Journal Watch: IEEE Transactions on Wireless Communication, November 2014

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- Distributed Resource Allocation for Relay-Aided Device-to -Device Communication: A Message Passing Approach

  Authors: M. Hasan and E. Hossain

System Model

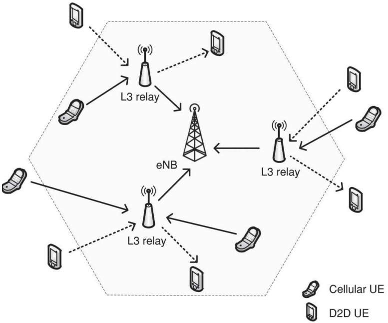

Figure : A single cell with multiple relay nodes.

- N channels for each relay
- Relay $--\,>$ eNB transmission over orthogonal channels

- *Goal:* To obtain the
  1. Assignment of channels
  2. Power levels to UEs

  which maximize the sum-rate for each relay, subject to
    - Maximum power
    - interference
    - QoS

  constraints for relay and UEs.

- Mixed-integer nonlinear program: NP hard

- Solution Method:
    - Channel allocation problem is solved using message-passing approach for max-sum problems.
    - After getting an optimal channel allocation, distributed power allocation is obtained using existing approach
    - Convergence and optimality of proposed scheme is proved.

- Joint Optimal Sensing and Resource Allocation for Multiuser Interweave Cognitive Radios

  Authors: L. M. Lopez-Ramos, A. G. Marques and J. Ramos

System Model

- Multiple PUs and SUs
- K frequency-flat orthogonal subchannels
- Centralized sensing and scheduling
- SU CSI is perfectly known
- Belief state is maintained for PU CSI
- Long-term power, and interference probability constraint.

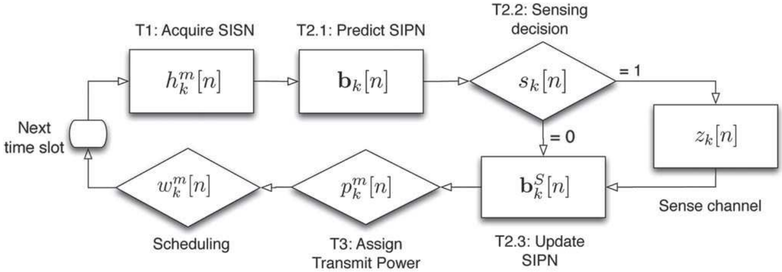

Figure : Sequential operation of the CR system.

- Goal,
  - Maximize the sum-rate,
  - Minimize the sensing cost
- Solution Method,
  - Solve the power assignment problem for a given sensing scheme: Convex problem
  - Solve a POMDP for optimal sensing scheme, with an input from above.
- Two-step strategy results in lower computational complexity without compromising the optimality

- On Non-Cooperative Multiple-Target Tracking with Wireless Sensor Networks

  Authors: Y. Zhu, A. Vikram, H. Fu and Y. Guan

- Algorithm,
  - Segregate the signals using *blind source separation* scheme,
  - Localize the target by intersecting the sensing ranges of the sensing groups hearing the same individual signals
  - Join the location to obtain the path
- Other Contributions,
  - Analyze the affect of signal attenuation
  - Analyze the tracking resolution.
- Related work is presented in the end

- Coaliation Games with Intervention: Application to Spectrum Leasing in Cognitive Radios

  Authors: J. J. Alcaraz and M. V. D. Schaar

System Model

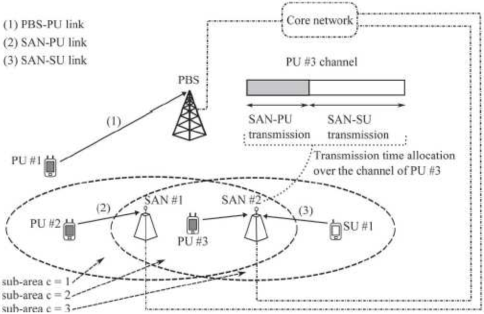

Figure : Service in exchange for spectrum system

- The PUs can be connected to the PN core network by means of a SAN, which receives part of the PU's spectral resources in return.

Contributions

- Objective: To design the intervention rule that maximizes the PN transmission rate
- Use coalition game analysis to show stable cartel existence
- Present a game intervention framework to reduce the cartel overcharge
- Also study the influence of
  1. Number of SANs
  2. PU traffic distribution
  3. Network topology

  on the intervention performance

Other Papers

- “On the Optimal Resource Allocation for a Wireless Energy Harvesting Node Considering the Circuitry Power Consumption”, *Maria Gregori and Miquel Payaro*
- “Energy Harvesting Cooperative Communication Systems”, *Arin Minasian, Shahram Shahbaz Panahi, and Raviraj S. Adve*
- “EH Broadband communication Systems With Processing Energy Cost” *Oner Orhan, Deniz Gunduz, and Elza Erkip*
- “On the Optimal Transmission Policy in Hybrid Energy Supply Wireless Communication Systems”, *Yuyi Mao, Guanding Yu, and Zhaoyang Zhang*