Abstract

The chief aim of information security is to protect an organization's precious resources, for instance information related to emails, passwords, ATM cards and Credit cards etc., Quantum key distribution (QKD) offers an unconditionally secured means of communication based on the laws of Quantum Mechanics. Let us look into the available information from our some of our scientists from their Reports that QKD experiments in which secured keys could be
distributed over 42 dB channel loss and 200 km of optical fiber Cable Networks. Superconducting Single Photon Detectors Provides us a relatively Less dark count rate in a less Frequency and tiny Timing Jitter with 60 pico seconds full width at half maximum. Currently, a major challenge is to obtain a QKD system with a 40 dB channel loss, using World wide QKD Networks with the Help of Satellite Communications. This Property makes us to construct a 10-GHz clock QKD system and therefore distribute the Secured Keys on the channel loss of 42 dB. 'Qubits' are Quantum Bits which are the Binary Information digits in Ternary; they are safe and un-predictable data representation. Keys created in experiment are secured for General Collective Attacks (GCA), and a Specific Collective Attack (SCA) on single and multiple-photons. This protocol is Executed with 10-GHz clock frequency, and Superconducting Single Photon Detectors (SSPD) With the Support of NbN Nano-wire. This communication Hierarchical element adds the sender and the receiver in Quantum Cryptography. Therefore we are supposed to make a new algorithm for Throughput Optimization (TPO) in a Quantum Cryptography. Apart of this we they also obtained a 17 Kbit/s Secure Key Rate (SKR) over 105 km of Optical Fiber Cable, and also 12. 1 bit/s Secure Key Rate (SKR) over 200 km of Optical Fiber Cable. Therefore we are required to create a new procedure to increase Throughput in Quantum Computers. These are the Key Elements of Quantum Cryptography in coming Quantum Computers. This Approximate Solution Algorithm (ASA) gives us a major reduction in computation time in contrast to available methods. They use the Quantum Key Distribution with Differential Phase Shift (DPS-QKD). This also provides reasonable size and large size of Computer related problems to solve. We need to obtain the fixed regular Qubits with the Help of 'Approximate Solution'. A Collection of Qubits could be effectively assigned to Hierarchical Structure at any throughput level. This is the longest World Wide QKD that can be established.

References

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Index Terms

Computer Science  Security
Keywords

Qc (quantum Cryptography)  Quantum Key Distribution (qkd)  quantum Key Distribution With Differential Phase Shift (dps-qkd)

superconducting Single Photon Detectors (sspd)

genral Collective Attacks (gca)

specific Collective Attack (sca)

throughput Optimization (tpo)

approximate Solution Algorithm (asa)

Protocols Layered System(pls)

application-specific Networking Methods (asnm)

transport Layer (tl)

transit Networks (tn)

link Layer (ll)

local Network Link(lnl)

internet Protocol (ip)

routing Tables (rt)

border Gateway Protocol (bgp)

quantum Cryptographic Hierarchical Structure(qchs).