Abstract

In current developing radio networks, energy scarcity and sensing time are become depreciate corner for cognitive radio (CR) networks, as network become deliberately energy-onerous. As fast growing wireless applications are consuming huge energy, and impersonate big challenges to operators in terms of energy footmark. Energy consumptionnot only includes the greenhouse problem and operational outlay, but is an obligatory to limit the power consumption demand in
spectrum sensing and signal overhead, hence it is of preeminent priority for a CR scenario compared to non-CR ones. Different degrees of cooperation are possible: from simply following the spectrum regulation and keeping transmission power below the specified mask, to accurate sensing and tracking of the primary licensee, or contribution of the SUs to the detection of the primary signal. So here we explored the effects of facilitating immoderate energy coherence in cognitive radio network from the aspect of fundamental trade-offs (i.e. what need to loss to be energy efficient). In this review paper, a given optimization problem expressed with two different strategies. In first strategy only one phase of coarse spectrum sensing is activated in situation of absence of primary user or Signal-to-Noise Ratio (SNR) quantity is quite large, which accomplished for quality spectrum sensing. And next algorithm finely exploits the local results of coarse detection. It preserves the energy and improves a detection performance in observable amount. Simulation results shows that discussed strategies can achieve target of minimum energy, less sensing time and superior performance.

References

- N Zhao, "A novel two-stage entropy-based robust cooperative spectrum sensing
  - Hongxing Xia, Guoping Zhang, and Hongbo Xu, &quot;A flexible cooperative spectrum sensing schemes for cognitive radio network&quot;:, IEICE Electronics express, Vol. 8, no. 8, 542-548, 2011.

**Index Terms**

Computer Science Wireless

**Keywords**