CONSORTIUM

LEIBNIZ INSTITUTE OF PHOTONIC TECHNOLOGY (GERMANY)

LINKOPINGS UNIVERSITET (SWEDEN)

UNIVERSITY DE MONTPELLIER (FRANCE)

JUSTMIND SL (SPAIN)

INTELLIGENTSIA CONSULTANTS SARL (LUXEMBOURG)

AALTO UNIVERSITY (FINLAND)

EOTVOS LORAND TUDOMANYEGYETEM (HUNGARY)

LOUGHBOROUGH UNIVERSITY (UK)

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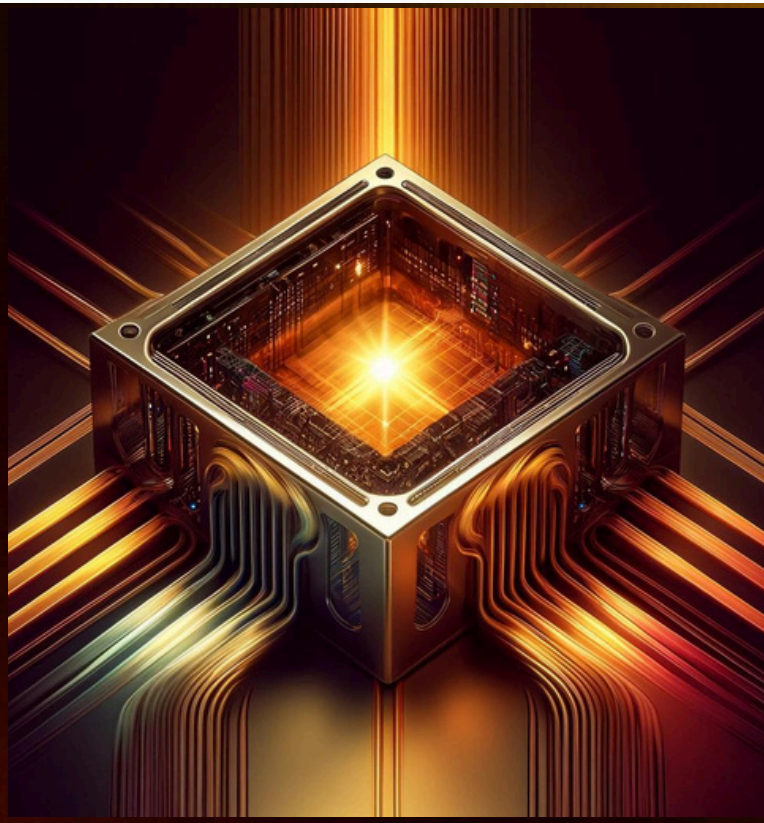

QUANTUM RESERVOIR COMPUTING FOR EFFICIENT SIGNAL PROCESSING

ABOUT PROJECT

FUNDING SOURCE:

The European Innovation Council (EIC) and UK Research and Innovation (UKRI)

Funded by the European Union

UK Research and Innovation

GRANT AGREEMENT ID: 101129663
PROJECT BUDGET: € 2,923,927.50
PROJECT DURATION: 1 January 2024 - 31 December 2026

PROJECT IS IMPLEMENTED BY A TEAM OF WORLD-CLASS EXPERTS WITH COMPLEMENTARY EXPERTISE TO SET NEW STANDARDS IN QUANTUM TECHNOLOGY

PIONEERING ADVANCEMENTS IN QUANTUM RESERVOIR COMPUTING

PROJECT GOAL

TO DEVELOP THE FIRST QUANTUM RESERVOIR COMPUTING SYSTEMS UTILIZING SUPERCONDUCTING QUBITS AND SILICON CARBIDE DEFECT QUBITS

NEW DISRUPTIVE TECHNOLOGY

QRC-4-ESP TECHNOLOGY BASED ON SUPERCONDUCTING QUBITS AND SILICON CARBIDE (SIC) DEFECT QUBITS WILL CREATE DRASTIC IMPROVEMENTS IN SPEED AND REDUCTION IN POWER CONSUMPTION – TWO OR MORE ORDERS OF MAGNITUDE (>100X) - COMPARED TO CLASSICAL MACHINE LEARNING SYSTEMS.

THE USE OF SUPERCONDUCTING QUBITS IS A STRATEGIC CHOICE, ALIGNING THE PROJECT WITH THE NEEDS OF SATELLITE COMMUNICATIONS, AS THESE QUBITS OPERATE EFFECTIVELY IN THE MICROWAVE RANGE, WHICH IS MINIMALLY DISTURBED BY ATMOSPHERIC CONDITIONS LIKE FOG AND CLOUDS. THE DEFECT-BASED QUBITS IN SIC, OPERATING IN SEVERAL FREQUENCY BANDS INCLUDING THE NEAR-INFRARED, ARE IDEAL FOR FIBRE-OPTICAL NETWORKS, OPENING NEW POSSIBILITIES IN LONG-RANGE COMMUNICATIONS AND MEDICAL DIAGNOSTICS.

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