Seminar on Pricing for Frequency Usage

METHODS OF MANAGING ACCESS TO THE FREQUENCY SPECTRUM

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Introduction

42 radio services are defined in the Radio Regulations

The success of any system in these services is critically dependent on the availability of the frequency spectrum and the existence of the necessary standards

Introduction

ITU has been organizing forums for drawing up standards for radio systems since 1906, when the spectrum was recognized as a limited natural resource

Since 1973, provisions on equitable access to the spectrum and the related orbits have been included in the Radio Regulations

Methods of managing access to the radio-frequency spectrum

Frequency allocation to radio services:

- as at present (status quo)
- based on “generic” services
- based on service area criteria
- based on EMC analysis
- based on the use of economic needs

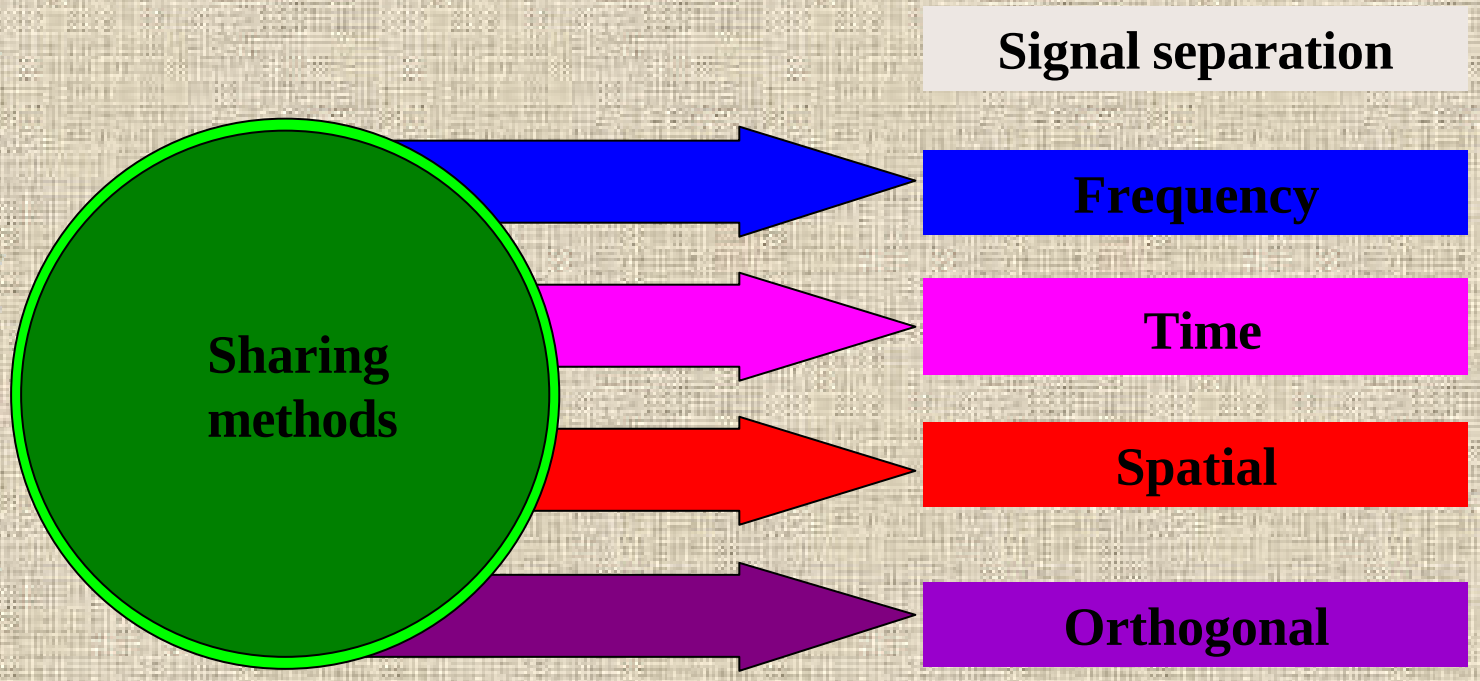
Current method of frequency allocation

- The spectrum 9 kHz - 400 GHz is broken down into frequency bands
- 41 terrestrial and space services
- Radio services: PRIMARY and Secondary
- Allocation on a worldwide or regional basis
- Three ITU Regions: Region 1, Region 2, Region 3

Current method of frequency allocation

Recommendation ITU-R SM.1132

General principles and methods for spectrum sharing between radio services



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Existing terrestrial services

- Mobile
  - Aeronautical
    - Aeronautical (R)
    - Aeronautical (OR)
  - Land
  - Maritime
    - Ship movement
    - Port operation
- Radio-determination
  - Radionavigation
    - Maritime
    - Aeronautical
  - Radiolocation

Fixed
Broadcasting
Amateur
Radio astronomy
Meteorological aids
Standards frequency and time signals

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Existing space services

- Mobile-satellite
  - Aeronautical-mobile satellite
    - Aeronautical (R)
    - Aeronautical (OR)
  - Land-mobile satellite
  - Maritime-mobile satellite
- Radio-determination satellite
  - Radionavigation-satellite
    - Maritime
    - Aeronautical
  - Radiolocation-satellite
- Fixed-satellite
- Broadcasting-satellite
- Amateur-satellite
- Radio astronomy
- Standard frequency and time signals-satellite
- Meteorological-satellite
- Earth exploration-satellite
- Space operations
- Space research
- Intersatellite

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“Generic” services

Terrestrial

Mobile
Fixed
Broadcasting
Amateur
Aeronautical mobile
Maritime mobile
Radiolocation
Radionavigation

Space

Mobile-satellite
Fixed-satellite
Broadcasting-satellite
Amateur-satellite
Space operation
Space research
Passive services

Frequency allocation based on service areas

Service areas

Terrestrial	Space
Point-to-point Point-to-area Area-to-point Area-to-area	Space-to-Earth Earth-to-space Space-to-space

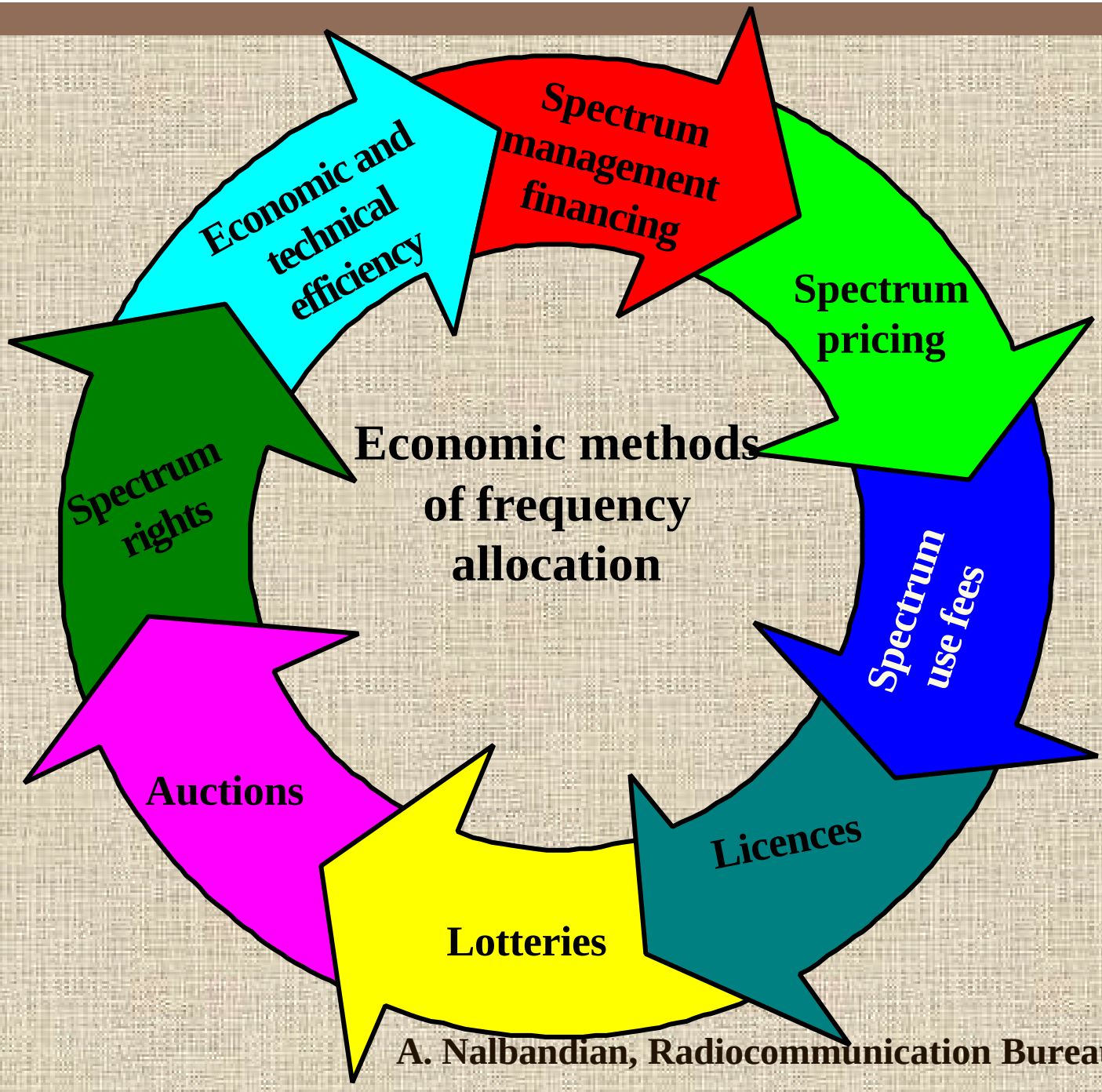
Frequency distribution based on EMC study

$$S/I > (S/I)_{TH}$$

Economic methods of frequency allocation

Why are economic methods needed???

- ✓ Liberalization of the telecommunication sector
- ✓ Privatization of telecommunication facilities
- ✓ Increased demand for radiocommunication services
- ✓ Inefficient spectrum use
- ✓ Spectrum management financing



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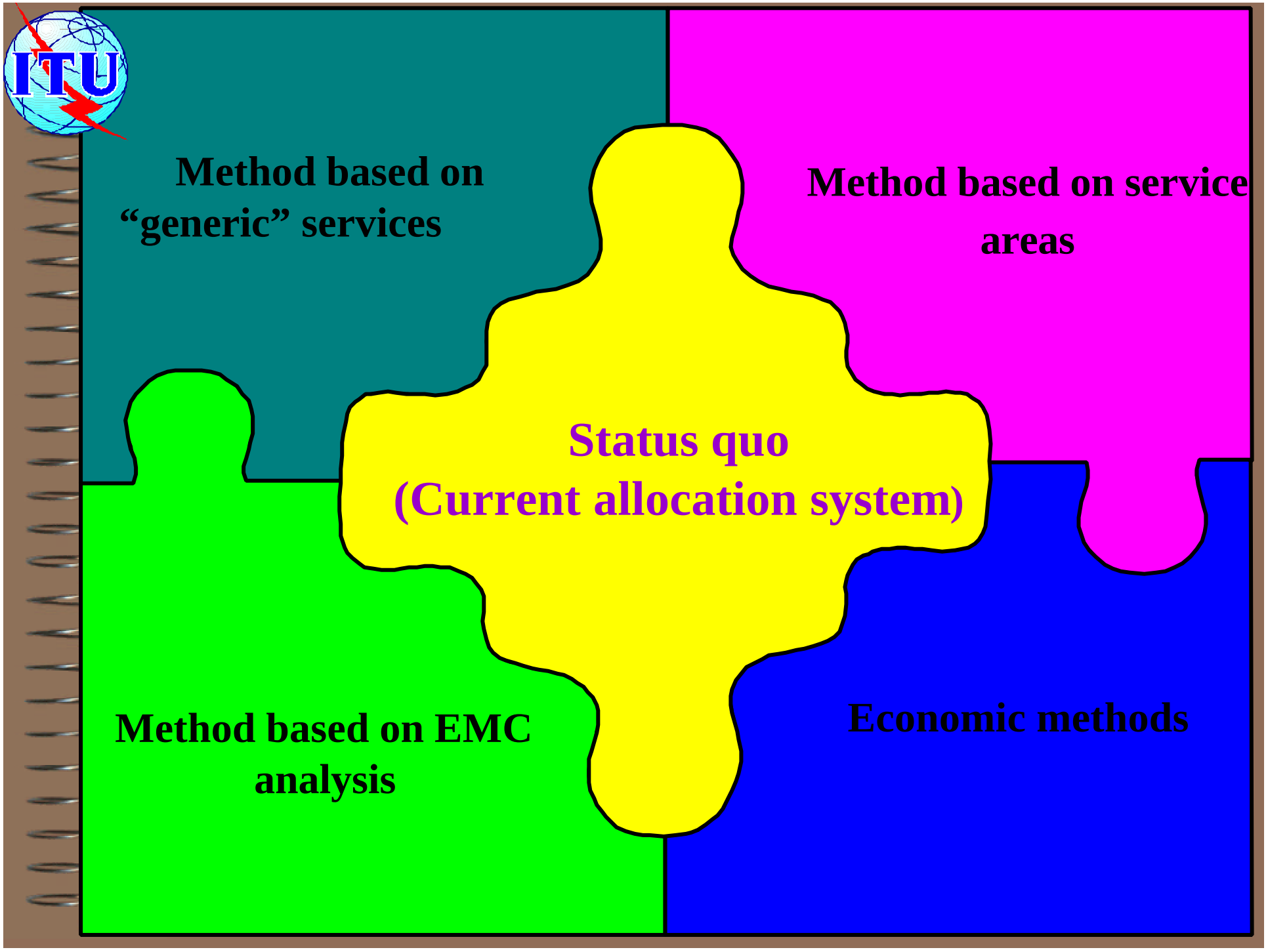
Method based on "generic" services
Method based on service areas
Status quo (Current allocation system)
Method based on EMC analysis
Economic methods

Conclusion

As things now stand, it seems advisable to treat any spectrum access methods as ways of supplementing the current method with a view to ensuring equal and effective access to this natural resource for all users.