

Remarks of Ed Thomas

New America Foundation & House Future of American Media Caucus Luncheon,
September 7, 2005, B-354 Rayburn House Office Building

DTV 201:

How the DTV Transition Can Move the Nation from “Broadcast to Broadband”

***Biography:** Edmond Thomas held the position of Chief Engineer of the Federal Communications Commission until June 1, 2005, when he joined the law firm of Harris, Wiltshire & Grannis as a partner specializing in technical policy. Prior to joining the Commission, Mr. Thomas served as President and CEO of MMRadiolink, President and CEO of RSL USA, and President of Science and Technology at Bell Atlantic. At Bell Atlantic, he was responsible for new product development. In 2003, for his work in advancing digital wireless communication, he was one of five people selected by Forbes Magazine to be in the magazine’s “E-gang.” In the same year, he was named by Wired Magazine as one of the five most influential technical people in Washington. Ed Thomas can be reached at Harris Wiltshire & Grannis, email: ejthomas@harriswiltshire.com, phone: 202-730-1305.*

Good afternoon everyone. It’s a pleasure to be here. Before I begin you should know that Microsoft is a client. The views you are about to hear are my own, but you should also be aware that Microsoft shares them.

What I would like to do today is to talk to you about the underutilized terrestrial over the air TV Spectrum containing channels 2 to 51.

I am sure that you are aware that many spectrum pundits have argued that over the air, terrestrial-based/broadcast TV is very inefficient. They believe that spectrum with such excellent propagation characteristics should be reclaimed and put to much better modern use. They are quick to point out that over the air TV is inefficient from a technical standpoint. And, in addition, it is economically inefficient since only 15% of TV viewers get their programs from over the air broadcasts while 85% obtain it via cable or satellite.

Though these arguments have merit, in my judgment, they miss the current political reality. There is little likelihood that the FCC will reclaim additional TV spectrum in the foreseeable future.

There is, however, a way to improve the technical and economic efficiency of the TV spectrum without affecting the broadcasters, the DTV transition or the 15% of the population who receive their TV over the air. This is exactly what the FCC white spaces NPRM issued May 2004 (docket 04-186) is designed to do. This proceeding proposes that the unused portion of the TV spectrum, the white spaces, be used for unlicensed broadband communications. It is important to remember that no one currently has a license or a right to this spectrum, though the broadcasters act as if they do. This spectrum is ready-made for unlicensed broadband applications for the following reasons:

- First, as I will explain in a moment, low power unlicensed systems coupled with smart radios will all but eliminate any possibility of interference. Remember, since these devices are proposed to be unlicensed they are forbidden to cause interference to licensed services. In the highly unlikely event that they do. The FCC NPRM requires them to automatically cease operation on the interfered with channel.
- Second, TV spectrum because of its propagation characteristics will provide larger coverage areas for a given emitted power level relative to systems operating above 1GHz. This translates to less capital expenditure for deployments that in turn will cause cost effective broadband Internet access to be more rapidly deployed in sparsely populated rural areas.
- Third, more white spaces or bandwidth exists in rural areas than in metropolitan areas. This will allow broadband to be easily brought to rural America where it is sorely needed.
- Fourth, TV spectrum enjoys superior penetration characteristics relative to systems operating above 1GHz, notably the existing unlicensed spectrum in the 2.4GHz and 5GHz. This translates to better signal quality and reliability in challenging environments involving foliage and structural obstacles.
- Fifth, for equivalent range and throughput, systems operating in the TV white spaces use lower emitted power levels than radios designed for use in the 2.4GHz and 5GHz unlicensed bands. This translates to better battery life.

I know you and the Commission have been subjected to intense lobbying by the broadcasters to prevent this from happening. They argue that the approach proposed in the NPRM will cause interference and slow down the DTV transition. Let me assure you that this is simply untrue. In its proposal the Commission has gone to great lengths to make certain that broadcasters are protected and that the transition can move forward unimpeded. Allow me to explain:

The proposed FCC rules require that smart radios be deployed in the TV band. These radios must have the capability to definitively and unambiguously establish which TV channels are occupied at their location before they transmit. They must then avoid transmitting in those channels.

They can also continuously sense their environment. Finally, they must have the capability to instantaneously exit a channel when either they sense a TV signal or are instructed to do so by the service provider.

As an example, consider the situation where a previously vacant TV channel goes into use as part of the DTV transition. The unlicensed transceiver will sense the change the instant the TV transmitter goes on the air and vacate that channel. Or it will be notified in advance of the change by the service provider and vacate the channel. Either way the broadcaster is protected.

Transceivers such as these are well understood and can be built cheaply in volume. In fact they are quite similar to WiFi transceivers on the market today.

Three primary public policy benefits will occur if the FCC authorizes the unlicensed use of the TV white spaces.

- First, cost effective rural broadband Internet access deployment will be expedited.
- Second, as a supplement to licensed public safety applications, unlicensed TV white spaces based technology can provide cost effective, incremental, interoperable capacity for innovative emergency services such as IP voice, video, and high-speed data. Widely available, inexpensive and compatible equipment with superior range and building penetration properties could prove very valuable in times of emergency.
- Finally, the wireless office and home where voice, video, music, data and other applications can be distributed from a single connection will become a reality.

In spite of the overwhelming benefits of allowing unlicensed use of the TV white spaces and probably because of the intense lobbying of the broadcasters the FCC has put on hold this proceeding initiated in May of 2004. This, in my judgment, is a shame and should not be allowed to continue.

I strongly urge Congress to direct the Commission as the expert government agency to bring this proceeding to a conclusion. If there is any doubt as to the level of protection which should be afforded to broadcasters, then Congress should also direct the FCC labs to conduct an on the record experiment to determine what is appropriate. The FCC laboratory has a long history of expertise in all facets of TV transmission. Recall they conducted the experiments that led to the DTV allocations and technical transition plan.

A golden opportunity exists to extend the social and economic benefits of broadband to all Americans. I urge Congress and the FCC not to be persuaded by the invalid self-serving claims of a few and to move forward expeditiously with FCC Docket 04-186.

Thank you for you time and attention.