US 20240214190A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2024/0214190 A1**

Mentovich et al. (43) **Pub. Date: Jun. 27, 2024**

(54) **QUANTUM KEY DISTRIBUTION ENABLED INTRA-DATACENTER NETWORK**

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(21) Appl. No.: **18/400,647**

(22) Filed: **Dec. 29, 2023**

Related U.S. Application Data

(63) Continuation of application No. 17/155,881, filed on Jan. 22, 2021, now Pat. No. 11,895,233.

(30) **Foreign Application Priority Data**

Dec. 28, 2020 (GR) 20200100753

Publication Classification

(51) **Int. Cl.**

H04L 9/08	(2006.01)
H04B 10/85	(2006.01)
H04Q 11/00	(2006.01)

(52) **U.S. Cl.**

CPC ***H04L 9/0852*** (2013.01); ***H04B 10/85*** (2013.01); ***H04Q 11/0071*** (2013.01); *H04Q 2213/13339* (2013.01)

(57) **ABSTRACT**

Embodiments are disclosed for a quantum key distribution (QKD) enabled intra-datacenter network. An example system includes a first QKD device and a second QKD device. The first QKD device includes a first quantum-enabled port and a first network port. The second QKD device includes a second quantum-enabled port and a second network port. The first quantum-enabled port of the first QKD device is communicatively coupled to the second quantum-enabled port of the second QKD device via a QKD link associated with quantum communication. Furthermore, the first network port of the first QKD device is communicatively coupled to a first network switch via a first classical link associated with classical network communication. The second network port of the second QKD device is communicatively coupled to a second network switch via a second classical link associated with classical network communication.