



**For Immediate Release**

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## **Shared Spectrum Company Awarded Funding to Develop Cognitive Radio System for First Responders**

Vienna, VA, October 15, 2007 – Shared Spectrum Company (SSC) has been awarded funding from the National Institute of Justice (NIJ) to develop and demonstrate a multi-band cognitive radio system that will help optimize spectrum access for public safety agencies.

This project focuses on creating a spectrum management sub-system on radio networks that controls the individual radios with spectrum access “policies” that allow better use of available spectrum frequencies. SSC has already developed, manufactured and field tested cognitive radio hardware and software for military applications.

“We are honored that NIJ has selected Shared Spectrum Company for this award, which will help bring new and innovative communications technology to first responders,” said Dr. Mark A. McHenry, founder and CEO of SSC. “A major concern among spectrum stakeholders, especially those supporting Public Safety operations, is the ability to adequately control cognitive and software defined radios that are capable of operating across multiple frequency bands. Our system gives spectrum and network managers transparent, flexible and adaptable tools to remotely control a large number of radios in a cost-effective, reliable manner.”

This sub-system, called cognitive radio access and management (CRAM), will lead to the creation and dissemination of a wide range of spectrum access and priority rules, including trusted security measures to avoid unauthorized access and operations. It will also provide for logging of transmissions to monitor usage and quickly remedy interference.

During the first phase of the program, SSC’s spectrum occupancy measurements will determine the characteristics of the spectrum “holes” that Public Safety cognitive radios can safely and reliably exploit. Detailed spectrum access requirements of the Public Safety community will be determined through extensive coordination and outreach with individual agencies and regulators.

Finally, laboratory demonstrations will be conducted with SSC’s prototype cognitive radios to show that they can be remotely controlled to safely use even the smallest spectrum holes across multiple bands without causing interference to a variety of legacy radios. The CRAM sub-system and SSC’s prototype radio build upon the company’s policy-based cognitive radio system developed under the Defense Advanced Research Projects Agency’s (DARPA) Next Generation (XG) Radio Program.

“We are evaluating the current spectrum management problems facing first responders from a different perspective and developing helpful and near-term technical solutions,” said Peter Tenhula, SSC vice president and the co-Principal Investigator on the project. “The concerns in

the Public Safety community about cognitive radio technologies also need to be addressed, so the system and software development process we will employ for this project directly involves key Public Safety stakeholders. Cognitive radio technology can address near- and long-term spectrum accessibility problems of Public Safety agencies. Unless these issues are solved, they will continue to detract from the agencies' core missions of emergency response and homeland security."

Tenhula said a number of experts in public safety communications will assist SSC to ensure all necessary system, security, software and operational requirements are established. They include Nancy Jesuale and Thera Bradshaw, who will lead the project's outreach and requirements gathering efforts. Ms. Jesuale is an expert in Public Safety communications system policies and deployments, having worked in local and state government since 1976 as a telecommunications strategic planner and as director of public safety networks, telecommunications networking and network operations for the City of Portland, OR. Ms. Bradshaw is a past President of the Association of Public-Safety Communications (APCO) and formerly Chief Information Officer for the City of Los Angeles.

In addition, Professor Dale Hatfield will provide outreach support and expert advice. Prof. Hatfield, adjunct professor in the Interdisciplinary Telecommunications Program at the University of Colorado, Boulder, has decades of experience as a world-renowned expert in telecommunications and spectrum policy and will provide valuable guidance on requirements, test plans and regulatory issues.

SSC has also received support for its proposal from the District of Columbia Office of Chief Technology Officer, the San Diego Police Department and the Columbia, OR, 9-1-1-Communications District.

Award No. 2007-DE-BX-K008, "An End-to-End, Multi-Band Cognitive Radio System for Public Safety Communications," awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed herein are those of the quoted individuals and do not necessarily reflect the views of the Department of Justice.

### **About the National Institute of Justice**

The National Institute of Justice (NIJ) is the research, development, and evaluation agency of the US Department of Justice and is dedicated to researching crime control and justice issues. NIJ provides objective, independent, evidence-based knowledge and tools to meet the challenges of crime and justice, particularly at the State and local levels.

### **About Shared Spectrum Company**

Based outside Washington, DC, in Vienna, VA, SSC is the leading developer of spectrum-sensing cognitive radio technologies that ensure optimum use of radio frequencies, maximize efficiency, and enable profitable spectrum leasing. It has introduced a range of dynamic spectrum access technology solutions that allow devices to automatically seek out and use the optimum frequencies and bandwidth while avoiding interference to or from legacy users. The Company was founded in 2000 by Dr. Mark A. McHenry to develop radio frequency technologies that would allow better use of available spectrum. Additional information is available at SSC's web site, <http://www.sharedspectrum.com>.

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