Nordhausen Testbed (Berlin → Erfurt → Frankfurt)

This testbed is a quantum communication corridor in Central Germany for testing quantum-secured fiber-based communication technologies under real-world conditions. It connects key sites including DE-CIX Internet Exchange (Frankfurt), Erfurt and Fraunhofer HHI, Berlin, (Extended over 680 km), forming a scalable backbone for future quantum networks. The infrastructure enables the deployment and evaluation of quantum key distribution (QKD) and related protocols over regional and intercity distances. It supports research on secure quantum communication within a broader German and European innovation ecosystem.

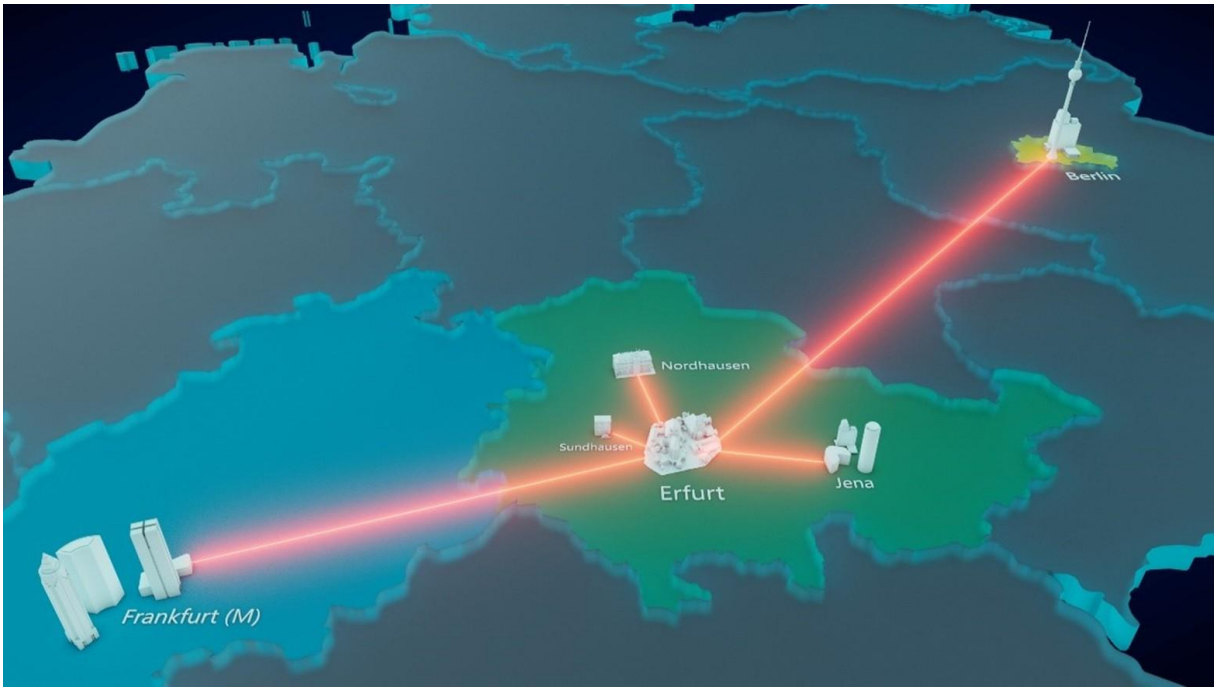

Fig.1 Schematische Darstellung der Teststrecken. © Fraunhofer IOF

A: Brief Information

Testbed Title	Nordhausen Testbed (Erfurt–Berlin–Frankfurt)
Institution/Organization	**Fraunhofer HHI** (Heinrich Hertz Institute, Berlin)
Contact	Andy Schreier, andy.schreier@hhi.fraunhofer.de
Status	Active

B: Technical Information

Start Point	End Point	Length [km]	Losses [dB]	Type of Transmission
Berlin	Schäpe	93,50	23	Free space link
Schäpe	Köckern	93	23,7	Fiber
Köckern	Eulau	82,70	21,2	Fiber
Eulau	Erfurt	112	30,0	Fiber
Erfurt	Eisenach	86	22,2	Fiber
Eisenach	Eiterfeld	60,5	16,0	Fiber
Eiterfeld	Schlüchtern	68,7	17,5	Fiber
Schlüchtern	Frankfurt	84,2	22,5	Fiber
Supported Wavelengths [nm]	1260-1625 (C-Band)			
polarization stabilization	No			
Type of Fiber	Single mode			
Type of Deployment	underground			
Quantum Communication Infrastructure				
Available Infrastructure for external Parties				

C: Additional Information

Linked Projects	Q-Net-Q, Quant-GPlCz
Press Release and Publications	
Demonstrated Milestone	
Outlook	will be used in follow up project Quant-GPlCz
Suggested Use Cases	

Other Comments/ Information	