
Review of Ultrawide Band Issues

Presentation to FCC TAC
by
Dewayne Hendricks
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Topics

Review of regulatory history

Discussion of current problem

Recomendations

Definition

Will use term 'wideband emissions' or 'wideband technologies' (WB) instead of ultra-wideband (UWB)

WB includes Spread Spectrum (SS)

WB Regulatory Path

1981 NOI

Part 15

Part 97 (Amateur Radio Service)

UWB NOI

SS NOI '81

First to raise issues of narrowband vs wideband

Discussed the concept of 'spectrum overlay'

Discussed the spectrum efficiency issues of wideband vs narrowband

UWB NOI '98

Driven by waiver requests from UWB companies

Many of the same issues and questions raised as in SS NOI

Proposed to operate under Part 15, but asked for alternatives

Part 15 (Unlicensed SS)

NPRM in 1984

R&O in 1985

Various rulemakings up thru 1999

Part 97 (ARS SS)

NPRM in 1984

R&O in 1985

STA in 1992

Petition for rulemaking in 1995

NPRM in 1997

R&O in 1999

Part 15 Issues

Very successful to date, but no idea as to how many devices and where

“Tragedy of Commons’ and noise floor

Sharing band with licensed services

Growing use of devices for Internet access

Part 97 Issues

More restrictive rules until this year

Repeater interference

Weak signal and EME interference

Need different allocation for WB
experimentation and use

Summary

Spectrum overlay is really the key issue
How are existing services accommodated
Only way to move forward is to deploy
real systems in controlled fashion and
test and measure impacts

Powered Flight Analogy

First looked at flying animals

Next tried lighter than air

Next tried heavier than air

Wright Brothers flight confirmed new direction

WB has yet to have its successful test flight

Recommended Actions (1)

Compile on-line database of most relevant filings on WB over the years at the Commission

SDR and WB are tightly coupled, some implementors will use both

Examine issue where licensed service wants to employ WB for spectrum overlay, such as ARS

Recommended Actions (2)

Find and deploy in regulatory environments where there are currently no restrictions against WB operations

Move to controlled test bed tests as the industry starts to work out the issues and determine what it really wants to do