FUTURE INTERNET TESTBEDS EXPERIMENTATION BETWEEN BRAZIL AND EUROPE

Co-funded by the European Union

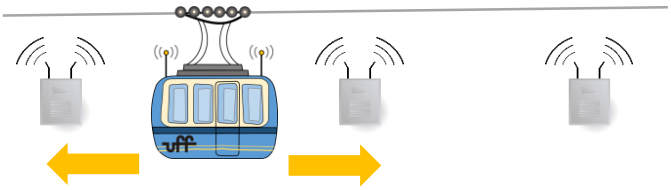
Pilot Use Case n.1

Seamless handoffs over wireless networks

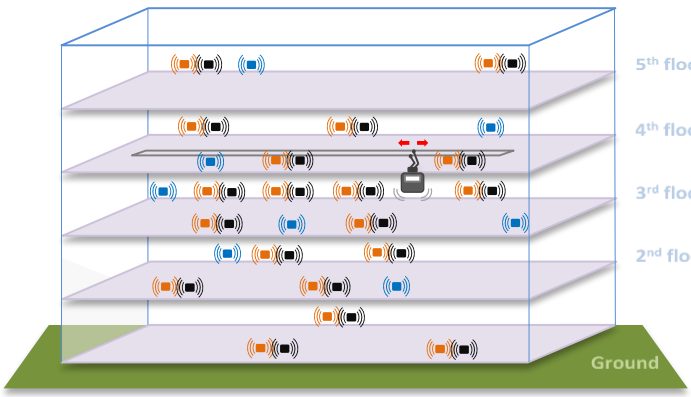
The UFF wireless testbed

Installed in the building of the School of Engineering at the Fluminense Federal University (UFF) in Brazil, this shared local testbed allows experiments in wireless networks. It also features **support for remote experimentation with reproducibility**.

Student performing horizontal handoff experiments, walking with his notebook across multiple access points.

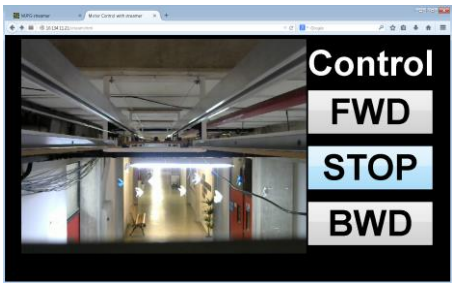


Automated experiment of horizontal handoff.
Course and speed are easily reproduced and remotely controlled.



Distribution of access points in the 5-storey building.

- Ícarus: Programmable wireless router developed by UTH.
- Mini-ITX: Low-cost programmable wireless router assembled by UFF.
- TP-Link 842nd: Monitoring infrastructure nodes.
- "Cable car" hanging from the ceiling of the 3rd floor- to automate the displacement. Extension = 100m.

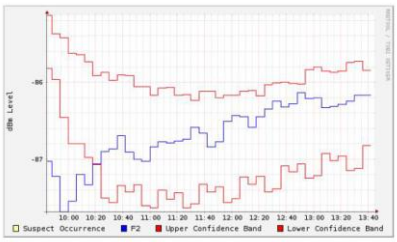


"Cable car" webcam and remote control

"Ícarus" Wireless Router
customized for FIBRE Project and
developed by University of Thessaly (UTH), Greece.

Monitoring System

Through a side spectrum monitoring infrastructure, experimenters can verify the quality of wireless signals by detecting the presence of band interferences.



Signal strength - graphic generated in real time
by the monitoring infrastructure.

Type of experiments

- Horizontal and vertical handoffs (IEEE802.11b/g/n, IEEE802.11a/b/g/n and bluetooth);
- Mobile ad hoc networks;
- Delay-tolerant networking (DTN).