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International Telecommunication Union
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Recommendation

ITU-T D.609R (02/2025)

SERIES D: Tariff and accounting principles and international telecommunication/ICT economic and policy issues

Recommendations for regional application – Recommendations applicable to the African Region

Guidelines for determining the size of fees associated with authorizations/licences

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Tariff and accounting principles and international telecommunication/ICT economic and policy issues

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Recommendation ITU-T D.609R

Guidelines for determining the size of fees associated with authorizations/licences

Summary
Regional Recommendation ITU-T D.609R provides guidelines for determining the size of fees associated with authorizations/licences.

History *

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1.0	ITU-T D.609R	2025-02-21	3	11.1002/1000/15895

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FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

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Guidelines for determining the size of fees associated with authorizations/licences

1 Scope

This Regional Recommendation provides guidelines for determining the fees associated with authorizations/licences.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.
None.

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and Acronyms

ARPU	Average Revenue Per User
GDP	Gross Domestic Product
GOS	Gross Operating Surplus
ICT	Information and Communication Technology
OTT	Over the Top
NPV	Net Present Value
WACC	Weighted Average Cost of Capital

5 Conventions

None.

6 Preamble

6.1 A licence fee may be defined as the remuneration that the State reserves for itself as of right from the exploitation of an authorization it has granted to an operator. Collected fees are an additional source of revenue for the State and make it possible to support investment in information and communication technologies (ICTs). This maximizes the contribution of ICTs to the national gross domestic product (GDP).

6.2 Through the exploitation of its authorization, an operator will clearly derive a certain revenue and achieve results (profits or losses) throughout the period of exploitation. As far as the initial wave of licensing is concerned, in particular in the framework of mobile telephony, the figures and indicators for the ICT sector show clearly that the exploitation of State-awarded authorizations has generally been highly profitable for the operators concerned.

6.3 Estimating the size of licence fees is a matter of concern for telecommunication sector operators and regulatory authorities alike. Furthermore, income from fees contribute to the growth and development of the telecommunication sector.

7 General considerations

7.1 The models for determining the size of a fee to be charged for a licence or authorization are generally developed by independent organizations on behalf of a country or the actual regulator or legislator. The methodology used for these models varies from player to player. The lack of a common basis for determining the size of licence fees leads to methods and calculations that are difficult to replicate and whose robustness cannot be taken for granted. Such models are thus difficult to adjust and do not necessarily foresee the considerable progress being made in the ICT sector.

7.2 Approaches vary among African countries when it comes to the granting of 2G/3G licences. These approaches are the result of the different situations: while some see it as a means of fostering competition by facilitating the introduction of new technological innovations, others see it as a means of levying a new tax within the framework of the State budget.

7.3 Indeed, licence fees, to be paid by each operator, constitute a substantial contribution to Member State revenues. Since the end of the 1990s, it is clear that exploitation of the various authorizations granted by Member States in Africa has generally been highly profitable for operators.

Operator profits, which are generally distributed among shareholders, are for the most part used outside the national financial circuit, thus generating little benefit for the national economy. Reinvestment of those profits in the companies in question would undoubtedly help to boost both the sector and the country's development. It is therefore only right that a State which provides an environment that is conducive to business and enables private enterprise (chiefly telecommunication operators) to make profits should seek to benefit from a part of those profits in order to cover certain areas of public expenditure, invest in ICTs and maximize public well-being. The fee ultimately represents a tax on the value created by the operator activity. The greater the profits made, the greater will be the value of the authorization, and vice versa. In other words, the fee charged for any such authorization must reflect the real economic benefit derived by the operator from its actual use.

7.4 The emergence of 3G/4G, with all the over the top (OTT)-dominated applications this has entailed. OTTs use the operator network, in some cases providing the same services free of charge without compensating the operator. This duplicity has to be handled carefully by the regulator, whose task it is to defend the interests of both operator and consumer. The OTT factor must therefore be taken into account when calculating the size of a 4G licence fee.

7.5 Indexing the initial licence fee to the annual inflation over the course of the licence's duration may provide an appropriate basis for adjusting the fee for the subsequent years. This involves taking the initial fee paid and adjusting it based on inflation over the licence period.

7.6 Member States are increasingly adopting unified global licences that cover multiple technologies and activities, with African States approaching the rollout of 5G, which brings new use cases that will amplify the needs already addressed by 4G. The proposed steps will provide guidance to Member States to consider the emerging technologies in the calculation of licence fees.

8 Definitions

8.1 A company's gross operating surplus (GOS), also known as gross operating profit, is the main wealth (after payment of all operating expenses, including staff expenses, but before amortization) derived over a given period from the company's activities. It is the profit margin, also known as operating margin.

8.2 GOS enables measurement of the performance and profitability of operations before the effects of income and calculated expenses. Most importantly, it presents a true picture of the result of the company's activity since it considers only the expenses and income due to that activity.

8.3 The weighted average cost of capital (WACC) is an economic indicator representing the average annual rate of return expected by shareholders and creditors in return for their investment. It takes account risk factors such as:

- inflationary risks associated with monetary erosion,
- the country/market risk,
- the systematic risk,
- return on investment,
- exclusionary premium.

In the new economic environment, the cost of capital remains the basic element used for present value calculations in valuation methods and cost models.

Purchasing power parity is a method used in economics to establish a comparison between countries with respect to the purchasing power of their national currencies – something that cannot be done solely on the basis of exchange rates.

9 Methodological approaches

9.1 Licence fees may be benchmarked based on MHz/inhabitant

In order to ensure that estimates of the value of licences and frequencies are fair, regulatory authorities commonly use benchmarking, which involves comparing the licence fees and valuations of frequency use, assuming all else remains constant. It is recognized that countries have different living standards and levels of development as regards telecommunications/ICT, which can vary considerably from one country to another. In applying this approach, then, the following aspects should be borne in mind:

1) In making comparisons between countries, comparators should be countries that are closest to the country being compared, and a common unit of measurement should be determined (the fee per MHz per inhabitant per year).
2) The living standard of the countries should be taken into account by using purchasing power parity. Thus, for Côte d'Ivoire:
3) The fees obtained are referred to the living standard of the reference country, using purchasing power parity. This is in order to take account of the wealth levels and price differences in each country.
4) On this basis, an average fee per MHz per inhabitant per year is calculated on the basis of the arithmetic average of the fees referred to the reference country.
5) Depending on the size of the sample and the disparity between the values of the licence fee obtained, a confidence interval is determined for the average cost with a statistical accuracy of at least 90 per cent, thereby providing a floor value and a ceiling value.
6) By referring these floor and ceiling values to the quantity of spectrum licensed, the population and the period of validity of the licence in the reference country, the reference fee can be determined.
7) This approach by benchmark can be enriched by means of an econometric analysis that seeks to estimate the size of licence and spectrum fees by regression, taking into account national parameters (GDP, population), the market (number of operators, average revenue per user (ARPU), and so on) and technical parameters (average cost of network deployment, average radius of coverage).

9.2 Licence fees based on Discounting approach

The underlying principle of this method is **discounting of the realized and future results**. The main fixed and mobile operators determine, from their market introduction until the expiry of the licence, the financial indicators that characterize their performance.
This approach needs to take the following into account:

1) The GOS values before year T_0 are capitalized at T_0, and the GOS values for the subsequent years, if known, are discounted to T_0; otherwise, they are estimated using the average of the preceding growth rates for this indicator before discounting.
2) The discount rate to be used is the cost of capital established by regulations of the reference country for a period corresponding to the lifetime of the licence or authorization to be granted.
3) The global theoretical value of the licence on the market under consideration will be obtained by adding together all of the discounted GOS values determined annually for all operators within the sector over the lifetime of the authorization or licence to be granted.
4) From the cumulative value of the GOS for the market, the investment effort of the operators over the period for the technological upgrading of their networks (in order to ensure viability of the activity throughout the period of validity of the licence) is subtracted.
5) A part of this cumulative net result of the GOSs, assessed in accordance with the development policy that has been decided, gives an indication as to the level of the **licence fee**.

9.3 Likewise, depending on the availability of information, the financial evaluations can be made more complete by using net present value (NPV) on the basis of a business plan of the operator for the lifetime of the licence or authorization to be granted.
9.4 The NPV is obtained by estimating the demand (number of subscribers, traffic), the capital expenditures (sites, nodes, links), the operating expenditures (operations and maintenance) and the cost of capital (WACC).
9.5 Like the GOS, the NPV can be used to calculate an assessment that will give an indication of the valuation of the licence or authorization.