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The Future of Spectrum Management

An International Viewpoint

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Titanic disaster



1st World War
Better radio technology
(e.g., spectrum efficient vacuum
tube transmitters)
Beginning & expansion of
broadcasting



Spark transmitter
phasing-out

1906: 1st RR

The basic international institutional arrangements for radiocommunications were conceived & implemented: regular meetings to prepare technical & operational standards, review rules & regulations (e.g., Table of Frequency Allocations); collection, recording and publication of telecommunication information by a central Bureau; stations acquire rights & recognition of frequency use without harmful interference from stations of other nations.

1932: Unification of ITU

**MARITIME,
BROADCASTING,
AERONAUTICAL,
FIXED, AMATEUR**

Radio
spectrum

Notification to
Bern Bureau:
rights &
recognition

1938: Radio expansion



Creation of the **International Frequency Registration Board (IFRB)**: Board members are “custodians of international public trust” (proposed as a kind of international court of justice for disputes on the use radio spectrum).



1947: Birth of modern ITU

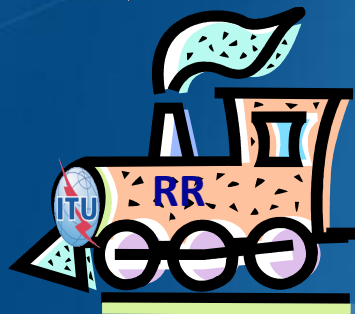


Table of Frequency Allocations
(bands & services)

Planned & unplanned bands
(procedures & standards)

Notification & rights + international recognition

**IFRB
CCIR**

The Wireless Development

centrally planned

regulated

market-driven

open

IMT-Advanced

digital broadcasting

IMT (3G)

digital mobile

personal mobile-satellite

wireless access

cellular

satellite-navigation
mobile-satellite

satellite

radio-relay

DIGITALIZATION

MICROPROCESSOR

SEMICONDUCTOR

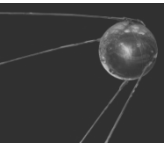
TUBES

CONVERGENCE

PERSONALIZATION

BROADBAND

COGNITION



First "outer space
artificial object" (1957)



First "mobile"
phone (1924)



utility-based

technology-based

1950's

1960's

1970's

1980's

1990's

2000's

2010's

Transforming radio from a
physical device
designed for a *specific purpose* ...



... into a
core function
embedded in *every device*

