



CIRF

**Converging Industries Research
Foundation**

Practical Solutions for Communications Policy

A Guide to Evolving Wireless Services

Executive Summary

December 7, 1998

Presentation at the February 1999

NARUC Meeting,

Washington, DC

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A Guide to Evolving Wireless Services

Executive Summary

Objective

This paper is a guide to the rapidly expanding wireless services and the technologies that underlie these services. This paper explains what they are, how they are similar, and how they are different.

Summary of Services Covered

Figure 1 shows the location on the radio frequency spectrum of the United States commercial wireless services covered in this paper. For each service, there is a brief description of the service, its location in the spectrum, the evolution of the wireless service, and an illustration (unless the service has yet to be deployed).

Substitution with Traditional Wireline Services — Both Telephone and Cable TV

Advances in technology and new spectrum policies make it possible for some wireless services to provide substitutes for traditional wireline and for other wireless services. A summary chart allows for comparisons and answers the question of whether a particular wireless service can be a substitute for wireline service. For example, video programming may be provided by traditional broadcasters and cable TV companies as well as by Local Multipoint Distribution Service (LMDS), also called cellular TV. Mobile voice service may be provided by traditional cellular companies as well as by newer wireless services such as Personal Communications Service (PCS), Enhanced Specialized Mobile Radio (ESMR), and some satellite companies.

From the customer's perspective, it is becoming increasingly difficult to distinguish these different services from one another. However, from the service providers perspective there are regulatory disparities, spectrum allocation differences, and technological barriers

Major Wireless Issues

Explains major wireless issues that have yet to be resolved and have a significant impact on the evolution of wireless companies and services: enhanced 911, *Communications Assistance for Law Enforcement Act* (CALEA), number portability, area codes, calling party pays, universal service, interconnection, spectrum licensing: partitioning, disaggregation, and spectrum flexibility, and standards.

Historical Example

Uses the historical example of early broadcast TV spectrum allocation to illustrate four basic issues associated with spectrum management during a period of technological change, consumer demand, and crowded spectrum.

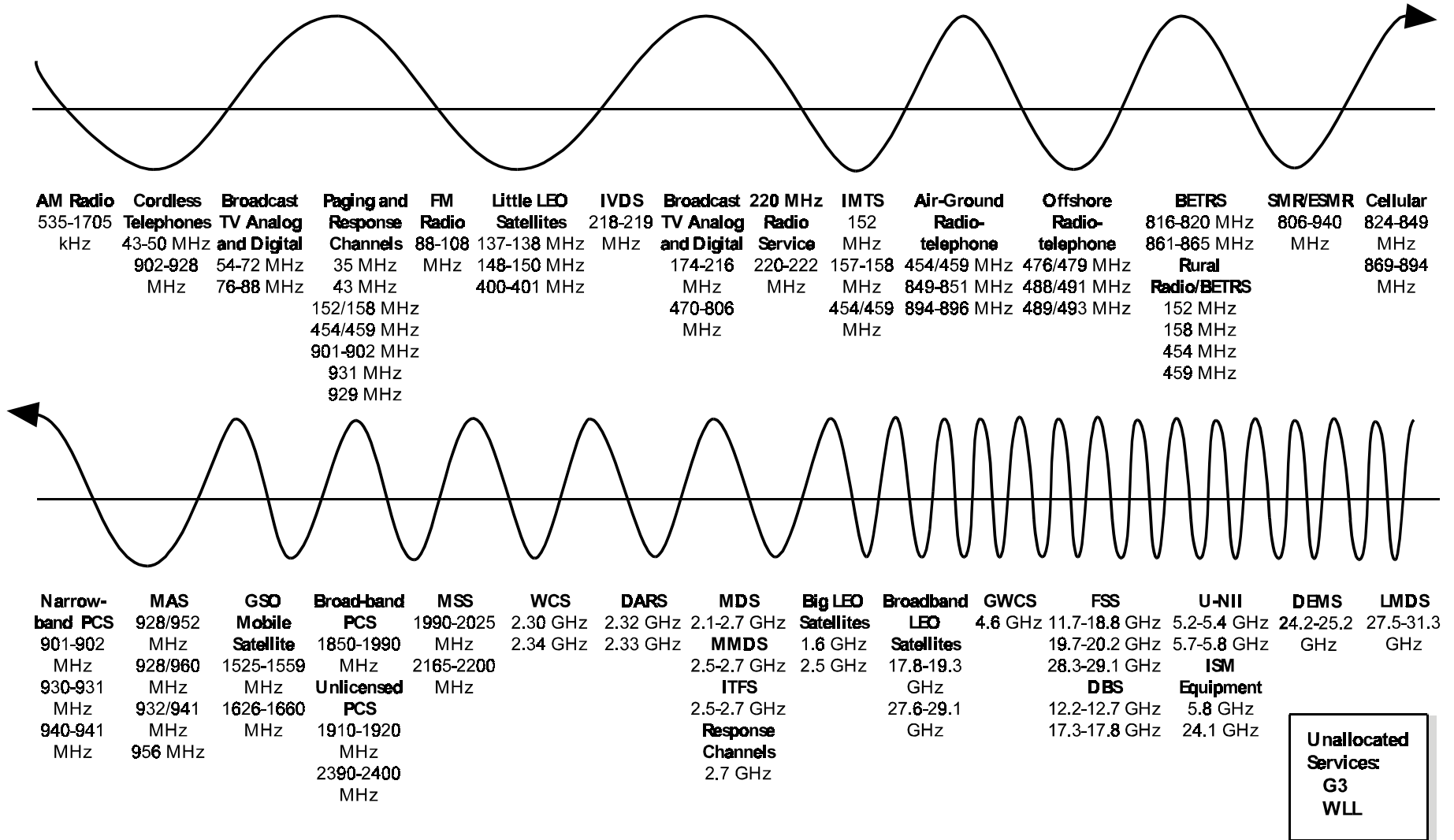
Basic Definitions

Provides an explanation of basic wireless terms, such as the radio frequency spectrum, the difference between wireless and traditional wireline technologies, the difference between licensed and unlicensed services, and definitions of the different types of satellites.

A Guide to Evolving Wireless Services, cont.

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Figure 1: U.S. Radio Spectrum — Location of Commercial Services



Project Information

List of Participants in the Telecommunications Industries Analysis Project

December 1998

State Regulators

NARUC Representatives from:
California Public Utilities Commission
Florida Public Service Commission
Illinois Commerce Commission
Iowa Utilities Board
Massachusetts Department of
Telecommunications and Energy

Companies and Governments

AT&T
Bell Atlantic
BellSouth
Corning
GTE
Kalona Cooperative Telephone
MCI Telecommunications Corp.
NTT America
SBC Communications Inc.
Sprint
U S WEST

Sponsors:

Corporation for Public Broadcasting

Assisting with *public* data:

Bellcore
Federal Communications Commission
National Exchange Carrier Association
National Telecommunications and Information Administration

Project Information, cont.

Background on the Telecommunications Industries Analysis Project

The Telecommunications Industries Analysis Project (TIAP), a seven-year-old research consortium, conducts and reports impartial research in the areas where network planning, business financials, and public policy (regulation and legislation) intersect. The participants actively work together to develop new options for telecommunications policies to meet the needs of consumers, governments, and companies in a changing, competitive environment. Participants include regulators, domestic and foreign telecommunications companies, materials and equipment manufacturers, and other communications-based organizations.

The purpose of the Project is to produce research and analysis that will assist policy makers in making informed decisions.

TIAP incorporates the following features:

- **Neutral setting**
The Project provides a neutral setting, free of partiality, thereby ensuring objective and independent research.
- **Multiple viewpoints**
Participants play an active role in the research and analysis, represent their own interests, and understand and assist in developing others' perspectives.
- **Analysis and results of alternatives**
The Project provides research data, tools, and models for critical decision making.
- **Public distribution of research**
Data used by this Project are publicly available. Research products become public domain information.