BCWS Seminar Series

Software Defined Radio and Simultaneous Multi-Radio Operation

by

Professor Michel Barbeau
Carleton University

Time: Wednesday, April 7, 1:30 - 2:30 pm
Place: Room 4356, Mackenzie Building, Carleton University

Abstract: A Software Defined Radio (SDR) is a transceiver implemented by a software system running over a hardware platform combing processing and radio frequency components. A SDR has several advantages. One is the capability of dynamic reconfiguration and quickly switching from one communication mode to another. It is also possible to transmit and/or receive simultaneously on several radio channels. This possibility, however, presents scheduling issues because the operation of multiple radios creates problems of interference and resource access conflicts. In this presentation, the concept of SDR will be explained. The problem of scheduling the tasks of multiple radios will be addressed. In particular, the problem of radio channel scanning will be analyzed. Three approaches, based on sequential, pseudo-concurrent and concurrent models, will be presented.

Biography: Michel Barbeau is a professor of Computer Science. He received his Bachelor, Master's and Ph.D. in Computer Science, from Universite de Sherbrooke, Canada (1985), for undergraduate studies, and Universite de Montr\´eal, Canada (1987 & 1991), for graduate studies. From 1991 to 1999, he was a professor at Universite de Sherbrooke. During the 1998-1999 academic year, he was a visiting researcher at the University of Aizu, Japan. Since 2000, he works at Carleton University, Canada. Wireless communications has been his main research interest. He focuses his efforts on wireless security, vehicular communications, wireless access network management, ad hoc networks and RFID.