2030 Lisboa
PROGRAMA REGIONAL DE LISBOA

LUMIRing_iscte
Lisbon Underground
Multicore Fiber Ring

Lisbon Underground Multicore Fiber Ring

Iscte - University Institute of Lisbon

Lisbon

The LUMIRing project aims to deploy a multi-core fiber (MCF) test bed within Lisbon Metro's Yellow Line — an ambitious and groundbreaking initiative to explore weakly coupled (WC) MCF transmission under real-world conditions. By leveraging the harsh mechanical stresses caused by metro operations in underground tunnels, the project offers a unique opportunity to investigate and address real-life transmission challenges. A core goal is to design, implement, and validate advanced techniques that mitigate performance degradation and integrate data transmission with sensing, pushing the limits of current MCF capabilities. The test bed infrastructure includes a 12-tube cable, with each tube containing 12 fibers. The cable contains 74 standard cladding diameter WC-MCFs (of 5 different types, with 4 and 7 cores and with step and trench-assisted refractive index profiles) and 70 conventional single-mode fibers (SSMFs).

Investimento total
1.471.121,00 €

Apoio financeiro da União Europeia
588.448,40 €

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Cofinanciado pela União Europeia