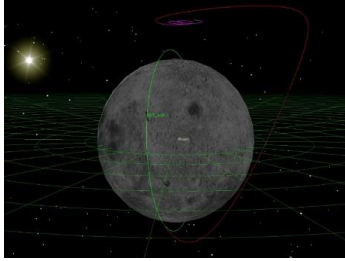


J. Querol, A. Astro, Z. Bokal, J. Duncan, M. Gholamian, O. Kodheli, J. Krivochiza, S. Kumar, C. Martinez, N. Maturo, L. Rana, J. Thoemel, S. Chatzinotas, M. Olivares-Mendez, T. Van Dam, B. Ottersten
SnT, University of Luxembourg

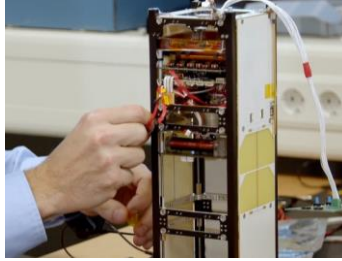


Project Description

The 5G Space Communications Lab (5G-SpaceLab) allows users to design and emulate realistic and novel space communications, as well as control scenarios for the next-generation of space applications.



Communications design



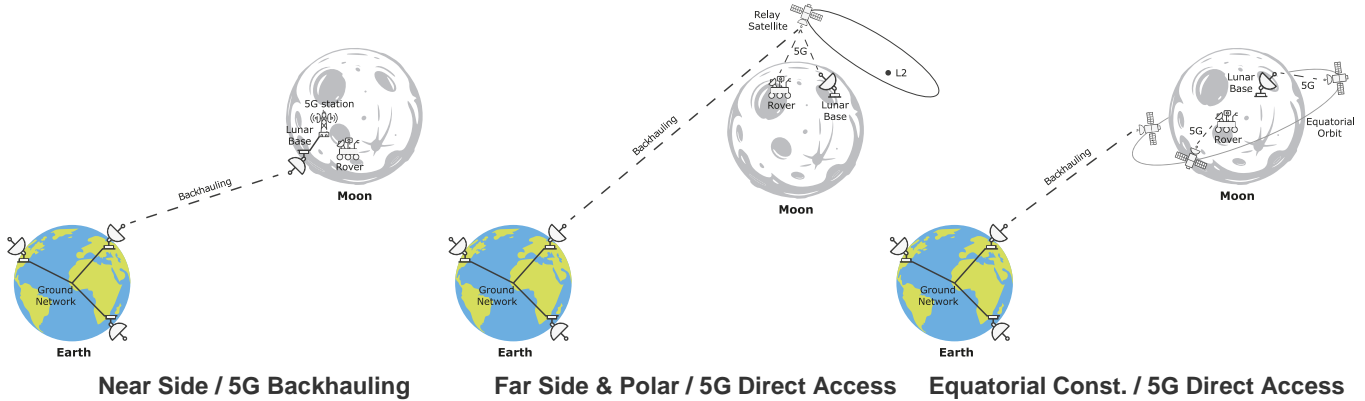
Hardware Prototyping



Experimentation facilities

Lunar 5G Communications

The 5G-SpaceLab enables full design of lunar 5G communications architectures, with software defined radio 5G base-stations and terminals (broadband & IOT), and a channel emulation with link budget, delay and Doppler.



Teleoperated Lunar Rover

The 5G-SpaceLab allows emulation of Earth-Moon communication delays, enabling the development of advanced perception and control strategies for the near real-time teleoperation of lunar rovers.



LunaLab: Lunar Analogue facility

- ➔ Bidirectional communication for data collection and sensor feedback
- ➔ AI-based approaches for trustworthy and efficient teleoperation of rovers
- ➔ Analysis of the effects of communication delays in the teleoperation task

In collaboration with:



Contact:

- Website ([link](#))

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