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
- Over 50 High Impact Factor Publications, PhD Theses
- 8 patents: 6 explored commercially

Future

H2020 and CMU-Portugal Proposals

- H2020 TOlling and Cooperative systems
  Competibility 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