

Call for Papers

IEEE Wireless Communications Magazine

Special Issue on “**Inter-Vehicular Communications**”

(pdf version of this CFP is available at <http://www.3g-wireless.net/IVC-CFP.pdf>)

Wireless communications technologies (cellular phones, wireless LANs, etc.) have enabled many of the conveniences in our lives, and also increased our day by day productivity. Another area where there is much potential for wireless technologies to make a tremendous impact is the area of inter-vehicular communications (IVC). The field of IVC is also known as vehicle-to-vehicle communications (V2V) and vehicular ad hoc networks (VANET).

There are numerous emerging applications that are unique to the vehicular setting. For example, safety applications would make driving safer; driver information services could intelligently inform drivers about congestion, businesses and services in the vicinity of the vehicle, and other news. Mobile commerce could extend to the realm of vehicles. Existing forms of entertainment may penetrate the vehicular domain, and new forms of entertainment may emerge, all supported by the inter-vehicular communications capabilities. These emerging services are currently not well supported.

Numerous research challenges need to be addressed in order for inter-vehicular communications to be widely deployed. The combination of unique features of inter-vehicular applications and networking opens new opportunities for many interesting research areas. The communications networking between cars has different characteristics from other communications networking problems. For example, because of the rapidly changing topology as cars move around, there are similarities with ad hoc networking scenarios. However, the constraints and optimizations are different. Power efficiency is not as important for inter-vehicular communications as it is for traditional ad hoc networking, since vehicles have a powerful and rechargeable source of energy. Vehicles in general are also constrained to move within roads (and within lanes most of the time).

The purpose of this special issue is to showcase the variety of research being conducted in IVC and survey the state-of-the-art in this field. We solicit original unpublished manuscripts not currently being considered elsewhere for publication. Topics of interest include, but are not limited to, the following:

- Service creation and management
- Vehicular communications applications in general
- Navigation safety applications
- Content distribution to vehicles
- Vehicle data collection and harvesting
- Role of IVC in Intelligent Transport Systems (ITS)
- Link and physical layer issues, algorithms and protocols
- Cross-layer protocol design
- Network architectures, system architectures
- Inter-working of vehicle-to-vehicle and vehicle-to-infrastructure communications
- Network protocols and algorithms, including clustering, routing, etc.

- Vehicle movement simulation
- Security for IVC
- Network management for IVC
- Mobility management

Articles should be tutorial in nature and should be written in a style comprehensible to readers outside the specialty of the article. All submissions will be reviewed based on technical merit and relevance. Articles should have no more than 4,500 words, no more than 6 tables/figures, and no more than 15 references. Further submission guidelines are available online at http://www.comsoc.org/pubs/pcm/sub_guidelines.html. Please send PDF (preferred), Microsoft Word, or PostScript formatted papers to both Daniel Wong (daniel_wong@ieee.org) and Kemal Tepe (ktepe@uwindsor.ca) no later than 15 February 2006.

Deadlines

Manuscript due	February 15 2006
Acceptance notification	April 15 2006
Final manuscript due	June 15 2006
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