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## Advancements on QKD networking in space and on the ground

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Recent cyber-attacks to national networks have highlighted the importance of developing an Italian cybersecurity infrastructure where QKD could play an important role by enabling the generation of secure cryptographic keys. The QuantumFuture group is involved in various research projects (eg., OPENQKD) aimed at developing fully-functioning and innovative QKD systems able to operate in the existing fiber telecommunication networks. Moreover, free-space ground-to-ground links and satellite channels will be an integral part of future quantum networks, and we are working on the inter-modal implementation of free-space and fiber links. An overview of the QKD methods developed by QuantumFuture will be given, as well as a presentation of the recent results obtained in field-trials over the Padua network will be presented.

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