



BRNO
UNIVERSITY
OF TECHNOLOGY



FACULTY OF ELECTRICAL
ENGINEERING AND COMMUNICATION
department
of telecommunications

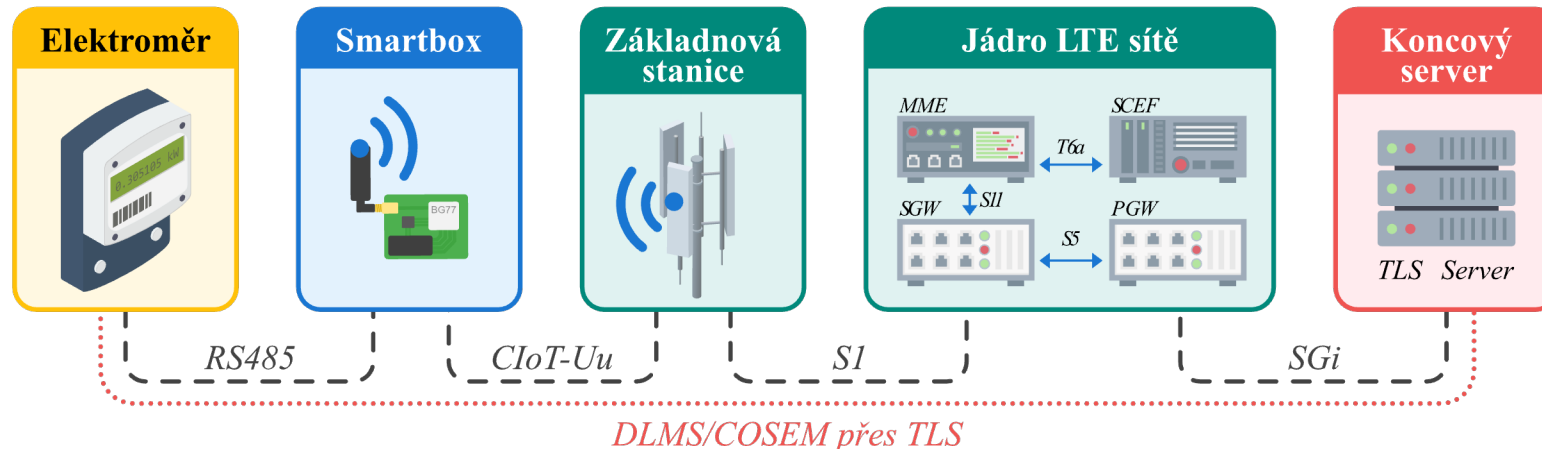
perFEKT Business Day

5G+ Wireless Communication Technologies

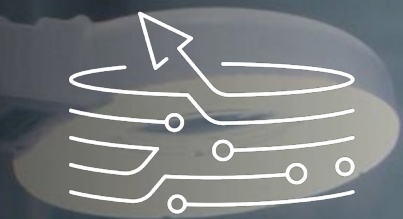
Presented by: Dr. Pavel Masek

Brno, 2025

- WISLAB and CyberGrid -> **#VodafoneUniLab**
 - Contributor to 3GPP standards.
- **Recent joint research areas.**
 - 5G+ communication systems.
 - Industry 4.0, SmartGrid infrastructure.
 - HW design, prototyping, lab. measurements.



#VodafoneUniLab



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 **vodafone**
business

- Development of 5G+ (5G NSA, SA, IoT) communication technologies.

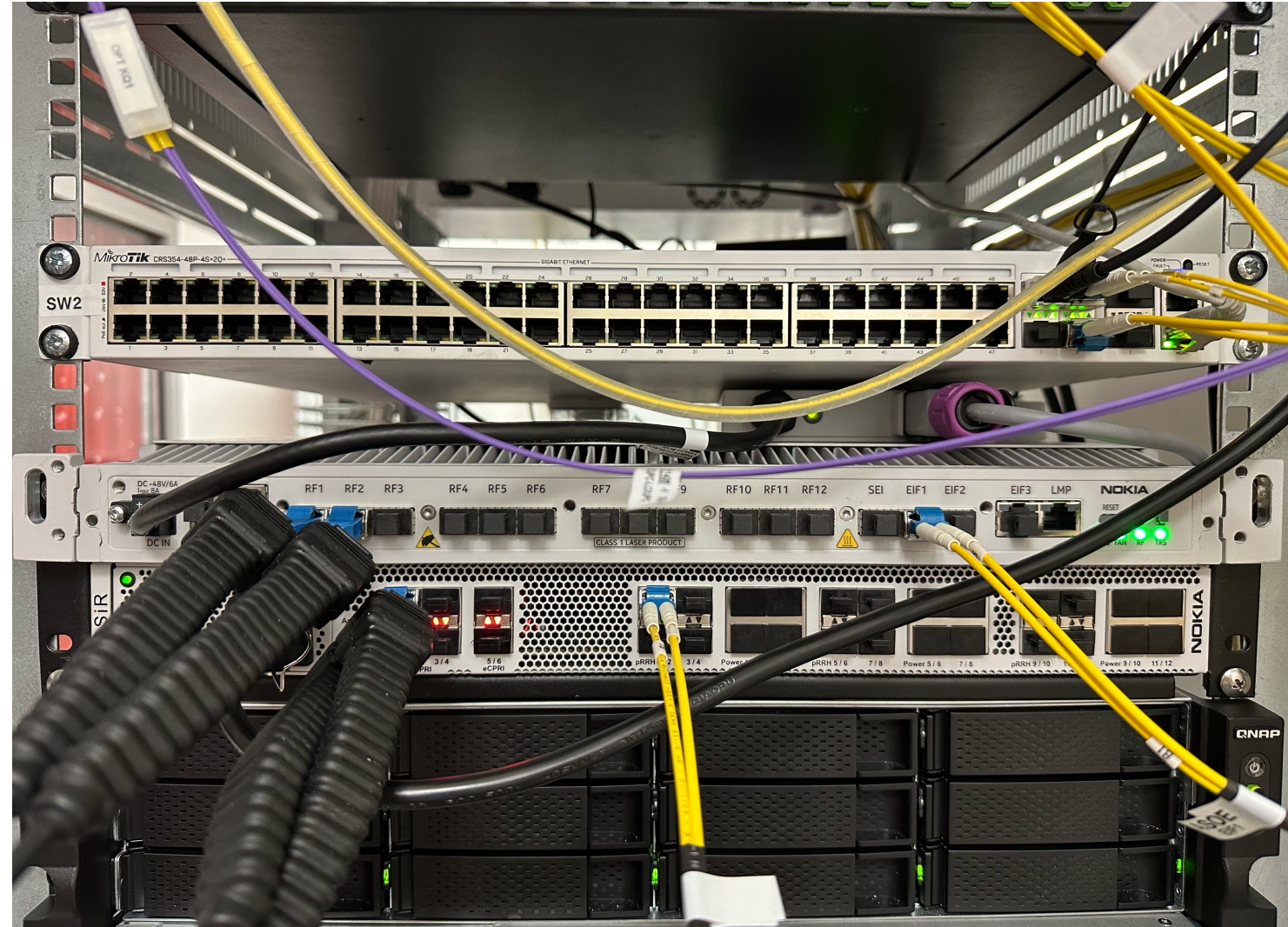


Our Partners



- **#1 laboratory for the development of 5G-IoT devices.** and mmWave communication in the Czechia.
- Implementation and verification of security mechanisms in public/private 5G+ systems.
- Laboratory in cooperation with the Ministry of Industry and Trade and Czech Telecommunication Office.
- **Augmented and virtual reality.**
 - Integration within emergency services scenarios
 - Real-time communication during the intervention.
- **Autonomous transportation.**
 - Development of autonomous robots, AGVs, ...
- **Stress testing of mobile networks**
 - Cooperation with industry partners, distributors, telco.

- Up to 100 MHz bandwidth allocation (C-band).
- **RAN part located at BUT #VodafoneUniLab.**
- Core part integrated in Prague.
- 10Gb/s optical connection between Brno and Prague.
- Prepared infrastructure for 5G+ use-cases (research and development).





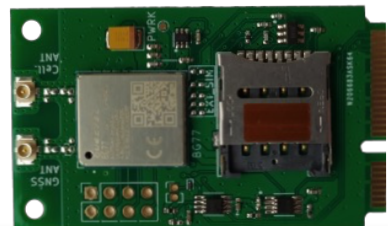
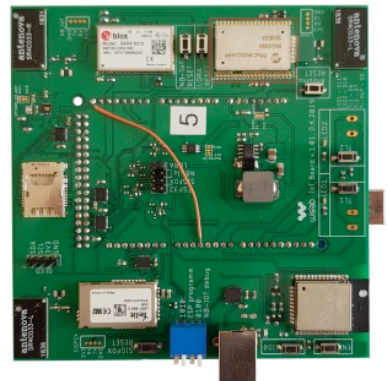
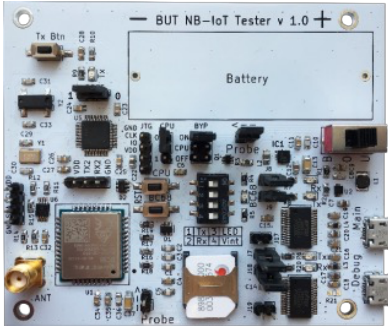
Smartbox – Smart Metering and Management Utilizing 5G-IoT

Research

Design

Verification

Production





Smartbox – Smart Metering and Management Utilizing 5G-IoT





Thank you for your attention.

Brno University of Technology,
Faculty of Electrical Engineering and Communication,
Department of Telecommunications

masekpavel@vut.cz



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