Redefining Security
Professional Services
Quantum-Safe Digital Trust Expertise and Services

ID Quantique offers a broad range of services and technologies to help governments and organisations to build digital trust and to improve their cyber security posture in the quantum era.

IDQ's Professional Services bring our expertise to your own unique situation to design and deliver practical solutions that will improve your data security. Our teams can intelligently adapt IDQ's solutions to fit your organisation and to match your security standards and country regulations. These solutions are designed to work seamlessly with your existing systems.

Based on our extensive experience in industry-specific workflows, from consultation to implementation of a customised solution, our teams are focused on helping you keep your organisation efficient and productive, while ensuring long-term security of your data.

We offer advisory consulting, technologies and professional design and implementation services for secure digital trust products and platforms to help you build security for a quantum-safe future.

Key Markets

Telco & MSP

Financial Services

Government & Defense

Critical Infrastructure

Internet of Things

Intellectual Property Protection

Expertise & Services

Quantum technology & crypto
IP licensing, development and customisation

Secure agile crypto design
Hardware & software implementations

Crypto algorithms
Assessment, customisation and implementation

Quantum technology & crypto
Key generation, management and distribution
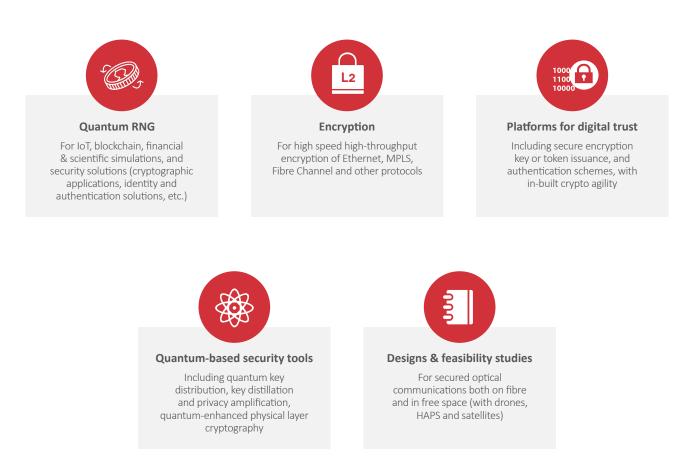
Unparalleled protection for long-term data

By harnessing the power of quantum mechanics, ID Quantique has developed a portfolio of quantum-safe security solutions which offers provably secure protection for mission-critical data into the post-quantum era.

TECHNOLOGY & IP LICENSING

IDQ's technology portfolio consists of advanced tools for quantum-safe encryption and post-quantum digital trust platforms, secure key generation and secure key distribution. IDQ has implemented its technologies in its own products, as well as providing the building blocks for the design and implementation of secure infrastructures for our global partners.

Our technologies and tools include:

Quantum RNG

For IoT, blockchain, financial & scientific simulations, and security solutions (cryptographic applications, identity and authentication solutions, etc.)

Encryption

For high speed high-throughput encryption of Ethernet, MPLS, Fibre Channel and other protocols

Platforms for digital trust

Including secure encryption key or token issuance, and authentication schemes, with in-built crypto agility

Quantum-based security tools

Including quantum key distribution, key distillation and privacy amplification, quantum-enhanced physical layer cryptography

Designs & feasibility studies

For secured optical communications both on fibre and in free space (with drones, HAPS and satellites)

Customised services

IDQ's broad range of capabilities includes secure crypto design, hardware & software implementation, applications & customisation of quantum technologies, providing you with the necessary crypto agility to reach quantum safety.

EXPERTISE

To stay competitive and protect yourself against data breaches, your team needs to prepare the future now. But finding the best solution can be time consuming and expensive, especially when complex business processes are involved. Benefit from our expertise to build digital trust and to improve your cyber security posture in a post-quantum era.

IDQ has proven implementation expertise in the following areas:

SECURE CRYPTO DESIGN

Generation of secure tokens and random numbers

✓ Design of agile crypto schemes

✓ Validation & testing of Quantum-resistant algorithms

✓ Implementation of custom ECC and other algorithms

✓ Customisation of S-box functions in AES core algorithms

✓ Tailoring of standards (X.509 and CMS/PKCS#7)

SECURE HARDWARE IMPLEMENTATION

Design & manufacture of secure HW crypto modules

✓ Implementation of crypto algorithms

✓ Implementation of symmetric key encryption algorithms

✓ Implementation of public key crypto algorithms

✓ VHDL code development

✓ FIPS & CC certifications of secured crypto modules

SECURE SOFTWARE IMPLEMENTATION

Secure & highly resilient architecture design

✓ Implementation of symmetric key encryption algorithms

✓ Implementation of public key crypto algorithms

✓ Crypto libraries for different applications

APPLICATION AND CUSTOMISATION OF QUANTUM TECHNOLOGIES

✓ Quantum randomness with customised outputs for integration into security, financial, blockchain and other applications

✓ Quantum Key Distribution expertise, from optical distribution (fibre-based and free space) to complete key processing

✓ Expertise on integration of QKD systems into backbone and access networks, including WDM architectures

✓ Expertise on quantum standardisation, interfaces and certification in collaboration with leading standardisation bodies

SELECTED CASE STUDIES

Critical Infrastructure security for ABB

IDQ co-designed and co-developed the SECU1 encryption card and management software to authenticate and encrypt MPLS traffic for ABB's XMC20 transport equipment for the critical infrastructure market. Special protocols ensure the time critical applications for utilities (such as electricity grids) depending on Precision Time Protocol are not impacted by the encryption. IDQ's Quantis QRNG is embedded in the board to ensure high quality key generation.

Secure Token Generation for Digital Currency

IDQ designed, developed and supported implementation of the security architecture and crypto elements for the issuance of secure digital money for use in a central bank. The elements included: secure crypto token issuance with unique serial numbers and authentication based on customised digital signature algorithms; management of cryptographic keys lifecycle, distribution, back up, update and expiration of tokens, with audit trials; validation and introduction of custom elliptic curves into commercially available HSMs.

Key Factory for Government and Defense

IDQ developed a highly secured encryption key generation platform based on multiple entropy sources for governments and defense clients, incorporating best practices in key scheduling, key mixing, key storage, key auditing. The platform includes live NIST testing of the final key material.

SUPPORT SERVICES

IDQ provides support and maintenance services for all products and solutions. Standard and premium support contracts are offered. Contact us for more information on Technical Support: support@idquantique.com or phone + 41 22 301 83 71.

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ID Quantique (IDQ) is the world leader in quantum-safe security solutions, designed to protect data for the long-term future. The company provides quantum-safe network encryption, secure quantum key generation and quantum key distribution solutions and services to the financial industry, enterprises and government organisations globally.

IDQ also commercializes a quantum random number generator, which is the reference in the gaming and security industries.

Additionally, IDQ is a leading provider of optical instrumentation products; most notably photon counters and related electronics. The company's innovative photonic solutions are used in both commercial and research applications.