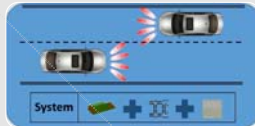


Vehicular Communications

Background and Challenges



DSRC: IEEE 802.11p and WAVE
Inter-technology: DSRC, WiFi, Cellular



Antenna design for vehicles and stations
Software Defined Radio



Network of Vehicles and Infrastructure: handovers of vehicles, routing, security



Integration with sensors: delay tolerant communications, real applications



Real Platforms: lab environment with lego cars,
Real platforms with BRISA, FIAT, fleets (trucks, buses, taxis)

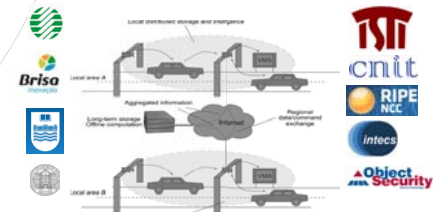
Current Activities



Vehicular Delay Tolerant Networks, EU FP7 NoE Euro-NF, 2011
VDTN@Lab, PESTOE 2011/12
Protocols, Services and Applications for Delay Tolerant Networks



DRIVE-IN, CMU-PT, 2008-2012
VTL Project, FCT, 2012-current
FUTURE-CITIES, EU FP7, Capacities, 2012-current
SenseBusNet, PESTOE 2013/14, 2014-current
Vehicular networks between vehicles and stations, integrated with sensors



HEADWAY, Brisa Inovação, 2008-current
Intelligent Coop. Sensing for Improved traffic efficiency, EU FP7 STREP 2013-current
Cooperative sensing and emergency applications

Achievements

Largest vehicular network in the world over 600 vehicles

In-House vehicular equipments and technology

Spin-off Veniam'Works, GeoLink, close cooperat. Brisa Inovação, FIAT

8 patents: 6 explored commercially

Over 50 High Impact Factor Publications, PhD Theses

Future

H2020 and CMU-Portugal Proposals

H2020 Tolling and Cooperative systems
CompAtibility Technology enhancement

H2020 EU-BRAZIL on Smart Cities

H2020-MSCA-ITN-2015 Innovative Training Networks on Mobile Networks

CMU-Portugal 2nd Call for Entrepreneurial Research Initiatives on Smart Cities