# Fast spectrum sensing in wran (802.22) an application using cognitive radio method

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Abstrak

Current spectrum management model, command and control, is creating a fundamental cause to drop the spectral efficiency of the radio spectrum in time and space by granting a right to Radio Access Technology (RAT) to access exclusively. In order to solve the spectrum scarcity, a number of bodies, headed by the FCC, have been taking actions to make new paradigm of spectrum management. Recently, the FCC announced a very interesting report (1). It pointed out that more than 7000 of radio spectrums are underutilized in certain times or geographic locations. This means that spectrum scarcity is not due to fundamental lack of spectrum instead because of wasteful static spectrum allocations. Hence, various spectrum sharing schemes which can raise spectrum utilization are investigated by research institutes. In this context, IEEE 802.22 WG which was organized in November 2004 has a purpose to provide wireless internet service to WRAN (Wireless Regional Area Network) user (or secondary user) using idle or unused TV spectrums not to disturb VHF/UHF TV band users (primary user). Since there are two types of users in terms of spectrum access priority, this coexistence is regarded as vertical sharing (2) that the secondary user utilizes licensed spectrums by opportunistic manner. The outstanding advantage of this sharing is to be realizable by little modifications of current spectrum regulation. Therefore, IEEE 802.22 activities have received a plenty of attentions.