



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

La prospettiva europea sull'evoluzione delle tecnologie quantistiche



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COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT AND THE COUNCIL

Quantum Europe Strategy: Quantum Europe in a Changing World

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ITALIAN STRATEGY FOR QUANTUM TECHNOLOGIES



QUANTUM EUROPE: STATE OF PLAY

Equity Investments & Support to Start-ups

Space Gravimetry

Quantum Flagship

IRIS2 & EuroQCI



CROSS-CUTTING ACTIVITIES

ENGINEERING /CONTROL
EDUCATION/TRAINING
SOFTWARE/THEORY



Chips Act

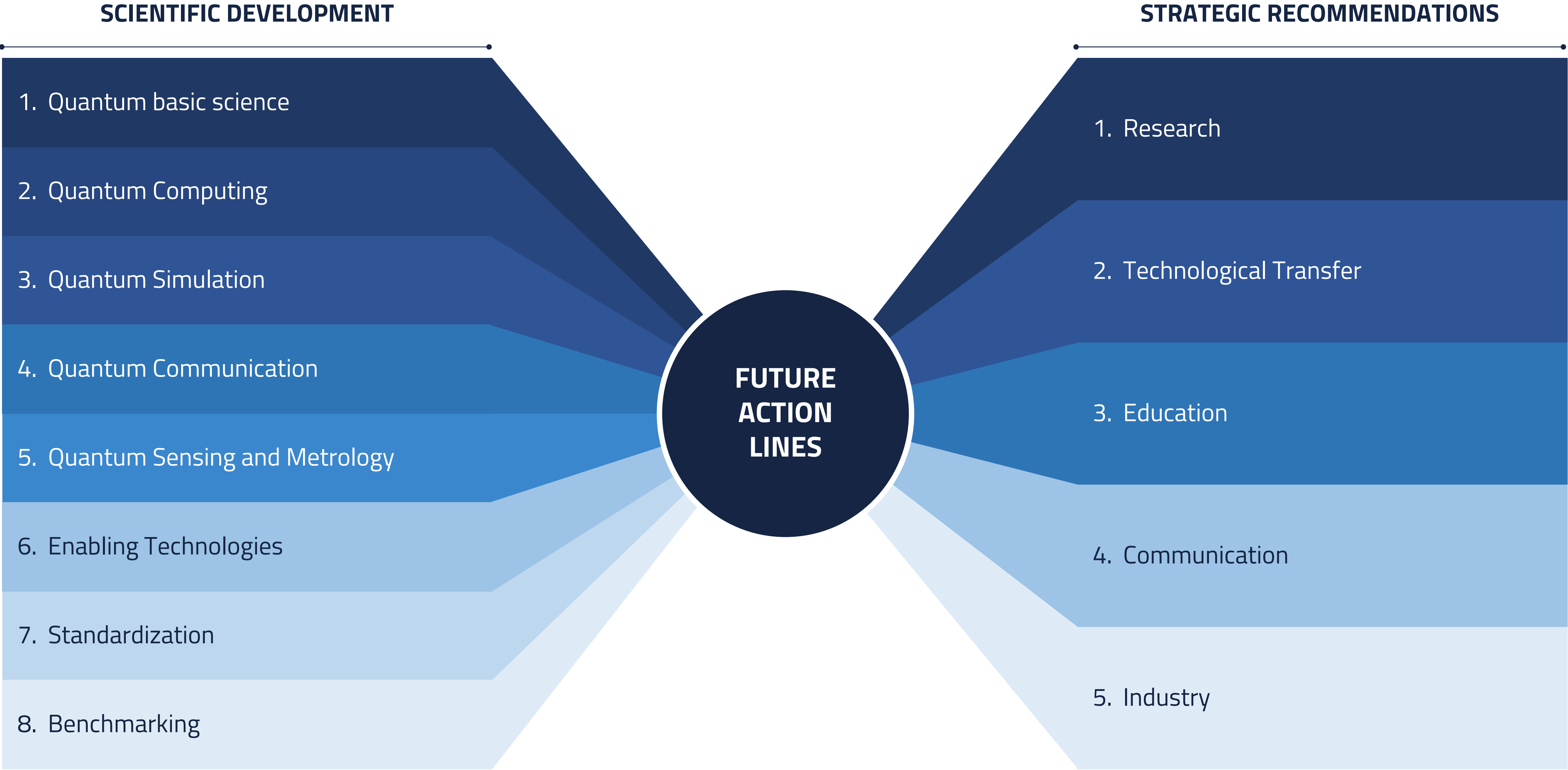
Quantum Chips

Skills & Education

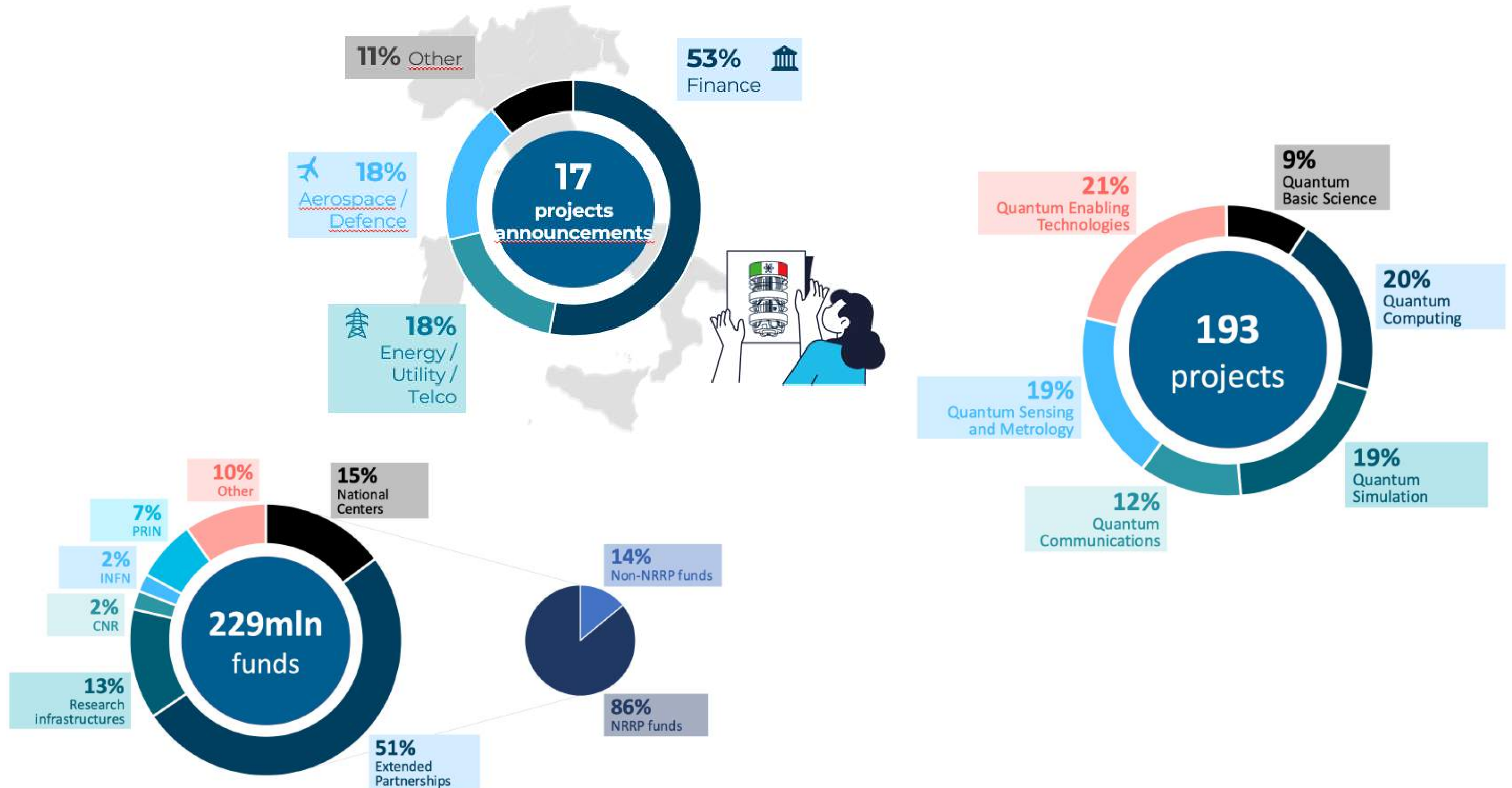
FROM FLAGSHIP TO FLEET



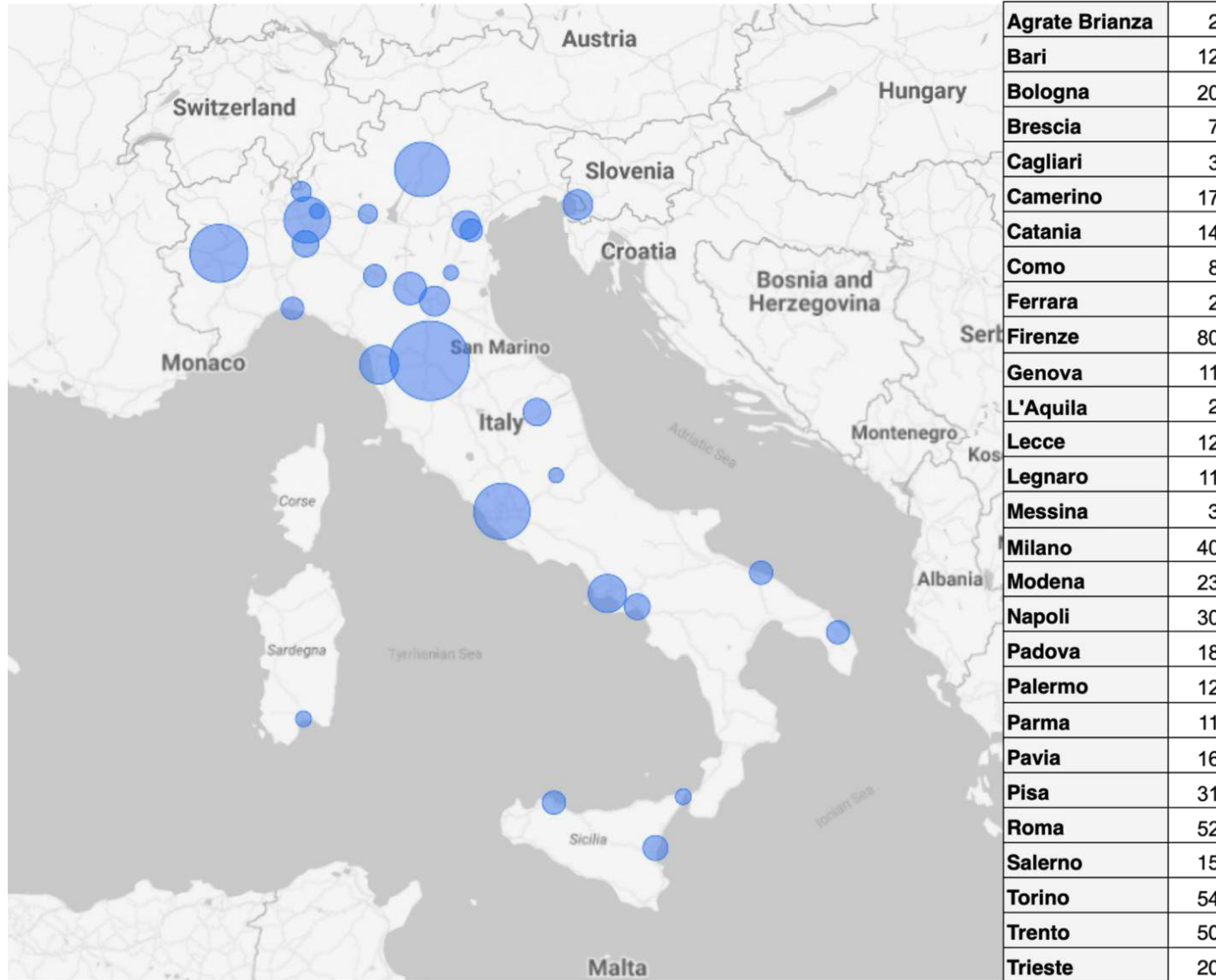
ITALIAN STRATEGY for QUANTUM TECHNOLOGIES



ITALY'S ENGAGEMENT IN QUANTUM TECHNOLOGIES



ITALIAN QUANTUM RESEARCH ECOSYSTEM



ALIGNMENT WITH QUANTUM EUROPE

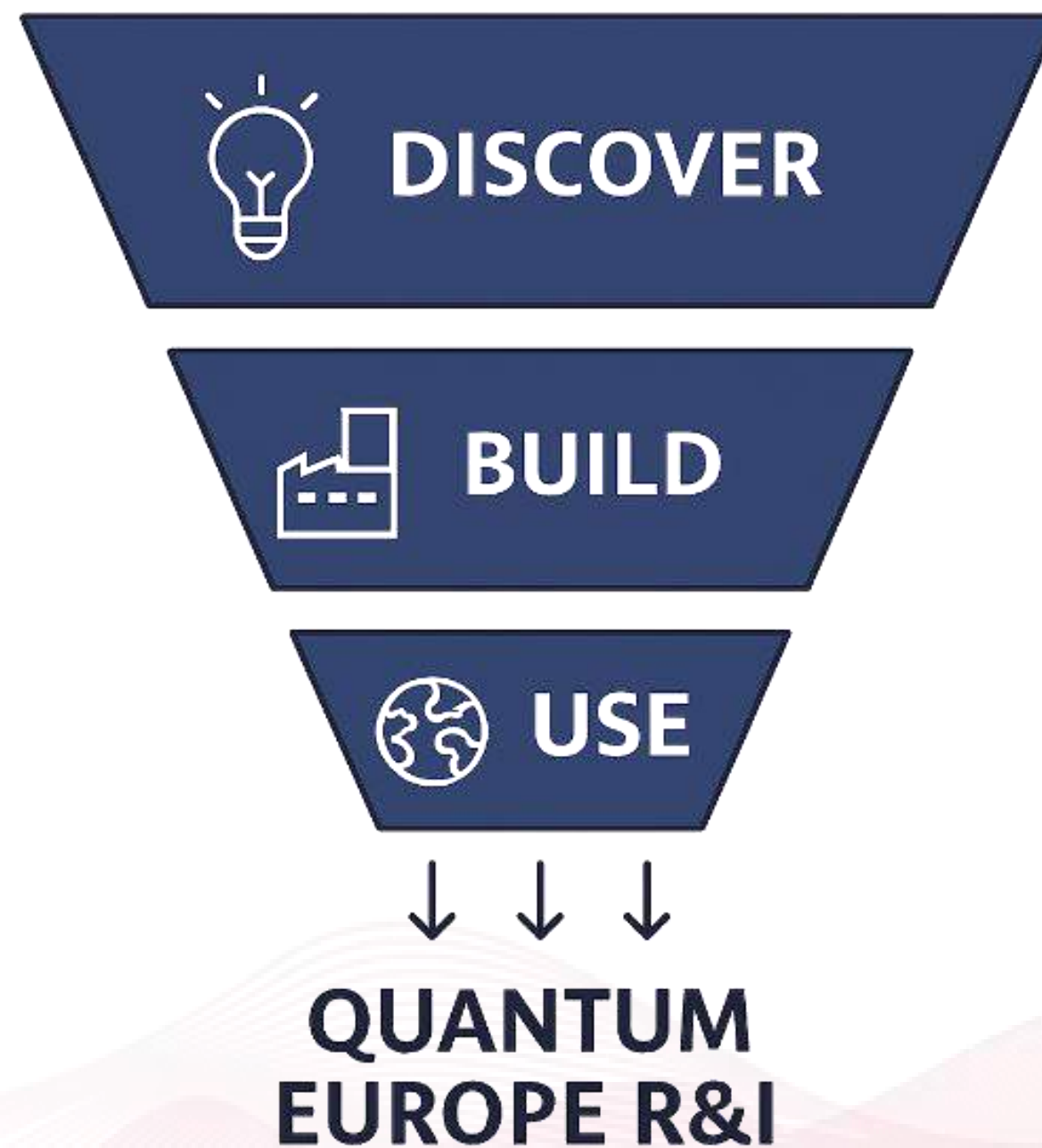


ITALIA



Strengthening the research and innovation ecosystem

FROM LAB TO MARKET



Coordination of research funding



Research attractiveness and internationalization



ALIGNMENT WITH QUANTUM EUROPE

ITALIA



Supporting the creation of mechanisms for permanent discussion of actors in the Italian ecosystem on QTs



Ensuring access to quantum technologies and infrastructure critical to the country



Promoting industrialization and entrepreneurship on quantum technologies nationwide

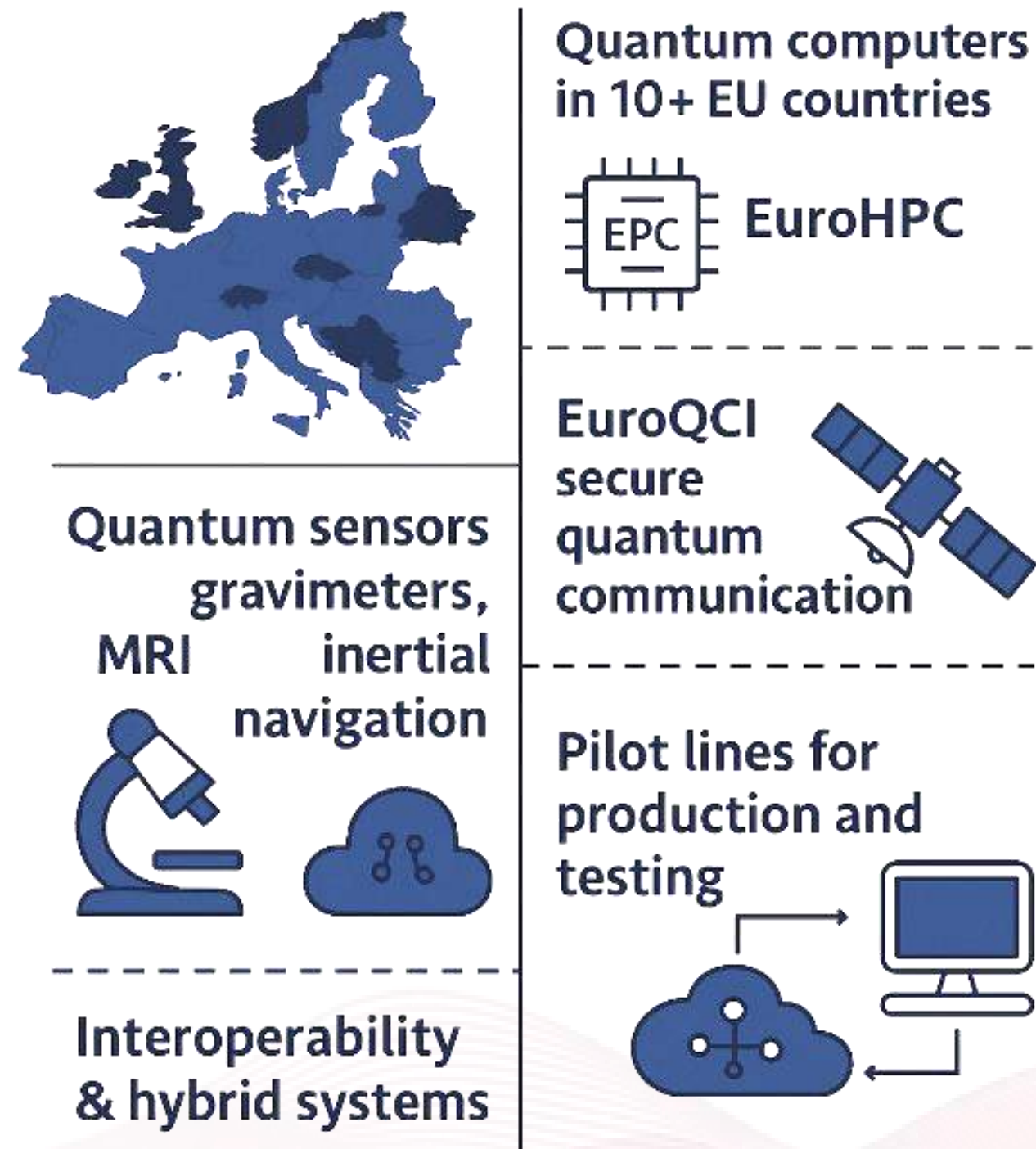
Funding for the creation of a structured and mature public-private ecosystem



Defining programs to disseminate knowledge and raise awareness about opportunities and risks in user enterprises



SCALING QUANTUM CAPABILITIES

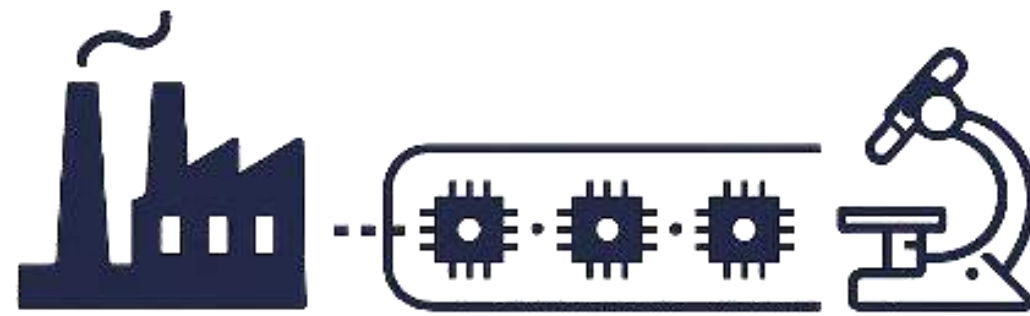


ALIGNMENT WITH QUANTUM EUROPE



ITALIA

GROWING EUROPE'S QUANTUM ECONOMY



- € 6 industrial pilot lines
- EU Design Facility + cloud-based tools
- Public procurement to stimulate demand
- QU-TEST: EU-wide certification + benchmarking
- IP strategy + resilience for EU supply chain

Financial instruments and incentives for growth



Skills development and strategic partnerships



Collaborative ecosystem for quantum innovation



ALIGNMENT WITH QUANTUM EUROPE



A QUANTUM WORKFORCE FOR THE FUTURE

110,000+ graduates/year in related fields

European Quantum Skills Academy (2026)

Training, scholarships, internships, mobility schemes

Outreach to schools and Widening Countries

Talent portal + 'Teach the Teacher' modules

Robust IP strategy



ITALIA



First, second and third level higher education

Workforce training and upgrading for industries



Widespread awareness and broad access to QTs

Developing a skilled workforce and creating an attractive market for domestic and foreign talent



ALIGNMENT WITH QUANTUM EUROPE



STRATEGIC AUTONOMY IN SPACE, SECURITY & DEFENCE

Quantum sensors for
GNSS-free navigation



Quantum communication
in IRIS² satellites

Roadmaps: PQC,
dual-use applications,
ESA cooperation



Quantum in EU defence
and NATO strategy

Quantum in EU defence
and NATO strategy



ITALIA

No dedicated section in the
Italian Quantum Strategy but
Ministry of Defense deeply
involved in the development

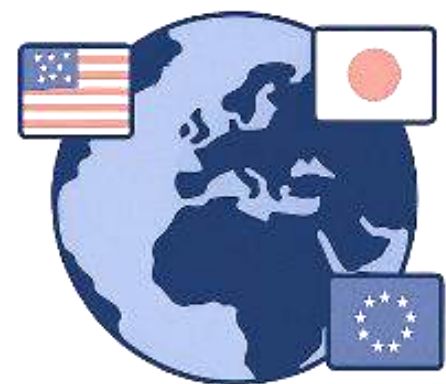


ALIGNMENT WITH QUANTUM EUROPE



EUROPE AS GLOBAL ACTOR

International Cooperation & Standards



Trusted partners:
US, Japan, Canada

Strategic autonomy:
EU-led components



EU shaping global
norms, ethics, and
standardisation



Quantum Internet
protocols and
certification



ITALIA

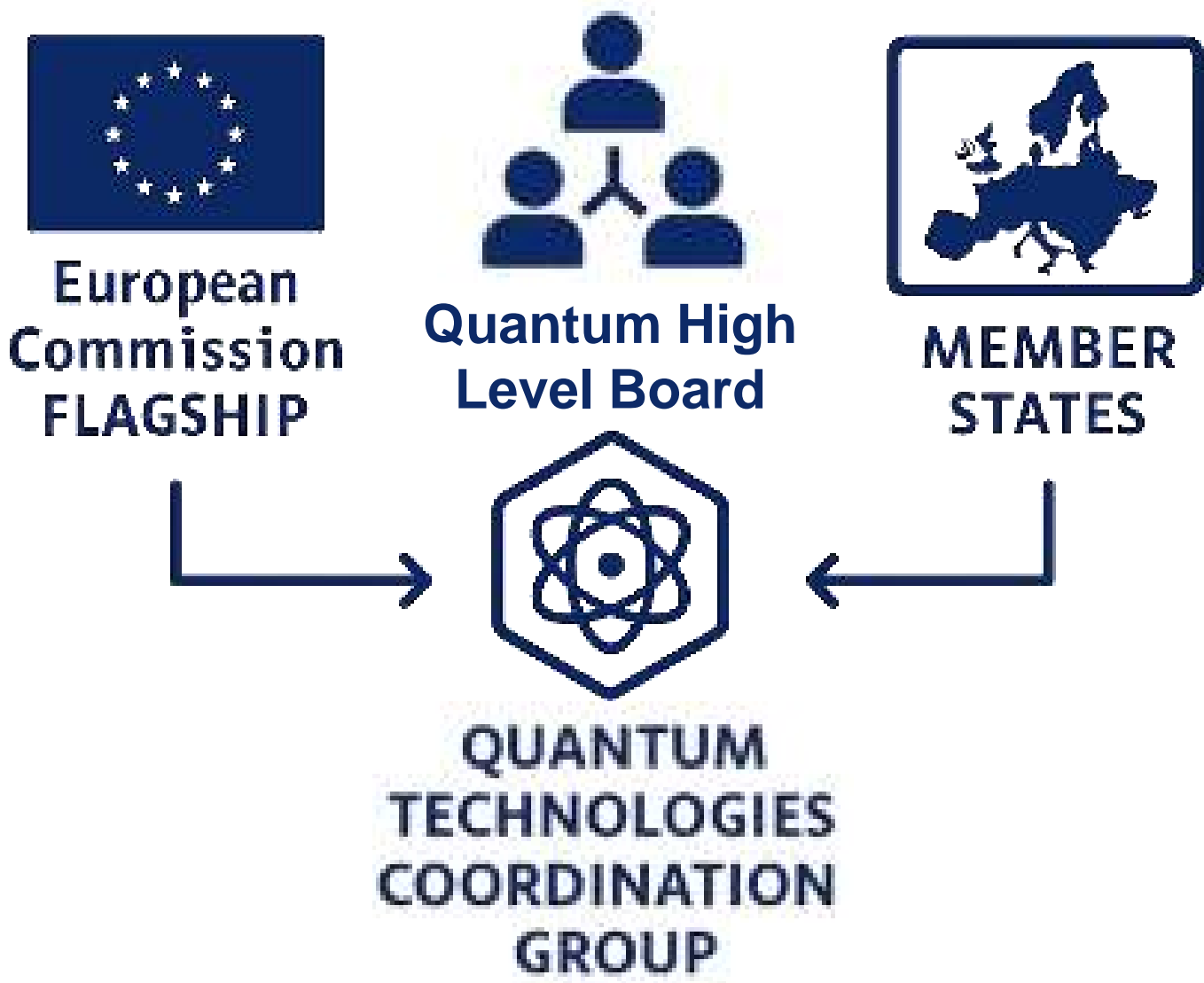


Promotion of international
cooperation in industrial and applied
research policies on quantum
technologies

ALIGNMENT WITH QUANTUM EUROPE

ITALIA

GOVERNANCE OF EU QUANTUM TECHNOLOGIES



GOVERNANCE MODEL

Standing Committee for
Quantum Technologies



*MIMIT, MUR,
Ministry of Defense,
MAECI, ACN, DTD,
scientific community
experts, relevant
business actors*



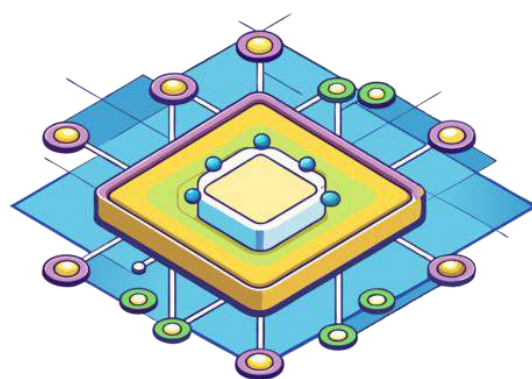
Policy-level Committee



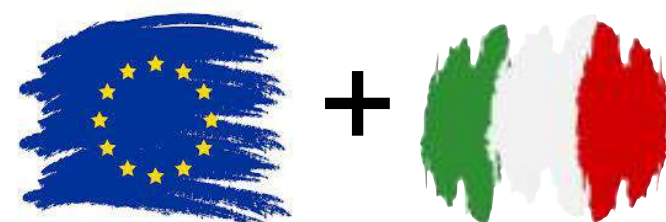
NATIONAL QUANTUM
COMPETENCE CLUSTER



Strategic Steering Committee



QUANTUM STRATEGY



**We lead in science
let's lead in tech**



**Strategic autonomy is a
necessity**

**A united EU quantum
ecosystem is essential**



**Together we build Europe's
digital and industrial future**



**Combine
scientific
leadership
with
industrial
strength**



**Ensure
technological
sovereignty**



**Translate
research
into
applications
and market
impact**



**Align with
European
values and
strategic
autonomy**