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TO PROMOTE
OPEN AND
COMPETITIVE
MARKETS / TO
ASSURE AND
PROTECT THE
RIGHTS OF USERS
AND CITIZENS
IN GENERAL -
MANAGEMENT
OF SCARCE
RESOURCES

(OBJECTIVES 1 + 2)

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● ● 4 To promote open and competitive markets/ to assure and protect the rights of users and citizens in general - Management of scarce resources (objectives 1+2)

Among the regulatory objectives established in the Community framework and in national legislation is the objective of encouraging efficient use and ensuring effective management of radio frequencies and numbering resources, which is embodied by objectives 1 and 2 of ICP- ANACOM's strategic plan and, to some extent, objective 4 when this involves coordination within the EU.

In fact, if the ultimate goal of achieving effective and efficient use of resources is to obtain benefits for consumers and citizens in general, such management and, in particular,

management of the spectrum can and must also be made an instrument to be used in the promotion of competition, where the principles of technological and service neutrality have a key role in ensuring that spectrum provision is increasingly market orientated.

The allocation of numbering resources within a reasonable time and using objective, transparent and non discriminatory procedures, is also a necessary condition for the development of markets of competitive and innovative services.

●● 4.1 Radio spectrum management

4.1.1 National Table of Frequency Allocations (NTFA)

By ICP-ANACOM determination of 23 December 2008 and pursuant to and in accordance with articles 15 and 16 of the ECL, approval was given to the public consultation on the draft revision of the NTFA, 2009/2010 edition.

This review consists in updating the allocation table to include new decisions of the Electronic Communications Committee (ECC) and of the EC, and also to incorporate new information on the uses of frequency bands with reference to 15 July 2009, spectrum available for the various radio services and information, provided in the Annex, on equipment using Ultra Wideband (UWB). Amendments were also proposed to the annexes on equipment exempt from licensing and on the amateur and amateur satellite service.

Regarding the frequencies bands and respective conditions of use for the different amateur categories, beyond the status of amateur and amateur satellite services, ICP-ANACOM gave approval to a specific determination on 27 May 2009.

With the aim of creating a portal providing information on frequencies and allowing information to be searched and viewed in a simple, intuitive and interactive form, in terms of frequency planning, allocations and national spectrum use, the requisites and specifications were identified and defined for the development of a software solution named e-NTFA.

Finally, and in compliance with the provisions of Decree-Law no. 58/2000 of 18 April, notification was made to IPQ - Instituto Português da Qualidade (Portuguese Institute of Quality), for subsequent submission to the EC, of the updates made to the technical specifications of the radio interfaces applicable to certain radio equipment categories, including short-range and low power stations Short Range Devices (SRD), of the amateur service, the aeronautical radionavigation service, the maritime radionavigation service, the fixed service, the fixed-satellite service, the aeronautical mobile service, the maritime mobile service, the Mobile Satellite Service (MSS), Land Mobile Service (LMS) and the broadcasting service.

4.1.2 National Agreement for Sharing of frequencies in Times of Peace (ANPF/1999)

In 2009 an update was made to the ANPF/1999 a document which reflects agreements reached in 1999 between ICP-ANACOM and the EMGFA/DICSI - Estado-Maior-General das Forças Armadas / Divisão de Comunicações e Sistemas de Informação (Armed Forces General Staff / Communications and Information Systems Division), on the sharing of radio spectrum.

The need to review that agreement resulted from amendments to the Radio Regulations introduced by World and Regional Radiocommunication Conferences held in the meantime under the auspices of the International Telecommunication Union (ITU), amendments to the bilateral agreements and also to the European decisions in the field of spectrum management.

In late 2009, EMGFA / DICSI and ICP-ANACOM approved and endorsed an update to the ANPF/1999 which came into force on 16 December 2009.

4.1.3 Fixed Wireless Access (FWA)

In 2009, upon request of the holder, ICP-ANACOM revoked the rights of use of frequencies for the operation of FWA systems awarded to Sonaecom, and further revoked the corresponding radio licenses.

4.1.4 Broadband Wireless Access (BWA)

By determination of 14 October 2009, ICP-ANACOM approved Regulation no. 427/2009, amended by Statement no. 2930/2009 of 16 November 2009, for the Allocation of Rights of Use of Frequencies for BWA in the 3400-3600 MHz and the 3600-3800 MHz frequency bands, following the public consultation held on the matter.

Under the terms of this regulation, an auction selection process was initiated, representing the first frequency auction in Portugal. This process aimed, in particular, to promote efficiency in the allocation and use of spectrum and to promote flexibility in the implementation of commercial operations, as well as follow the trend seen globally in the telecommunications sector.

This auction took place between late 2009 and early 2010, and covered 36 lots of frequencies in the 3400-3800 MHz range, reserved for BWA. The 36 lots, of 28 MHz each, corresponded to four lots in each of the nine defined geographic areas.

In this auction, operators holding rights of use of frequencies in the 3400-3800 MHz frequency band and operators designated in Portugal with significant market power on the wholesale broadband access market were excluded, along with operators holding rights of use of frequencies in Portugal for the provision of the publicly available LMS. With this decision, ICP-ANACOM intended, first, to foster competition in the provision of broadband and, secondly, to promote more efficient spectrum use.

A combinatorial auction model was chosen with two rounds of secret bidding (one for the distribution stage and another in the assignment stage), with application of the second price rule. The round of bidding in the distribution stage was designed to define the number of lots won by each bidder in each geographical area, whereas the assignment stage would determine the specific lots won by each bidder. A combinatorial model was chosen because it would allow participating entities to simultaneously bid for several lots in different geographical areas. The purpose of applying the second price rule was to encourage bidders to reveal the real value which they attached to the spectrum, reducing the strategic complexity of bidding and promoting efficiency in the allocation of a scarce resource.

Applications to the auction were received from three entities, whereas Bravesensor, Unipessoal, Lda. (Bravesensor) won three lots in geographical area 1, two lots in geographic area 2, and one lot in geographic areas 3 to 8, while OniTelecom - Infocomunicações, S. A. (OniTelecom) won one lot in geographical areas 1-8.

Since the winning bidders obtained lots in different regions (with only geographical area 9, corresponding to the Madeira archipelago, without allocated lots), a key objective of ICP-ANACOM for this auction was accomplished, which was to enable the development of commercial operations

in info-excluded areas. Furthermore, the speed with which the auction, once started, was conducted, and the allocation of a significant proportion of the lots in question (50 %), shows that this procedure for allocating rights of use was successful, whereas it also provided ICP-ANACOM with know-how in the design and conduct of auctions, which will be a very useful asset in the future.

4.1.5 New rights of use of frequencies in the 450-470 MHz band

By determination of 7 January 2009, ICP-ANACOM endorsed the proposal, submitted by the Commission appointed for the tender, to allocate to Rede Nacional de Telecomunicações, S. A. (RNT) the right of use frequencies, on a national basis, in the 450-470 MHz frequency band for the provision of the publicly available LMS.

By determination of 20 May 2009, ICP-ANACOM approved the report of the prior hearing of RNT and, accordingly, decided to revoke the act granting the company the right of use of frequencies, given that RNT failed to provide the collateral that was required under paragraph 1 of article 15 and article 19 of the Tender Regulation. This decision involved the forfeit, in favour of ICP-ANACOM, of the provisional bond provided by the company pursuant to the Tender Regulation.

4.1.6 Mobile television (DVB-H)

In 2009 various business models were put forward for the introduction of mobile TV in broadcast mode, while today this type of service is provided by mobile operators in unicast mode (addressed) . However, the potential distribution of television programming services by several operators on the same radio network is inconsistent with the legislation that is currently in force, making it necessary to amend to the existing Television Law (Law no. 27/2007 of 30 July), which amendments ICP-ANACOM has in the meantime proposed to the Government. In 2010 the Government is due to submit a draft law to make the first amendment to the Television Law.

4.1.7 Allocation of rights of use in the 2.6 GHz band

By determination of 17 June 2009, ICP-ANACOM approved the public consultation report on the allocation of rights of use in the 2500-2690 MHz (2.6 GHz band) frequency band for the operation of publicly available electronic communication services.

The responses to the public consultation show that there is broad interest in the 2.6 GHz band for electronic communications services in Portugal, whereby ICP-ANACOM will make the spectrum in question available, pursuant to EC Decision 2008/477/EC.

As regards the combination of the 2.6 GHz band with other bands, the positions expressed during the consultation were varied. In general there was interest expressed in complementing the 2.6 GHz frequency band with other bands, varying depending on the areas of business and the interest of respondents.

In this context, taking into account the responses received and the guidelines laid down in legislation, in the public consultation report ICP-ANACOM deemed it fitting to establish a set of guidelines, specifically:

- The market should be given the opportunity of combining the provision of the 2.6 GHz band with available spectrum, while not defining a priori closed aggregations of spectrum. As such, the opportunity should be given, in the same selection process, for the different participants in the market to aggregate the spectrum from what is available as seen fit, i.e. in the 2.6 GHz band, in the 1800 MHz band and in the 2.1 GHz band (5 carriers of 5 MHz, corresponding to the spectrum of 1900-1910 MHz and 2010-2025 MHz).
- The options for the GSM extension band (e-GSM) shall only be taken after conclusion of the process of “refarming” of GSM 900/1800.

4.1.8 Digital Terrestrial Television (DTT)

Following the tender opened by Administrative Rule no. 207-A/2008 of 25 February, ICP-ANACOM determined, on 9 June 2009, to issue PTC the titles of allocation of rights of use of frequencies for the provision of the DTT service, corresponding to two coverages on a national basis, associated with Multiplexers B and C, and three partial coverages of mainland territory, associated with Multiplexers D, E and F, for the transmission of television programme services of unrestricted access with subscription or restricted access.

In parallel, and in accordance with paragraph 2 of article 17 of the Tender Regulation approved by Administrative Rule no. 207-A/2008 of 25 February, on 2 June 2009, ERC - Entidade Reguladora para a Comunicação Social (Media Regulatory Authority) decided to issue to PTC the title of distribution operator responsible for the activity of television which consists of the selection and putting together of programme services with conditional access or non-conditional access with subscription, and for their provision to the public.

4.1.9 Digital dividend

By determination of 25 March 2009, ICP-ANACOM approved the launch of a public consultation on the Digital Dividend, in order to come to a properly sustained decision on this issue. This consultation took place between 30 March and 22 May 2009, during which time a workshop was held on the subject.

By determination of 29 July 2009, ICP-ANACOM approved the public consultation report, noting, *inter alia*, the indication that it was deemed likely that the 790-862 MHz sub-band would be made for broadband electronic communications services, in accordance with the principles of the Wireless Access Policy for Electronic Communications Services (WAPECS), although this material would have to be subject to specific public consultation.

4.1.10 Other issues

It is also fitting to make reference, in particular due to the impact they might have on the future management of radio spectrum, to following the determinations of ICP-ANACOM:

- partial repeal, following the renunciation submitted by Sonaecom, of the right of use of a block of 5 MHz frequencies of the third generation mobile communications system (UMTS) Time-Division Duplexing (TDD), corresponding to the 1900-1905 MHz frequencies, which were assigned to the company for the operation of the UMTS system - determination of 4 February 2009;
- amendment at the request of the holders, of the rights of use of frequencies allocated to Oni Telecom and Vodafone for the operation of the FWA system, as regards the minimum number of central stations to be installed by the companies - determinations of 4 February 2009 and 17 June 2009, respectively;
- repeal of the license granted to Bragatel - Companhia de Televisão por Cabo de Braga, S. A. (Bragatel) - which company was since merged by incorporation into ZON TV Cabo - for the operation of FWA systems in the 27.5-29.5 GHz band and recovery of the corresponding right of use of frequencies with effect on 1 January 2004 - determination of 9 December 2009;
- renewal at the request of the company, of the right of use of frequencies assigned to Sistemas de Comunicação de Recursos Partilhados, S. A. (Repart) for the provision of mobile trunking services for a period of 15 years, setting its expiry on 21 March 2024. The title was issued on 1 April 2009 after a prior hearing of the company determinations of 17 December 2008 and 1 April 2009.

●● 4.2 Numbering

4.2.1 Use of geographic numbering on multi-site private networks

Many companies and institutions are currently pursuing plans to migrate from traditional telephone networks to private telephone networks supported on IP technology, with the aim of developing new features and reducing the investment and operational cost associated with communications.

This reduction in costs also includes the reduction of interfaces with the public network, enabling the optimization and utilization of existing capacity between the private network and public network. However, on cancelling access points to the public network, the corresponding geographic numbers lose the network address function, whereby the legitimacy of its use is put in question. Breaking the link between geographic number and the physical location - address - where the call originates may, in particular, affect the effectiveness of assistance provided when a request is made to the Emergency Services through a 112 call.

In this context, ICP-ANACOM issued a clarification on 27 March 2009, in which, recognizing that it is important to maintain geographic numbers on multi-site networks and, also the existence of technical solutions on IP networks (e.g. IPSec tunnelling) capable of ensuring, when properly used, control of FTS communications in each of the access points available, it is considered there is an emulation of these eliminated access points, which can be identified under these conditions through the respective geographic numbers.

4.2.2 Transfer of rights of use of numbers

By determination of 23 December 2009, ICP-ANACOM decided to review the conditions associated with the return of rights of use of numbers transferred to Sonaecom SGPS, defined by determination of 29 December 2008, allowing

the company to maintain two Network Routing Number (NRN) codes taking into account that return under the terms indicated as possible by the company would involve effort, costs and risk which goes beyond Sonaecom itself and that these resources are abundant, whereas there is no commercial benefit in the merger of two codes by the same operator.

4.2.3 New numbers in the 116 range of the NNP: 116006 and 116117

EC Decision 2009/884/EC of 3 December 2009, amending the annex to Decision 2007/116/EC, reserved new numbers of the 116 range for harmonised services of social value: 116006 for the helpline for victims of crimes and 116117 for non-emergency medical calls. These numbers are added to three other numbers in the 116 range, reserved throughout the EU for services of social value: 11600 missing children hotline, 116111 child helpline and 116123 emotional support line.

Therefore, ICP-ANACOM amended the NNP in line with the designations of the corresponding harmonised services of social value, whereby the right of use of these numbers may be allocated to interested parties. These new numbers are disclosed on ICP-ANACOM's website.

4.2.4 Allocation of rights of use of numbers for electronic communications services

Data is presented below on the evolution seen in the allocation of rights of use of numbers, which details the volume of numbers resulting from allocations made in 2009 and, more importantly, the volume of numbers recovered, resulting, to a large extent, from the fact that rights of use of numbers of the NNP have been made subject to the payment of fees, according to the new fee model which entered into force on 1 January 2009, pursuant to Administrative Rule no. 1473-B/2008 of 17 December.

Geographic numbers - evolution of the national situation | Table 11

Year	Allocated and/or reserved (A) or Recovered (R)	Geographic numbers ²⁴			Totals
		Lisbon geographic area	Porto geographic area	Other geographic areas	
2007	A R	110,000 10,000	50,000 0	420,000 0	580,000 10,000
2008	A R	190,000 10,000	70,000 10,000	1,040,000 590,000	1,300,000 610,000
2009	A R	180,000 0	60,000 0	30,000 490,000	270,000 490,000

Source: ICP-ANACOM.

Non-geographic numbers - evolution of the national situation | Table 12

Year	Allocated and/or reserved (A) or Recovered (R)	Nomadic VoIP ²⁵ services	Short numbers ²⁶	Voice mail and translation services ²⁷	Data services (ISP) ²⁸	MTS ²⁹	Totals
2007	A R	180,000 0	9 4	120,000 0	0 400	1,400,000 0	1,700,009 404
2008	A R	290,000 50,000	5 8	164,503 140,000	300 400	2,600,000 350,000	3,054,808 540,408
2009	A R	70,000 120,000	2 6	0 160,000	0 0	1,500,000 0	1,570,002 280,006

Source: ICP-ANACOM.

An outline is given below of the cumulative values of numbers assigned nationally since 2000; an increase is seen, for electronic communication services, in the use of the NNP with respect to non-geographic numbers (including mobile) and an overall decline in geographical numbers.

This reflects not so much a reduction in FTS activity, but the application of measures of self-control by the operators, taking into account that the use of numbers is now subject to the payment of fees, contributing to more effective and efficient management of numbering.

²⁴ Numbers allocated in blocks of 10,000.

²⁵ Voice over Internet Protocol.

²⁶ Corresponds to the ranges 10xy, 116xyz, 14x (y), 15xy, 16xyz and 18xy. Are allocated individually with exception of 16xyz which is allocated in blocks of 10.

²⁷ Allocated in blocks of 10,000 with exception of 80080 range which is allocated individually. Translation services are provided using the 707, 708, 760, 761, 762, 800, 808 and 809 range of the PNN, while the voice mail service is provided using the 600 range.

²⁸ Allocated in blocks of 10, with last 3 digits fixed as zeros for 67 range (data services).

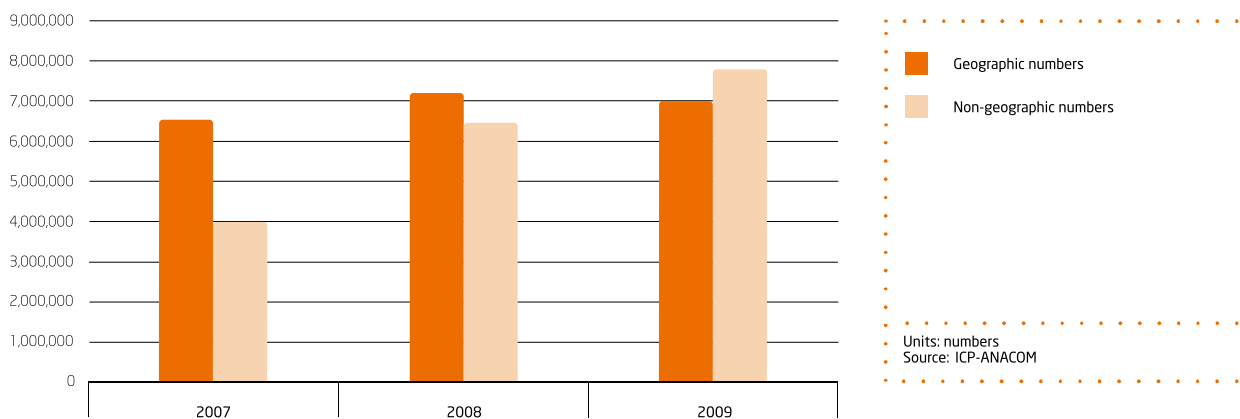
²⁹ Allocated in blocks of 10,000 for the 92 range. Rights of use of numbers of the 609 and 669 range are implicitly allocated for access to the voice mail service, respectively, voice mail consultation and leaving messages and the numbers of the 639 and 659 range, respectively for access to fax and data mobile services.

Accumulated value of numbers assigned nationally | Table 13

Year	Geographic numbers	Non-geographic numbers
2007	6,560,000	3,959,655
2008	7,250,000	6,474,055
2009	7,030,000	7,764,051

Source: ICP-ANACOM.

Accumulated value of numbers assigned nationally | Graph 38



4.2.5 Allocation of numbers to audiotext services and valued-added services based on message sending

Data is presented below on trends in the allocation of rights of use of numbers to audiotext companies, highlighting a steady reduction in the total volume of numbers whose rights are allocated to these companies, reflecting a significant decline in these activities.

Audiotext numbers - national trends | Table 14

Year	Allocated and/or reserved (A) or Recovered (R)	Numbers for audiotext services ³⁰					Totals
		General (601)	Tele-voting (607)	Sales (608)	Competitions and hobbies (646)	Erotic (648)	
2007	A	4,000	2,000	2,000	1,000	1,000	10,000
	R	1,000	2,000	1,000	1,000	0	5,000
2008	A	2,000	1,000	2,000	1,000	1,000	7,000
	R	3,000	0	0	0	0	3,000
2009	A	0	1,000	0	0	1,000	2,000
	R	1,000	0	0	0	0	1,000

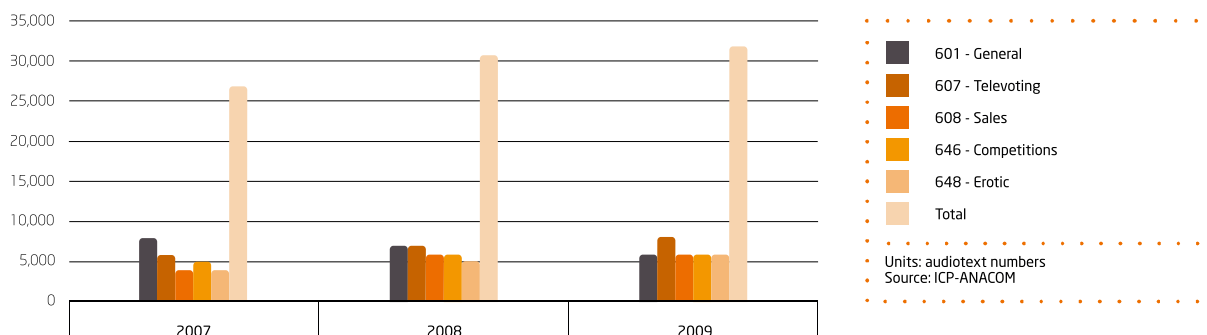
Source: ICP-ANACOM.

Accumulated value of numbers assigned nationally | Table 15

Year	Audiotext					Totals
	General (601)	Tele-voting (607)	Sales (608)	Competitions and hobbies (646)	Erotic (648)	
2007	8,000	6,000	4,000	5,000	4,000	27,000
2008	7,000	7,000	6,000	6,000	5,000	31,000
2009	6,000	8,000	6,000	6,000	6,000	32,000

Source: ICP-ANACOM.

Accumulated value of audiotext numbers assigned nationally | Graph 39



³⁰ Numbers are allocated in blocks of 1,000.

In 2009, with the publication of Decree Law no. 63/2009 of 10 March on valued-added services based on message sending, there was a period of intense activity in the allocation of rights of use for the codes established by ICP-ANACOM, as mentioned in section 3.7.

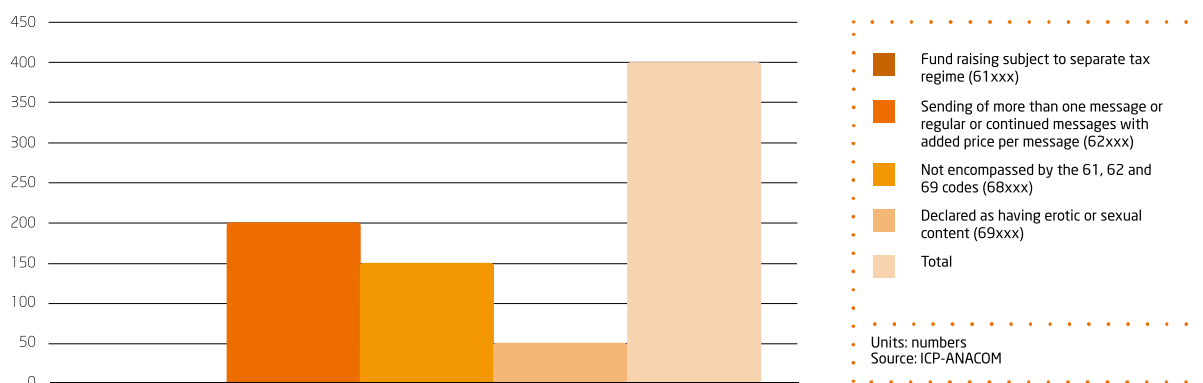
Figures on the allocation of rights of use of these numbers during 2009 to companies providing valued-added services based on message sending are presented below.

Figures for message-based valued-added services - national situation | Table 16

Year	Allocated and/or reserved (A) or Recovered (R)	Figures for message-based valued-added services ³¹				Totals
		Fund raising subject to separate tax regime (61xxx)	Sending of more than one message or regular or continued messages with added price per message (62xxx)	Not encompassed by the 61, 62 and 69 codes (68xxx)	Declared as having erotic or sexual content (69xxx)	
2009	A R	1 0	202 0	151 0	51 0	405 0

Source: ICP-ANACOM.

Numbers for valued-added services based on message sending allocated at national level (2009) | Graph 40



³¹ Numbers are allocated in blocks of 10 numbers up to a maximum of 5 individual numbers, in accordance with ICP-ANACOM determination of 3 June 2009.

4.2.6 Electronic numbering (ENUM)

It is part of ICP-ANACOM's remit to participate in the overall definition of the development of communications, particularly in the context of convergence between telecommunications and information technologies, and, to promote technical standardization, in cooperation with other organizations, in the communications sector and related fields. As such this Authority organized a workshop entitled ENUM: What's the Future? on 28 and 29 October 2009, bringing together national and international representations from manufacturers, operators, Sectorial Regulators and

DNS/ENUM Registries. Themes were addressed related to User-ENUM *versus* Infrastructure-ENUM, relations between ENUM and NGA, applications and services and regulatory aspects.

From the discussion on the issues at hand, it was evident that the User-ENUM has as its main target the user and Infrastructure-ENUM the operators. In the case of Infrastructure-ENUM it was also evident that this will be a key technology in NGA networks for enhancing the quality of communications and maximizing resources, including with respect to interconnection and number portability.