II.4 Mobile Trunking Service

This chapter shows the state of the trunking service at the end of 2005, and the evolution that occurred during that period.

II.4.1 Main trends

In the mobile trunking service's activity during 2005, the intensification of the use of the service following the launch of commercial offers using CDMA (Code Division Multiple Access[57]) stands out.

II.4.2 The mobile trunking offer

Below is a more detailed description of the services provided and the evolution during the year 2005. Entities providing these services in Portugal are also described.

II.4.2.1 Mobile Trunking

Mobile trunking is an electronic communications service via radio that is characterized by the establishment of bi-directional voice and data communications within a given closed user group. In this service, frequencies are dynamically shared by several clients in order to make the radio spectrum more profitable, being managed by the operator in order to guarantee the access to all clients. Each client has access to a private network, of a virtual nature, and the entity providing the service is responsible for the radio licences, infrastructure and equipment maintenance.

The mobile trunking service is especially targeted at companies that operate fleets, namely transportation, security and emergency, and construction companies, public and technical services. Its solutions apply to telemetry, remote control and remote

[57] Access system characterized by the sharing of the same frequency band through the allocation of different codes to each user.

monitoring services, video surveillance, fleet location and management.

II.4.2.2 Mobile trunking providers

In 2005, the trunking service was provided by two licensed entities: Radiomóvel – Telecomunicações, S.A. (Radiomóvel)[58], and Repart – Sistemas de Comunicação de Recursos Partilhados, S.A. (Repart)[59].

These entities started their commercial activity in February and October 1994, respectively, having provided the service using the MPT 1327[60] analogue system established by DTI (Department of Trade and Industry), from the United Kingdom, and the TETRA (Trans European Trunked Radio System)[61] digital technology.

Repart started to operate the TETRA system at the end of 1999, and Radiomóvel launched this offer in 2000. However, since TETRA did not have the expected[62] evolution, in 2002 Radiomóvel requested the change of its trunking operator licence in order to be authorized to use the CDMA[Error! Bookmark not defined.] system. For that purpose, its licence was reconfigured, although it kept its status as a mobile trunking provider.

Table 58 – Mobile trunking providers

Radiomóvel - Telecomunicações, S.A.
Repart - Sistemas de Comunicação de Recursos Partilhados, S.A.

Source: ICP-ANACOM

II.4.2.3 New commercial offers launched in 2005

[58] Radiomóvel's licence was granted in 1993, further to an open competition.
[59] Repart's licence was granted in 1993, further to a second open competition.
[60] Technology used since the beginning of the provision of the service providing individual and group calls between users of a given closed group, short data messages and connections to the fixed network.
[61] System used after 1999, considered more advantageous because it is based on a pan-European standard, therefore using harmonized frequencies and, thus, making it possible to use the service in Europe's geographical scope, through roaming. TETRA has also the following advantages: the possibility of manufacturers being able to produce TETRA equipment based on the same specifications (since it is an open standard); greater efficiency in the spectrum management, by using TDMA technology (Time Division Multiple Access – a system characterized by the simultaneous access of several users to a sole radio frequency band by breaking it in time by channels - time slots); capability to support a large set of new services (short group message calls, including the possibility of video transmission), etc..
[62] Operators faced some problems, such as the lack of terminal equipment at an affordable price, a high cost of the network equipment (due to the limited scale production) and a limited number of equipment distributors.

During the year 2005, a new service was launched in connection with the offer using CDMA technology, named Zapp PTT (push-to-talk), which resembles the traditional walkie-talkie. Besides this service and with the same terminal it is also possible to make voice calls and to send SMSs to any other mobile network.

The main characteristic of the service are the following:

- Unlimited use of closed user group (CUG) calls and of CUG group calls up to ten participants;
- Basic monthly fee: 32.50 euros/terminal;
- Optional services:
  PTT group calls > 10: 0.06 euros/minute/participant
  Voice calls (price per minute):
  - CUG Zapp network: 0.026 euros
  - Zapp network: 0.06 euros
  - Fixed network: 0.06 euros
  On-net SMS messages: 0.08 euros/sms

Besides this offer, there are also Zapp Total and Zapp Privados, with other possible configurations.

II.4.3 Evolution of mobile trunking in 2005

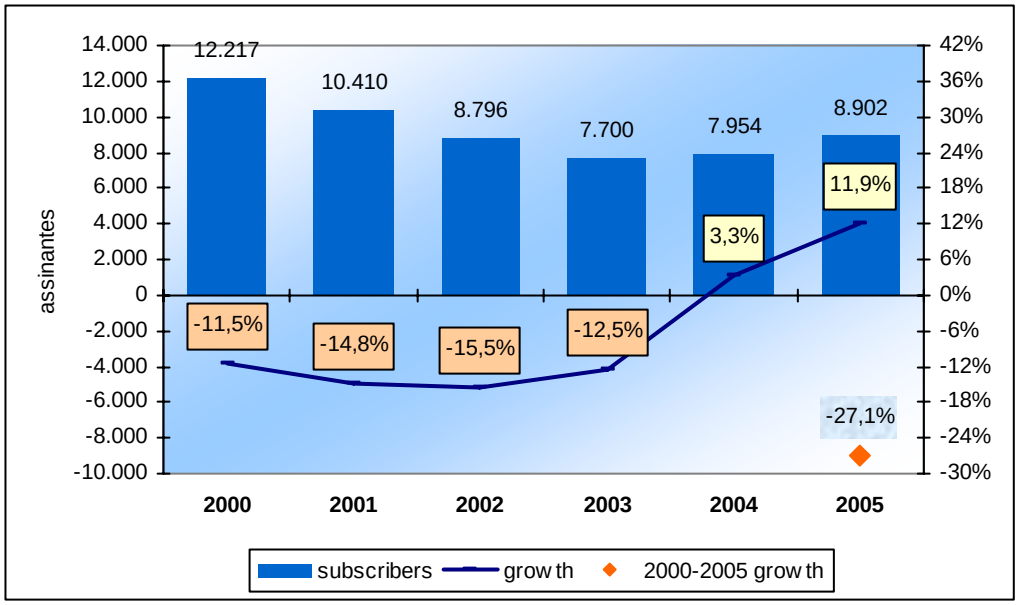
In 2005, the mobile trunking service increased its number of subscribers in around 11.9 per cent, confirming the reversion of the trend registered in 2004. However, the number of subscribers is still below the one of 2000.

Table 59 – Number of subscribers

	2000	2001	2002	2003	2004	2005
Mobile trunking subscribers	12,217	10,410	8,796	7,700	7,954	8,902
Annual growth rate	-11.5%	-14.8%	-15.5%	-12.5%	3.3%	11.9%
2000/2005 growth						-27.1%

Source: ICP-ANACOM Unit: 1 subscriber, %

Graph 72 – Evolution of the number of subscribers



Source: ICP-ANACOM

This growth is justified by the introduction of the CDMA system, with a broader and more varied offer than the previous systems.

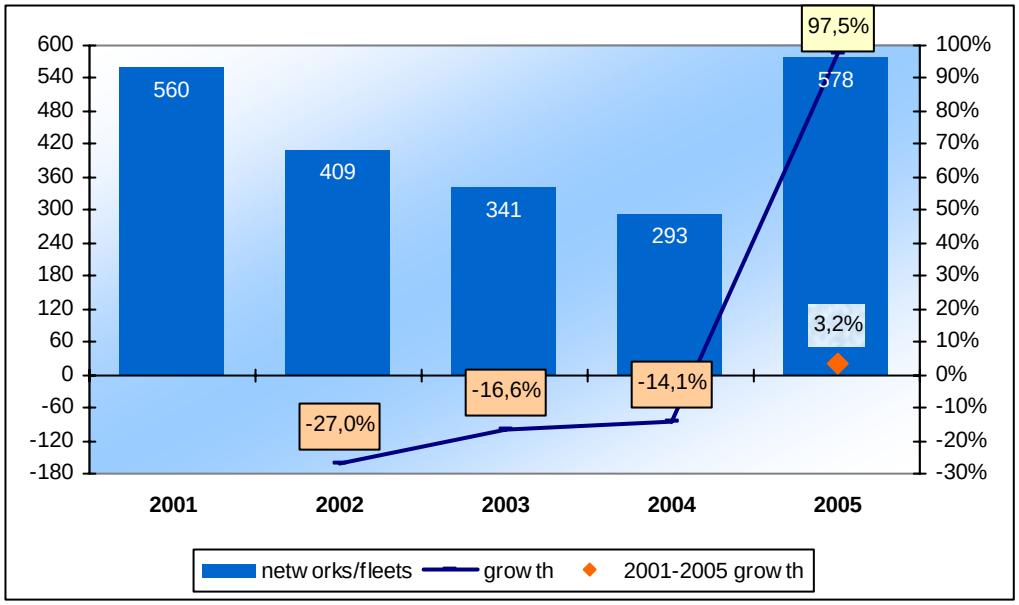
It should be mentioned that the growth in the number of networks was stronger than that in the number of subscribers.

Table 60 – Number of networks / fleets

	2001	2002	2003	2004	2005
Networks / Fleets	560	409	341	293	578
Annual growth rate		-27.0%	-16.6%	-14.1%	97.3%
2001/2005 growth					3.2%

Source: ICP-ANACOM Unit: 1 network/fleet, %

Graph 73 – Evolution of the number of networks / fleets



Source: ICP-ANACOM