Quantum Network

QKDN Security
in Q15/SG17

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Introduction

- Q15: Security for/by emerging technologies including quantum-based security

- Quantum-safe security with QKD/QRNG

Achievements

- **QRNG architecture**: X.1702

- **QKD security requirements, framework for key management, security measures for key management**
  XSTR.sec-QKD, X.1710, X.1712

- **Key combination and confidential key supply for QKD**: X.1714

- **QKD key usage for the various different layers of communication**: XSTR-HYB-QKD

- **Security requirements and measures for integration of QKDN and secure storage network**: X.1715

Updates

- **QKDN security perspective**

- **Currently working on 6 deliverables regarding Authentication & Authorization, Trusted Node, Control & Management, Interworking, QKD protocol and QKD/PQC hybrid approaches, respectively** : X.sec_QKDN_AA, X.sec_QKDN_tn, X.sec_QKDN_CM and X.sec_QKDNi, X.sec_QKD_profr, TR.hyb_qsafe

- **Approved 2 new work items recently regarding Framework of QKD protocols and Key management of hybrid approaches with QKD/PQC** (March 2023): X.sec_QKD_profr, TR.hyb_qsafe

Q15/17: Security for/by emerging techs including quantum-based security

Major Topics
Quantum-based Security

QKDN Security in general
QKDN Security Framework
QKDN Key Management
QRNGG architecture

QKDN integration to Secure Network Infra
Hybrid approaches for key exchange with QKD

QKDN Authentication & Authorization
QKDN Trusted Node
QKDN Control & Management

Security requirements for QKDN Interworking

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Major Topics
Emerging Techs

Incubation mechanism

Guidelines for security management of using AI tech

Security Capabilities Definitions
Security Data Schemas

Security middle platform architecture

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QKDN Authentication & Authorization
QKDN Trusted Node
QKDN Control & Management

Security requirements for QKDN Interworking

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Major Topics
Security for emerging Quantum Techs

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