in the public (e-Government) and in the private sectors, as well as in the sensitisation of the public in matters of Electronic Signature use.

3.2. Promotion of Competition in Networks and Services

3.2.1. Interventions based on the Framework in Force

Organisations with Significant Market Power in the Mobile Telephony Market

In 2002, EETT issued a Decision designating providers COSMOTE S.A. and VODAFONE as Organisations with SMP in the public networks and mobile telephony services market. In the beginning of 2003, EETT issued a Decision[31] designating the providers COSMOTE S.A., STET HELLAS S.A. and VODAFONE as SMP Operators in this market.

It is noted that the goal of the relevant legislative framework is to develop the principles of Open Network Provision (ONP), which render feasible the access of subscribers from one telecommunications provider to the other. This is also a necessary precondition for the entry of new providers to the wider telecommunications market.

Specifically, in this context, Organisations with SMP must satisfy all reasonable requests for network access, including access to points other than the terminating network points that are mentioned to the majority of end users. Furthermore, they have to abide by the principles of non discrimination and transparency as to the Interconnection offered to third parties and to treat all providers requesting Interconnection or Special Access, in an equal manner. Non discrimination requires that providers' requests are satisfied in equivalent conditions, in equivalent circumstances and for equivalent services.

Implementing the same principle, the SMP Operators in the market of public networks and mobile telephony services, are under the obligation to provide information and services concerning Interconnection and Special Access to third parties, under the same conditions and of the same quality as their own provided services or the services of their subsidiaries or partners. Finally, it is noted that these Organisations are under the obligation to provide, following a request, all the necessary information and specifications to providers that are examining the prospect of Interconnection, in order to facilitate the conclusion of the agreement.

Organisations with Significant Market Power in the Interconnection Market

EETT, by Decision[32], designated the telecommunications providers COSMOTE S.A., OTE and VODAFONE as Organisations with SMP in the Interconnection Market of public telecommunications networks. The aforementioned Organisations have to fulfill all the relevant obligations provided by the national and European legislation in force.

More specifically, their obligations, as they result from the Directive 1997/33/EC and PD 165/1999[33], are among others, the following:

- To satisfy all reasonable requests for access to the public telecommunications network, including

[31] *EETT Decision 278/65/2003, GG Issue 338/B/20-03-2003.*
[32] *EETT Decision 275/72B/2003, GG Issue 148/B/12-02-2003.*
[33] *PD 165/1999, GG Issue 159/A/04-08-1999.*

access to points other than the public network terminating points that are provided to end users.

- To implement the principle of non discrimination in Interconnection offered to third parties.
- To implement equivalent conditions in equivalent circumstances for interconnected providers providing equivalent services.
- To implement Interconnection fees that follow the principles of transparency and cost orientation.

It is noted that EETT can request from these Organisations to fully justify the Interconnection fees they charge and demand the reformation of fees, when this is deemed necessary.

The aforementioned actions led to a significant decrease of call termination fees from a fixed to any mobile telephony network, as it can be seen at Charts 50, 51, 52, and 53.

Chart 50

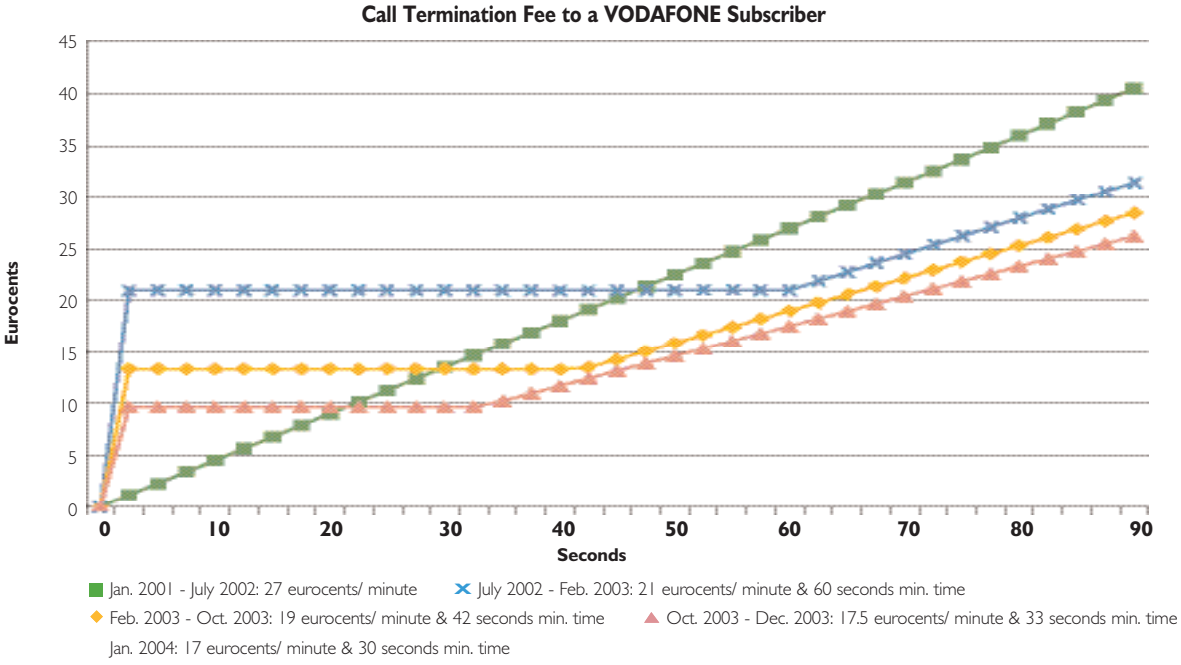


Chart 51

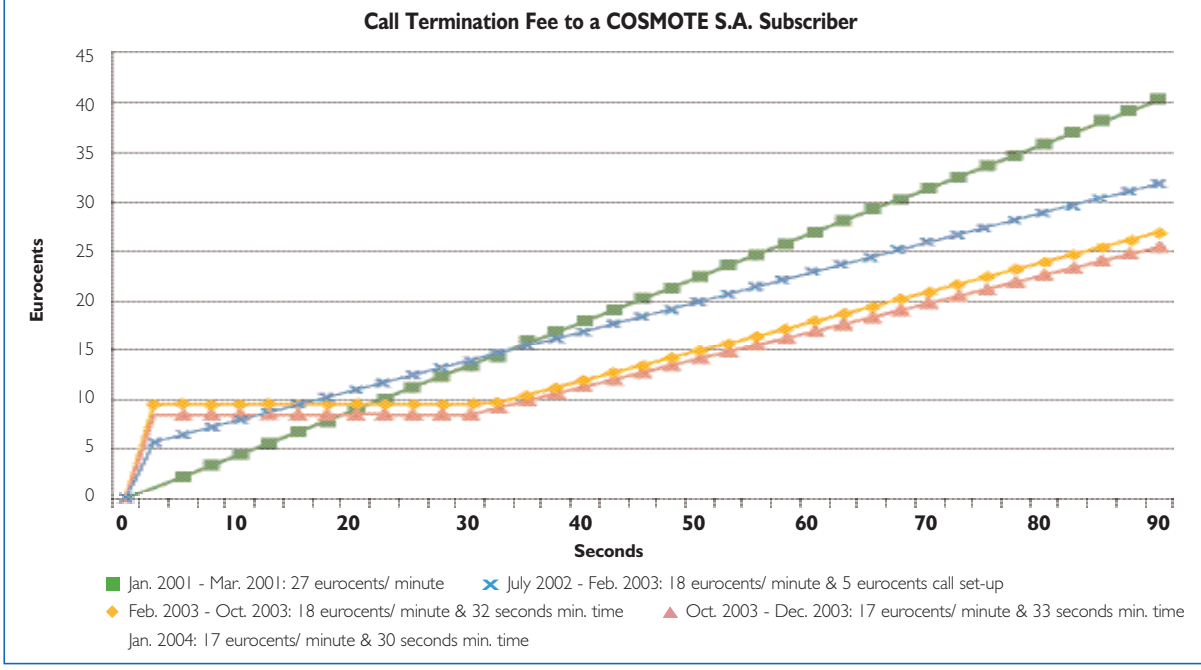


Chart 52

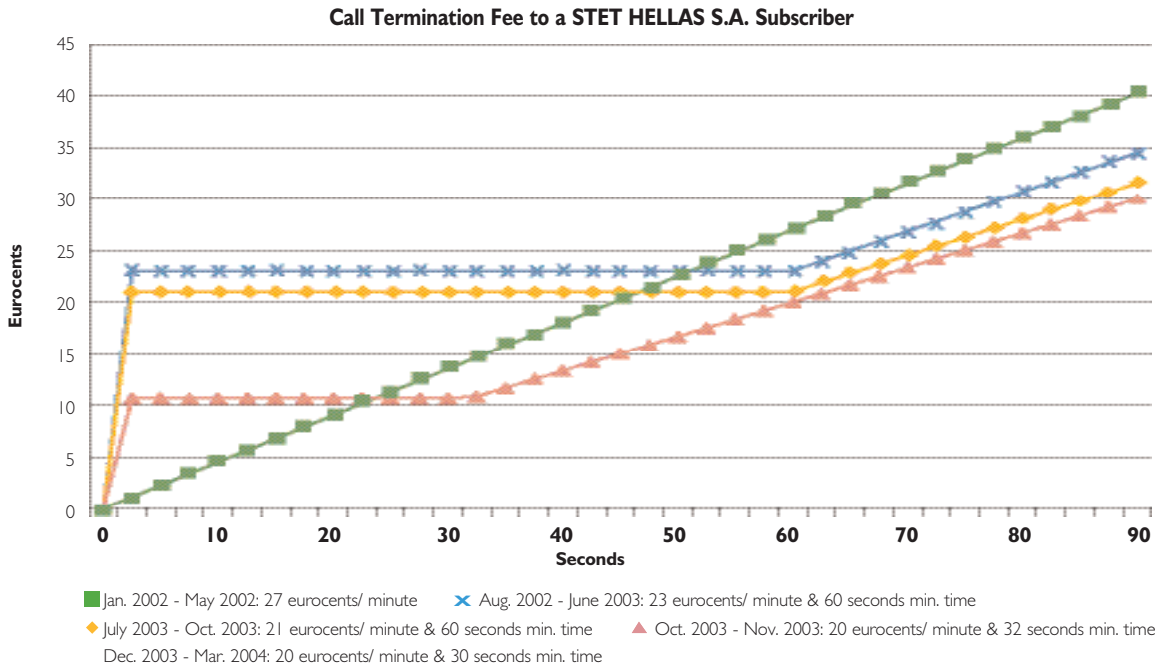
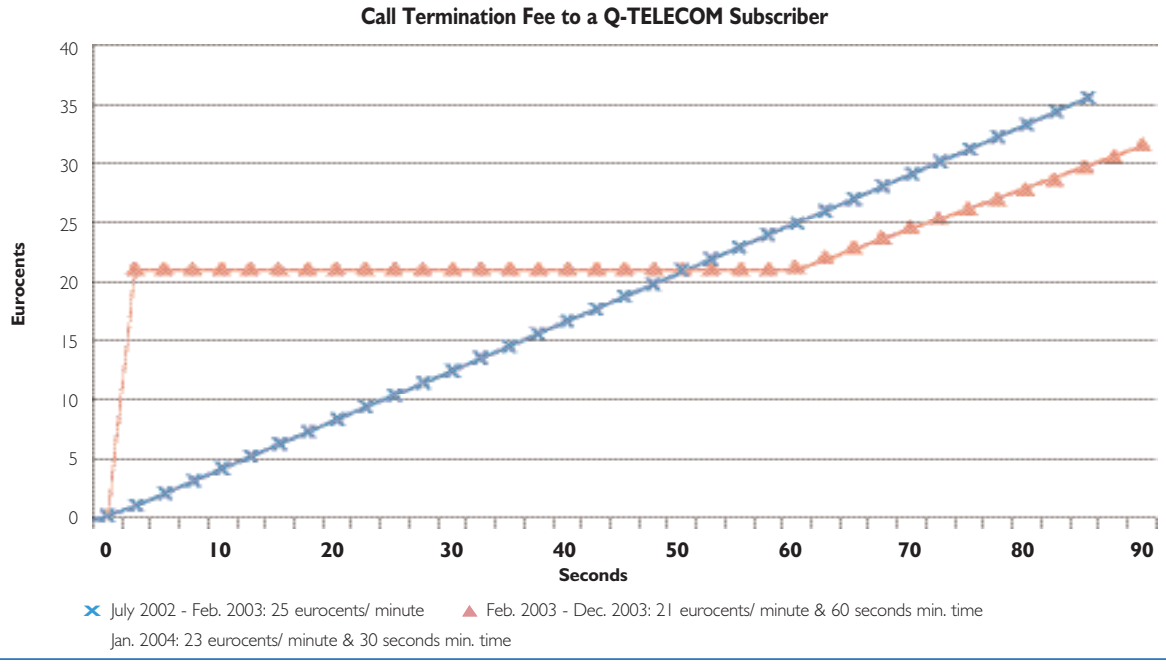


Chart 53



OTE's 2003 Reference Interconnection Offer

Interconnection of telecommunications providers' networks constitutes one of the most important conditions for the smooth operation and development of the telecommunications market. According to the legislative framework, the SMP Operators in the relevant market are obligated to publish a Reference Interconnection Offer (RIO), which constitutes the negotiating base for the conclusion of relevant Interconnection agreements. Among EETT's competences is the control and approval of the RIO, with the aim to protect the market from any possible distortions, to uphold the non discrimination principle on the part of the Organisations in question and to create favourable competition conditions.

In December 2002, OTE, the SMP operator in the relevant market in Greece, submitted for approval the 2003 RIO. EETT, after a control, proceeded to amendments, which mostly concerned the provided Interconnection services, the price control, as well as the conditions and the procedures of service provision. The points where the RIO was upgraded resulted either from the needs that were ascertained during the implementation of the previous RIO, or from the opinions/ proposals that were stated in the relevant Public Consultation carried out in November 2002. It is noted that 2002 was essentially the first year during which, the Interconnection of new fixed voice telephony providers' networks with OTE's network, was implemented and thus many Interconnection implementation issues arose, which, in their majority, were, resolved by the 2003 RIO.

The main differentiation points between the 2003 RIO and the previous RIOs were the following:

- Definition of a common Interconnection framework for fixed and mobile providers. In the 2003 RIO, the proper additions/ amendments were made so that it can constitute the principal framework for the conclusion of an agreement between mobile providers and OTE. The common framework resulted in the establishment of competition in the relevant market, safeguarding it from any possible distortions.
- Integration in the RIO, for the first time, of procedures for the implementation of Number Portability and at the same time, simplification and clarification of procedures for Carrier Pre-selection.
- Clarification and definition of basic procedures and timetables for the implementation of Interconnection, such as testing procedures, failure announcement and restoration, co-installation procedures, definition of algorithm for cost allocation of Interconnection links.

EETT, given OTE's obligation for cost-oriented pricing of most Interconnection services, and due to its inability to prove this cost-orientation for certain services, proceeded to the readjustment of some tariffs. The result was the increase of profit margins for new providers, with positive results for consumers. In Table 12 (page 80), we compare the margins between the Interconnection cost of new providers and the OTE's retail charges for the 2002 and 2003 RIOs. With the regulations of the 2003 RIO, the margins of new providers significantly increased. Specifically, they are given opportunities to make new investments and at the same time to provide the consumers with services of higher quality in lower prices.

Table 12

Comparison of New Providers Margins in relation to the OTE Retail Charges

Call Type	Interconnection Type	Margins	
		2002 RIO	2003 RIO
Local	Local/ Local	16% ~ 20%	~34%
	Local/ Simple	-3% ~ 1%	~ 15%
National	Local/ Local	65% ~ 67%	~ 73%
	Local/ Simple	57% ~ 59%	~ 65%
	Simple/ Simple	49% ~ 51%	~ 57%
	Simple/ Double	27% ~ 28%	~ 34%

The most important Interconnection issues on which EETT will focus in 2004, are the clarification of Interconnection procedures and the definition of service prices included in the RIO.

Bottom-Up Model Design for the OTE Network

Bottom-up models are technical-economic studies through which the network cost of a telecommunications provider is defined for some services. A basic characteristic of these models is that an optimum planning of telecommunications networks is achieved, aiming at the maximum efficiency of their capabilities.

Such models constitute necessary tools for providers, because they will be able to know the provided service cost, but are also necessary for the National Regulatory Authorities (NRAs) in order to perform cost controls to providers. Most NRAs implement bottom-up models in services that must be cost-oriented by Organisations with SMP, so as to determine the relevant tariffs.

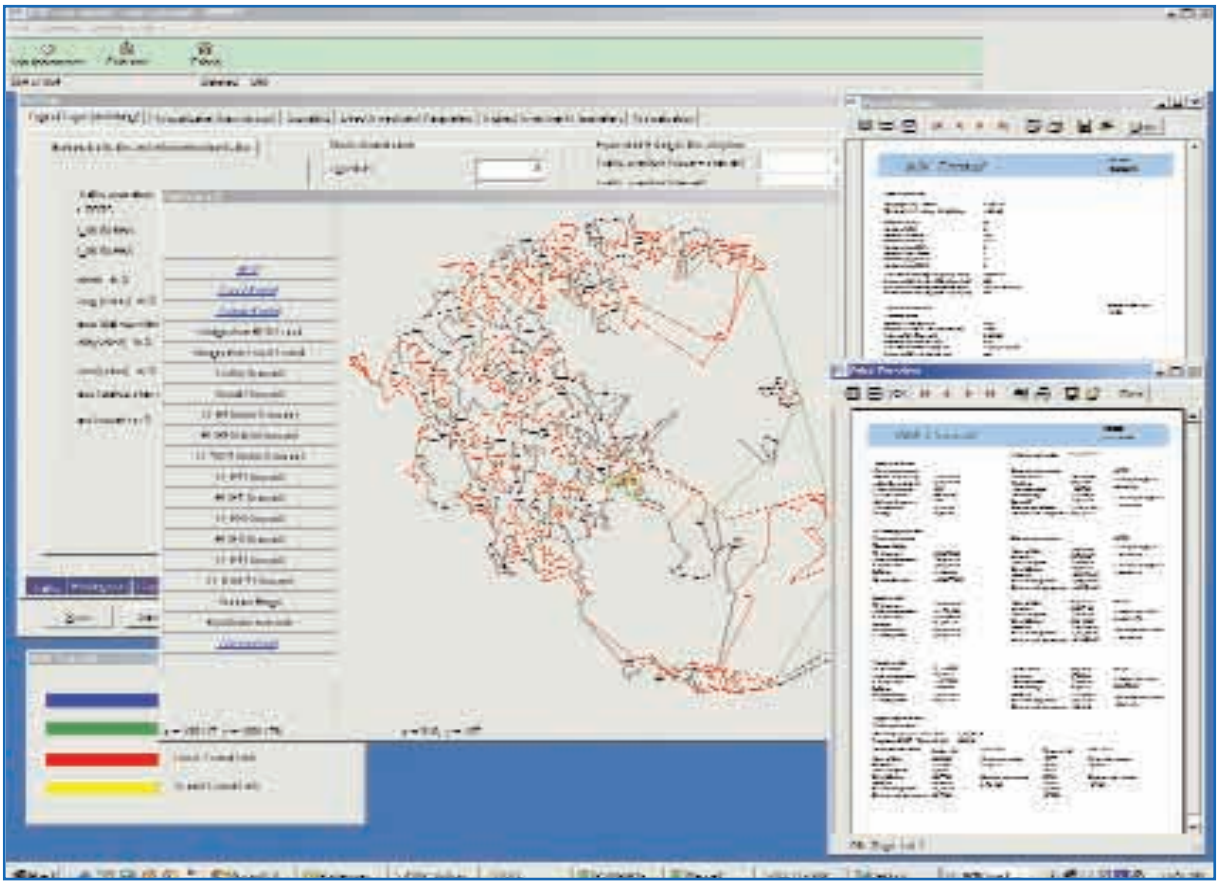
In September 2003, an EETT study by an external consultant was completed regarding the implementation of a bottom-up model for OTE's network and particularly for the Interconnection, LLU and Leased Lines services.

The execution of the project required the collection of a plethora of data from the Greek environment, thus data was requested from:

- OTE, when it concerned the network's technical characteristics, as well as its financial data.
- The National Statistical Service (NSS) of Greece for demographic data such as the country's population and the number of households.
- The Ministry of Environment, Physical Planning and Public Works (MEPPPW), concerning the geographic limits of prefectures and municipalities for the whole Greek state.
- A private undertaking, for data on the coordinates of roads for the whole Greek state (Geographical Information System-GIS).

Following the above, the design and implementation of the model was executed, giving emphasis to the characteristics of the Greek state, as for example the particularities of the population distribution (densely populated urban centers in opposition to scantily populated rural areas) and the particular geographical characteristics (many islands). The model calculates the network costs for the following services:

Figure 1: Operational Environment of the Bottom-Up Model



- Interconnection.
  - Local, Single and Double Call Collection.
  - Local, Single and Double Call Termination.
  - Single and Double Call Transit.
  - Provision of Flat Rate Internet Access Call Origination (FRIACO).
  - LLU.
  - Fully Unbundled Access.
  - Shared Access.
- Leased Lines.
  - Typical Leased Lines.
  - Part Circuits.

An important characteristic of the model is its high level of capability. It is indicatively mentioned that it receives approximately 700 input parameters, which are initiated by the model's user and used for the calculation of the cost of the services under examination. The aforementioned model is flexible and can be readjusted in case the initial data changes. (Figure 1 presents the model's operational environment).

Thus, EETT has in its possession a useful and effective tool, which allows EETT to:

- Assess and evaluate the proposed, through top-down approaches, tariffs by OTE for Interconnection, LLU and Leased Lines.
- Assess the cost for the introduction of new services by OTE.
- Compare the top-down and bottom-up methodologies for the provision of services, a comparison that leads to the identification of non-efficient processes for the

provision of specific services, as well as to a general assessment on the efficiency of services provided by OTE.

The bottom-up model has already been used by EETT for the examination of OTE's proposed tariffs for Interconnection, LLU and Leased Lines and is expected to be used for the assessment of other existing and new services tarrifs.

Bottom-Up Model Design for the Mobile Telephony Networks

In 2003, given the high mobile call termination tariffs, EETT collaborated with a consultant for the analysis of the competition level in the relevant market. Specifically, a bottom-up model was designed, concerning the networks of mobile telephony providers in order to use this model for the shaping of a proper regulatory policy.

EETT also carried out a Consultation with the mobile operators, during which the basic principles of the bottom-up model were presented. Following that, the model was notified to the providers to study it in detail. The providers sent their comments on the model, which in their majority were taken into consideration in the new improved versions of the model. The model calculates the mobile call termination cost and serves the following goals:

- The definition of the competition level in what concerns the tariffs for call termination.
- The definition of the target price, in case EETT deems it necessary to impose cost-oriented termination tariffs.

The model calculates the network cost for a number of services, including the outgoing traffic to other networks, the traffic within the network and the incoming traffic from other networks. The model uses the Long Run Incremental Cost (LRIC) method.

EETT, having in its possession the specific bottom-up model, ensures that its regulatory policy on mobile call termination tariffs, is objective and thus the interests of mobile and fixed voice telephony users are more effectively safeguarded.

3.2.2. Interventions based on the New Framework

Market Analysis and Assessment of Significant Market Power in Relevant Markets

In March 2002, the European Union (EU) adopted the new Regulatory Framework for electronic communications networks and services, which among others, includes the following Directives:

- Directive 2002/21/EC[34] of the European Parliament and of the Council of March 7th, 2002 (Framework Directive), on a common Regulatory Framework for electronic communications networks and services.
- Directive 2002/19/EC[35] of the European Parliament and of the Council of March 7th, 2002 (Access Directive) on access to, and interconnection of, electronic communications networks and associated facilities.
- Directive 2002/22/EC[36] of the European Parliament and of the Council of March 7th, 2002 (US Directive) on US and users' rights relating to electronic communications networks and services.
- Directive 2002/20/EC[37] of the European Parliament

[34] *Directive 2002/21/EC, OJ L108 of the 24-04-2002, p. 0033-0050.*
[35] *Directive 2002/19/EC, OJ L108 of the 24-04-2002, p. 0007-0020.*
[36] *Directive 2002/22/EC, OJ L108 of the 24-04-2002, p. 0051-0077.*
[37] *Directive 2002/20/EC, OJ L108 of the 24-04-2002, p. 0021-0032.*

and of the Council of March 7th, 2002 (Authorisation Directive) on the authorisation of electronic communications networks and services.

The aforementioned Framework was put into effect on the 24th of April 2002 and the member-states should integrate it in national law until the 25th of July 2003.

According to the new Regulatory Framework, the definition of markets must be conducted according to the principles of competition law and taking into consideration the Recommendation of the Commission on relevant markets, as well as the Commission guidelines on market analysis and assessment of SMP. The Framework Directive, provides that the NRAs analyse the level of competition in the relevant markets mentioned in the Commission's Recommendation[38] of the 11th February 2003 on the markets of electronic communications products and services that need regulation a priori, as well as in any additional markets they may define.

The procedure that must be followed by the NRAs is divided in three stages:

- Market definition.
- Assessment of the level of competition and designation of SMP Operators in the relevant market.
- Proposed regulatory obligations.

In the aforementioned Recommendation, eighteen markets are proposed for examination.

Before the final decision concerning the definition of these markets and the imposition of proposed regulatory obligations, the NRAs are obligated to carry out relevant Public Consultations, on a national level as well as with the Commission and the NRAs of the remaining member-states.

In 2003, EETT, in order to respond to the aforementioned obligations, following an invitation to tender, assigned to a consultant a study on the definition and analysis of the mobile call termination market. It was ascertained that each mobile telephony network constitutes a separate market, which is not adequately competitive and that each mobile operator was designated as having SMP in the market of call termination in its network. The study's findings were put to a Public Consultation in September 2003. EETT, upon completion of the Public Consultation, proceeded to draft a text of positions concerning the regulatory obligations that must be imposed, which will be put on Consultation in the beginning of 2004. Then, after it is finalised, it will be notified to the European Commission, according to the provisions of the new Regulatory Framework.

At the same time, in 2003, EETT began in collaboration with an external consultant, the works for the definition and analysis of the market of publicly available local or/ and national telephone services provided at a fixed position for non residential customers.

As far as the remaining markets, EETT sent to telecommunications providers relevant questionnaires for the collection of the necessary data and at the same time conducted a public tender procedure on the selection of a consultant for the project of analysis of the remaining markets.

3.2.3. Number Portability

Number Portability constitutes one of the principal pivots for the promotion of competition in the telecommunications sector, between the telecommunications providers. Number Portability allows consumers to retain their telephone number when they choose to change their

[38] *Recommendation (2003) 497/11-02-2003.*

telecommunications provider, so that they can satisfy their needs on quality and price. This invigorates the competition among telecommunications providers, who in an effort to attract new subscribers and to maintain the current ones, constantly improve the quality and price of services, to the benefit of the consumer.

Since 2002, EETT, by a Decision[39], set detailed rules on the introduction of Number Portability in the telecommunications market. Number Portability concerns geographic numbers (fixed voice telephony numbers), non-geographic numbers (free of charge numbers and numbers of additional charge etc.), as well as mobile telephony numbers.

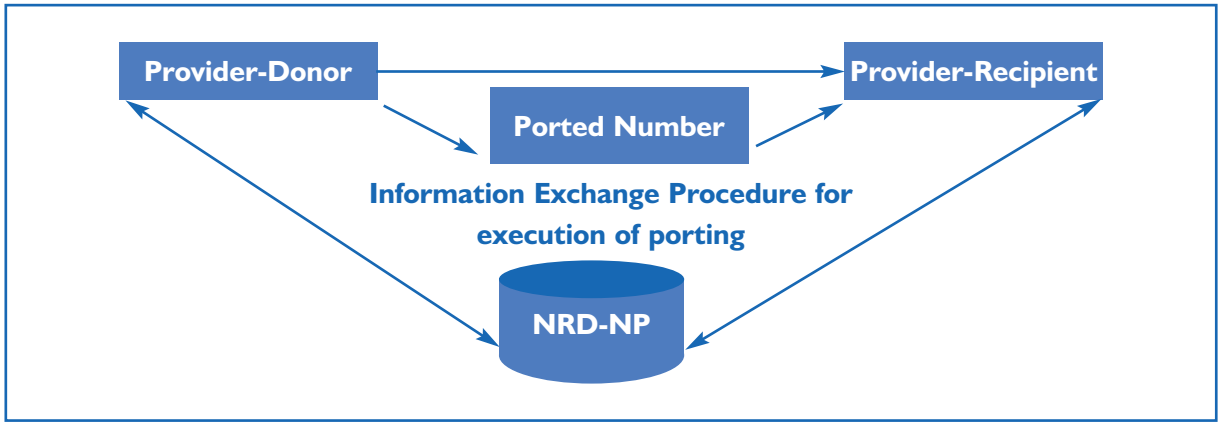
For the facilitation of Number Portability provision, the implementation of the National Relational Database for Number Portability (NRD-NP) began in 2003. It is a specially formed database, which operates under EETT's supervision and contains call routing information. The NRD-NP is linked to the operational databases of all providers, using a standardised communication infrastructure and supports the exchange of information between the databases (see Figure 2). This information mostly concerns the management of subscribers' portability applications, as well as the forwarding of providers "identities" that accept the numbers (providers-recipients) to all providers, so that they can successfully route the calls to them and not to the former providers from which the numbers were transported (providers-donors).

For the implementation of NRD-NP, EETT collaborated with all involved providers, in order to collect the relevant technical requirements for NRD-NP design, as well as to resolve any issues that may affect the smooth and timely implementation of portability in our country.

The implementation of mobile telephony Number Portability with the use of the NRD-NP will take place gradually during 2004, in order to ensure the quality of provided portability services to the consumers. Specifically, EETT's Decision[40] finalised the following implementation schedule:

- During the period from January 12th – till February 27th, 2004, a limited range pilot operation with friendly users will be executed.
- The commercial provision of the service will begin on the March 1st 2004, and by March 31st 2004, the processing time of applications through NRD-NP will not exceed 20 working days. From April 1st 2004, the processing time of applications will not exceed 10 working days.

Figure 2: The Number Porting Procedure using NRD-NP



[39] *EETT Decision 254/71/2002, GG Issue 791/B/26-06-2002.*
[40] *EETT Decision 300/22/2003, GG Issue 1915/B/23-12-2003.*

3.2.4. Market Monitoring and Assessment of Competition Level

The need to evaluate the competition level in the telecommunications market renders the existence of an efficient monitoring system necessary, for the collection and processing of the necessary market related data and information.

Since 2000, EETT had already begun the collection of relevant data, mostly through telecommunications providers. At the same time, EETT collects and evaluates data from market surveys on a national and international level. This way, EETT monitors the development of competition on an EU level. Furthermore, with the use of suitable information and indexes on the national market, deviations and similarities between European markets can be analysed.

In 2003, EETT sent to all owners of General Authorisation or Individual Licence detailed questionnaires, aiming to draw and evaluate data, in order to imprint the all-time evolution of the market. This way, EETT has in its possession the majority of data required for the defining and analysing the relevant telecommunications markets.

At the same time, EETT, during 2003, provided information on the Greek telecommunications market to all interested bodies – the Ministry of Transportation and Communications (MTC), Eurostat, the Organisation for Economic Cooperation and Development (OECD) and the International Telecommunication Union (ITU) – undertakings, providers and citizens. Furthermore, by forwarding all the requested data on the Greek telecommunications market to the European Commission, it contributed to the drafting of EU's 9th Report on telecommunications. The aforementioned Report, which is available in EU's website[41], includes comparative analysis regarding the telecommunications market among member-states.

EETT also started the definition of market monitoring system specifications, which is expected to be completed in 2004. The development of an efficient monitoring system is expected to support EETT's work on market regulation. At the same time, a monitoring tool for the telecommunications providers' tariffs is being developed, aiming to implement an internet application, which consumers will be able to access through EETT's website in order to compare tariffs. This application is expected to be available to consumers during the first semester of 2004.

3.3. Safeguarding Competition

During 2003, critical issues arose, concerning competition in the telecommunications market, rendering EETT's intervention necessary, in order to ensure the smooth operation of the market. The principal issues that EETT was called to face are stated below.

Hearing concerning OTE Discount Packages on Voice Telephony

In March 2003, OTE notified EETT of its intention to implement discounts in voice telephony tariffs. According to OTE's proposal, national calls made on Sundays would be charged according to the tariffs of

[41] *http://europa.eu.int/information_society/topics/text_en.htm.*