

# Toward Un-hackable Quantum Network

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Quantum key distribution (QKD) aims to provide an information theoretically secure way to distribute secret keys. However, practical devices may not follow the theoretical assumptions, which leaves a backdoor for eavesdropper to exploit. Single photon detectors are considered to be the most vulnerable part in QKD systems. Measurement device independent (MDI) protocol provides a way to remove all detector side channels by introducing an untrusted relay performing Bell-state measurement jointly on the prepared states. The relay can also serve as the central node of a quantum network, which allows quantum communication without trusted relay or point-to-point communication which is hard to scale up.

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