Carrier Grade Mesh Networks?
The Vehicular Mesh case

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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!