initial assessment of the proposals.

Q3: What precise technical definition should applicants apply, when demonstrating the milestone as a processor with ≥ 100-photonic qubits?
A3: The technical definition of a "processor with ≥ 100-photonic qubits" refers to a photonic quantum computing system that meets the following criteria: (1) qubit count - the system must demonstrate at least 100 photonic qubits (e.g., encoded in photons, optical modes, or other photonic degrees of freedom); (2) quantum processing capability - the qubits must be coherently controllable, entangleable, and measurable to perform quantum computations; (3) scalability - the architecture should enable expansion beyond 100 photonic qubits via e.g. modular, resource-efficient designs; (4) benchmarking - the system should be validated using reliable benchmarks across platforms.

Q4: Could an applicant meet the intended 2028 outcome demonstrating, on their own architecture, computational capability and a credible path to fault-tolerant scaling, even without specifically reaching a processor with ≥ 100 physical qubits simultaneously represented?
A4: Please observe that call expects contributions toward the 100-qubit outcome, so applicants can demonstrate computational capability and a credible scaling path without simultaneously representing 100+ qubits.