Multi-Vehicle Networks

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Where: Jakob-Haringer-Str. 2, Room T02

When: Wednesday, May 18, 2011, 13:00 s.t.

The marriage of wireless ad-hoc communication and embedded computing is enabling new frontiers in robotic vehicles. We will show how sensing, communication, and control technologies are combining to realize unmanned air vehicle networks and collaborating cars. Our UAV's use Wi-fi to autonomously divide sensing tasks amongst themselves. Our cars communicate to track each other and provide sub-second warning to their drivers to enhance the safety of road travel. I will show how these new multi-vehicle networks call for new theoretical developments and synergies between control, middleware, and embedded computing, and present some mathematical results.

Dr. Raja Sengupta is currently Associate Professor in the Systems program of the department of Civil and Environmental Engineering at the University of California at Berkeley. He received his Ph.d from the EECS department of the University of Michigan, at Ann Arbor. He has served as PI of the Safetrip-21 Networked Traveler project and Principal Investigator of the CICAS ñ Signalized Left turn assist projects. His current research interests are in DSRC, networked estimation and control, vision based control of unmanned air vehicles, and collaborative behavior in robotic systems. He has served as Associate Editor of the IEEE Control Systems magazine and of the Journal of Intelligent Transportation Systems. He was Program Chair of the IEEE Conference on Autonomous Intelligent Networked Systems 2003 and Co-General Chair of the first ACM MOBICOM Workshop on Vehicular Ad-hoc Networks held in 2004, Co-Chair of the Program Committee for the second ACM MOBICOM Workshop on Vehicular Ad-hoc Networks held in 2005, Program Chair for the First International Symposium on Vehicular Computing Systems 2008, and will be Co-General Chair or IEEE WIVEC 2011.

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