



EETT

HELLENIC TELECOMMUNICATIONS & POST COMMISSION

Spectrum auctions in Greece

Haris Geronymakis

Dep. Head

Spectrum Management Department

Spectrum auctions in Greece

- 2000:** 3.5GHz & 26.5GHz bands for FWA systems (2 ×86MHz and 2 ×336MHz were granted)
- 2001:** 2GHz bands for 3G Mobile Services
- 2001:** Extra spectrum in the 900MHz and 1800MHz bands
- 2002:** 400MHz band for TETRA services
- 2006:** Re-auctioning available spectrum in the 3.5GHz band for BWA
- 2011:** 2 ×20MHz in the 900MHz band that expire in 2012

An efficient way to allot spectrum?

- EETT used auctions to grant spectrum in all cases since 2000.
- All auctions run smoothly –no legal complaints
- In the first auction that took place in 2000, participants congratulated EETT for the open and objective granting procedure.
- In most cases the reserve price was determined by an independent study. The main effort was to give an estimation of the minimum value of the spectrum for sale.
- Attention should be given to the planning of the auction. The regulator has to have clear picture of what should be done and have rules in place to avoid competition distortions (e.g. “deep pockets” get most of the spectrum).

Critical aspects

- Enough demand that is equal or exceeds supply is necessary for successful auctions
- Measures should be taken to avoid any legal connection between participants
- Reserve price (minimum bid) can become a critical issue, especially when competition is low
- Bidders should be free to purchase as much spectrum as they need, but this might lead to a complicated process.
- Payment schemes should give the right incentives to the operators and also must leave them with enough cash to deploy their networks
- Transparency: EETT publishes in every tender
 - A public consultation document
 - An Information Memorandum
 - The final Tender Document (which includes license's terms and conditions)

Case I: 3.5& 26.5 GHz bands

- In December 2001 in total 7 licenses for fixed wireless access were auctioned simultaneously by EETT
 - 3 licenses in the 3400-3600MHz frequency band with fixed bandwidths ranging from $2 \times 28\text{MHz}$ to $2 \times 14\text{MHz}$
 - 4 licenses in the 24.5-26.5 GHz frequency band with fixed bandwidths $2 \times 112\text{MHz}$ and $2 \times 56\text{MHz}$
- Each bidder had the right to bid for one license maximum, in each band
- The spectrum per license was fixed. The process was simpler, but the participants could not bid for extra spectrum, even if they could afford it.
- As a result one license in the 3.5GHz band remained available although there was satisfactory demand for spectrum.

Case II: 3G licensing in the 2GHz band

Main Objectives

- To grant the 3G spectrum through an efficient and open procedure
- To facilitate for the entrance of one or more newcomers in the Greek market
- To minimize the available (after the tender) spectrum

Main Phases of the tender procedure

- Phase A: Up to 4 Basic licenses ($2 \times 10 + 5$ MHz each) were available for bidding. One of them was reserved for new comers in the market.
- Phase B: Successful bidders in the phase A, had the right to bid for extra spectrum (segments of 2×10 MHz).
- Phase C: Successful bidders had the right to select the actual spectrum segments within the available Frequency Band

Spectrum bands for BWA

- Interest about BWA in the 3.5 GHz band in Greece. The last available license in the band was awarded in 2006 for €20m (2×14MHz)
- No final decisions have been taken at the moment for the 800MHz band (digital dividend)
- Both 2.3GHz and 2.5GHz bands are not available at the moment.
- In the present time market in Greece shows great interest about the liberalization of the 900MHz and 1800MHz bands to provide 3G /LTE services.
- There is also some interest for BWA systems in the 28GHz band

900MHz and 1800MHz bands

2x5 MHz

Band	COSMOTE	VODAFONE	WIND
GSM 900	2017	2012 2012 2016	2012 2012
DCS 1800	2020 2020 2020 2020 2020	2016 2016 2016	2016 2016 2016

Liberalization of 900MHz and 1800MHz bands

- EETT conducted a public consultation on this issue— there was some concerns that there was not enough spectrum for every operator to deploy 3G services in the band, thus make more spectrum available from other uses or re allocating the existing spectrum .
- Given the limited amount of time until the expiration of the spectrum rights, EETT has to act fast in order to avoid any problems in the provision of communication services.
- In 2011 EETT conducted a new public consultation dealing with the tender process in the 900MHz band. An extra fee was proposed for the liberalization of the 1800MHz that will be calculated in relation to the tender outcome in the 900MHz band.
- It is considered that the new licenses will have a duration of at least 15 years.

Spectrum fees

- According to the Greek legislation any fees for the use of spectrum are included in the final bid paid by the successful bidder
- The liberalization of the 900MHz and 1800MHz bands allows operators to use this spectrum to deploy broadband networks at a lower cost. The added value of this spectrum should be reflected in the amount paid to use this spectrum in order to avoid efficient use (i.e. to promote maximum use of available spectrum)
- In the 2011 consultation document the results of a study that was conducted by EETT were presented. There was an estimation of the minimum bid in the 900MHz band (using benchmarking) to be between €60m and €90m for each 2×5 MHz.
- According to the same document, in order for an operator to use the 1800MHz spectrum to provide 3G services, an extra fee should be paid, based on the outcome of the tender process in the 900MHz band

**Thank you
for your attention!**

h.geronymakis@eett.gr