Network Layer for Cognitive Radio Sensor Networks

Based on recent trends, Cognitive Radio paradigm has become an integral part of future communication networks of which Wireless Sensor Network is an integral part. However, Cognitive Radio (CR) introduces critical issues that have to be addressed for communication in networks to be achieved. Routing, being the core of communication, has to be critically examined within the context of Cognitive Radio Sensor Networks. In this chapter, the authors discuss relevant issues on the topic of routing in Cognitive Radio Sensor Networks (CRSN). As a basis, a general overview of routing in the Wireless Sensor Network (WSN) is made. The applicability of these protocols in CRSN is discussed and the need for integrating Opportunistic Spectrum Access components into existing Wireless Sensor Network protocols is exposed. Factors affecting routing in CRSN are outlined with an emphasis on a cross layering design approach based on a generalized framework. Recent works in this respect are categorized, and finally, open issues in need for research attention are pinpointed.

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