

UNLICENSED PERSONAL COMMUNICATIONS SERVICES

Summary of Decisions in

Second Report & Order in GEN Docket No. 90-314

Transcription of Slides presented by Mr. Julian Knapp, FCC

October 26, 1993

FCC Laboratories -- Columbia, MD

Allocations

Total of 160 MHz for PCS

- **120 MHz for licensed PCS**
 - Expected to foster new mobile services and technologies
 - Sufficient spectrum to foster competition among providers
 - Provides sufficient spectrum to foster competition between PCS providers and cellular operators
 - Ensures rapid deployment and implementation of service
 - Provides flexibility for licensees to coordinate with existing microwave licensees
- **40 MHz for unlicensed PCS**
 - Foster the rapid introduction of new PCS technologies
 - Permits manufacturers to directly market new PCS products to the general public

Unlicensed PCS Channel Plan

Frequency (MHz)	Transmission Mode
1890-1900	Voice (i.e., isochronous)
1900-1920	Data (i.e., asynchronous)
1920-1930	Voice

Part 15 Unlicensed PCS Rules

New Rules Contained in New Part 15 Subpart D

- Define Unlicensed PCS Devices as intentional radiators operating in the frequency band 1890-1930 that provide a wide array of mobile and ancillary fixed communication services to individuals and businesses
 - Address band clearing of incumbent microwave operations
 - Establish a spectrum etiquette
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Band Clearing of Incumbent Microwave Operations

- 1890-1910 MHz band has 1400 incumbents
 - 1910-1930 MHz band has 400 incumbents
 - UTAM, Inc. conditionally designated as coordinator for unlicensed devices in the 1890-1930 MHz band
 - Must submit and have accepted by FCC:
 - an equitable relocation funding plan
 - a band clearing plan that will permit the implementation of unlicensed devices as promptly as possible
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UTAM, Inc. Responsibilities

- Relocation of existing microwave stations in accordance with the requirements of ET Docket 92-9
 - Ensuring that comparable facilities are provided
 - Resolving and disputes of interference to OFS microwave operations from unlicensed PCS
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Specific Coordination Requirements

- Applicants for equipment authorization must be participants in UTAM, Inc.
 - UTAM to determine whether device is coordinatable
 - Coordinatable devices may be deployed early
 - Noncoordinatable devices not permitted until the band is cleared or it can be shown there is little risk of interference to the remaining incumbents
 - Device must include measures to ensure it cannot be activated until installed at its authorized location
 - Device must include an automatic mechanism to disable operation in the event it is relocated outside coordination area
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Unlicensed PCS Spectrum Etiquette

- Largely consistent with WINForum etiquette
 - Reorganized text of WINForum proposed etiquette to separate requirement for asynchronous and isochronous
 - Made several modifications, deletions and additions to WINForum proposed etiquette to improve spectrum efficiency
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Spectrum Etiquette: Purpose

- Enables differing applications and technologies to share spectrum
 - Separate etiquette for isochronous applications (i.e., voice) and asynchronous applications (i.e., broadband data)
 - Isochronous etiquette: 1890-1900 and 1920-1930 MHz
 - Asynchronous etiquette: 1900-1920 MHz
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Spectrum Etiquette: Features

- Transmission time limits
 - Power output limit varies with the square root of the emission bandwidth
 - Listen-before-talk requirements
 - Power reduction tied to listening threshold limit
 - Strict emissions control
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Modifications to WINForum Etiquette

- Reduced permitted emissions in the adjacent channel by changing attenuation from 30 dB to 40 dB down
 - Reduced emissions removed from the center frequency by an amount equal to the emission bandwidth by changing attenuation from 30 to 40 dB down
 - Transmit bandwidth defined as the 26 dB down points instead of the 23 dB down points.
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Deletions to WINForum Etiquette

- Deleted provisions that permitted certain technologies to circumvent the isochronous listen-before talk provisions in the band you intend to occupy
 - Deleted provision for marker beacons
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Additions to WINForum Etiquette

- Provision for a maximum 5 MHz emission bandwidth in the 1890-1900 isochronous band
 - Adopted spectrum packing requirements to improve spectrum utilization
 - Adopted a provision requiring an accuracy of 3 dB for monitoring ambient signals prior to transmitting
 - Provided for signalling and control information as equivalent to data
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