

SPECTRU 143 SET/OCT 2013

More information at: www.anacom.pt

FIXED TERMINATION - PROVISIONAL AND URGENT MEASURES

The provisional and urgent measures set out in the document on the "wholesale termination market for calls in the public telephone network at a fixed site - definition of product markets and geographic markets, SMP evaluation and the imposition, maintenance, modification or withdrawal of regulatory obligations" were approved by the Autoridade

Nacional de Comunicações (ANACOM) by determination dated 27 August 2013. The lower termination prices starting on 1 October 2013 were maintained, with the exception of aspects associated to obligations questioned by the European Commission (EC) on 12 August 2013. (+)

DEDUCTION OF POSTAL RECORDS AFFECTED BY GENERAL STRIKE

ANACOM decided last 3 October to reject the request by CTT-Correios de Portugal (CTT - Portuguese postal service) to deduct normal and priority mail expedition figures directly affected by

the strike by the company's workers on 7 June 2013 from the records used to calculate the quality of service indicators per the universal postal service quality agreement. (+)

NET COSTS OF UNIVERSAL SERVICE

ANACOM approved last 19 September the decision on final results of the audit of net costs of universal electronic

communications service resubmitted by PT Comunicações (PTC). (+)

MODIFICATION OF UNIVERSAL SERVICE PROVISIONS

ANACOM approved last 19 August the conditions and specifications for each of the provisions constituting universal service (US) for electronic communications, namely

the provision of a complete telephone directory and a complete directory information service. (+)

RPAO - INVOICING AND PENALTY CHARGES

ANACOM approved last 19 September the final decision on invoicing and penalty charges for beneficiaries of the

reference poles access offer (RPAO) of PT Comunicações. (+)

DIGITAL TERRESTRIAL TELEVISION (DTT)

SUBSIDIES AND CO-PAYMENT FOR SATELLITE SERVICE

ANACOM approved last 4 September the set of indicators to disclose regarding implementation of subsidy and co-payment programmes meant to assure satellite TV service (DTH) in the scope of DTT. (+)

SPECTRUM MONITORING AND CONTROL ACTIONS

Updated third quarter 2013 information on actions carried out to monitor and control the DTT switchover process is now available. (+)

COMMUNICATIONS IN PORTUGAL

NEWS

ADMINISTRATIVE OFFENCE CASES

As administrative infractions were verified involving breaches of the respective obligations for installing telecommunications infrastructures in buildings (the Portuguese acronym is ITED) according to plan and to applicable technical standards, penalties were imposed by decision of the Autoridade Nacional de Comunicações (ANACOM) on the following:

- Carlos Manuel da Silva Pereira fine of 650 euros, paid by same; (+)
- José Luis Santos fine of 525 euros. The fine was not paid, whereby the case was passed on to the Competition, Regulation and Supervision Court for execution; (+)
- Agostinho Flávio Gonçalves Castanho fine of 600 euros. This decision became final and binding; (+)
- José Alberto Sousa Carvalho a fine of 650 euros. This decision became final and binding; (+)
- António Manuel Pereira Rodrigues a fine of 500 euros. This decision became final and binding. (+)

Optimus – Comunicações was also verified to have practiced an administrative infraction by not sending statistical information on fixed telephone service to ANACOM, whereby it was subject to a reprimand penalty. (+)

Regarding electronic communications, the practice of two infractions by the company Inedisinal, Unipessoal, was verified and a fine of 8,000 euros imposed. That fine was not paid, whereby the case was passed on to the Competition, Regulation and Supervision Court for execution. (+)

Lastly, a reprimand penalty was imposed on the company Adicional - Distribuição e Gestão Comercial upon verification that it had committed an administrative infraction. (+)

ANACOM PUBLIC PARTICIPATION

The vice-chairman of the ANACOM management board, José Manuel Perdigoto, took part in the 3rd Forum of the Health Regulatory Agency (ERS – Entidade Reguladora da Saúde), held on 27 September in Porto and focusing on the theme topic of "Independent Regulation in Portugal". Board member João Confraria in turn represented ANACOM at a bilateral meeting with the General Regulation Authority (AGER) of São Tomé and Príncipe, held last 2-6 September in that island country.

2012 ANNUAL REPORT AND ACCOUNTS

The ANACOM Annual Report and Accounts for 2012, drawn up and approved per the bylaws, was published last 9 September. (+)

CHANGES TO THE NFAP

The National Frequency Allocation Plan (NFAP) currently in force (NFAP 2010/2011 Version 2) was updated by ANACOM determination dated 4 September 2013, which approved the 2013 Addendum. (+)

TITLES ISSUED BY ANACOM

ANACOM issued last 7 and 14 August declarations authorising the following companies to provide communication services:

- TRANSVIEW; (+)
- VIVANET Distribuição de Produtos Eletrónicos; (+)
- VaporCloud Unipessoal.

On 14 August the company Spring & Fisiocol, Unipessoal, was issued a registration to provide audiotext services. (+)

FREQUENCY TRANSFERS

ANACOM published last 8 August the decisions transferring title for the following audio broadcasting activity frequency usage rights:

- from Santa Casa da Misericórdia de Campo Maior to Palavras Originais, Unipessoal; (+)
- from Rádio Larouco, Cooperativa de Rádio e Informação, to Provótexto, Unipessoal. (+)

AUTHORISATION EXPIRED

The authorisation allowing the company HMJ - Envio Rápido de Encomendas to provide postal services was declared expired by ANACOM order dated 10 September 2013. (+)

ANACOM WEBSITE - AUDIO VERSION

ANACOM has an alternative consultation tool for its website to facilitate use by people with special needs and users of mobile devices such as smartphones or tablets. (+)

BUNDLED OFFERS - STUDIES

- ANACOM has produced an internal study on bundled electronic communication service offerings in Portugal; (+)
- Indera Estudos Económicos has produced at ANACOM's request a statistical report on the user survey of bundled electronic communication services in Portugal, namely households which use packages comprising two or more services. (+)

PORTED NUMBERS

| 2012 | | | | | | | 2013 | | | | | | | | |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| | Jul | Aug | Sep | Oct | Nov | Dec | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep |
| FTS | 1359437 | 1367619 | 1378874 | 1399542 | 1409923 | 1418580 | 1425721 | 1437160 | 1451434 | 1464822 | 1473104 | 1486516 | 1495659 | 1505001 | 1514536 |
| MTS | 499737 | 507220 | 514172 | 522813 | 529865 | 537713 | 547219 | 570771 | 592773 | 617513 | 640928 | 664212 | 691120 | 720142 | 743747 |
| NGS ¹ | 1789 | 1800 | 1857 | 1878 | 1889 | 1904 | 1926 | 1948 | 2223 | 2241 | 2253 | 2410 | 2612 | 2614 | 2620 |
| Total | 1860963 | 1876639 | 1894903 | 1924233 | 1941677 | 1958197 | 1974866 | 2009879 | 2046430 | 2084576 | 2116285 | 2153138 | 2189391 | 2227757 | 2260903 |

- FTS fixed telephone service; MTS mobile telephone service; NGS non-geographic services
- It was deemed necessary in this table to correct data previously disclosed. The corrections concern the merger process whereby PT PRIME Soluções Empresariais de Telecomunicações e Sistemas, S.A., was incorporated in PT Comunicações, S.A.
- 1 At end 3rd quarter 2013 620 ported numbers from the '30' numbering range (numbers associated to nomad VoIP service) were included.

CALCULATION OF THE NET COST OF PTC CAPITAL - CONSULTATION

September 3rd was the deadline to submit contributions to the consultation launched by the Autoridade Nacional de Comunicações (ANACÔM), per determination dated 1 August, concerning definition of the methodology used to calculate the capital cost rate of PT Comunicações (PTC) applied from financial year 2012 on. (+)

UNIVERSAL POSTAL SERVICE PRICES - CONSULTATION

September 3rd was likewise the deadline for the consultation regarding the criteria for setting prices of the universal postal

service provided by CTT - Correios de Portugal (CTT), approved by decision dated 5 August 2013. (+)

MOBILE BROADBAND COVERAGE OBLIGATIONS

By determination dated 22 August 2013 ANACOM approved the decision substantiating the geographic component of coverage obligations in the 800 MHz frequency band. (+)

PROCEDURES TO SELECT UNIVERSAL SERVICE PROVIDER

Order no. 11699-A/2013 was published in the official gazette last 9 September. It designates the jury for the direct adjustment procedure to select the provider of the universal service of providing a complete telephone directory and a complete directory information service.

This appointment follows the government's decision to contract

(with a view to choosing the corresponding universal service provider) through use of the direct adjustment procedure, inviting entities qualified in the previously launched limited tender by prior qualification, in which no proposal was put forward for the services in question. (+)

FRAMEWORK-LAW FOR REGULATORY BODIES

The framework-law for regulatory bodies (Law no. 67/2013) was published last 28 September and specifically envisages the need to adjust the regulators' bylaws within 90 days after it takes force. The regulatory bodies have been given a maximum of 30 days counting from the first working day after publication of the law to submit to the government a draft modification of

the respective bylaws.

ANACOM is one of the regulatory bodies covered by this measure. Plans call for it to change its official designation to eliminate any reference to the ICP. When the new bylaws take force its designation will therefore solely be Autoridade Nacional de Comunicações (ANACOM). (+)

TELECOMMUNICATION INFRASTRUCTURE RULE CHANGES TAKE FORCE

Modifications to the legal framework governing the construction, access and installation of electronic communication infrastructures and networks took force last 9 September, specifically concerning telecommunication infrastructures in

housing estates, urban developments and groups of buildings (ITUR) and telecommunications infrastructures in buildings (ITED), in compliance with the provisions of Law no. 47/2013, published on 10 July. (+)

AUDIOTEXT AND ADDED VALUE SERVICE BLOCKING

New rules for selective blocking of message-based value added services, including SMS (short message service) or MMS (multimedia messaging service) and audiotext services took force last 17 August. All audiotext services (numbers beginning with 601, 607, 608, 646 or 648) are henceforth barred by default;

they can only be activated if the subscriber submits a written request to the telephone service operator. Services involving the sending of more than one message or the periodical or continual sending of messages and services that have erotic or sexual content continue to be barred by default. (+)

CONTROL OPERATION BY THE MARITIME POLICE AND ANACOM

A joint operation by the Maritime Police (MP) and the Autoridade Nacional de Comunicações (ANACOM) was conducted last 3-5 September in all ports in the Algarve and domestic maritime waters. The aim was to combat communications interference in the maritime environment. (+)

MERGER OPERATION BETWEEN OPTIMUS AND ZON

The Competition Authority (AdC) issued last 27 August the final

decision not to oppose the merger of Optimus and ZON. (+)

CONCENTRATION OPERATION BETWEEN CABOVISÃO AND ONI

The Competition Authority (AdC) adopted last 2 August a decision not to oppose the operation involving the concentration

of Cabovisão with Oni, considering that the operation is not liable to create any hindrance to competition. (+)

UMTS - PARTIAL REVOCATION OF TITLE HELD BY TMN

By determination dated 26 September 2013 ANACOM partially revoked the title held by TMN with respect to the frequency usage right for the use of technology in the third generation

(UMTS) mobile communication system – time division duplexing (TDD). (+)

FWA - VODAFONE FREQUENCY USAGE RIGHT REVOKED

ANACOM approved last 22 August the revocation of the frequency usage right, for the operation of fixed wireless

access (FWA) systems, held by Vodafone Portugal. (+)

RECENTLY ENACTED LEGISLATION

Decree-Law no. 129/2013 (Series I – *Diário da República* of 6 September) – approves the privatisation process of CTT – Correios de Portugal. (+)

Decree-Law no. 124/2013 (Series I – D.R. of 30 August) – regulates Law no. 55/2012 of 6 September, with respect to support measures for the development and protection of cinema and audiovisual activities, investment obligations and the registration of cinema and audiovisual works and companies. (+)

COMMUNICATIONS AROUND THE WORLD

EUROPEAN UNION

PLAN TO REFORM TELECOMMUNICATIONS MARKET

The European Commission (EC) adopted last 11 September the telecommunications market reform plan, based on the Connected Continent legislative package comprising Regulation COM(2013) 627, Communication COM(2013) 634, Recommendation C(2013) 5761 and an assessment of the respective impact. BEREC has released a communication about the proposed regulation. (+)

BENELUX HAS HIGHEST ROAMING RATES IN EUROPE

Information published last 6 August by the EC indicates that the Benelux countries (Belgium, the Netherlands and Luxembourg) have the highest roaming rates in the European Union (EU). (+)

COMMISSION SUSPENDS PROPOSAL FROM CZECH REGULATOR

The EC has suspended a proposal from the Czech telecommunications regulator (CTO) concerning regulatory measures for the termination market for public telephone network calls at a fixed site. (+)

COMMISSION REPEATS REQUEST TO GERMAN REGULATOR

The EC has reiterated its request to the German regulatory authority (BNetzA) to modify or withdraw the proposal that sets fixed termination rates which are three times higher than the average in member states that follow the EU recommendations. (+)

COMMISSION QUESTIONS ITALIAN REGULATOR

The EC has invoked the EU's revision mechanism with respect to plans by the Italian authority, the Autorità per le Garanzie nelle Comunicazioni (AGCOM), to modify wholesale broadband prices. (+)

PUBLIC SPEECHES BY NEELIE KROES

The latest public speeches given by Commissioner Neelie Kroes have been posted, of which the following stand out: "Bringing down the barriers for startups", Campus Party Opening Ceremony (London, 2 September); "A Manifesto for Innovation and Change", Startup Europe Leaders' Club (London, 2 September); "Building a Startup Europe", Startup Europe Forum (London, 2 September); "Creating tomorrow's Internet", Launch of Future Internet Labs (London, 3 September); "Stimulating Europe's App Economy", Launch Event of European App Economy Report (Brussels, 4 September); "Smarter cities in a connected continent", Mobile 360 Connected Europe Conference - GSMA (Brussels, 5 September); "We must act now - time for a Connected Continent", at the Telecoms Single Market press conference (Brussels, 12 September); "Building a connected continent for the next generation", FT - Telefonica Millennials Summit (Brussels, 19 September); "Building a connected continent", European Internet Foundation Breakfast Debate (Brussels, 24 September); and "Opening up Education - Making the 21th century classroom a reality", Launch of Opening up Education (Brussels, 25 September). (+)

ERGP RELEASES DOCUMENTS

The European Regulators Group for Postal Services (ERGP) has released final documents concerning cost allocation rules, effects of distorted VAT exemption and impacts on calculation of the net cost of universal postal service and market data indicators for the postal sector. (+)

BEREC

ROAMING QUESTIONNAIRE

The Body of European Regulators for Electronic Communications (BEREC) produced a questionnaire addressed to mobile telephone service providers regarding roaming rate comparability and transparency, which ANACOM has disseminated at national level. (+)

WORKSHOP ON ACCESSIBILITY

BEREC held last 15 October a workshop on accessibility. The aim was to discuss accessibility challenges from the end-user standpoint. (+)

16[™] PLENARY MEETING

- BEREC has released documents approved at its 16th plenary meeting, held last 26-27 September, along with the respective results; (+)
- BEREC held last 25 September in Riga, Latvia, its first stakeholder forum, which discussed topics such as the electronic communications market in Europe (vision and challenges for the middle and long term) and quality of service and transparency. (+)

ANACOM INTERNATIONAL ACTIVITY

The Autoridade Nacional de Comunicações (ANACOM) represents the Portuguese communications sector before international sector-related organisations and took part in recent meetings in the scope of the European Conference of Postal and Telecommunications Administrations (CEPT), the Postal Union of the Americas, Spain and Portugal (UPAEP), the European Regulators Group for Postal Services (ERGP), the Independent Regulators Group (IRG), the Body of European Regulators for Electronic Communications (BEREC) and the International Telecommunication Union (ITU).

CEPT

The following meetings were held in the scope of work by the Electronic Communications Committee (ECC):

- Meeting of PT44 of WGFM 16-18 July in London; (+)
- 3rd meeting of CPG PTB 21-23 August in Copenhagen; (+)
- 3rd meeting of CPG PTA 3-5 September in Budapest; (+)
- Meeting of SRD/MG 28-30 August in Vienna; (+)
- Meeting of the WGFM correspondence group on Unpaired 2
 GHz Bands 9 September in Lisbon; (+)
- 44th meeting of ECC PT1 9-13 September in Ljubljana; (+)
- Meeting of WGFM PT22 10-13 September in Copenhagen; (+)
- 32nd meeting of EFIS-MG 16-17 September in Tallinn; (+)
- 9th meeting of the Maritime Forum Group 17-19 September in Constanta, Romania; (+)
- Meeting of PT TRIS of WG NaN 10-11 September in Lisbon. (+)

UPAEP

The 22nd UPAEP Congress was held last 9-13 September in Havana, Cuba. (+)

ERGP

The following group meetings were held in the scope of the ERGP:

- WG Cross Border Issues 4 September in Bucharest; (+)
- Subgroup on Common Cost Allocation 12-13 September in Paris; (+)
- WG End Users Satisfaction and Monitoring of Market
 Outcomes 5 September in Prague; (+)
- WG Access Regulation and End to End Competition 20
 September in London; (+)
- Steering Group 18 September in Brussels. (+)

IRG

In the scope of the IRG, the following meetings took place:

- Contact Network 5-6 September in The Hague; (+)
- General Assembly 26-27 September in Riga. (+)

BEREC

The following BEREC meetings were held:

- Contact Network 5-6 September in The Hague; (+)
- 16th meeting of the Board of Regulators 26-27 September in Riga; (+)
- 16th meeting of the Management Committee 27 September in Riga; (+)
- Meeting of EWG-NGN 19-20 September in Brussels. (+)

ITU

Geneva hosted last 23-24 September a workshop on economic and regulatory aspects of roaming services. (+)

EMERG WORKSHOP

The EMERG workshop on Number Portability was held last 11-12 September in Istanbul. ANACOM took part in the event,

presenting the national experience with respect to the event's theme topic. (+)

COOPERATION

ANACOM hosted in September delegations from its counterparts in Mozambique (INCM - Instituto Nacional das Comunicações de Moçambique) and Guinea-Bissau (ARN-TIC - Autoridade Reguladora Nacional das Tecnologias de Informação e Comunicação).

ITU EXCELLENCE CENTRE

A workshop focusing on the topic of interconnection business was held last 2-5 September in São Tomé and Príncipe, coordinated by Portugal. ANACOM took part in this event along

with representatives from the Portuguese-speaking African countries (PALOPs).

NEWS FROM OTHER COUNTRIES

GERMANY - Bundesnetzagentur (BNetzA)

• BNetzA approved last 30 August the new interconnection prices for Telekom Deutschland's fixed network, covering call origination and termination rates along with rates that include calls to value added services and narrowband internet traffic. (+)

BRAZIL - Agência Nacional de Telecomunicações (ANATEL)

- ANATEL presented last 17 September the SNOA system, an intermediation platform for negotiating products meant for wholesale offers by groups holding significant market power (SMP). New agents can use SNOA to obtain via internet, in a fair and non-discriminatory manner, wholesale products such as towers, ducts, dedicated lines, interconnections, local access and roaming, i.e. vital infrastructures for agents arriving in the Brazilian market. (+)
- ANATEL and the National Electric Energy Agency (ANEEL) held two public hearings to debate the proposed joint resolution concerning pole sharing by telecommunication service providers and electric power distributors. (+)

SPAIN - Comisión del Mercado de las Telecomunicaciones (CMT)

• The CMT decided to combine in one single measure 15 existing procedures used to combat fraudulent irregular call traffic practices, with the goal of increasing efficiency and flexibility. Operators have denounced the proliferation of groups that use numbering to provide fictitious services that have economic and technical impact. According to the CMT, technological progress makes such practices increasingly hard to detect. (+)

USA - Federal Communications Commission (FCC)

- The FCC has granted the possibility of Connect America Fund access to areas that have yet to benefit from broadband (rural communities); 44 states have signed up for the fund, requesting more than 385 million dollars. (+)
- The FCC held last 1 October a forum on technology and cyber-security as part of activities during cyber-security awareness month. The discussion focused on protecting children from online risks and demonstrations of consumer-oriented cyber-security technology. The forum gathered teenagers, parents, educators and experts. (+)

FRANCE - Autorité de Régulation des Communications Électroniques et des Postes (ARCEP)

- ARCEP published last 8 October a consultation on a costing model for the mobile voice call termination market. (+)
- The annual ARCEP meeting was held last 17 October in Paris. The aim was to find answers to questions associated to prospects for value creation and distribution in telecommunications. (+)

IRELAND - Commission for Communications Regulation (ComReg)

- The consultation on the regulator's proposed measures to ensure equivalent access and choice for end users with special needs ended last 16 August. (+)
- A consultation was published last 19 September concerning wholesale broadband access and the traffic price control obligation. The aim is to promote competition and encourage affordable internet access for end users. (+)

NETHERLANDS - Authority for Consumers and Markets (ACM)

- The ACM published last 20 September its strategy, which specifically includes its mission and objectives such as consumer protection, competition and sector regulation. This document was previously subject to consultation. (+)

UNITED KINGDOM - Office of Communications (Ofcom)

- The regulator published a notice addressed to consumers, warning about a fraudulent practice using lost calls via the '070' number, which is charged at 1.50 pounds (1.77 euros) per minute for the returned call. (+)
- Ofcom published last 4 September a new guide meant to help consumers understand how fixed and mobile internet access service providers (ISPs) manage their broadband services during peak traffic periods. (+)
- A consultation on the future role of spectrum sharing for mobile and wireless data services (shared licences, wifi and dynamic spectrum access) was launched last 9 July. The aim is to better understand the role of access to shared spectrum in mobile broadband and machine-to-machine (M2M). Contributions may be submitted until 9 November. (+)

BILATERIAL MEETING WITH THAI COUNTERPART

ANACOM hosted last 23 September a visiting delegation from Thailand's National Broadcast and Telecommunications

Commission (NBTC), with a view to sharing regulatory experience and information about progress in the sector. (+)

2ND QUARTER 2013 STATISTICS RELEASED

FIXED TELEPHONE SERVICE

The main telephone access penetration rate stood at 42.9 per 100 inhabitants. Note that new subscribers to packages supported by high speed networks (fibre optics - FTTH/FTTB, cable) did not compensate for the decline of analogue accesses, ISDN accesses and accesses supported on mobile networks. (+)

MOBILE SERVICES

The mobile service penetration rate rose to 157.9 per 100 inhabitants. The penetration rate of effectively used mobile stations was 123.1 per 100 inhabitants. Effective mobile broadband users fell by 2.5 percent compared to the previous quarter and grew by 6 percent year-on-year. (+)

INTERNET ACCESS SERVICE

Fixed internet accesses increased to nearly 2.46 million, 1.5 percent more than in 1Q13. Compared to the same quarter

of the previous year growth was 6.5 percent. At end 2Q13 about 8.5 percent were double-play customers (with TV or fixed telephone) and nearly 80.2 percent possessed a triple-play (with TV + fixed telephone), quadruple play (TV + fixed telephone + mobile broadband) or quintuple play package. (+)

POSTAL SERVICES

During the quarter under analysis postal service traffic totalled nearly 223.2 million objects, with 96 percent of distributed objects addressed to the national market and the remaining 4 percent to other countries. (+)

SUBSCRIPTION TV SERVICE

The total number of subscription television subscribers was nearly 3.14 million. Cable television distribution service accounted for 45.6 percent of total subscribers, satellite television service (DTH) 20.1 percent and the set of DSL family (xDSL) technologies 20.5 percent. (+)

SPECTRUM MANAGEMENT CONFERENCE

The presentations given at the Spectrum Management Conference held by ANACOM and at the workshop on Cognitive

Systems promoted by the European Commission (EC) have been posted on the ANACOM website. (+)

WORKSHOP ON 'CYBER-SECURITY: ECONOMIC ASPECTS'

The presentations given at the workshop on Cyber-Security: Economic Aspects have also been posted. The event held last 30

September was organised by ANACOM with collaboration from the Directorate-General for Economic Activities (DGAE). (+)

7th CONGRESS OF THE PORTUGUESE COMMITTEE OF URSI

22 November 2013, Lisbon

An ocean

without borders:

technological challenges

Venue:

Fundação Portuguesa das Comunicações

Registration at: www.anacom.pt

Free participation limited to room capacity.

SCIENTIFIC THEMES

- > Electromagnetic metrology > Fields and waves: electromagnetic theory and applications > Radio systems and signal processing
- > Electronics and photonics > Electromagnetic environment and interference > Wave propagation and remote sensing
- > Ionospheric radio electricity and propagation > Plasma waves
- > Radioastronomy > Electromagnetics in biology and medicine

Delivery of ANACOM - URSI Portugal Prize and Best Student Paper Award

More informations at www.anacom.pt









PUBLISHER AND OWNER: ICP - Autoridade Nacional de Comunicações HEADQUARTERS: Av. José Malhoa, 12 1099-017 Lisboa info@anacom.pt www.anacom.pt **DIRECTOR:** Fátima A. Botelho

PRODUCTION: companhia dos riscos, design Ida