

Question 7: Purpose of Experiment

DataSoft is developing a Software Defined Radio platform featuring a configurable 400 MHz to 4000 MHz transceiver, Monsoon. DataSoft intends to market Monsoon to emerging markets requiring an adaptable, programmable or cognitive radio such as TV Whitespace, Smart Grids and Home Networking. The intent of this experimental license application is to test the capability of the monsoon transceiver in a TV Whitespace application.

Please see the responses to the FCC questions regarding the license:

The complete program of research and experimentation proposed including description of equipment and theory of operation.

DataSoft is developing a Software Defined Radio Platform which includes a re-configurable transceiver, Monsoon with cognitive and adaptability features. We intend to use the reconfigurable transceiver in a demonstration of a TV Whitespace network.

Monsoon is a RF Transceiver covering 400 MHz to 4000 MHz with signal bandwidths of 25 KHz to 20 MHz. It is fully programmable allowing a variety of wireless protocol applications. The maximum output power is 0 dBm (1mW). A front end module with maximum output power of 30 dBm (1W) may be used with the monsoon transceiver in our experiment.

Theory of operation: We intend to re-band a WiFi AP (access point) signal to TV Whitespace, broadcast to a SS (subscriber station) over Whitespace and translate back to WiFi for the user equipment.

The specific objectives sought to be accomplished:

The intent of this experiment is to demonstrate:

(1) The DataSoft Monsoon Transceiver used in a TVBD (TV band device) application will meet all requirements set forth by the FCC operating as either a fixed device or a personal/portable device.

(2) Example Deployment of a TVWS network: One of the greatest challenges of implementing a TV Whitespace network is that client devices do not exist and will not exist at an acceptable price point anytime soon. A means of inexpensively connecting a TV Whitespace system to legacy WiFi networks can bridge this gap.

A proposed solution is to examine the use of WiFi access points and subscriber points with the TV Whitespace as the transmit medium as shown in figure 1.

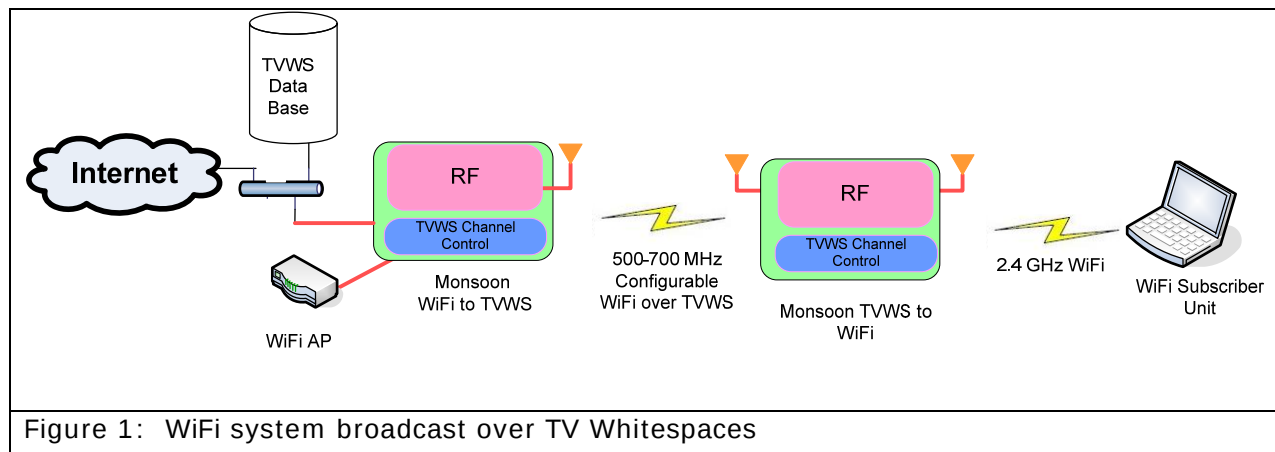


Figure 1: WiFi system broadcast over TV Whitespaces

How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion or utilization of the radio art, or is along line not already investigated.

The TV Whitespace frequencies offer an efficient and effective strategy to support the future growth of broadband communications technologies. These technologies include Rural Broadband access, White Space LAN networks, expanded Public Safety communications networks, Smart Power Grid networks, Mesh/Sensor Networks, Home networks and Telemedicine.

The experiments by DataSoft will provide a path to efficiently deploy a TVWS network using established WiFi standards and equipment. In addition, the experiments will add to the work done by others in the definition and specifications for TV Band Devices to be used in the proposed unlicensed TV Whitespace frequency band.