

# White-space sensing device approved by FCC for further development

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A team of engineers at Singapore's Institute for Infocomm Research (I2R) has created a white-space sensing device that has received approval for further development by the Federal Communications Commission (FCC).

I2R, one of the research institutes sponsored by Singapore's A\*STAr (Agency for Science, Technology and Research) was the only non-USA based organization whose technology was tested by FCC.

White space refers to unoccupied frequency spectrum that does not require an FCC license to operate on. It has the potential of opening up a new wave of technology innovations replicating the success of WiFi.

FCC officially released the test report on TV white-space device testing (spectrum sensing for cognitive radio) in Oct. 2008. The report consists of results from laboratory and field tests on devices submitted by Adaptrum, Microsoft, Motorola, Philips and I2R.

I2R's device displayed a consistent ability in sensing digital TV (ATSC format) signals' occupancy and un-occupancy using spectrum sensing technique in actual field tests with an 81% detection rate.

For wireless microphone field tests, I2R's device was able to detect the wireless microphone transmissions during the live performance / game test while correctly identifying some unoccupied channels.

The report issued by FCC mentioned, "At this juncture, we believe that the burden of 'proof of concept' has been met. We are satisfied that spectrum sensing in combination with geo-location and database access techniques can be used to authorize equipment today under appropriate technical standards and that issues regarding future development and approval of any additional devices, including devices relying on sensing alone, can be addressed."

FCC voted unanimously on Nov. 4, 2008 to approve the use of unlicensed white-spaces device.

"This simply proves that our in-house developed technologies are able to compete with the global offerings on a level playing field. I see this area as having immense potential for further research by the team at I2R," said Lye Kin Mun, Deputy Executive Director for research at I2R, one of the research institutes headquartered in the new Fusionopolis centre for physical sciences and engineering R&D.

Source: Agency for Science, Technology and Research (A\*STAR), Singapore

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