



REPUBLIC OF BULGARIA
MINISTRY OF EDUCATION
AND SCIENCE



Euro QCI National plan for Bulgaria

(1) The interest of your country to participate in a national/cross border development of QCI: Please confirm you are interested in participating in such work or not.

Yes, Bulgaria is interested to participate in a National/Cross-border development of the European quantum-secure communication infrastructure, according to the signed Declaration.

(2) If yes, please provide a first description of your national plan (1 page). This could include:

-The area that you plan to deploy a national QCI system, and the use case(s) that you would cover:

The National QCI system will be deployed in the following areas*:

- e-Government;
- International and Internal Security;
- Economy and Finances;
- Regional Development;
- Electro-Energy Distribution and Transport;
- Medicine and Health care;
- Social Policy;
- High-tech Industry.

**The specified areas are indicative and could be extended/complemented*

The use cases covered by the National QCI system in the mentioned areas would be oriented towards transfer of sensitive information and manipulation of databases, including personal data, inter-institutional information (both on EU level and National one), providing public services, etc.

- The possible actors that would implement such national effort and the way you plan to select them:

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Several possible actors that could implement the National QCI plan could be pointed out. Currently Bulgaria is developing a Center of Competence called “Quantum Communication, Intelligent Security System and Risk Management” (QUASAR), which is financed by the EU under the Operational Program “Science and Education for Smart Growth”. In the Center the Institute for Nuclear Research and Nuclear Energy and the Institute of Robotics of the Bulgarian Academy of Sciences, together with the Technical University of Gabrovo and 3 other big Bulgarian Universities are implementing a test terrestrial quantum communication infrastructure with several nodes. This pioneering local QCI is working on the Coherent-One Way Protocol, which is demonstrated to be compatible with the Wave-Division-Multiplexing technology of the standard Telecoms (using dark fibers). It would also be interesting to investigate, develop and implement other protocols, such as the entangled-pairs protocol (Ekkert 91), as well as QKD protocols which are appropriate for satellite communication.

The National QCI System will involve the corresponding management/administration structures in the above-mentioned areas, responsible on National and Regional level, as well as private structures engaged in the field of security and/or the management of critical infrastructure, databases, information etc.

- **On the National level** potential users/actors would be for example the Council of Ministers, Ministry of the Interior, National Revenue Agency, National Customs Agency, State Agency „National Security “, Ministry of Defense, etc.
- **On the Regional level** the possible users would be the Regional Administrations and Municipalities, as well as the critical infrastructures such as airports, railway infrastructure, coastal ports infrastructure, electro distribution infrastructure, hospitals, etc.
- **In the Business sphere** the potential users would be the Telecommunication Operators, Financial Institutions, such as Banks, Insurance Institutions, Medical and Transport Infrastructure Operators, etc.

The particular Participants would be selected from the Government of Bulgaria, in coordination with the Ministries of Charge, as well as The Regional Governors. In addition, after selecting the Participants, the Council of Ministers of Bulgaria would coordinate the legislation process to reflect the National QCI System in the corresponding Legal Acts.

- The first budgetary indications and the time schedule for deploying such national plan in the period 2021-2023 and the expected EU and national (financial) contributions



The initial indicative budget for the period 2021-2023 is estimated to about 7 Million EUR, 50% of which 50% from the EU and 50% National contribution.

(3) Potential interest to be involved in a cross-country experience that may involve deploying a QCI network together with other countries and/or through the common interface for satellite interconnection

Yes, Bulgaria is interested to be involved in a cross-country experience to deploy common interface for terrestrial and satellite interconnection. As a first step it would be discussed the cross-border connection Bulgaria-Romania (Rousse-Bucharest) eventually complemented with a satellite connection Sofia-Rousse. Cross-border interconnections with Greece, (terrestrial and/or space) would also be a subject for discussions.

(4) How would you expect your national QCI project to be coordinated with that of other countries?

We expect the coordination of the National QCI plans of the Member States to be organized by the EC.

Representative of Bulgaria in Euro QCI Board

Assoc. Prof. Lachezar Georgiev

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