



ITU-D Regional Seminar on Spectrum
Management and Broadcasting for
Europe and CIS

Spectrum Pricing

Administered Incentive Pricing (AIP)

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The Vision

„The [spectrum usage] fee should remain a tool for rationalizing the utilization of spectrum and in no event be employed as a source of recurrent additional income for the state.“



Source: A. M. Youssef, E. Kalman, L. Benzoni, "Technico-Economic Methods For Radio Spectrum Assignment", in IEEE Communications Magazine, June 1995, p.93

Vision's Implications

Stable financing of spectrum management founded on

- **Administrative charges paid by spectrum users**
 - Strong connection to costs caused to administration
 - Fairness & transparency for spectrum users
 - Judiciary control
 - Promotes cost-efficiency of spectrum management
 - Need for cost-accounting instruments
- **General budget of the State** (income from taxes)



Terminology

Administrative charge

- Payment for services provided by the administration to a beneficiary
- Height limited by general ***cost-coverage*** and ***proportionality*** principles

Tax

- Monetary contribution to the general budget of the State without any direct service or advantage in return
- Parliament determines height (tax law)

Distinction based on

- Payment associated to a particular service, advantage provided by the State



Spectrum Usage Fee

Payment for a particular advantage (\approx admin. charge), and height detached from costs of activities of State (\approx tax)

- Spectrum is there per se (natural resource)

The fee is a counterpart for

- Right to **use a public good**, the public domain more extensively or exclusively
- License to **exercise a regalian right**



Objectives of AIP

For an efficient spectrum management

- **Send clear signals to users** about valuable nature of spectrum
- **Influence their behaviour**
 - Disincentive to hoard spectrum
 - Consideration of alternative frequency bands
 - Investment into more performing technologies
- **Comprehensible fees**
 - Non-discriminatory, objective, equitable, reasonably simple, and transparent structure



Formula

- "Universal" spectrum fee calculation model

Bandwidth factor

- * **Frequency band factor**
- * **Reuse factor**
- * **Exclusivity factor**
- * **Congestion / location factor**
- * **Time factor**
- * **Tariff unit (TU)**

- Selection of relevant factors depending on specificities of radiocommunication applications

What Spectrum Price Is « Right »?

- *Economists' view*
Price is function of the **marginal costs** of spectrum usage at the social optimum
- *Speaker's suggestion*
Price set thanks to **estimation and experience**
 - What is financially bearable for users?
 - What is acceptable to common welfare, political organs?
 - What are the financial needs of the spectrum management authority?



Establishment of Spectrum Usage Fees

- Steps
 1. Determination (**qualifying**) of the relevant factors
 2. Evaluation (**quantifying**) of factors
- Practical aspects
 - Compilation of the necessary **numerical data**
 - Quantity and structures of licenses, present income, ...
 - Estimation of **financial implications**



Some Practical Considerations when Introducing AIP

- Height of fees set under due consideration of economic realities
- Benchmark fees with comparable States
- Resolution despite opposition from spectrum users
 - But good reasons may call for adaptation of height of fees
 - Different spectrum „price“ / spectrum „value“ ratio for spectrum management authorities than for spectrum users
- AIP inapplicable in license-free frequency bands
 - Because spectrum users unidentifiable individually
- Periodical adjustments of fees very probable
 - Need for monitoring of incentive effect of fees over time
- Arrange stable financing (recurrent administrative charges)

Thank you for your attention



& Good luck with your experimentations !