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WATCH by Rice researchers smartly uses TV UHF band to offer super Wi-Fi

Now there is growing interest to utilise what is called whitespace, which is nothing but unused frequency bands in the UHF frequency range popularly used for television broadcasting world over. The UHF channel in a particular region is not being used by any television broadcaster, that whitespace can be used for Wi-Fi communication, such Wi-Fi communication using UHF is called super Wi-Fi. Super Wi-Fi can provide Internet to a longer distance of 10 km and the signals can pass through walls and trees or any such obstacles. That's the reason why it is called as super Wi-Fi.

The engineers at U.S.-based Rice University have demonstrated Wi-Fi communications over UHF channels during active TV broadcasts using a smart way of monitoring available channels without interfering with the television broadcasting.

Both in the developing and developed countries, the UHF spectrum is not well utilized. Due to the growing demand of bandwidth by billions of connected devices mainly the smart phones, it is becoming necessary to explore all the available communication channel for digital communication. The UHF spectrum in the range of 400 to 700 megahertz, which is also called as "beachfront property" of the wireless spectrum is a less costing option compared to some of the other ways of communication.

Rice University could send WiFi data over UHF channels during active TV broadcasts. Lead researcher Edward Knightly and Rice graduate student Xu Zhang developed a technology called Wi-Fi in Active TV Channels (WATCH). WATCH continuously monitors whenever a nearby TV is tuned to a channel to avoid interfering with reception.

The technology what they have developed works in two ways. One Works with normal televisions which are not really smart. And other way is to work with what is called smart TV remotes and next-generation TV televisions, which communicate with the Wi-Fi system when they are tuned to a particular UHF channel.

Rice researchers used WARP, the "wireless open-access research platform," to build the first system.



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