# QUANTUM COMPUTING EUROPEAN UNION SOUTH KOREA WORKING TEAM

G. Pelosi[1], G. Agosta[1], S. Perriello[2], G. Lancellotti[2], P. Matic[3], N. V. Tcholtchev[3], R. Zander[3], I. You[4], H. Kwon[4], G. Bettonte[5], D. Gregori[5], S. Rizzo[5], T. Liberati[5], M. Barbieri[5], C. Belli[6]

[1] Politecnico di Milano (Italy), [2] Promethence srl (Italy), [3] Fraunhofer FOKUS (Germany), [4] Kookmin University (R. of Korea), [5] E4 Computer Engineering SpA (Italy), [6] IQM (Finland)

## MISSION

Develop an open, hardware-agnostic quantum software ecosystem bridging high-level programming models and real quantum hardware.

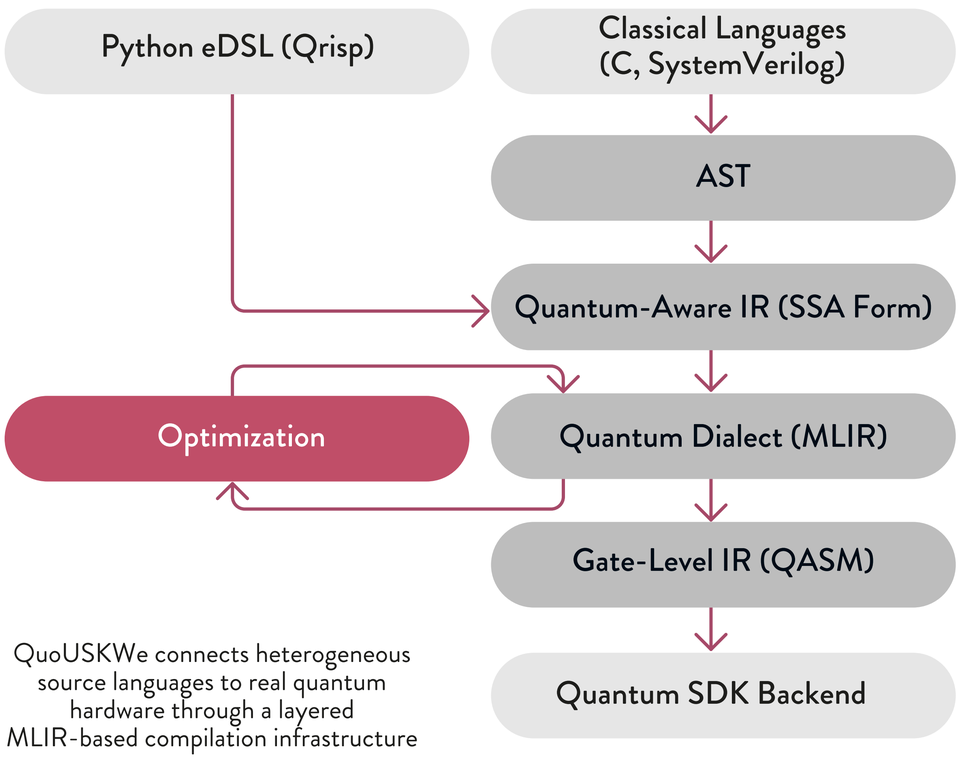
**PROGRAMMABILITY**
Qrisp
MLIR
Multi-language
High-level Dev

**OPTIMIZATION**
Compiler Passes
Circuit Reduction
Error Correction
Hardware
Mapping

**APPLICATIONS**
Cryptanalysis
Simulation
Quantum AI
AI-RAN

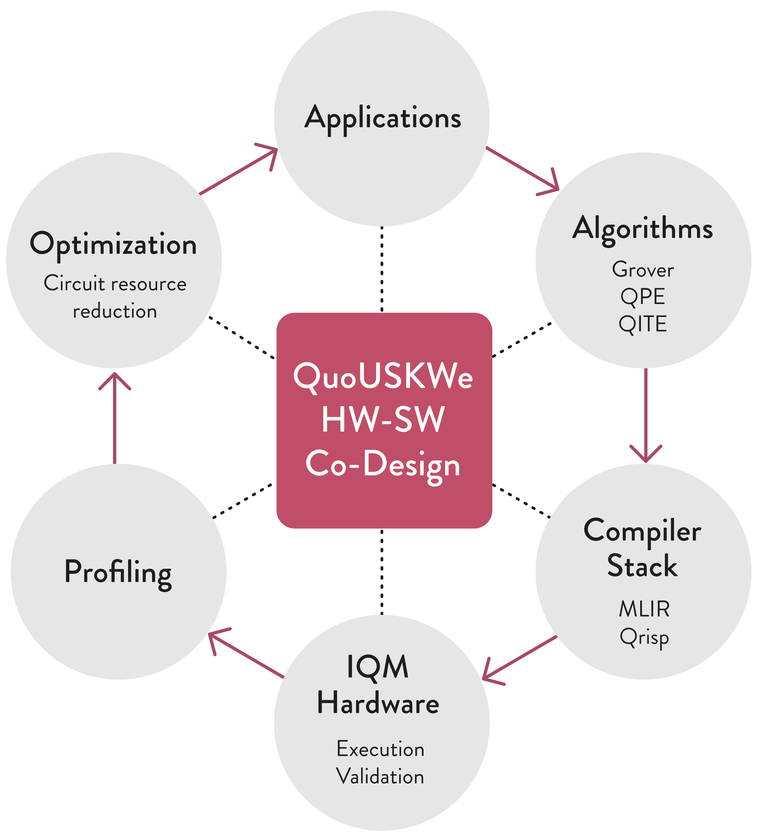
Open Ecosystem: Open Source, Standardization, Hardware Agnostic, EU–ROK Collaboration

## QUOUSKWE ARCHITECTURE

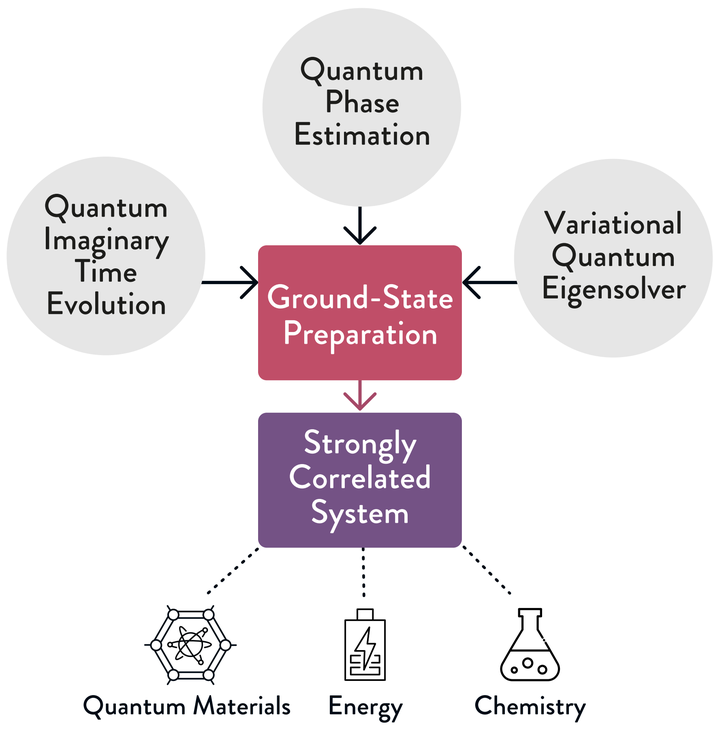



QuoUSKWe connects heterogeneous source languages to real quantum hardware through a layered MLIR-based compilation infrastructure

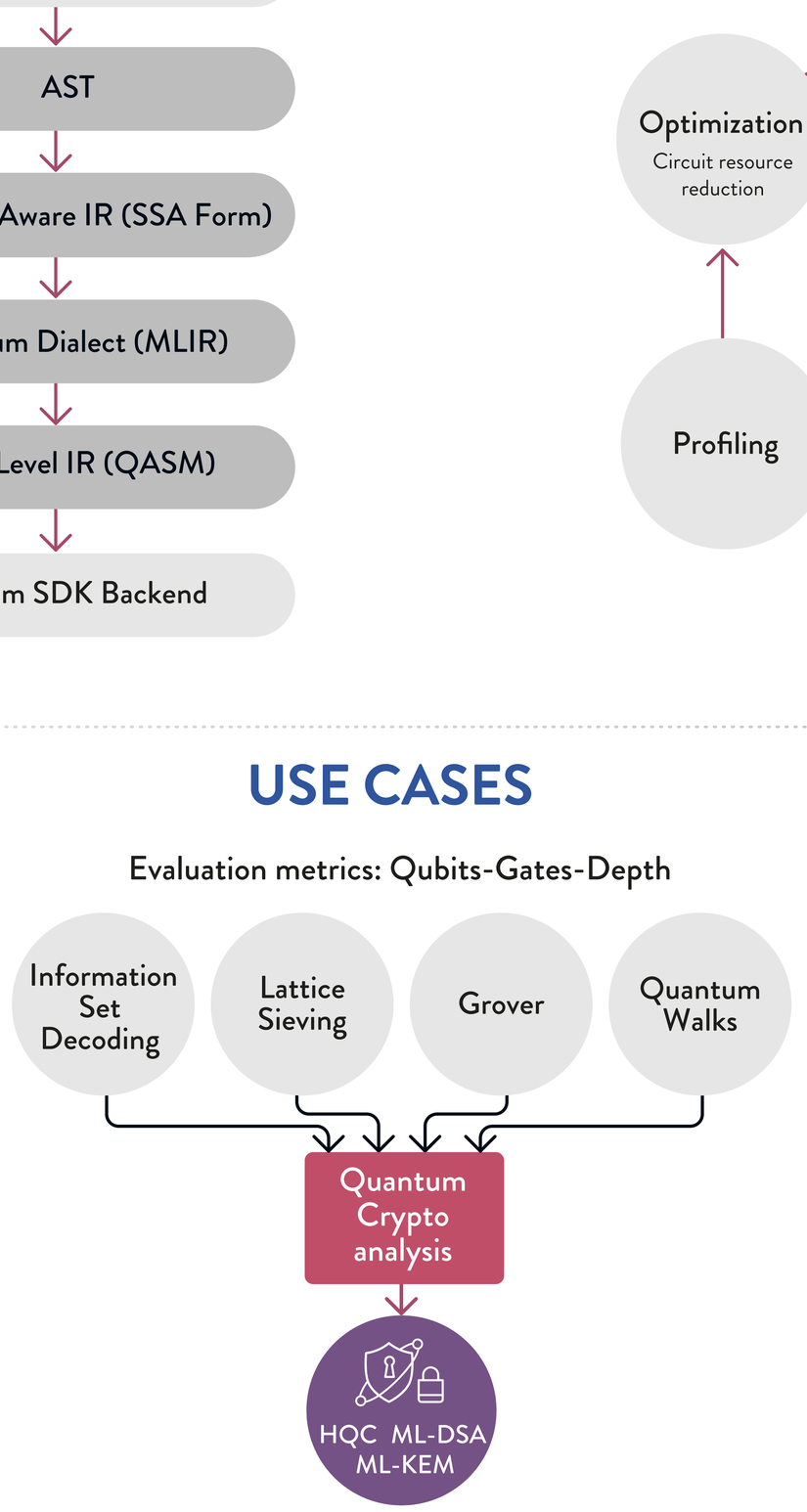
## HARDWARE – SOFTWARE CO-DESIGN



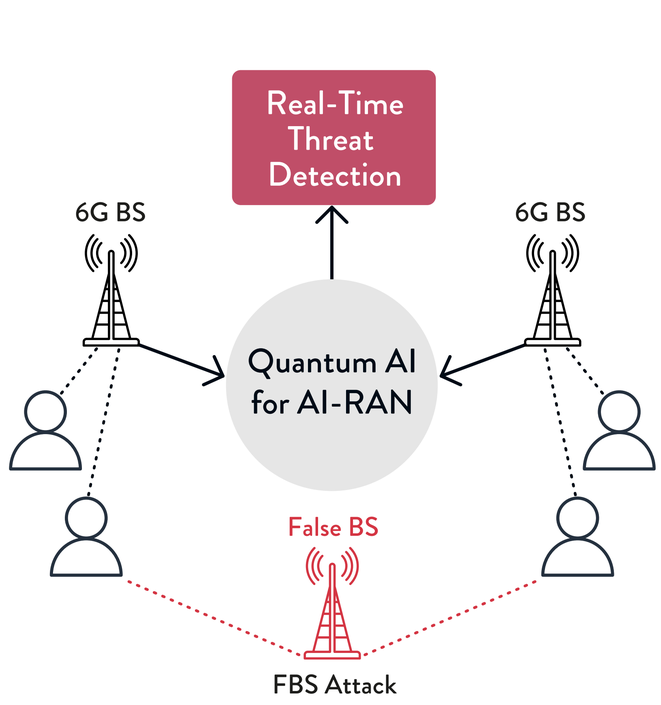

## USE CASES




Ground-state preparation and simulation of strongly correlated quantum systems.




Evaluate the resilience of PQC schemes using advanced quantum algorithms.




Quantum-enhanced machine learning for AI-native radio access networks.

MORE INFO

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