Many routing protocols have been proposed by researchers for possible practical implementation of a Mobile Ad-Hoc Network (MANET) in military, government and commercial environments. Examples of such protocols include: Ad Hoc on demand Distance Vector routing (AODV), Dynamic Source Routing (DSR), Optimized Link State Routing (OLSR) and Temporally Ordered Routing Algorithm (TORA), and many others. We also have reactive and proactive routing protocols. In most of these routing protocols, security is built on top of the protocol. In many cases, this turn out not to be the best approach in terms of being fully secured. Therefore, we propose a new security feature that will be designed from the ground up considering the routing concepts with the security and trust integrated. We call this new protocol model “Trust-Aware Routing Protocol (TARP).” TARP focuses more on the trusted availability and quality of trust as important factors in securing Ad Hoc networks.

In this talk, we review the current Ad-Hoc routing protocols and investigate their security features. Then, we discuss the details of the new proposed protocol, TARP, and show how we believe that it will resolve some the current security problems that Ad-Hoc networks are facing today.

Bio:

Mohsen Guizani is currently a Full Professor and the Chair of the Computer Science Department at Western Michigan University. He served as the Chair of the Computer Science Department at the University of West Florida from 1999 to 2003. He was an Associate Professor of Electrical and Computer Engineering and the director of graduate studies at the University of Missouri-Columbia from 1997 to 1999. Prior to joining the University of Missouri, he was a Research Fellow at the University of Colorado-Boulder. From 1989 to 1996, he held academic positions at the Computer Engineering Department at the University of Petroleum and Minerals, Dhahran, Saudi Arabia. He was also a Visiting Professor in the Electrical and Computer Engineering Department at Syracuse University, Syracuse, New York during academic year 1988-1989. He received his B.S. (with distinction) and M.S. degrees in Electrical Engineering; M.S. and Ph.D. degrees in Computer Engineering in 1984, 1986, 1987, and 1990, respectively, all from Syracuse University, Syracuse, New York.

His research interests include Wireless Communications and Computing, Computer Network Security, Design and Analysis of Computer Systems, and Optical Networking. He currently serves on the editorial boards of many national and international journals, such as the IEEE Transactions on Wireless Communications, IEEE Transactions on Vehicular

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Dr. Guizani is the Chair of the IEEE Communications Society Technical Committee on Transmissions, Access, and Optical Systems (IEEE TAOS), the Secretary for the IEEE Communications Society of Personal Communications (IEEE TCPC), and a member of the Computer Network Security Technical Committee. Dr. Guizani is designated by the IEEE Computer Society as a Distinguished National Speaker from January 2003 to December 2005. He is also ABET Accreditation Evaluator for Computer Science and Information Technology Programs.

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Dr. Guizani is a senior member of IEEE, member of IEEE Communication Society, IEEE Computer Society, ASEE, ACM, OSA, SCS, and Tau Beta Pi.