



## 3. Increase of the Number of Operators

### 3.1. Third Generation (3G) Mobile Communications Licences

#### 3.1.1. Introduction

The rapid growth of mobile telephony and the advent of 3G (UMTS) Mobile Communications marked a new era in international communications. This fact, combined with the high penetration of mobile telephony in our country during the previous years and with its estimated further growth, necessitated the participation of Greece in the new mobile communications technologies. The State had recognised in time the importance of installing and developing these systems in our country for further opening-up the market and for providing new high-quality services to citizens. For this purpose, EETT, as the competent authority, was assigned in the end of 2000 with the task to organise and carry out the licensing procedures for the above systems.

On its part, EETT had already begun a detailed evaluation of all issues relating to the licensing procedure. Taking into consideration the increased requirements and the complexity of the procedures involved, EETT cooperated with internationally recognised consultancies, selected through an open public tender procedure, for planning the licensing activities. The licensing procedure comprised two stages aiming, inter alia, to record the views and queries of interested parties as well as to inform candidates in detail of the conditions for participation in the auction and of the obligations of the bidders. The main objective was to establish conditions suitable for facilitating entrants in this new market and for strengthening competition to the benefit of consumers.

The schedule set by EETT was faithfully adhered to and the auction was successfully concluded

within a period of five and a half months, which by international standards is an exceptionally short period for such a demanding and complex project.

The procedure was thoroughly organised and was conducted under conditions of full transparency, resulting in the granting of 3G Mobile Communications Licences. A key feature of the procedure was that the market was given the opportunity to freely determine the value of the licences, leading to results beyond any contestation. The result of the auction contributed to the further opening-up of the market and is expected to bring about various benefits to the consumers, strengthening in parallel the economy of the country. Moreover, it led to the collection by the Greek State of considerable revenues, amounting to EURO 484.5 million (GRD 165.1 billion).

#### 3.1.2. Third Generation (3G) Mobile Communications Systems

UMTS networks allow the provision of new, advanced services and applications beyond those already provided by 2G networks (i.e. voice services, SMS, WAP and basic information services). In particular, 3G networks are capable of providing data services, allowing the development of numerous applications relating to both interpersonal communications and computer-based "communications" -interfacing, such as:

- ✓ Teleconferencing services
- ✓ Internet services (electronic mail, chat and Internet navigation, electronic commerce etc.)
- ✓ Interbanking transactions
- ✓ Entertainment services, such as interactive games, music videos, film trailers

It is evident from the above that, with the introduction of



3G networks, the wireless communications sector will contribute to the creation of new markets over the Internet.

Other services which are considered to be more innovative and may possibly be provided by these networks include remote monitoring of home or office premises, stock exchange information services and automatic messaging concerning fluctuations in the value of shares, tracing of optimal route and identification of the user location, remote diagnosis (e.g. monitoring of a car engine by the workshop and notification of a potential malfunction), tracking of vehicles and goods deliveries etc.

It will be possible for these services to be priced on the basis of network usage degree or data volumes, instead of being priced based on the duration of the subscriber's use of the network services, as is the case today. The application of appropriate tariffication will play a significant part in determining the impact and success of these services.

### **3.1.3. Objectives of the licensing procedure**

The principal objectives of the procedure for granting the Individual Licences for installation, operation and exploitation of a public telecommunications network supporting 3G Mobile Communications and for provision of corresponding 3G services were the following:

- ✓ To grant the licences to operators capable of exploiting them in the best possible way, to the benefit of the consumers
- ✓ To ensure timely provision of the services to Greek consumers, under favourable conditions

- ✓ To ensure the provision of these services during the period in which the 2004 Athens Olympic Games are going to be held
- ✓ To ensure that competition in this particular market is fair and operates under conditions securing the long-term viability of operators
- ✓ To promote new technologies and in particular the convergence of Internet technologies and mobile telephony in Greece, at the quickest possible pace
- ✓ To achieve efficient spectrum management
- ✓ To receive, on behalf of the State and, by extension, of the society in its entirety, a reasonable price for granting the rights to the use of a scarce resource
- ✓ To achieve the above through fair, equal and transparent procedures

### **3.1.4. Timing of the licence granting procedure**

The procedure for granting the said Individual Licences took place in accordance to the following timetable:

**Table 5: Timing of the licence granting procedure**

February 23 - March 26	Public Consultation
April 9	Publication of Public Consultation results
May 7	Publication of the Information Memorandum
June 1	Publication of the Invitation to Tender
July 2 and 3	Submission of participation envelopes
July 11 and 13	Procedure for granting 3G Individual Licences
August 6	Granting of 3G Individual Licences

It is worth noting here that this timetable was specified and announced upon the commencement of the project and was faithfully adhered to in terms of total time. The timetable provided for conducting the



shortest ever licensing procedure for 3G Mobile Communications in Europe.

### **3.1.5. Public Consultation**

The Public Consultation process was held between 23 February and 26 March 2001. Using a suitably formulated Q&A list, its purpose was to provide all interested parties with the opportunity to express their views and remarks concerning the licensing procedure planned. The parties that responded to it were the following:

1. COSMOTE
2. CHAOS ME S.A.
3. ERICSSON HELLAS S.A.
4. PANAFON
5. STET HELLAS
6. UMTS FORUM
7. WIND TELECOMUNICAZIONI S.P.A.

After the Public Consultation process was concluded, responses were codified and processed. EETT, having available in writing the views of the above parties concerning the licensing framework, and taking into consideration relevant techno-economic studies conducted under the project, had to set out suitable technical specifications, assess the financial scope of the licences and, finally, lay down the terms and conditions for their granting. On 5 May 2001, the Minister of Transport and Communications accepted the EETT recommendations and issued a relevant Ministerial Decision (YA) (26998/1738/02-05-2001).

### **3.1.6. Publication of the Information Memorandum**

On 7 May 2001, the Information Memorandum (the Memorandum) was published in both Greek and

English. The Memorandum presented:

- ✓ The procedure to be followed for granting the 3G Mobile Communications Licences
- ✓ The criteria that parties interested to participate should meet
- ✓ The obligations to be undertaken by the participants, in the event they were granted a licence, concerning both the development of their network and the payment method for the auction proceeds

Interested parties were then given the opportunity to submit queries and views concerning the text. It is pointed out that the Memorandum set out the timetable (as presented above) for conclusion of the licensing procedure, adherence to which was directly connected to ensuring the transparency and integrity of the procedure.

After commencement of the licence granting procedure and until its conclusion, EETT organised a campaign for promoting the auction and informing all interested parties. In this context, EETT created a special area on its website where all relevant texts, decisions and announcements were published, contacted all large mobile telephony operators active mainly in Europe and informed Commercial Attachés and Embassies, financial institutions, banks and the international press. In parallel, EETT executives participated in international conferences/events concerning developments in licensing of 3G Mobile Communications.

As a result of this extensive information campaign and after the publication of the Memorandum, two of the largest mobile telephony operators in Europe, Hutchison 3G Europe and Orange S.A., expressed their interest for the procedure.



In total, the following operators expressed their remarks on the Memorandum:

1. PPC TELECOMMUNICATIONS S.A.
2. COSMOTE
3. HUTCHISON 3G EUROPE
4. ORANGE S.A.
5. PANAFON
6. STET HELLAS
7. WIND TELECOMUNICAZIONI S.P.A.

### **3.1.7. Publication of the Invitation to Tender**

The Invitation to Tender, describing the licensing procedure in detail, was published on 1 June 2001, in printed and electronic format and in both Greek and English. In particular, this document contained:

- ✓ The criteria concerning technical and financial adequacy for participation in the licensing procedure
- ✓ The restrictions concerning the ownership status of participating entities
- ✓ The description of the phases and intermediate stages of the auction
- ✓ The minimum price to be paid in each phase
- ✓ The terms concerning coverage percentages and growth rate for the networks
- ✓ The terms concerning payment of the auction proceeds and draft texts of the licences to be allocated

On 21 June, clarifications on the Invitation to Tender were given through the EETT website. On 26 June 2001, additional clarifications were given, concerning the procedure for the submission of applications and the opening of the bids.

According to the provisions of the Invitation to Tender, licence holders would undertake the obligation to

install, operate and maintain the equipment necessary for the provision of services meeting at least the following requirements:

- ✓ 25% minimum coverage of Greek population by December 2003
- ✓ Coverage by June 2004 of Olympic Games facilities and of all locations within Attica where similar activities are to take place, as well as of the main road arteries that lead to the above locations and lie within Attica
- ✓ 50% minimum coverage of Greek population by December 2006

### **3.1.8. Procedure for prequalification of participants**

Between the date on which the Invitation to Tender was issued and the date on which the prequalification procedure commenced, the time elapsed was sufficient for interested parties to prepare their participation envelopes. Submission of participation envelopes took place on Monday 2 July and Tuesday 3 July 2001.

The prequalification of candidates then followed, based on the examination of the contents of the applications and envelopes submitted, and on 10 July the list of participants in the procedure was announced. The participants were the following companies:

1. COSMOTE
2. PANAFON
3. STET HELLAS

### **3.1.9. Auction for 3G Mobile Communications Licences**

The auction type selected was that of the auction using sealed bids: in this, each bidder paid the



price specified in his bids, which had to be higher than or equal to the opening price set for each phase. A maximum of four licences were to be granted. The design of the auction aimed at creating incentives and strengthening the participation of new entrants, providing for a number of licences which exceeded by one the number of incumbent mobile telephony operators.

The total spectrum available for auctioning in the context of the licensing procedure was:

- ✓ 2 x 60 MHz paired bandwidth in the 1920-1980 MHz and 2110-2170 MHz band
- ✓ 20 MHz unpaired bandwidth frequencies in the 900-1920 MHz band

According to the design of the auction, the bandwidth for each licence was not fixed, but instead participants were allowed to determine it depending on estimates of their future needs. This was an innovative design on a worldwide scale, as it provided for different phases depending on the level of interest expressed. Thus, at the initial stage, the efforts concerned the creation of a market with four operators and, if

this was not achieved, of a market with three operators, and so on.

The auction was conducted in three phases. In Phase 1, 2x10 MHz (paired) plus 5 MHz (unpaired) radio frequency blocks were allocated (Basic Licences). In Phase 2, additional 2x5 MHz radio frequency blocks were allocated, and in Phase 3 the positioning of the radio frequency blocks within the available spectrum band was specified. Opening prices for the Basic Licences as well as for the additional radio frequency blocks for new entrants and for incumbent operators are given in Table 6.

Phase 1 commenced on Tuesday 11 July 2001 and was concluded on Wednesday 12 July 2001. No new entrant participated in this phase, and 2 Basic Licences were granted for 2x10 MHz (paired) plus 5 MHz (unpaired) bandwidth to all participants. Phase 2, regarding the allocation of additional radio frequency blocks to those who had obtained Basic Licences, was held on Friday 13 July 2001. As a result of combinatorial bidding, two additional radio frequency blocks were granted to PANAFON and one to COSMOTE. STET HELLAS did not express its interest for additional radio frequency blocks.

**Table 6: Opening prices**

	Opening price for new entrant operators	Opening price for incumbent operators
<b>Phase 1</b> (1 2x10 MHz block + 5 MHz)	EURO 146,735,143 (GRD 50 bn.)	EURO 146,735,143 (GRD 50 bn.)
<b>Phase 2</b> (Reserved 2x5 MHz additional block)	EURO 2,934,702 * (GRD 1 bn.)	n/a
<b>Phase 2</b> (Non-reserved additional 2x5 MHz blocks)	EURO 14,673,514 (GRD 5 bn.)	EURO 14,673,514 (GRD 5 bn.)

\* Applicable only if the new entrant had obtained a Basic Licence in the initial stage of Phase 1 of the auction.



**Table 7: Spectrum band for 3G Mobile Communications**

Bandwidth	Bidder	Auction proceeds
2x20 MHz FDD and 5 MHz TDD	PANAFON	EURO 176,376,199 (GRD 60,100,189,809)
2x15 MHz FDD and 5 MHz TDD	COSMOTE	EURO 161,411,701 (GRD 55,001,037,116)
2x10 MHz FDD and 5 MHz TDD	STET HELLAS	EURO 146,735,169 (GRD 50,000,008,837)

**Table 8: Spectrum band for 3G Mobile Communications**

Bidder	Radio Frequency Block
PANAFON	1920.3-1940.3 MHz & 2110.3-2130.3 MHz 1915.1 - 1920.1 MHz
COSMOTE	1950.3-1965.3 MHz & 2140.3-2155.3 MHz 1905.1-1910.1 MHz
STET HELLAS	1940.3-1950.3 MHz & 2130.3-2140.3 MHz 1910.1-1915.1 MHz

Table 7 shows the final radio frequencies allocated and the corresponding auction proceeds for 3G Mobile Communications Licences.

Phase 3 then followed, for positioning the radio frequency blocks allocated as above within the available spectrum band (see Table 8).

As a result of the fact that EETT designed the competitive procedure in a way that allowed the number of licences and the bandwidth for each one of them to be market-driven, the participants obtained the licences, which they had foreseen as necessary for meeting the needs of their client base in the future.

### **3.1.10. Method of payment of the auction proceeds**

In accordance with the provisions of the Invitation to Tender, the auction proceeds were paid in the following manner:

- ▶ 70% of the auction proceeds was paid within 20 days (6 August 2001) from the date on which the EETT Decision appointing the successful bidders was issued.

**Table 9: Payment dates of auction proceeds and corresponding amounts**

Operators	06/08/01	20/12/05	20/12/06	20/12/07	TOTAL
<b>PANAFON</b> (EURO / GRD)	<b>123,463,339</b> 42,070,132,764	<b>17,637,620</b> 6,010,019,015	<b>17,637,620</b> 6,010,019,015	<b>17,637,620</b> 6,010,019,015	<b>176,376,199</b> 60,100,189,809
<b>COSMOTE</b> (EURO / GRD)	<b>112,988,191</b> 38,500,726,083	<b>16,141,170</b> 5,500,103,678	<b>16,141,170</b> 5,500,103,678	<b>16,141,170</b> 5,500,103,677	<b>161,411,701</b> 55,001,037,116
<b>STET HELLAS</b> (EURO / GRD)	<b>102,714,618</b> 35,000,006,084	<b>14,673,517</b> 5,000,000,918	<b>14,673,517</b> 5,000,000,918	<b>14,673,517</b> 5,000,000,917	<b>146,735,169</b> 50,000,008,837
<b>TOTAL</b> (EURO / GRD)	<b>339,166,148</b> 115,570,864,931	<b>48,452,307</b> 16,510,123,611	<b>48,452,307</b> 16,510,123,611	<b>48,452,307</b> 16,510,123,609	<b>484,523,069</b> 165,101,235,762



- ▶ The remaining price (30% of the auction proceeds) will consist of equal instalment amounts payable annually, the first such payment being paid in December 2005.

In particular, bidders shall pay the instalment amounts shown in Table 9.

### 3.1.11. Conclusions

The procedure for granting 3G Mobile Communications Licences was judged by all interested parties to be absolutely transparent, fair and efficient. Any legal or other disputes, which might jeopardize the outcome or the timeframe of the procedure were avoided. It should be noted that the experience from corresponding auctions conducted in other European countries is very different.

In evaluating the procedure, it is important to take into consideration the following factors:

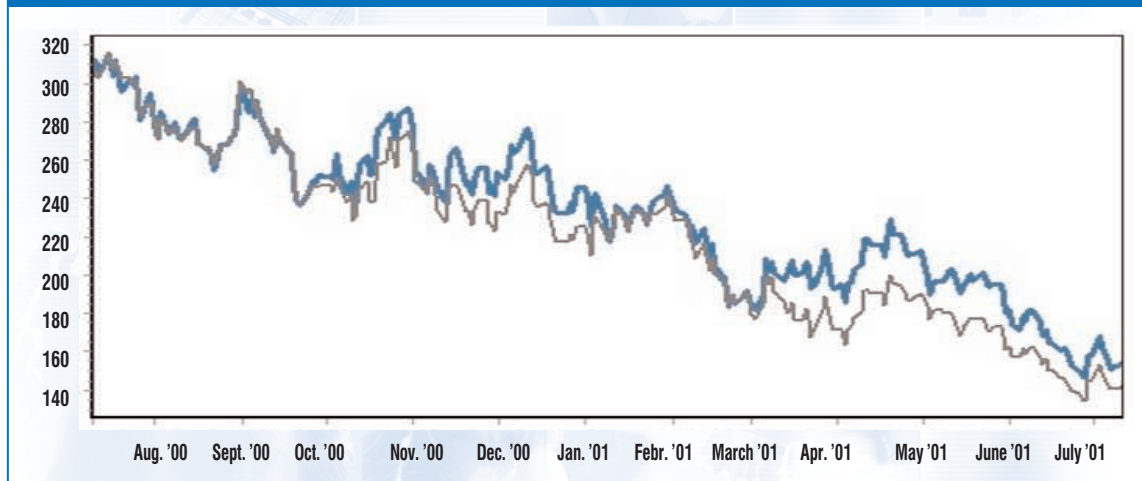
- ✓ The timeframe for concluding the licensing procedure was the shortest among all EU countries
- ✓ In view of the 2004 Olympic Games, Greece was obliged to quickly grant the Licences for 3G Mobile Communications, so that the networks necessary for provision of the corresponding services could be developed
- ✓ Most European countries had already granted Licences for 3G Mobile Communications
- ✓ The licensing procedure in Greece took place at a time when the economic conjuncture, in the Greek and international markets, was unfavourable. This situation is shown in Table 10 and in Chart 21 on the next page
- ✓ The adverse developments in the telecommunications sector, such as the uncertainty concerning the start of terminal devices sales and the guarded -to this date- optimism about the success of similar services, such as WAP

**Table 10: Economic conjuncture per country and timing of the licensing procedure (Fluctuation of Nasdaq and LSE FTSE indices for the period Apr.2000-Jul.2001)**

Auction	Date	Nasdaq Telecom Index		LSE FTSE Telecom Index	
		Index Value	% Change against Sep.2000	Index Value	% Change against Apr.2000
United Kingdom	Apr. 2000	1 100	0.0%	315	0.0%
Netherlands	Jul. 2000	870	-20.9%	310	-1.6%
Germany	Aug. 2000	770	-30.0%	290	-7.9%
Italy	Oct. 2000	730	-33.6%	250	-20.6%
Austria	Nov. 2000	600	-45.5%	270	-14.3%
Switzerland, Poland	Dec. 2000	480	-56.4%	230	-27.0%
Belgium	Feb. 2001	500	-54.5%	230	-27.0%
Greece	Jul. 2001	300	-72.7%	150	-52.4%



Chart 21: Telecommunications Index LSE FTSE



— : British Telecom share price — : LSE FTSE Index value

Table 11: Ranking of European countries by price paid per inhabitant

No.	Country	Total revenues (GRD bn.)	Price per inhabitant GRD 000s)
1.	Germany	17,312	209.9
2.	United Kingdom	11,872	200.4
3.	Italy	4,708	81.4
4.	Netherlands	915	57.9
5.	France	3,377	57.2
6.	Austria	240	29.6
7.	Greece	165	15.6
8.	Belgium	153	15.0
9.	Portugal	136	13.6
10.	Norway	34	7.5
11.	Switzerland	46	6.1
12.	Spain	182	4.8
13.	Sweden	0	0.0
14.	Finland	0	0.0

Despite the unfavourable economic climate prevailing worldwide, EETT collected significant revenue on behalf of the State. In parallel, a comparison of the prices paid per inhabitant and per GDP unit for 3G Licences, presented in Tables 11 and 12, shows that the licences in Greece were granted for a reasonable price, avoiding the negative con-

sequences that have arisen in the cases of the United Kingdom and of Germany. In these two cases, a series of reactions and concerns were manifested concerning the capability of the operators to exploit the licences that they obtained and the possibility of the consumers bearing in full the excessively high price paid for the purchase of the licences.



**Table 12: Ranking of European countries by price paid per GDP unit**

No.	Country	Total revenue (GRD bn.)	Price per GDP unit
1.	Germany	17,312	23.51
2.	United Kingdom	11,872	23.38
3.	Italy	4,708	9.35
4.	France	3,377	6.92
5.	Netherlands	915	5.96
6.	Austria	240	3.21
7.	Greece	165	2.74
8.	Portugal	136	2.18
9.	Belgium	153	1.62
10.	Norway	34	0.71
11.	Spain	182	0.70
12.	Switzerland	46	0.57
13.	Sweden	0	0.00
14.	Finland	0	0.00

Undoubtedly, this project was a major challenge for EETT, as its outcome will significantly influence the future landscape of the Greek telecommunications sector, and will in parallel exercise a positive effect on the national economy. Granting of these licences will decisively contribute to the modernisation of the network infrastructure of our country and will upgrade the quality and quantity of the services provided to consumers. The licensed operators are expected to quickly develop modern networks, capable of supporting a set of tele-services that will contribute not only to the improvement in the quality of life but also to the economic growth of Greece. Finally, the strong interrelation existing between the increased telecommunications needs of our country during the 2004 Olympics and the development of 3G networks, which can satisfy a significant part of these needs, should be stressed. This interrelation will contribute towards further strengthening the domestic telecommunications sector and promoting competition, with considerable benefits for the consumers.

## 3. 2. Second Generation (2G) Mobile Communications Licences

### 3.2.1. Introduction

Until August 2001, there were three mobile telephony (2G Mobile Communications) operators active in Greece. Two of them, PANAFON and STET HELLAS, operated exclusively in the GSM band, while the third one, COSMOTE, operated exclusively in the DCS band.

Aware that sufficient unallocated spectrum was available in the two spectrum bands (in the GSM band and especially in the DCS band), which at the European level is made available for use to 2G Mobile Communications operators, as well as of the fact that Greece was one of the few European countries where mobile telephony operators were active exclusively in one of the two bands, the State decided to allocate the remaining (unallocated) spectrum.



In this context, and following a relevant Public Consultation process held in July 2000, it was decided that the procedure for allocating this spectrum should form part of the procedure for granting 3G Mobile Communications Licences. The relevant Ministerial Decision (YA 58648/4946), specifying the terms for conducting the above procedures, was issued. On the basis of the aforementioned Ministerial Decision, the procedure for granting the 2G Mobile Communications Licences followed a course parallel to that for 3G Licences. In this way, the Public Consultation and the Information Memorandum and Invitation to Tender were common for the two auctions, despite the fact that the design of the procedure was different for each case.

The auction for granting 2G Licences was conducted under conditions of full transparency and based on procedures beyond contestation, and was successfully concluded. The result is considered particularly important for the Greek mobile communications market, as it led to the entry of one new mobile telephony operator, thus strengthening competition in the corresponding market. In addition, the auction contributed to the collection, on behalf of the Greek State, of significant revenues, which amounted to EURO 162 mill. (GRD 55.2 bn.).

### **3.2.2. Licensing procedure**

The design of the auction for granting the 2G Mobile Communications Licences was innovative and relied on combinatorial bidding using sealed bids: under this procedure, each bidder paid the price specified in his bid, which had to be higher than or equal to the opening price set.

The design ensured that the bandwidth for each licence was not necessarily fixed, but instead participants were allowed to determine it depending on estimates of their future needs. A maximum of four licences

were to be granted, one more than the number of incumbent mobile telephony operators.

As already mentioned, the procedure followed the same timetable with that for 3G Mobile Communications Licences. Given that the Public Consultation, the Information Memorandum and the Invitation to Tender were common for the two licensing procedures, the same parties expressed their views and remarks.

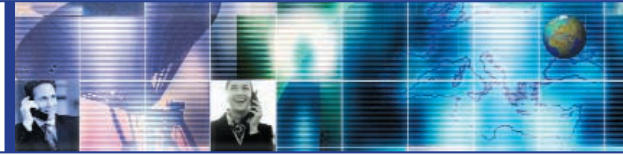
The companies selected to participate in the procedure were the following:

1. COSMOTE
2. INFOQUEST S.A.
3. PANAFON
4. STET HELLAS

The obligations of the holders of the new 2G Licences regarding coverage were as follows:

- ▶ New entrants not holding a 3G Mobile Communications Licence would undertake the obligation to install, operate and maintain the equipment required for the provision of services meeting the following requirements:
  - ✓ 25% minimum coverage of Greek population by December 2003
  - ✓ 50% minimum coverage of Greek population by December 2006
- ▶ The above obligations did not apply for those already holding a 2G Mobile Communications Licence

The total spectrum available for allocation was 2x50 MHz in the DCS band and 2x10 MHz in the GSM/EGSM band. The spectrum under allocation was divided into 2x5 MHz radio frequency blocks, in



**Table 13: Opening prices (in GRD) for incumbent operators**

		DCS						
GSM	(MHz)	0	2 x 5	2 x 10	2 x 15	2 x 20	2 x 25	2 x 30
	0		9 bn.	18 bn.	27 bn.	36 bn.	45 bn.	54 bn.
	2 x 5	12 bn.	21 bn.	30 bn.	39 bn.	48 bn.	57 bn.	
	2 x 10							

**Table 14: Opening prices (in GRD) for new entrant operators**

		DCS						
GSM	(MHz)	0	2 x 5	2 x 10	2 x 15	2 x 20	2 x 25	2 x 30
	0			7 bn.	14 bn.	22 bn.	31 bn.	40 bn.
	2 x 5		7 bn.	14 bn.	22 bn.	31 bn.	40 bn.	
	2 x 10	13 bn.	19 bn.	26 bn.	34 bn.	43 bn.		

both the GSM/EGSM and the DCS band. Four 2x5 MHz radio frequency blocks in the DCS band and one 2x5 MHz block in the EGSM band were reserved for new entrants. The six 2x5 MHz blocks in the DCS band and the one 2x5 MHz block in the GSM band were available to all interested parties.

The radio frequency blocks allocated were defined based on the options selected by each participant and under the condition that, after the conclusion of the procedure, the total bandwidth in the 2G band held by each participant:

- ✓ would not exceed 2x30 MHz
- ✓ would not be less than 2x10 MHz including the bandwidth already held by the participant concerned.

The opening prices for incumbent and new entrant operators are given in Tables 13 and 14, respectively.

The procedure for granting the 2G (GSM/DCS) Mobile Communications Licences was conducted on Tuesday 17 July. The final allocations and the auction proceeds as well as the positioning of the radio frequency blocks within the available spectrum band are given in Tables 15 and 16 respectively, as presented below. On 6 August 2001, the bidders paid the entire amount of the auction proceeds in cash.

**Table 15: Spectrum allocation to bidders**

Radio frequency band for 2G Mobile Communications		
Bandwidth	Bidder	Auction proceeds
2 x 10 MHz DCS and 2 x 5 MHz GSM	PANAFON	<b>EURO 115,019,983</b> (GRD 39,193,059,207)
2 x 5 MHz DCS	STET HELLAS	<b>EURO 26,412,331</b> (GRD 9,000,001,788)
2 x 10 MHz DCS	INFOQUEST S.A.	<b>EURO 20,542,930</b> (GRD 7,000,003,398)
<b>TOTAL</b>		<b>EURO 161.975.244</b> (GRD 55.193.064.393)

**Table 16: Location of the radio frequency blocks within the available frequency band**

Bidder	Radio Frequency Block
PANAFON	1745-1760 MHz & 1840-1855 MHz 900-905 MHz & 945-950 MHz
STET HELLAS	1730-1735 MHz & 1825-1830 MHz
INFOQUEST S.A.	1735-1745 MHz & 1830-1840 MHz



### 3.2.3. Conclusions

The procedure for granting new 2G Mobile Communications Licences was judged by all interested parties to be absolutely transparent, unbiased and efficient. The key aim was to strengthen competition, with parallel utilisation of the unallocated spectrum in the mobile telephony bands. Under this perspective, the entry of a fourth operator in the mobile telephony market is considered of particular importance and is expected to have a positive impact on the further upgrade in the quality of the services provided and on the reduction of prices in favour of the consumers.

### 3.3. Local Loop Unbundling (LLU)

Local Loop Unbundling (LLU) provides beneficiary telecommunications operators with the opportunity to use the (wire) access network of OTE S.A. for the provision of services to domestic or business users. The access network is considered to be the section of the telecommunications network from the subscriber's terminal equipment (e.g. telephone) to the nearest telecommunications exchange (e.g. local OTE S.A. exchange).

Mainly due to the huge investments required for the development of the access network, OTE S.A. -in common with many previously State-owned European telecommunications operators- developed the largest part of its access network in the period during which it was enjoying a legal monopoly. The upgrade of capabilities, together with further utilisation of this network to the benefit of end-users, has today been made possible via technological progress. This utilisation may take place not only by OTE S.A. but also by other interested beneficiary telecommunications service providers. LLU accelerates the implementation of new technologies (e.g. xDSL) in the access network,

allowing the provision of new services (e.g. fast Internet access) and enabling users to enjoy high-quality services at affordable prices.

LLU takes two forms:

- ▶ Fully Unbundled Access to the Local Loop: the beneficiary telecommunications operator leases for his exclusive use the Local Loop (wire cable connecting the subscriber's terminal device to the nearest telecommunications exchange) of the access network, and has full control of the Local Loop for providing telecommunications services to consumers.
- ▶ Shared Local Loop Access: the Local Loop is used both by OTE S.A. (for the provision of conventional telephony) and by a beneficiary operator (for the provision of new telecommunications services, such as fast Internet access).

The legal status concerning all matters of relevance to LLU is governed at the European level by Regulation 2887/2000 of the European Parliament and of the Council of 18 December 2000, and at the national level by L.2867/2000 as well as by the relevant Decisions of EETT. In this context, OTE S.A. is obliged as of 1 January 2001 to publish and update a Reference Unbundling Offer (RUO) concerning Unbundled Access to the Local Loop. The RUO constitutes the basis for negotiations and specifies the terms for the conclusion of corresponding agreements between beneficiary operators and OTE S.A. Prior to its application, the RUO is subject to review and approval by EETT.

At the national level, during 2001 EETT proceeded to a number of actions aimed at facilitating a faster and



smoother application of LLU. The most important of these actions were the following:

- ▶ EETT processed and published the responses to the relevant Public Consultation Process held in 2000
- ▶ In May 2001, EETT approved (after modifications) OTE S.A.'s RUO concerning Fully Unbundled Access to the Local Loop, taking into consideration the international experience, the results of the Public Consultation and the relevant legal framework
- ▶ EETT held a series of meetings with both OTE S.A. and interested beneficiary operators, with the aim to identify and then resolve the problems that had arisen in the implementation of LLU
- ▶ Recognising the complexity of Shared Access, as well as the relevant problems that are still observed in the context of its implementation in other European countries, EETT proceeded to the following actions:
  - ✓ Conducted a country-wide inventory of existing xDSL technologies, as implementation of Shared Access presupposes the installation in OTE S.A.'s access network of ADSL technologies, which may interact with existing installed xDSL technologies
  - ✓ Held a Public Consultation on issues relating to Shared Access in order to record the views of interested parties, so that any difficulties that may arise in the implementation of Shared Access in our country are minimised

- ▶ In December 2001, EETT approved, after modifications, the Reference Offer submitted by OTE S.A. concerning Shared Local Loop Access.

According to OTE S.A. data, eleven beneficiary operators had by 15 November 2001 expressed their interest and had initiated the procedures for the conclusion of LLU agreements. Of these, three had already signed the relevant agreements and had taken delivery of 92 local loops, of which 76 were already in operation.

Furthermore, recognizing the importance of the application of LLU, EETT closely followed the corresponding developments in competent European bodies, such as the Open Network Provision (ONP) Committee. In parallel, and in the framework of the Independent Regulators Group (IRG) of EU Member States, EETT was actively involved in the formulation of a common approach for addressing the relevant problems also faced by the other Independent Regulatory Authorities.

Having set as a key objective the acceleration of the implementation of LLU in the domestic telecommunications market, EETT shall intensify its efforts regarding control of the proper application of the relevant regulatory framework, mainly through maintaining ongoing communication with all interested parties.

### 3.4. Fixed Wireless Access (FWA) Licences

Following the auction conducted in 2000 for granting FWA Individual Licences, the licences were granted to the bidders in January 2001. It should be noted that of these six Licences, one had already been granted in late December 2000.



The companies to which the licences have been granted are the following:

1. MEDITERRANEAN BROADBAND SERVICES S.A.
2. OTE S.A.
3. EUROPROM S.A.
4. EVERGY S.A.
5. QUEST WIRELESS S.A.
6. PANAFON

The above companies have already completed the design and installation of their networks, and the first base stations have already been licensed by EETT. In addition, numbers under the National Numbering Plan have been allocated to those of the above companies that have submitted relevant applications. It should also be noted that several of these companies have also entered into interconnection agreements with OTE S.A.

According to the announcements made by the companies, provision of FWA services is expected to be launched in 2002.

### 3.5. Licences for TETRA Mobile Communication Systems

TETRA (TErrestrial Trunked RAdio) is a relatively recent, standardised wireless digital trunk mobile communication system, intended mainly for professional use. It was designed to meet the needs of demanding professionals-users requiring voice and data services. It is capable of providing communication between independent user groups, with users being also capable of calling a fixed or mobile telephone. The digital technology used by the TETRA system allows the allocation of a certain number of radio frequencies, depending on the needs of the users, thus contributing to optimised spectrum usage. At the same time, digital

technology ensures high-quality communication, reliability and enhanced security, by making efficient use of encryption systems. TETRA networks have considerable advantages over private analogue-based mobile radio networks, which today are commonly used in Greece for covering the above needs.

Recognising the benefits to the end user that result from the introduction of TETRA networks, and after a relevant request by the Minister of Transport and Communications, EETT held in the period between 21 September and 20 October 2001 a Public Consultation on the subject of the "Introduction of Public Digital Mobile Services in the 410-430 and 450-470 MHz frequency bands." Using a set of questions, the Public Consultation established a framework for the expression of views, in order for interested parties to state their opinions on important issues such as the number and type of licences and the ways in which the problems of scarcity of available radio frequencies that exist in these particular bands are addressed.

A total of twelve parties -telecommunications operators, manufacturers of telecommunications equipment and other interested organisations or companies- participated in the Public Consultation. Processing of the responses was concluded on 23 November 2001, and the results were published on the EETT website. This process contributed to the extraction of valuable conclusions on the future development of TETRA networks in our country.

After the above procedure was concluded, EETT forwarded a relevant recommendation to the Minister of Transport and Communications. The final decisions are expected to be announced during 2002, through a Ministerial Decision that will specify, inter alia, the characteristics and the type of the licences to be tendered, as well as the type of competition procedure to be followed.