

# **Carrier Grade Mesh Networks? The Vehicular Mesh case**

**MeshNet Workshop, Santander, June10 2009**

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# Issues

- **Is mesh a successful technology in the market place? Will it ever be?**
- **Is there a demand for heterogeneous mesh networks?**
- **Is it feasible to provide carrier grade services with mesh networks?**
- **What are the remaining key challenges to be solved in mesh networks?**

## **Mesh a successful technology**

- **The success of the Vehicular Mesh is tied to that of the VANET**
- **The compelling applications for VANET are there**
  - Safe Navigation
  - Intelligent transport
  - Etc
- **There are still many issues to resolve before VANETs become common place:**
  - Liability issues
  - Privacy issues
  - Penetration dependence for some applications
- **If the VANET takes off, it will pull the Vehicular Mesh with it**

# Heterogeneous Vehicular mesh networks?

- **In an Emergency Mode, lots of heterogeneity**
  - Fixed nodes and Mobile nodes
  - Some nodes will use Cog Radios and White Spectrum for connectivity

# V-Mesh with emergency links (green)

## Carrier grade service?

- **Is carrier grade services needed?**
  - The Mobile Mesh will have very strict QoS and reliability in Navigation Safety and in Emergency applications
- **Is carrier grade services feasible?**
  - That is what we are striving to achieve!
  - Unfortunately, the Mobile Mesh environment is less friendly than the conventional fixed Mesh environment

# Remaining key challenges

- **For the Vehicular Mesh:**
  - QoS: low latency for vehicular safety applications
  - Security and Privacy
  - Reliability, redundancy (unpredictable radio channel in urban environment)
  - Flexibility, reconfigurability
  - Heterogeneous operation support
  - Close interworking between Mesh and Infrastructure

**Thank You!**