A Multi-Radio Rendezvo Algorithm Based on Chinese Remainder Theorem in Heterogeneous Cognitive Radio Networks

ABSTRACT

- In recent years, the cost of wireless transceivers has fallen dramatically.
- It is more feasible for users to apply multiple radios to reduce the time to rendezvous significantly.
- In this paper, we propose a Chinese Remainder Theorem Based Multi-Radio Rendezvous algorithm for heterogeneous CRNs, where the users are unaware of the total number of channels and are allowed to have different spectrum-sensing capabilities.

EXISTING SYSTEM

- In cognitive radio networks, secondary users can utilize the temporary unused spectrum opportunistically without affecting the quality of services of the licensed users, also called primary users.
- It is a fundamental operation for auser to rendezvous with another user on the same channel and establish a communication link.

Traditional rendezvous algorithms assume homogeneous CRNs and each user equipped with a single radio.

PROPOSED SYSTEM

- The CH approaches can be classified according to two criteria, homogeneous versus heterogeneous, and single-radio versus multi-radio.
- Most of the existing **CH** approaches are homogeneous single-radio approaches, which assume that there is exactly one radio equipped at SUs and SUs have the same spectrum-sensing capability.
- In this paper, we focus on the multi-radio rendezvous algorithm in distributed heterogeneous environments.
 The MTTR of homogeneous multi-radio algorithms increases with the number of channels N, such as RPS.

HARDWARE REQUIREMENTS

Intel core

- Processor
- RAM 2B
- Hard Disk 20 GB

SOFTWARE REQUIREMENTS

- Operating System : LINUX
- Tool : Network Simulator-2
- Front End : OTCL (Object Oriented Tool Command Language)

REFERENCE

- [1] FCC Spectrum Policy Task Force Report, ET Docket No. 02-135, Nov. 2002.
- [2] A. Ghasemi and E.S. Sousa, "Spectrum Sensing in Cognitive Radio Networks: Requirements, Challenges and Design Tradeoffs,", Apr. 2008.
- [3] C. Cordeiro, K. Challapali, D. Birru, and N. Sai Shankar, "IEEE 802.22: The First Worldwide Wireless Standard based on Cognitive Radios,", Nov. 2005.
- [4] S. Krishnamurthy, M. Thoppian, S. Venkatesan, and R. Prakash, "Control Channel Based MAC-Layer Configuration, Routing and Situation Awareness for Cognitive Radio Networks,", Oct. 2005.