Annual Report 2002

Regulatory Authority for
Telecommunications and Posts
– RegTP –

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See consolidation as an opportunity

Keep the balance between infrastructure and services competition

Fresh stimulus through service innovation

Consolidation in the telecoms markets continued in 2002. Nevertheless, revenues, capacity utilisation and the number of licence holders are still rising and the growth in the number of mobile telephony and Internet users has lost none of its momentum. There was, however, a decline in jobs for the first time since 1998, a fall of 5 percent as a result of withdrawals from the markets and corporate efficiency gains.

The environment in Germany is still such that the success of competition over the past years will not be jeopardised by consolidation. The balance between infrastructure and services competition, in particular, will continue to be the basis upon which German regulatory strategy is built.

If, for instance, 12 percent of all phone lines in Hamburg, 21 percent of phone lines in Cologne and even 23 percent of lines in Oldenburg are provided by the competitors, this shows that regional phone companies, through a combination of wholesale products from Deutsche Telekom, their own facilities, large-scale marketing and competitive pricing, have been able to win over business and residential customers alike and to notch up regional success.

Chief driver of this trend is the steady growth in the number of local loops leased – whose total is set to pass the one million mark shortly –, creating the basis for direct access to the customer, since 90 percent of all competitors' lines are realised via leased loops.

The positive mood created by innovation and services growth is what makes the German telecoms markets stand out. The following figures illustrate this growth dynamic:

- €8bn in telecoms investment,
- 22 percent more traffic in the fixed network (DSL included),
- cuts of up to 55 percent in the price of international calls over the past 12 months,
- almost 3 million new mobile telephony customers,
- 17 percent more traffic in the mobile markets,
- 47.5 percent more short text messages (23.6bn in all); 3 million multimedia messages,
- an increase of almost 17 percent in the number of Internet users.

Added spectrum for WLANs in the 5 GHz band and the launch of UMTS networks and services will further spur innovation in the German telecoms market.

Innovative services now also feature in the postal markets, as a result of competitors' entry. To date, however, the new licence holders have not been able to capture much of the letter market. Separately, RegTP's price regulation has lowered price levels for letter services in Germany for the first time, by just under 5 percent. This amounts to savings to consumers of between €250 to 300 million annually. Consumers can also expect prices to remain constant until 2007.

Matthias Kurth
President
Regulatory Authority for
Telecommunications and Posts

Consumer Representation

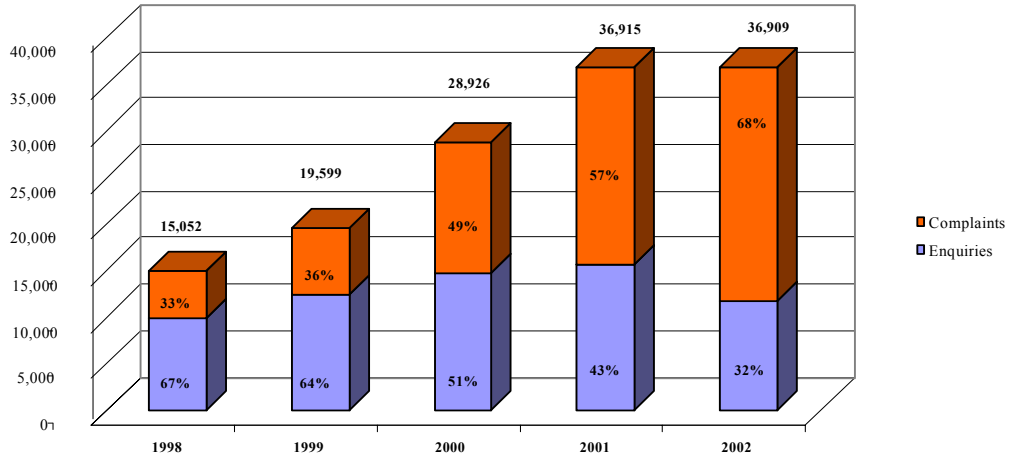
Telecoms

Consumer Enquiries

The development of the German telecoms markets has given the consumer not only a choice of provider but also a vast array of services. Individual companies have recorded strong growth in their customer base.

In the liberalised telecoms environment, the Consumer Representation service has become an important pillar of the Regulatory Authority for Telecommunications and Posts (RegTP). Awareness of it continues to grow, as reflected in the volume of enquiries and complaints received.

Consumer Representation



On account of the popularity of the service, representative statistics are now available on trends in enquiries and complaints, broken down by provider and content. RegTP also uses these internal figures to draw companies' attention to complaints received about them.

Aided by a customer weighting of the volume of complaints per company, RegTP is thus aware of customer dissatisfaction levels.

A total of 36,909 enquiries and complaints was received in 2002. Of these contacts,

20,203 were made on the consumer helpline (030/22 480 500),
10,043 were received as letters / faxes (fax: 030/22 480 515),
6,663 were received as e-mails.

The main issues in 2002 were:

30.4%	unsolicited direct marketing (especially by fax, touting for customers),
26.2%	bills (difficulty in understanding bills, bills not arriving),

9.3% contracts,
6.5% numbering (porting numbers, allocating numbers, barring options),
5.4% fees and charges.

Regrettably, as in the previous year, complaints from users bothered by unsolicited direct marketing by fax, text messaging or e-mail accounted for most of the contacts. Consumer Representation has therefore engaged in the debate on further measures to stem abuse of the 0190/0900 range. Consumers' rights were strengthened with the entry into force on 28 August 2002 of the Second Ordinance Amending the Telecommunications Customer Protection Ordinance (Federal Law Gazette 2002/62), inserting a new section 13a into the legislation.

The bulk of enquiries from customers not understanding their bills was about charges for calls arising in connection with Internet usage (involuntarily installed diallers) and use of 0190 premium rate services.

Complaints about contracts were often made as a result of a lack of knowledge of a provider's general terms and conditions. Consumers are often confused by the contracts that need to be concluded before a telecoms service can be used, their terms and conditions and diverse, complicated pricing structures, all of which make choice difficult. Also, a great many consumers mistakenly believe RegTP to be a supervisory body in relation to the companies, armed with appropriate powers of intervention.

Enquiries and complaints were received about the legal regulations in connection with users keeping their number when they switched fixed-line and mobile operator. There were also questions about number allocation and call barring options.

Favourable Status List
Every provider of voice communication services must undertake under section 14 of the Telecommunications Customer Protection Ordinance (TKV) to provide their customers, upon request, with a standard itemised bill free of charge. To secure providers' commitment to this, RegTP keeps a favourable status list. This is updated twice a year, published in RegTP's Official Gazette and posted on RegTP's website at www.regtp.de. Currently listed are 44 companies; a further round of updating is underway. The itemised bill is a great help for the consumer, particularly if their bill is unclear. As the law stands at present, there is no entitlement under section 14 of the Ordinance to have Internet access calls listed.

Dispute Resolution
Under section 35 of the TKV, customers claiming that their statutory rights have been infringed may ask RegTP to conciliate in a dispute with their voice telephony or public telecoms network access provider. It was for this purpose that RegTP set up its own dispute resolution service in June 1999, in line with the amended regulations published in its Official Gazette of 14 November 2001 as Communication 22/2001 in conjunction with section 35(1) of the TKV. Accordingly, the procedure may be invoked when the applicant can assert violation of their statutory rights, when judicial proceedings with the same subject matter are not pending, when dispute resolution on the same matter is not taking place or has not taken place, when an attempt to reach agreement with the defendant has been made beforehand, when the defendant has not cited limitation of action and when clarification of a fundamental issue is not compromised.

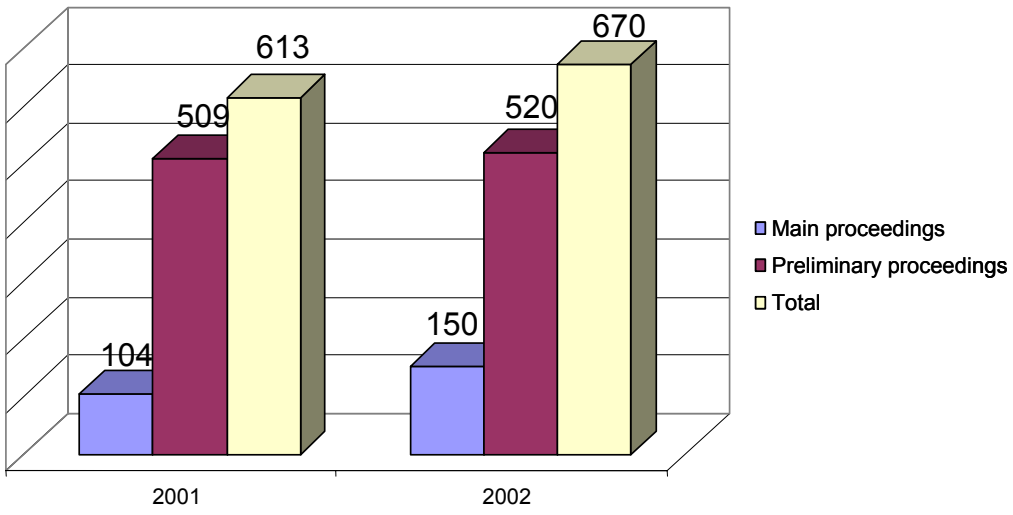
As a rule, dispute resolution by RegTP is carried out in writing, in line with its rules of procedure. It is voluntary. It follows, therefore, that the procedure is regarded as closed as soon as one of the parties refuses to cooperate. The aim is amicable agreement. It fails if the applicant withdraws their application, if the defendant refuses to agree to conciliation or if the proposal made is not accepted. In deciding to invoke the process, the applicant must bear in mind that it is an out of court dispute resolution procedure. RegTP's service assesses both parties' statements on the case, their evidence and declarations as to the legal position. It then works out a proposal based on the parties' positions and aimed at a compromise between the conflicting demands. The outcome thus fundamentally depends on the willingness of the two sides themselves to clarify the facts and accept a compromise.

Under section 15a(3) of the Code of Civil Procedure Introduction Act (ZPOEG), RegTP's service is classified as "another conciliation body". This means that RegTP's service – except in the case of implementation by a federal state of section 15a of the ZPOEG – can in pecuniary disputes before the local courts when the value of the matter in dispute does not exceed €750, take the place of the mandatory procedure before a conciliation body set up or recognised by the state administration of justice. It should be remembered that a settlement made through the agency of RegTP's service is not an executory title within the meaning of section 794 of the Code of Civil Procedure (ZPO).

Fees for the service were introduced on 11 May 2002. The fee is €25 per procedure invoked. If the value of the matter in dispute exceeds €25,000, the fee is set at 0.1 percent of the amount in dispute. The dispute resolution office determines the costs as appears fair, taking into account the findings of fact. In other respects, sections 8 to 21 of the Administrative Expenses Act apply accordingly.

RegTP's service has now received more than 2,000 requests to resolve disputes. 670 cases were heard in 2002, a slight increase over the number in 2001 (613). RegTP sees this increase as signalling the growing acceptance and use by consumers of this route to settle disputes with their telecoms providers out of court .

Dispute Resolution Requests



Most of RegTP's proposals were accepted by the parties concerned. Altogether, a number of disputes (some 40 percent) were cleared up and resolved. Of the procedures that failed, most are accounted for by those in which the defendant regrettably declined to take part.

The main causes of dispute were

- understanding the charges on telephone bills,
- the quality of telecoms and customer services,
- sorting out differences of opinion between consumers and providers on charges billed, the use of premium rate services (0190) and the use and duration of use of online services.

A number of requests were to do with contractual matters, but were not related to arrangements in the TKV. Dispute resolution under section 35 of the TKV was not therefore possible.

Companies showed different degrees of willingness to contribute to a successful outcome. Those largely refusing to take part or to play a constructive part are however – similar to the evaluation of consumer information – reminded of the situation by RegTP once a year and assessed accordingly.

Universal Services in Telecommunications
Under sections 18 and 19 of the Telecommunications Act (TKG) RegTP only commits an enterprise to provide a universal service if gaps in supply are identified in the relevant product market. To date, this has not been the case. Deutsche Telekom AG (DTAG) is required by section 97(1) of the TKG to notify RegTP, even after abolition of the voice telephony monopoly, of any changes in the extent to which or in the terms under which it provides universal services one year before they are introduced.

Thus RegTP's activity in respect of universal service is in accord with the EU's universal service philosophy to let market forces work and to intervene solely in the event of a deficit becoming apparent. RegTP was in many instances able to help customers in stating their case for network access (telephone line) and for entry in a public directory.

Further RegTP activities concerned the service "Provision of public telephones". In light of the full fixed-line coverage and more than 57 million mobile users, there was agreement between DTAG, local authority associations and RegTP to adapt to the changed usage patterns and to the extremely low demand for public telephones by introducing a new structural concept to ensure coverage even at uneconomic locations. In such locations it was planned to retain the functionality of the telephones but to do without added features, using so-called basic telephones. DTAG had assured RegTP it intended to continue to fulfil its mandate of providing public telephones, and planned to carry out a pilot project in order to continue serving sparsely frequented locations across the country in a cost-effective manner. In its 27th meeting on 26 November 2001 RegTP's Advisory Council had noted this approach with approval, subject to the agreement of the local authority associations. Agreement with the local authority associations, DTAG and RegTP on the outline conditions for the one-year pilot was then reached in early 2002. In late 2002, DTAG advised that it had completed its preparations for installation of the basic telephone, which it would begin roughly in the second quarter of 2003. The project is being supported by a board of representatives from the local authority associations, DTAG and RegTP. Independently of this, RegTP's criteria to

ensure nationwide provision of public telephones (Communication No 136/2002 in Official Gazette 4/2002 of 6 March 2002), supplemented by the criterion of wireless coverage as proposed by the Advisory Council, continue to apply.

Privacy of Telecommunications and Data Protection at Telcos

Particularly in a liberalised market there is a fundamental interest in upholding the privacy of telecommunications and data protection. Privacy and data protection continue to be ranked highly. Before a telecoms service can be provided, a substantial amount of personal data must be collected, processed and used, for instance to conclude a contract on telecoms services, to set up calls, for billing purposes and to provide itemised bills. Service providers are not therefore allowed under section 85 of the TKG to procure, for themselves or others, any information regarding the content or detailed circumstances of telecoms beyond that which they need to provide the service, or to use this knowledge for any other purpose, unless expressly permitted. They are also required to observe the strict data protection regulations set out for the telecoms sector in section 89 of the TKG as well as in the separate Telecommunications Data Protection Ordinance.

Section 91(1) and (3) of the TKG give RegTP extensive powers to enforce companies' compliance. RegTP is authorised to take a range of measures, including wholly or partially prohibiting companies from providing service. These measures may have a specific cause (eg public petitions or notices in the media), or they may be simply routine. RegTP investigates, for example, whether or not personal data have been properly collected and processed, customers' rights of choice and objection have been complied with and data erased within the maximum storage period allowed.

In 2002, routine checks were carried out on around 40 companies as part of RegTP's annual work programme and six checks made in light of special circumstances. The routine checks made random tests of compliance with the regulations in collecting, processing and using customer data (eg customer's name and address), in collecting and processing call data (eg date, time and duration of calls) and in charging and billing. The checks made so far show that the regulations are not always implemented properly, particularly as regards the service provider's obligation when concluding a contract to inform the customer about the nature, extent, place and purpose of using personal data, and as regards compliance with the maximum storage periods for call data and customer data. However, such lack of compliance was typically remedied by the companies after being asked and advised on how to do so. Also, numerous requests from individuals and companies were dealt with in writing or over the telephone and – if an infringement was established – appropriate action taken.

Another – welcome – focus of activity was informing and advising telcos. Prevention, particularly as far as data protection is concerned, is the best way of ensuring that breaches do not occur in the first place. Telcos' enquiries about new services and offers, for instance, were answered. This meant that innovations could be introduced in conformity with the regulations, without, conversely, data protection inhibiting innovative ideas. This dialogue was also promoted by the meetings organised by the Federal Data Protection Commissioner in which current issues are discussed by the supervisory bodies and the telcos.

Postal Sector

Consumer Questions / Universal Service

The Second Amendment to the Postal Act of 30 January 2002 was enacted on 7 February 2002. Under the former arrangements, every licence holder was, under certain conditions (sections 12 to 17 of the old Postal Act), to "make a contribution … in order to facilitate provision of the relevant universal service." Now, the Postal Act commits Deutsche Post AG (DPAG) – and DPAG only – to provide universal services as defined in the Postal Universal Service Ordinance (PUDLV) for the period of the statutory exclusive licence (until 31 December 2007). The PUDLV was also amended by the Second Amendment.

Fixed Facilities

The amended PUDLV continues the reduction in the minimum total fixed facilities (12,000) as well as the minimum operated by DPAG's own staff (5,000) until 31 December 2007.

Number of fixed facilities 1997 – 2002

Date	DPAG total	Operated by own staff	Operated by other staff
31.12.97	15,331	10,095	5,236
31.12.98	14,482	7,946	6,536
31.12.99	13,948	5,956	7,992
31.12.00	13,663	5,590	8,073
31.12.01	12,818	5,331	7,487
31.03.02	12,774	5,311	7,463
30.06.02	12,734	5,278	7,456
30.09.02	12,854	5,205	7,649
31.12.02	12,683	5,030	7,653
PUDLV target	minimum **12,000**	minimum **5,000**	7,653

Source: DPAG

In addition, there must be at least one fixed facility in future in communities with more than 2,000 inhabitants (previously: 4,000). The distance rule (2,000 metres) however, continues to apply only to communities with over 4,000 inhabitants or communities with centralised functions. Meant by "community" is a community within the meaning of local government law. The PUDLV does not regard parts of a community separate from the main place as an independent community. Nevertheless, in the Advisory Council meeting on 16 December 2002, DPAG stressed that it would operate one such facility in all districts with more than 4,000 inhabitants. It transpires from the amended PUDLV that a total of 203 fixed outlets will have to be installed in communities of more than 2,000 inhabitants. DPAG had installed 158 by the end of November 2002.

There will also have to be at least one fixed facility in future in all districts for each 80 square kilometres. According to DPAG's calculations, which match RegTP's, this means that 125 new outlets will have to be installed as a result of this "area criterion". 85 are already in place. RegTP will see to the installation without delay of those not yet provided in communities with more than 2,000 inhabitants and individual districts.

By the end of November 2002 a total of 243 new outlets had been set up; yet the total number of fixed facilities fell by 135 between 31 December 2001 and 31 December 2002

(see table "Number of fixed facilities 1997 – 2002"). Thus DPAG, at the same time as it was setting up new fixed facilities, closed up to 378 others. There is adequate potential for such closures in the 1,800 existing fixed outlets in communities with fewer than 2,000 inhabitants. This could allow DPAG further closures, as long as it meets the requirements of the PUDLV.

Insured Items
RegTP is investigating whether or not DPAG is complying properly with the requirements of the PUDLV in respect of its insured items universal service. Its first findings are as follows:

- Letters can only be insured as an *Expressbrief* item, an inadequate form.
- Parcel options are restricted by various conveyance constraints.
- Items can be insured up to the value of €25,000 only.

Although DPAG has introduced a "Valuepack" product allowing jewellery, watches and precious stones to be sent insured up to a maximum of €25,000, this only partly fills the universal service gap arising after discontinuance of its insured letter product.

DPAG asserts that the insured items not included in its portfolio do not qualify for universal service. They need special treatment on account of their – valuable – contents (special security regulations applicable to the staff accompanying the transport, the changing routes and protection in the vehicle during transport). RegTP is currently looking into whether or not the arrangement set out in section 1(3) para 1 of the PUDLV ("special treatment") is applicable.

Dispute Resolution in the Postal Market
Section 10 of the Postal Services Ordinance (PDLV) of 21 August 2001, enacted on 25 August 2001, provides for dispute resolution in the postal market. This comes into play when a customer of a postal service provider asserts that their statutory rights have been violated, in particular if mail has been lost, stolen, or damaged. In this case the customer can request the services of RegTP to settle the dispute. Before doing so, however, they must have made an attempt beforehand to resolve the dispute with the provider directly and this attempt must have failed. RegTP has set up its own service for this purpose.

RegTP's proposal need not necessarily be accepted. Both parties have the option of rejecting it. 12 requests for dispute resolution were made in 2002. In three cases, a ruling was agreed (compensation for the loss of *Expressbrief* items); in another four cases, no agreement was reached (loss or theft of the contents of an *Expressbrief* or parcel). The remaining five cases are ongoing.

Public Petitions and Consumer Protection
Under section 5 of the PUDLV every individual is entitled to submit written proposals to RegTP for measures to ensure prescribed quality standards. This route continued to be well used in 2002. Some of the submissions did not – strictly speaking – comply with the section 5 criteria, according to which the public petition can only propose measures to guarantee the quality standards. But this is often a question of definition. The following therefore deals with consumers' submissions as a whole.

RegTP received a total of 870 petitions and similar proposals in 2002, an increase of almost 70 percent over the previous year.

In categorising the submissions, RegTP has followed the forthcoming EU standard Postal services – Quality of service – Measurement of complaints and redress procedures.

Petition Statistics

The breakdown of the 870 submissions received by RegTP is as follows for the period 1 January to 31 December 2002:		
How complaints are treated	129	14.8%
Mail delivery	124	14.4%
Access to postal services	106	12.2%
Item lost (in PUDLV terms)	70	8.0%
Cross-border mail	29	3.3%
Mail collection	23	2.6%
Dispute resolution according to the PDLV	13	1.5%
Item damaged	18	2.1%
Item arriving late	15	1.7%
Change of address	10	1.2%
Access to customer service information	2	0.2%
Other complaints*	331	38.0%

* Mainly complaints about the changed general terms and conditions for DPAG's insured letter product, the arrangements for exchanging stamps, DPAG's prices and German Parcel's practice of bringing in parcels from the US.

RegTP also responded to some 650 telephone enquiries covering the whole range of postal services.

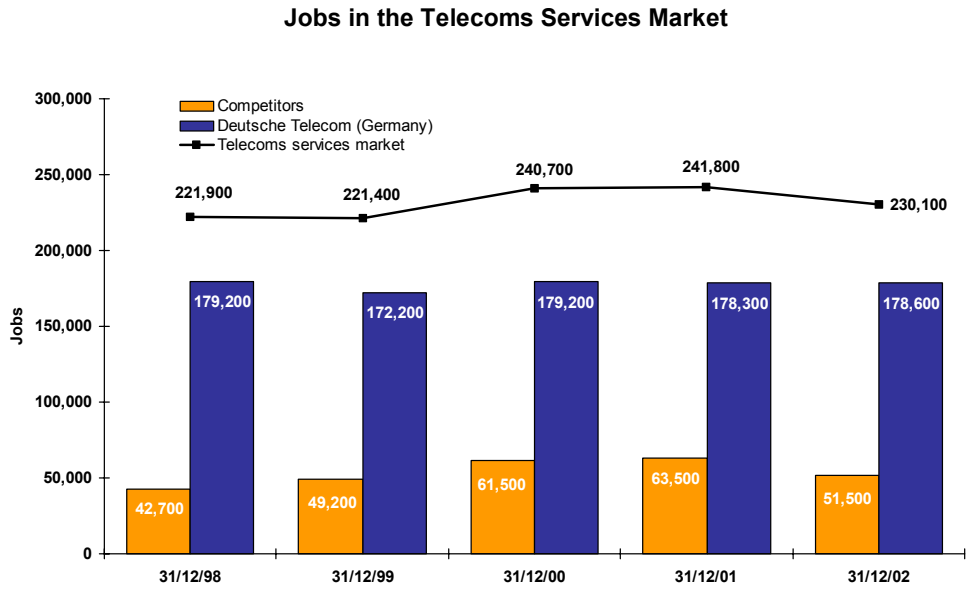
Postal Privacy and Data Protection

A new ordinance regulating data protection for companies providing postal services (PDSV) was enacted on 8 July 2002. It features important new data protection arrangements. Mail finding its way by mistake into the system of another service provider is one of the grey areas now explicitly covered. The aim is to make sure that misrouted mail does not entail the loss of data protection. Also, the PDSV includes the regulations needed to implement the aims of section 29(2) of the Postal Act, ie for access to PO boxes and changes of address. Service providers can now transmit relocation data to other service providers for due delivery purposes. However, only the service provider in relation to whom the forwarding request was made is entitled to transmit such data. Yet the party concerned also has a right of objection to this. Also, the new PDSV makes it possible to agree to the use of electronic procedures. All data processing equipment used for obtaining consent or for any other declarations given to a service provider must be designed in such a way that the party concerned can fully recognise their declaration. This provision takes effect on 1 May 2003, to give service providers time to obtain and introduce the equipment.

Employment Trends

Jobs in the Telecoms Market

The number of people working in the telecoms services market fell by 5 percent over the previous year to 230,100 at the end of 2002. This is the first time since liberalisation in 1998 that the number of jobs fell. In absolute terms, however, the number of jobs is still higher than during the 1998/1999 boom years.



The main reason for this trend is the 19 percent drop to 51,500 in the number of persons employed by the competitors (holders of licence classes 1 to 4, mobile providers, registered providers who are licence-exempt under section 4 of the TKG).

Deutsche Telekom's workforce (parent and German subsidiaries), on the other hand, remained more or less constant year-on-year, totalling 178,600 as of 31 December 2002. The impact of DTAG's announced reduction of 42,500 jobs in Germany will not be felt before 2003; according to DTAG sources, the job reduction will continue until the end of 2005.

Twice as many jobs had been shed (7,300) in the fixed network (holders of class 3 and 4 licences, not including broadband offerings and not including DTAG) at the end of the year under review as in the mobile market (holders of class 1 licences), which recorded a loss of 3,500 jobs.

At the end of 2002 the licensed competitors in the fixed network (not including cable TV) had a total of 22,700 on their payrolls.

In all, 31,500 persons were employed in the mobile market (by operators and service providers). Of these, 24,300 worked for the licensed mobile operators. Without DTAG's figures, the workforce in the mobile market was 22,760.

Around 6,000 persons are employed by licence-exempt telecoms service providers, cable television providers and other radio services.

Jobs in the Postal Market
Number of persons employed in the licensed area in 2001 (annual average).
(Final figures for 2002 not available at the time of publication)!

		DPAG	Holders of licences issued under the Postal Act	Holders of old-type licences*)
Full time (persons working 35 or more hours a week)		104,778	5,022	91
Part time (persons for whom the categories *Full time* and *In insignificant employment* do not apply)		56,056	3,453	8
In insignificant employment (persons employed under the so-called DM630 rule)		1,331	11,067	2,151
including those	a) liable to social insurance contributions	257	10,130	651
	b) not liable to social insurance contributions	1,074	937	1,500

*) Licences issued prior to enactment of the Postal Act for the delivery of large mailings not exceeding 100g per piece in weight and valid until the end of 2007 at the latest (no employment contract targets).

Thus since 1998 the new licence holders have created almost 20,000 additional jobs. Were it not for them, these jobs would not exist, and the staff might otherwise be out of work. The licence holders are therefore making a sizable contribution to easing the strain in the labour market. The chart shows that over 95 percent of those employed by the licence holders now pay social insurance contributions. Companies operating under a so-called old-type licence are not required to meet such targets.

Of the 1,331 persons in insignificant employment with DPAG more than 80 percent are not liable to social insurance contributions, according to DPAG sources, whereas these contributions are paid in relation to over 90 percent of those in insignificant employment with competitors granted a licence under the Postal Act.

The (new) licence holders have created a disproportionately large number of full and part time jobs. They accounted in 2001 for some 2.4 percent of revenues in the licensed area, for over 4.5 percent of the number of full time jobs and just under 5.8 percent of the number of part time jobs. For information purposes: the 401 exits from the market (see above) have meant the loss of around 700 full time, 425 part time and 900 low earnings jobs.

Persons employed by Licence Holders (not including DPAG) by Federal State:

	Full time	Part time	In insignificant employment
Baden-Württemberg	247	397	2,443
Bavaria	240	56	94
Berlin	381	178	21
Brandenburg	123	137	858
Bremen	3	10	16
Hamburg	1,795	983	685
Hesse	264	91	148
Mecklenburg-Western Pomerania	148	87	1,855
Lower Saxony	274	336	992
North-Rhine Westphalia	621	378	877
Rhineland-Palatinate	102	23	76
Saarland	20	16	103
Saxony	459	548	3,884
Saxony-Anhalt	268	114	497
Schleswig-Holstein	56	68	225
Thuringia	109	39	444
Total	**5,113**	**3,461**	**13,218**

Most of the jobs provided by the new licence holders are not in city regions but in structurally weaker areas.

DPAG workforce (letter market):

	1997	1998	1999	2000	2001
Total *)	153,467	147,043	142,332	140,613	137,130

*) Number of staff at year's end, rounded to full time
Source: DPAG

Thus between the end of 1997 and the end of 2001 DPAG has shed the equivalent of 16,337 full time jobs (–10.6 percent), not as a result of falling revenues or sales in the letter market, since it has recorded a steady increase in both since the beginning of 1998.

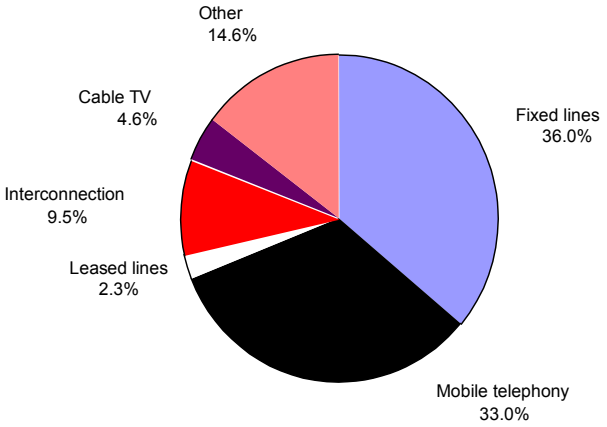
Telecoms Market Watch

Growth in the Telecoms Services Market
Under market watch, RegTP keeps a constant check on the number of companies, their revenues, workforce and investment. It also monitors trends in subscriber numbers and traffic volumes.

Following the practice of the Federal Statistical Office (StBA), company revenues are shown in their entirety, irrespective of business partner(s) with whom the revenue is generated. Further analysis is necessary to make a breakdown on this basis[1].

According to the figures available, the telecoms companies achieved a slight overall revenue gain. Revenues from telecoms services reached €61 billion in 2002, up 3 percent.

Spread of Telecoms Service Revenues in 2002



Total revenues
€61 billion

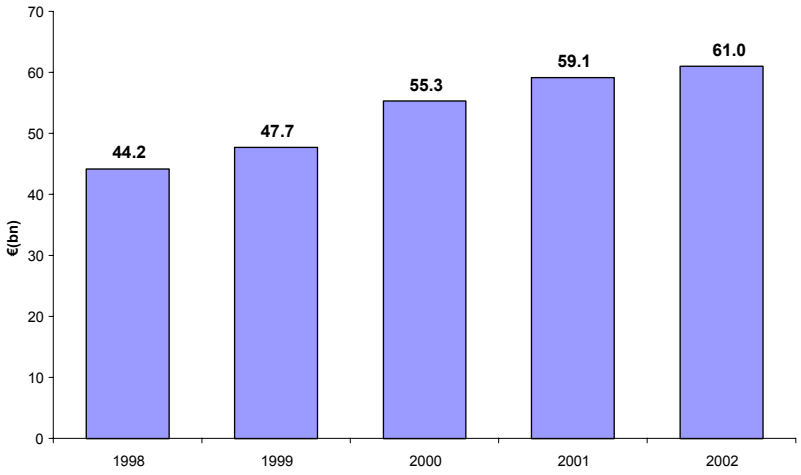
Provisional figures

[1] Fixed line services include all the services licence holders provide to end users and resellers, in particular, provision of the line and all types of switched call. Calls to premium rate numbers and Internet access calls include services that go beyond call set up (information content). Resellers' revenues are likewise included. Mobile telephone service revenues comprise the revenues generated by both network operators and service providers. The figures for mobile telephone service and fixed line service do not include revenues for interconnect services. Interconnect services are grouped in the Carrier Business segment. Grouped under this heading are connection and access services which companies provide in order to interconnect their networks. They include the shared use of buildings (colocation), local loop rental, and collection and preselection services. Leased lines feature in a segment of their own. The cable television segment includes the revenues earned by the cable operators from connection and programme feed charges. The segment "Other" subsumes all such services as cannot be allocated to any of the above, for example data services, corporate network services, broadcasting services, multimedia services, radiocommunication services such as paging and mobile data, along with various value added services. The heading "Other" may also include software services and other non-telecoms-specific services provided by a telecoms company or group.

Year-on-Year

Telecoms Service Revenues

1998 – 2002[2]



2001/2002: provisional figures

Investments

Telecoms companies invested a total of €6.4 billion in fixed assets in 2002. Of this, 30 percent went into mobile networks and 70 percent into fixed networks[3].

Interconnection

Setting up telephone calls often involves the participation of more than one network operator. The basis for this cooperation is an interconnection agreement. At year's end, 81 competitors had signed such an agreement with DTAG. Competitors also cooperate with each other, to lessen their dependence on DTAG.

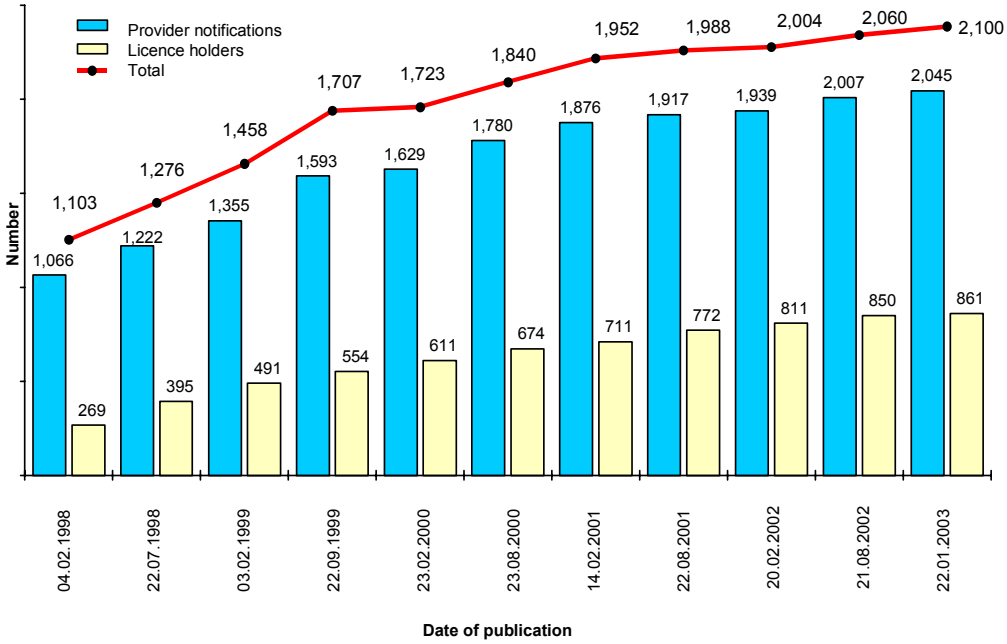
Number of Providers / Service Trends

At year's end, 2,100 providers had registered with RegTP. 496 companies held an unrestricted network and/or voice telephony licence. The number of licence holders continued to grow in 2002. At year's end, 250 companies provided voice services in the fixed network, 100 of these offering call by call, preselection and direct access over their own core and access networks. The others operated purely as resellers, buying call minutes from the network operators and marketing and billing these in their own name. All this has added to the diversity in the German voice and value added services market.

Under section 4 of the TKG, every telecoms service provider must notify RegTP of the commencement of their operations. On 22 January 2003 RegTP updated its listing, which can be viewed on www.regtp.de. Click on *Telecoms Regulation* and then on *Telecoms Service Providers*.

[2] Corrections have arisen for 2001 after the publication of new company figures.
[3] Cable television included.

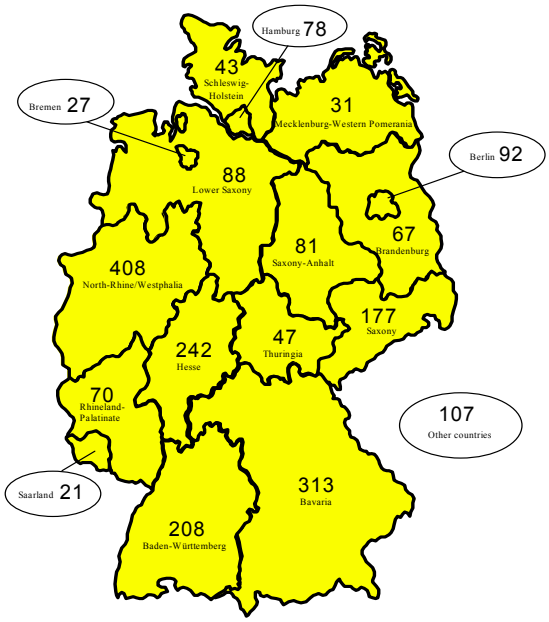
Growth in the Number of Telecoms Service Providers

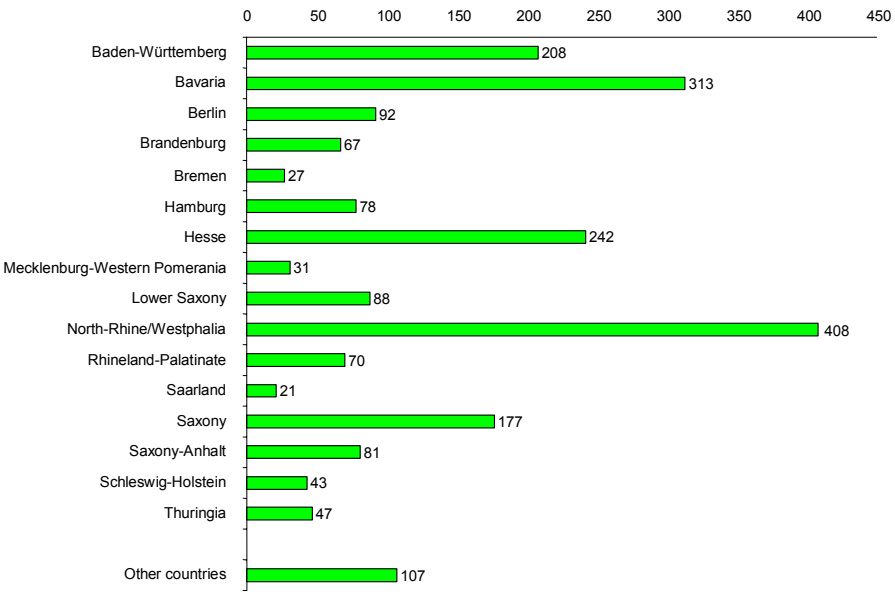


The total number of licence holders in the chart are holders of licences for Classes 1 to 4. Holders of more than one licence are counted once only.

The chart overleaf shows the federal state in which providers have their headquarters. Some operate nationally, while others have regional strategies.

Regional Breakdown of Telecoms Service Providers

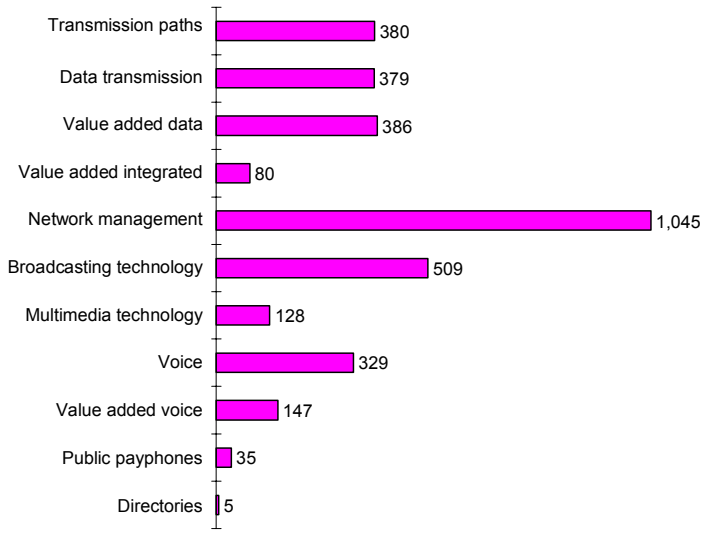




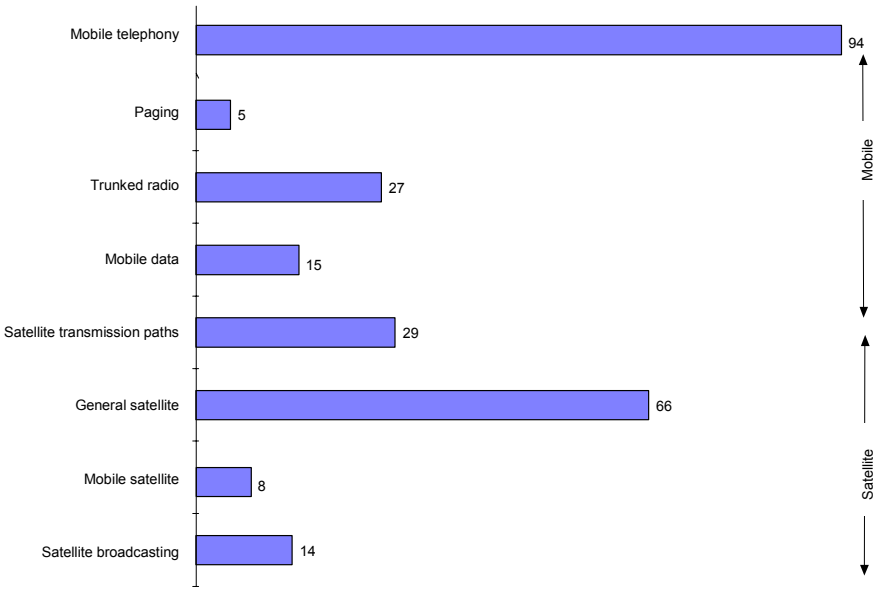
Network management services are found most often. Of these, Internet access services offered by Internet Service Providers, or ISPs, are the most common. Most of the new providers are registered for these Internet access services and for voice services also.

The figures on the offers are given below:

Fixed Telecoms Services



Mobile and Satellite Services



Growth of Competition in the Local Access Market
Telephone Channels / Fixed Lines

At the end of 2002 the number of telephone channels[4] in Germany totalled 53,716 million. This resulted from 29,154 million analogue lines[5], public telephones included, 10,451 million ISDN basic rate lines[6] and 122,000 primary rate ISDN lines[7]. There were also 3,195 million DSL lines[8] in operation.

Telephone Lines

DTAG and Competitors

	1998	1999	2000	2001	2002
Competitors					
Total (million)	0.16	0.40	0.86	1.58	2.35
Analogue	15%	21%	17%	14%	10%
ISDN	85%	79%	83%	86%	90%
Number of providers	21	40	55	61	64
DTAG					
Total (million)	46.37	47.81	49.36	50.70	51.37
Analogue	78%	72%	65%	60%	56%
ISDN	22%	28%	35%	40%	44%
Total (DTAG + Competitors)					
Total (million)	**46.53**	**48.21**	**50.22**	**52.28**	**53.72**
Competitors	0.3%	0.8%	1.7%	3.0%	4.4%
DTAG	99.7%	99.2%	98.3%	97.0%	95.6%

including public payphones

Alternative operators increased their share to a total of 2.35 million telephone channels in the year under review. This represents a share of 4.4 percent. Across the country, they accounted for 0.8 percent of analogue lines, 7.2 percent of basic rate ISDN lines and 16.5 percent of primary rate ISDN lines.

[4] The standard voice channel, ie the equivalent of a 64 kbit/s channel, is a suitable measure of size, enabling the different types of line such as analogue, basic rate ISDN and primary rate ISDN to be subsumed under one heading. The line is understood not in terms of telephone number but in terms of capacity. Public telephones are included in the total. Both the competitors' and DTAG's figures include a small proportion for their own requirements.
[5] Traditional telephone line (voice channel with 3.1 kHz bandwidth).
[6] Basic rate IDSN (Integrated Services Digital Network): two independent voice channels, each operating at 64 kbit/s.
[7] Primary rate ISDN: 30 independent voice channels, each operating at 64 kbit/s
[8] DSL (Digital Subscriber Line) provides high speed Internet access over the ordinary copper telephone line.

Regionally, the competitors enjoyed different degrees of success in increasing their share of the telephone line market. In northern Germany in particular, the national average of 4.4 percent was often exceeded. Thus in Hamburg the competitors notched up a share of 12 percent of the market, of 21 percent in Cologne and as much as 23 percent in Oldenburg. A mix of wholesale products from DTAG, facilities of their own, large scale marketing strategies and competitive pricing made it possible for regional telephone companies to attract business and residential customers alike and to achieve success at regional level.

The picture is similar as regards high speed Internet access via DSL (see below).

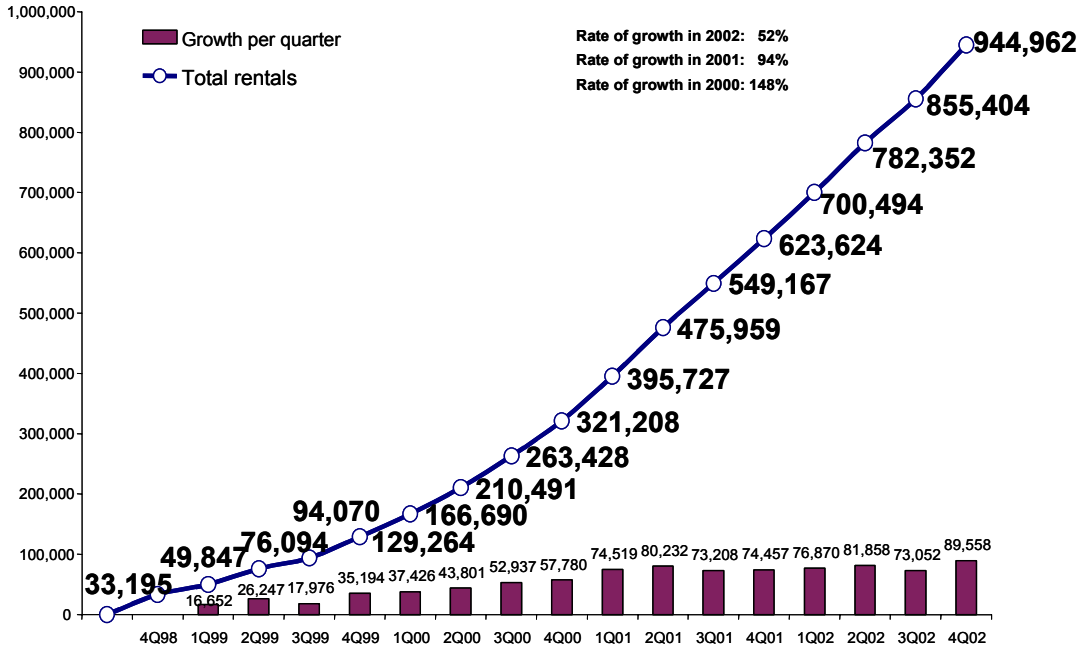
Following the explosive growth in the number of mobile phone users, the demand for and number of payphones and cardphones fell to 109,000 at year's end. The competitors held 2.8 percent of this market.

Besides DTAG, more than 64 licence holders offered analogue and ISDN lines[9] on the basis of local loop access agreements with DTAG, or their own facilities. Thus there was a choice of access provider for one third of the population at year's end.

Access to DTAG's Loops

To access the customer, competitors mainly used DTAG's loops; to a lesser extent they used their own lines, or wireless links. At the end of 2002, 95 companies had contractual arrangements with DTAG on local loop rental. Generally, the loops were the copper pair, but occasionally fibre loops. 90 percent of the lines competitors offered were based on rented DTAG loops. At year's end, a total of 944,962 such rentals had been agreed. Internationally, Germany occupies a midway position with its monthly rental of €12.48 for the ordinary copper pair[10].

Growth in DTAG's Local Loop Rentals



Source: DTAG, http://www.telekom.de/dtag/ipl1/cda/level4s_a/0,3682,20378,00.html

[9] In some cases the service is offered subject to minimum revenues.
[10] See the European Commission's VIII Implementation Report.

The precondition for this is shared use of the technical rooms and access to the main distribution frames in DTAG's exchanges (colocation facilities). At year's end, the competitors had requested colocation facilities in more than one third of DTAG's access areas. These are predominantly access areas in the larger towns and cities where customer density is high and the heavy users are to be found. Meantime, the first access network operators are also expanding their operations into less populated areas. At the end of 2002 colocation facilities had been provided in more than 2,600 of DTAG's 7,900 access areas.

Broadband Internet Access

Broadband Internet access at speeds upwards of 124 kbit/s is available over digital subscriber lines, cable TV, powerline, and satellite. More than 3.3 million broadband Internet connections were operational in Germany at year's end. Three million of these were DTAG's T-DSL connections, 195,000 the ADSL/SDSL lines of alternative fixed line operators, more than 45,000 bidirectional cable connections, 7,000 powerline connections and some few thousand were satellite-delivered. Thus the competitors held around 8 percent of the market for broadband connections at year's end.

DSL

Including DTAG, 45 companies offered DSL connections[11] at year's end. Four of these (DTAG included) offered DSL capability across the country, whereas most of the alternative telephone companies targeted particular cities or regions. Generally speaking, the alternative operators require the customer to have a line[12] from them before they will provide ADSL. SDSL capability, by contrast, is offered separately from the telephone line. Internet service providers also promote DTAG's or alternative telephone companies' DSL technology, in all or in part of the country. While the contract for the DSL line then exists with an access network provider, more than 100 Internet service providers offer DSL Internet tariffs for use of the Internet on this basis. Altogether, there are far more than 100 Internet service providers offering DSL tariffs.

At year's end, DTAG operated a total of 3 million T-DSL[13] lines. Competing operators provided 195,000 DSL lines between them. In terms of the country as a whole, the competitors thus captured a little over 6 percent of the market, increasing their share year-on-year by 3 percentage points. The regional differences, some of which are significantly higher than the national average, are striking. Competitors' share in Oldenburg, for instance, was around 15 percent, compared with 34 percent in Hamburg. Also, competitors' share of the market for business DSL lines (SDSL) is noticeably higher as a rule.

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[11] DSL (Digital Subscriber Line) is a high speed connection provided on the copper telephone line from the exchange to the end customer. Variants such as ADSL, SDSL, HDSL, etc, are commercially available. They differ in transmission speed. ADSL (Asymmetric DSL) offers different speeds in the two directions (upstream and downstream). SDSL (Symmetric DSL) and HDSL (High Data Rate DSL) provide the same speed in both directions. Unlike ADSL and SDSL, HDSL does not support the parallel use of telephone services in the baseband.

[12] With a few exceptions, DSL is only offered in combination with ISDN.

[13] DTAG markets its DSL variants under the T-DSL brand.

Cable Networks
The cable market is currently in a phase of consolidation. DTAG still has a minority stake in the major cable companies in North-Rhine Westphalia and Baden-Württemberg, *ish* and *Kabel BW,* while *Kabel Deutschland GmbH* (KDG) was sold in early 2003.

The rollout of cable TV systems with return channel capability seems to have slowed for the time being. An international comparison shows high speed Internet access via cable to be one of the less attractive access platforms in Germany. Two dozen cable operators provide such access, while more than 45,000 households had actually connected to the Internet via broadband cable modem at year's end. There is potential for the connection of around 1 million cable customers.

Powerline
Two companies are currently using powerline technology to offer high speed Internet access in different locations. At year's end, 7,000 households had broadband Internet access via this medium. 90,000 households could be connected directly.

Satellite Delivered Internet Access
The ASTRA and EUTELSAT satellite systems deliver two kinds of broadband Internet access. One, for business users, is a two-way link that uses the satellite for both the upstream and the downstream data flow. Fewer than ten companies currently offer this service in Germany. The number of users is likely to be in the region of some few thousand. The relatively high installation, hardware and provisioning costs – around €3,000 on average – make this bidirectional service lucrative first and foremost for business applications.

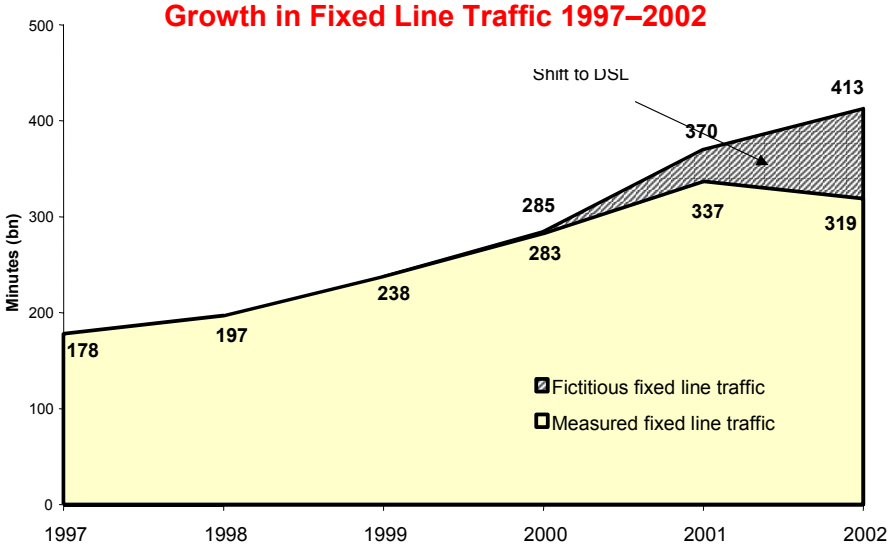
The second variant is a service for home users. The satellite is used for the uplink, while the return channel to the Internet is realised over the telephone line. DTAG in 2002 introduced a satellite DSL service for customers who, for technical reasons, do not have T-DSL access over the fixed network. In addition, about six further companies offer one-directional satellite Internet services in Germany. The number of users is likely to be around 10,000.

Call Volumes in the Fixed Network
The volume of traffic in the fixed network is now fundamentally determined by Internet traffic. Noticeable is the large shift from switched to DSL calls. The Internet was accessed on more than 3 million DSL lines at year's end. Intensive use is made of these high speed connections, all the more so as around half of them are billed at a flat rate.

Assuming that this intensive use took place over analogue or ISDN lines instead of DSL, the total for 2002, given average usage of 50 hours per month per DSL line, would have been 413 billion minutes[14].

[14] The model calculation shows the DSL lines as an annual average. The usage profile of a DSL line cannot be applied here 1:1 to the usage patterns of fixed lines in the switched network. Internet usage originating on analogue or ISDN lines adapts to the switched network's (metered) pricing. Hence 50 hours/month as used in the model is taken to mean intensive use.

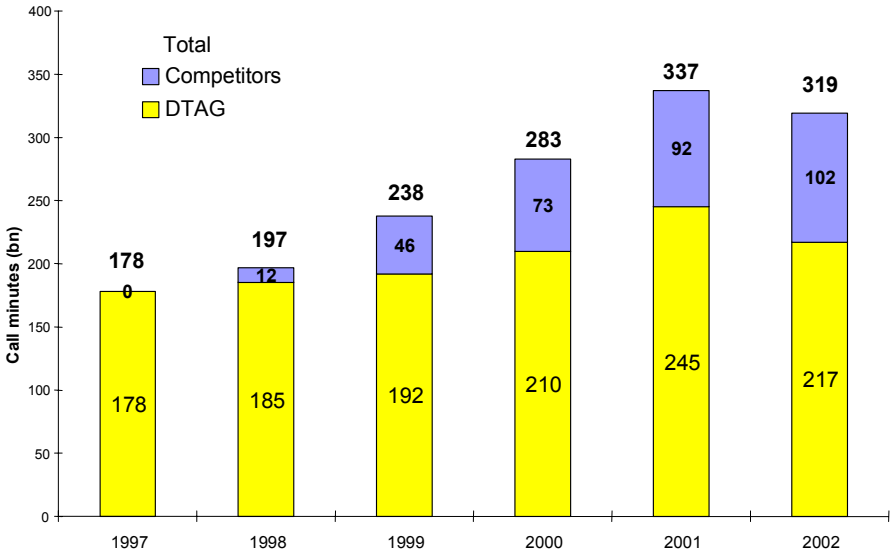
Growth in Fixed Line Traffic 1997–2002



2002: provisional figures

In reality, the volume of switched calls in the fixed network totalled 319bn minutes in 2002. Undoubtedly, the growth in mobile telephony was a contributing factor to the decline in fixed line calls.

Call Minutes in the Fixed Network 1997–2002

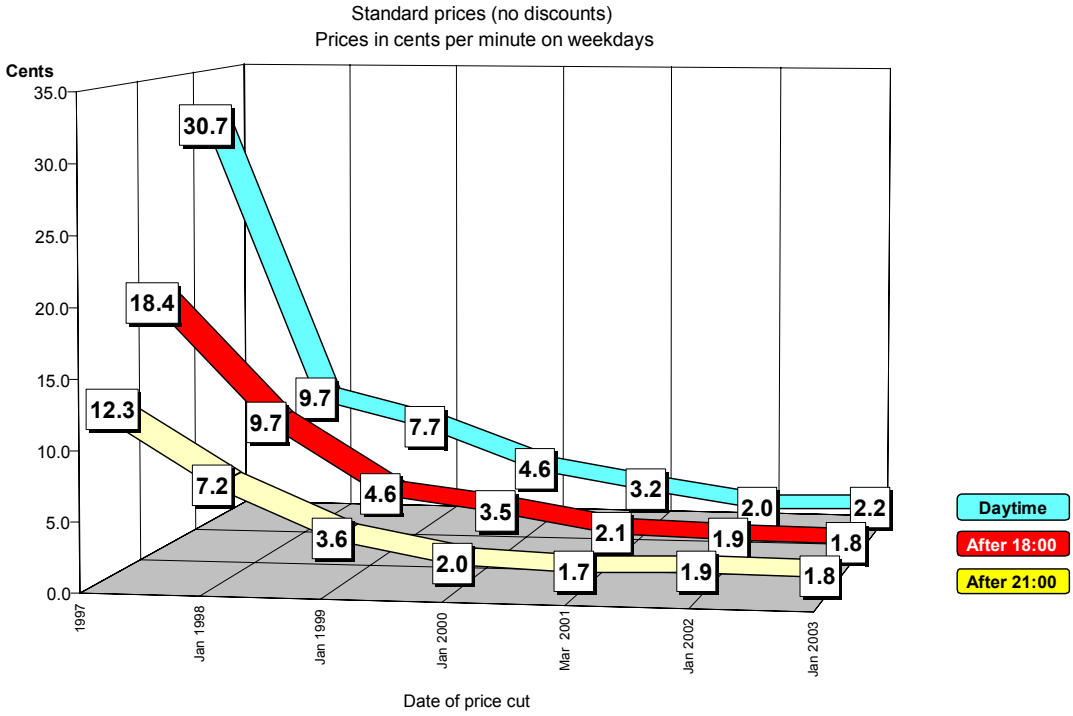


2002: provisional figures, including self supply, public payphones

Price Trends

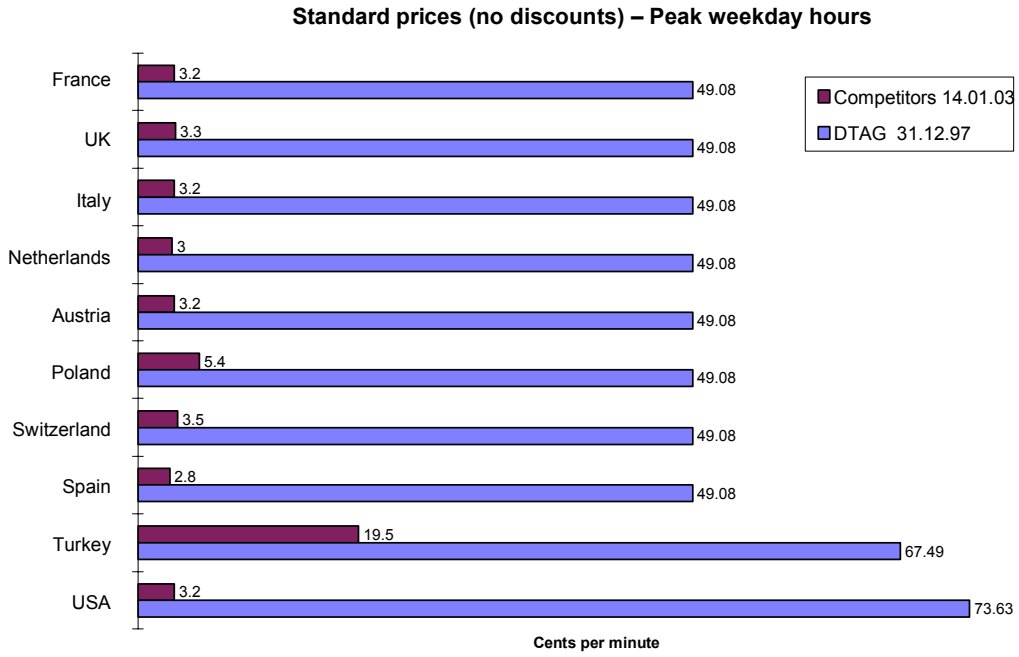
Since the voice telephony market was liberalised on 1 January 1998 there has been a huge drop in the price of long distance calls as a result of competition. Prices for national weekday calls, depending on the time of day, are now only about 7 percent of what they were during the monopoly. The chart below illustrates price trends for indirect access calls delivered by the cheapest provider.

Minimum Prices for Fixed National Calls
using Call by Call Selection
(as of 9 January 2003)



Competition in the international call market has also brought the consumer great savings. Since liberalisation in January 1998 prices for calls during peak periods to the ten major destination countries have fallen more than 95 percent. Falling prices have been a constant feature. Compared to the previous year (10 January 2002 to 14 January 2003) there have been further price cuts, in some cases of up to 55 percent.

Price of International Calls to 10 Major Destinations
(as of 14 January 2003)



On 1 May 2002 DTAG introduced an increase of €0.56 (net) in its monthly rental for all types of line. It also introduced a cut of €0.011 (net) in the uniform price of *City* calls. On 1 February 2003 the price of its ordinary analogue line was raised by €0.33 (net). For *City* calls, the number of seconds per unit was increased so that on average, the standard price has been 4.2 percent lower since 1 February 2003.

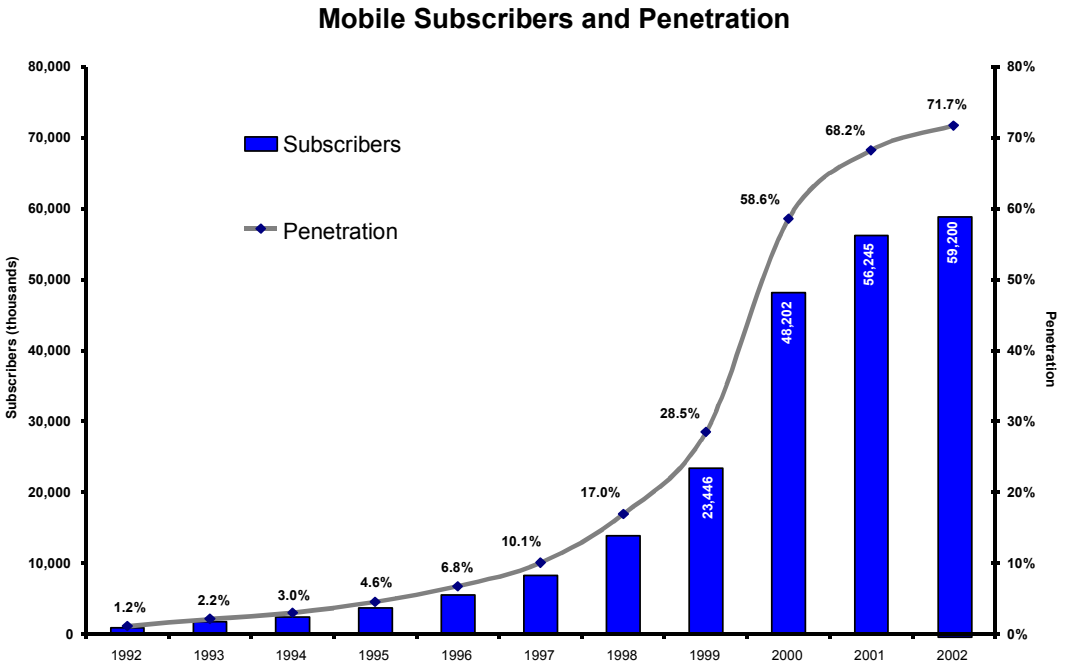
A number of direct access providers currently offer local calls within their own local network free of charge, while DTAG, under its XXL product (higher monthly flat rate), provides all national calls on Sundays and public holidays at no extra charge. Some of the competitors' charges for *City* calls are more than 30 percent cheaper than DTAG's.

Preselection and call by call were only possible to begin with for long distance calls. Their introduction for local calls as well is expected to spur competition in this segment.

Mobile Market

Subscribers and Penetration

The German mobile networks (D1, D2, E1, E2) had recorded 59.2 million subscribers by year's end. This amounts to a penetration rate[15] of 71.7 percent and annual growth of around 2.955 million users.

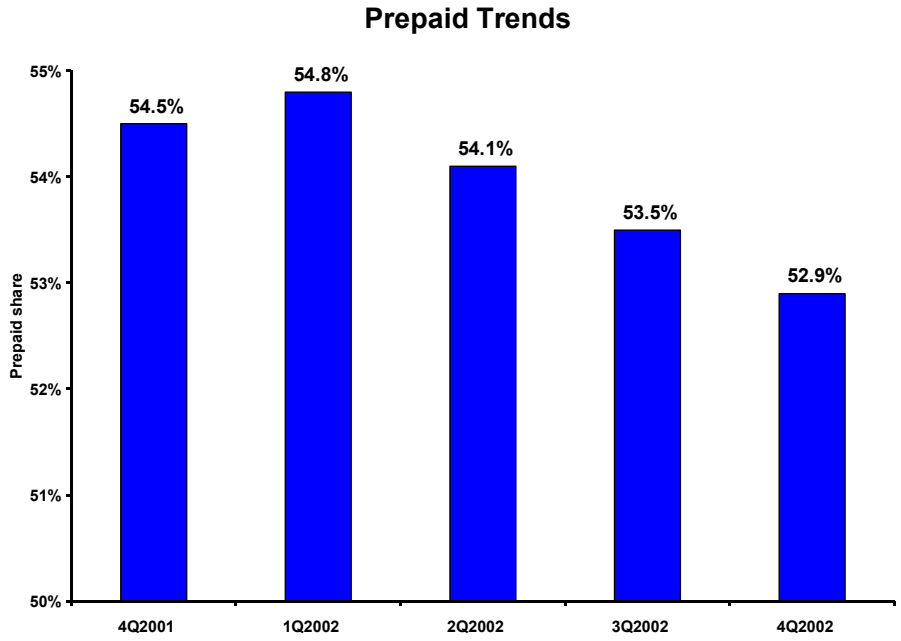


Even though subscriber statistics were adjusted to disregard prepaid users who, while registered, did not generate revenues, rising numbers overall were posted again as from the third quarter of 2002.

The international league table shows Germany (penetration rate of 71.7 percent) to be ahead of the US (47.7 percent), Japan (62.1 percent) and eastern Europe (30 percent), but to be some 5 percent below the average in western Europe (77 percent). However, many European countries have not removed inactive prepaid users from their statistics.

[15] Penetration = mobile users / inhabitants.

The chart below shows how the number of prepaid users has fallen in relation to subscription customers.

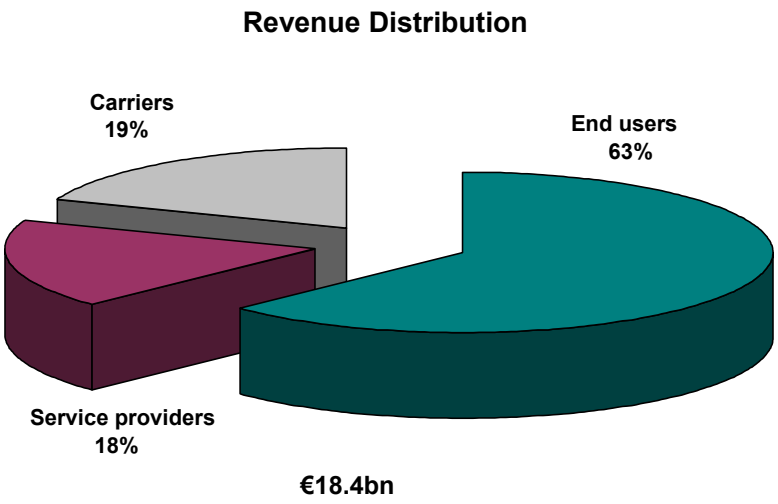


The proportion of independent service providers fell in 2002 to around 28 percent of the total number of users, down from 31 percent in 2001. This decline was caused by extensive restructuring measures and a changed business case for many providers.

Revenues

Mobile companies' cumulative revenue totalled €23.7bn in 2002. This is 2.8 percent up on the previous year. Mainly responsible for this rise were the network operators who gained success notably through their aggressive marketing of new data services based on GPRS[16], HSCSD[17] and i-mode. Thus the network operators alone recorded total revenues of €18.4bn in the year under review, an increase of 5.2 percent over 2001. Service providers, by contrast, suffered losses of around 4.5 percent over the same period.

[16] General Packet Radio Services.
[17] High Speed Circuit Switched Data.



As the pie chart above shows, the largest share (63 percent) of mobile operator revenues was generated with end users. This amounted to an average €17[18] per subscriber per month.

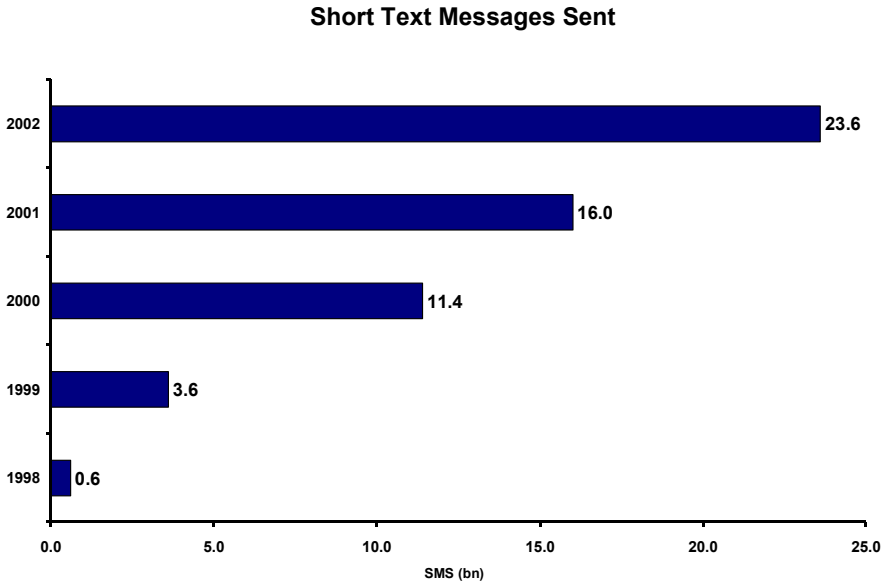
Call Volumes in the Mobile Market

Chiefly driving the operators' higher revenues in 2002 was the rise in the volume of traffic in the mobile networks. In 2001, 27.3bn minutes had been recorded, compared with a total of 32bn minutes in 2002, a rise of 17 percent. Yet this rise did not have an equivalent effect on revenues, since price levels in the mobile market fell by 2.5 percent during the period under review, according to the Federal Statistical Office. Furthermore, the share attributable to data services rose considerably in 2002 in relation to total revenues.

Network operators and service providers successfully marketed new data and Internet services based on the GPRS and HSCSD technologies. Three million short text messages were sent via Multimedia Messaging Services (MMS). In all, there were just short of 5 million GPRS users.

In the Short Messaging Service (SMS) too, the number of text messages shot up by 47.5 percent year-on-year. Altogether, 23.6bn short text messages were sent from the mobile networks in 2002.

[18] This average relates to the total number of mobile users (prepaid and subscription customers). Taking subscription customers only gives an amount of some €26, according to operators' recently published figures.



Investment / Mobile Communications
The mobile operators invested just under €2bn in the year under review. This was predominantly for UMTS network rollout, scheduled to begin in 2003. Service providers' investment level was comparatively low (€30m), but more than twice that of 2001, all the same.

Internet / Online Market

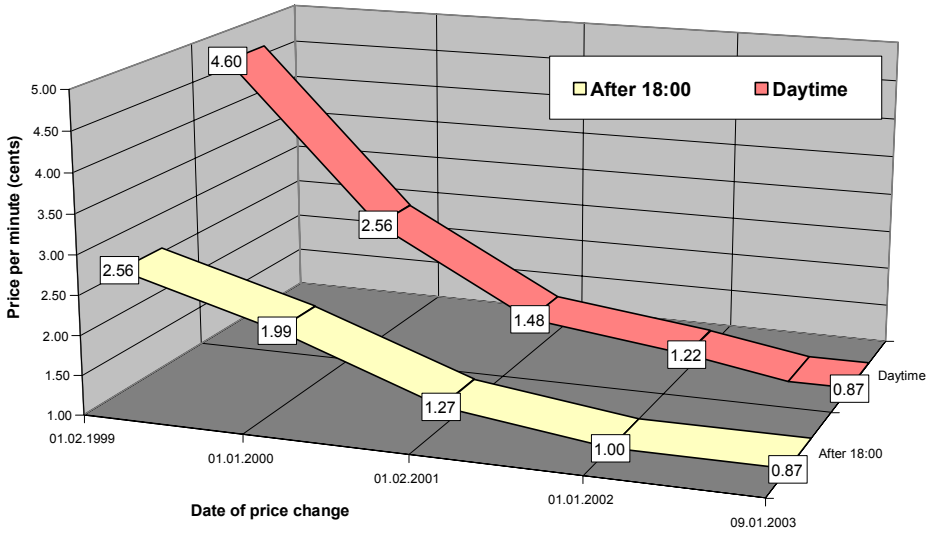
Internet Users
2002 also saw a clear increase in the number of Internet users in Germany. RegTP estimates that, by year's end, more than 35 million Germans over 14 years of age had accessed the Internet in various ways, for instance at work, at home, at friends' or in Internet cafés. This represents over 50 percent of this demographic group.

It is the heavy users in Germany in particular that are changing from narrowband (analogue/ISDN) to broadband access.

Internet Packages
The enormous rise in the number of users and the longer time spent online was the result not least of the lower prices payable for Internet access – both for Internet-by-call, or pay-as-you-go, and for the unmetered packages.

The pay-as-you-go option involves no monthly subscription charge, registration or minimum usage. The price for the user continues to fall here, as well. For example, charges at peak periods were down 29 percent on the previous year; since February 1999 they have fallen by a staggering 81 percent. And further reductions are possible with the pay-as-you-go option when users register with an ISP.

Minimum Prices for Pay-As-You-Go Internet Access
(as of 9 January 2003)



The fall in prices is also confirmed by the Federal Statistical Office's retail price index (RPI). This looks at all households and includes figures from a sample of providers. According to the Federal Statistical Office, price levels for Internet usage in 2002 were 2.7 percent lower on average than in the previous year.

ISPs' flat rates are aimed particularly at heavy users. Some of these unmetered tariffs, however, are only offered regionally. Including the regional ISPs, more than 30 companies now offer flat rates, some of which have limits on the volumes that can be transmitted, however.

Cooperation with the European Commission

Cooperation with the European Commission was again mainly concerned with meeting the reporting requirements set out in section 5 of the TKG. The focus this year was the Commission's Eighth Report on the Implementation of the Telecommunications Regulatory Package. This Implementation Report (COM(2002)695 final, 3 December 2002) is available at http://europa.eu.int/information_society/topics/telecoms/implementation/annual_report/8threport/index_en.htm (annexes in English only).

Also, RegTP – accompanying the Federal Economics and Labour Ministry (BMWA) – took part in the meetings of the ONP Committee and the Licensing Committee, united by the Framework Directive[19] in the new Communications Committee, or COCOM.

[19] Directive 2001/21/EC of the European Parliament and of the Council of 7 March 2002 on a common

Cooperation with Other Regulatory Authorities

Cooperation with other national regulatory authorities (NRAs) not members of the Independent Regulators' Group (IRG) took the form of diverse fact-finding visits to RegTP exploring virtually all aspects of telecoms regulation.

Numbering Administration

RegTP took over responsibility for administering and allocating numbers in Germany when the telecoms market was opened up to competition in 1998. The aim is to give all players non-discriminatory access to numbering resources and to make sure that numbers are available in all ranges, hence avoiding bottlenecks. Structuring the numbering space, drawing up allocation rules, fixing conditions of use for the various numbering ranges and allocating numbers to network operators, service providers and consumers are the main tasks of numbering administration.

Activities in 2002 focused on the introduction of 0900 numbers for premium rate services, the introduction of mobile network number portability (MNP) and the introduction of the call by call and preselection facilities for local calls. How many numbers have been allocated to local networks, premium rate services, so-called technical numbers for information services and carrier selection codes is shown in the tables in the following.

Introduction of Mobile Number Portability
By 31 December 2002 a total of 6,013 numbers had been ported. By 31 January 2003, this figure had jumped to 14,928. In January 2003 then, some 400 numbers were ported every working day.

Implementation of MNP is strengthening competition between the mobile operators and will promote the interests of the consumer on more than a temporary basis. A modern, efficient procedure has been introduced in Germany, designed to ensure a rapid and smooth changeover.

The benefits to the consumer are as follows:

- mobile customers wishing to switch operator can now avoid the costs of changing their number, eg of having new calling cards printed, of informing friends and business partners;
- mobile customers who felt tied to their provider in the absence of portability can now shop around for the best deal.

The disadvantage, however, is that the operator can no longer be identified by the number. Operators charging different prices for calls to the mobile networks must still give their customers the opportunity, even after the introduction of MNP, to enquire about the price for every call. How this is done is a matter for operators themselves to decide.

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regulatory framework for electronic communications networks and services (*Framework Directive*), OJ L 108 page 33 of 24 April 2002.

Preparations for the Introduction of Carrier (Pre)selection for Local Calls
Section 43(6) of the TKG as amended on 1 December 2002 says the following: "Dominant providers of public communications networks shall enable their subscribers to access the services of any provider whose public network is interconnected with their own, by call by call, that is to say by dialling an access code on each occasion of use, and by preselection, with the possibility of overriding the choice on each occasion of use by dialling an access code. The subscriber should also be able to preselect different carriers for local and national calls. RegTP may suspend this obligation wholly or in part, insofar and for as long as this is justified on technical grounds. ..."

Due to the short space of time between the adoption of the First Amending Act on 27 September 2002 and its entry into force it was not technically possible to introduce call by call and preselection in the local market on 1 December 2002. In light of what is necessary technically and operationally, it will only be possible to do so in the course of 2003. The exact date will be decided after completion of the ongoing public consultation.

Number Allocation
Service providers apply to RegTP for blocks of 1,000 local numbers to suballocate to their customers. By year's end, a total of 63,653 blocks had been allocated to 81 operators in 5,200 local networks.

	Blocks allocated	Local networks	Operators
End 1998	3,088	710	53
End 1999	6,750	2,636	72
End 2000	50,861	5,200	89
End 2001	59,372	5,200	86
End 2002	63,653	5,200	81

Classed as value added services are 0800 freephone numbers, 0180 shared cost service numbers and 0700 personal numbers. The total number allocated and the number allocated in 2002 is shown in the chart below.

Service	Allocated in 2002	Total allocated
0800	12,280	147,397
0700	10,300	89,812
0180	16,000	108,145

The long-planned introduction of **0900 numbers** for premium rate services took concrete shape in 2002 with the end of the Day 1 procedure and dispatch of the allocation and rejection notices. For the first time, numbers will no longer be allocated in blocks – as the 0190 numbers are – but separately. Further, 0900 numbers no longer have rate, but content, indicators. Hence the content provider can fix the price of a call to each number separately. However, before charging begins there must be a recorded announcement advising the caller of the price payable.

2002 saw a total of 162,266 applications for 0900 numbers. At the end of January 2003 75,000 had already been allocated.

There is likewise strong demand for the **technical numbers** (data as of December 2002) with interest in National Signalling Point Codes, or NSPCs, being especially pronounced.

Technical Resources		
Allocations	2002	Total
National Signalling Point Codes (NSPCs)	196	2,202
International Signalling Point Codes (ISPCs)	31	344
Portability codes	7	174
Closed User Group Interlock Codes (CUGICs)	5	22
Charging reference branches	1	108
Equipment manufacturer codes for telematic protocols	3	15
Notification of International Carrier Codes (ICCs)	-	9
Individual TETRA subscriber identity (ITSI)	2	4
International mobile subscriber identity (IMSI)	-	16
Data Network Identification Code (DNIC)	-	16

Numbering Resources		
Allocations	2002	Total
User groups	1	10
International Virtual Private Networks (IVPNs)	7	39
Innovative services	1	6

Particularly important numbers are those for directory enquiry services and carrier codes.

Directory enquiry services **0118xy**	Allocated in 2002	Total allocated
	13	80

Carrier code **010xyz**	Allocated in 2002	Total allocated
	6	122

EU Regulatory Framework for Electronic Communications Networks and Services; Amendment of the TKG

2002 saw the entry into force of the EU's regulatory framework for electronic communications networks and services. Specifically, this refers to the Directive on a common regulatory framework for electronic communications networks and services, which sets out a common framework for EC and Member States' further regulatory action; the Directive on access to, and interconnection of, electronic communications networks and associated facilities; the Directive on the authorisation of electronic communications networks and services; the Directive on universal service and users' rights relating to electronic communications networks and services; the Directive

concerning the processing of personal data and the protection of privacy in the electronic communications sector, and the Decision on a regulatory framework for radio spectrum policy in the European Community.

The previous regulatory framework for electronic communications infrastructure and associated services is unified by these legislative acts, adapted to current trends and simplified by reducing the 28 legislative acts previously issued for this sector to eight in all. The above package is supplemented by a Directive on competition in the markets for electronic communications services. This Directive is intended to replace all the previous liberalisation directives on the withdrawal of special or exclusive rights in respect of building and/or using electronic communications networks and providing electronic communications services.

All the above Directives are to be transposed into German legislation by the end of 2003. The Federal Economics and Labour Ministry's bill incorporates the wide experience RegTP is able to draw on from its day-to-day application of the law.

Spectrum Management

UMTS/IMT-2000 and Wireless LAN: Complementary or Not?
The question has arisen in the market of whether or not future services based on generally available, and thus free of charge for the operator, Wireless Local Area Network (WLAN) spectrum could substitute – at least in part – the services of the licensed UMTS/IMT-2000 providers. Press reports headed 4G have forecast a technological advance that would lead to WLAN offers increasingly taking on mobile qualities and thus providing an alternative to UMTS, particularly in hot spots such as airports and railway stations.

RegTP was responsible for taking the decision about general authorisation and hence the "release" of frequencies in the 5 GHz range for WLAN services. It conducted a wide-ranging technical, market and regulatory analysis before announcing in July 2002 that WLAN did not represent competition for UMTS, but that the two were complementary and could be used meaningfully for the benefit of all players. As WLANs are not conceived as national cellular networks but as hot spot solutions, their high speed capability is available only in limited geographic areas, with mobility scarcely being given. Unlike WLANs, UMTS networks are national cellular networks. Although UMTS, like WLAN, provides high speed data transmission, UMTS does not perform nearly as well as WLAN in this respect in stationary operation. But UMTS is much better at meeting needs for relatively high data rates and full mobility over large areas. Hence substitution is only conceivable if the user does not need mobility and widespread availability. Should these two aspects be to the fore, however, then WLAN might well be substituted by UMTS.

Use of WLAN spectrum for public applications as well is thus in the interest of UMTS and is more likely to boost its commercial success than if it were not allowed. Possibly, UMTS providers will offer their customers WLANs on the basis of self operated networks and as service providers or roaming partners. In a market like this, such a bundled product of mobile and WLAN services would be very much in line with demand and ultimately in every player's interest.

RegTP's Official Gazette of 10 July 2002 thus published a draft general authorisation for WLAN services in the 5 GHz range. This had been preceded by a public consultation in order that RegTP's assessment of the relationship between UMTS and WLAN could be seen to be transparent, objective and non-discriminatory. After the comments had been evaluated the 5 GHz range was allocated to WLAN services in the Communication of 13 November 2002. Germany was the first of the EU Member States to do so, thus additionally boosting opportunities in its mobile data market.

Frequency Usage Plan
Publication of Draft Subplans 198 and 223
In early 2000 RegTP published its "Administrative Principles for Frequency Usage" (VwGrds-FreqN), reflecting the administrative practice for frequency assignment until the Frequency Usage Plan (FreqNP) takes effect. The tables detail the frequency usages in Germany in the range from 9 kHz to 275 GHz and show which bands have been allocated to which services, which subbands designated for which types of radio application and the conditions of use. (Further information, in German only, on the Administrative Principles and how to order them is available on RegTP's website at *http://www.regtp.de -> Regulierung Telekommunikation -> Frequenzordnung -> Verwaltungsgrundsätze Frequenznutzungen*).

Spectrum Refarming
Spectrum refarming means the application of existing and future administrative, financial and technical instruments that may serve to make specified frequency bands available for a different kind of usage than in the past. These instruments can be short term, medium term or long term. The special importance of spectrum refarming is generally affirmed by Europe's national frequency administrations. This is shown by, amongst other things, the exchanges of views that have taken place in international bodies aiming to analyse the concept of refarming more thoroughly than hitherto. Given that frequency spectrum is a finite resource for which demand is growing significantly, the question arises of whether or not the existing frameworks that the national administrations have put in place will be sufficient to deal with demand in the future.

As things stand at present, the following measures are conceivable:

Refarming tools at planning level:
These include a survey of spectrum requirements and amendments to the frequency allocation plan and/or the frequency usage plan.
Refarming within the framework of existing usages: cited here should be revocation of frequencies already assigned, whereby the grounds for revocation can be one of many.
Tools to facilitate later refarming measures: these include time limits and/or a revocation proviso.

One of the next goals will be to extend the range of tools so as to create the proper environment for refarming.

Class 1 Licences (Mobile Communications)
Mobile Data
The German mobile data market was opened to competition in 1994 with the invitation to tender for two national licences. One of these licences was handed back in December 2000, and the other in October 2002, as *T-Mobile Deutschland GmbH* also discontinued its network.

Trunked Radio
Two trunked radio licences were granted in 2002. Further applications are being processed. A growing number of traffic associations and local authorities are showing an interest in public trunked radio networks for their internal communications and also to be able to offer the transmission paths to authorities with like tasks. Demand is growing for frequencies for digital technology, particularly in population centres. There is an occasional shortage of channels as a result. In the existing networks, the switchover from analogue to digital is proceeding only slowly. However, digital technology is invariably used for all new applications. The current total of trunked radio licences stands at 60.

Class 2 Licences (Satellite)
In addition to numerous name and property changes, eight satellite licences in all were granted in 2002, four of which went to companies whose "old-type" licence issued under the Telecommunication Installations Act (FAG) had expired. A further nine old-type licences expired with no application being made for a replacement. Thus the current total of satellite licences stands at 53. Besides the conventional licences, a Satellite Personal Communications System (S-PCS) licence was granted to the satellite telecommunications company *Thuraya*, based in Abu Dhabi in the United Arab Emirates. In regulatory terms, S-PCS is a combination of licence classes 1 and 2 to accommodate the mobile component. An S-PCS network is a satellite-based mobile network that uses handsets very similar to the GSM ones.

Class 3 Licences (Transmission Paths) and Class 4 Licences (Voice Telephony)

In principle, Class 3 and 4 licences are granted on a first come, first served basis, with no restrictions. Class 3 licences may, however, also be granted with limitations on use of the transmission paths (for receiving and/or distributing broadcast signals only). Also listed are Class 3 licences awarded to operators of transmission paths for terrestrial sound and TV broadcasting under the jurisdiction of the federal states and/or for the terrestrial distribution of media and teleservices for direct reception by the public (broadcast transmitter operators).

Growth in the Number of Licences
For details please refer to Number of Providers / Service Trends on page 13.

International Frameworks for Spectrum Use

New radio applications are generally conceived today for widespread use in the international business environment. More and more, the introduction of new systems requires the national authorities to coordinate their approach at international level. RegTP is particularly committed to making spectrum available Europe-wide and worldwide for innovative ideas and developments.

The Electronic Communications Committee (ECC) of the CEPT is responsible for spectrum planning in Europe. It has permanent Working Groups, backed by project teams looking at specific areas. In 2002, RegTP was again actively involved in drawing up various CEPT frameworks for spectrum use.

A current example of an innovative new application is short range vehicular radar. The importance of this system is its comprehensive "safety net", addressing traffic flows, for instance, as well as accident prevention. Yet application in the 24 GHz band preferred by the automotive industry is only compatible with the existing services with restrictions and under certain conditions. RegTP, the authorities in the other CEPT countries, the automotive industry and the spectrum users concerned are working together to resolve the issue so that this new vehicular sensor technology may soon be introduced across Europe without lasting interference to existing applications.

RegTP was involved in 2002 with the following European frameworks in particular:

- Harmonisation and provision of further spectrum at 2.6 GHz for public mobile networks (eg UMTS/IMT-2000). This spectrum is expected to be available across Europe in 2008.

- Wireless Local Area Networks – WLANs at 5 GHz. Full account has been taken of the CEPT Working Groups' findings in allocating spectrum for WLANs in the bands at 5150–5350 MHz and 5470–5725 MHz, published in Order 35/2002 of 13 November 2002.

- Professional Mobile Radio – PMR / Public Access Mobile Radio – PAMR. A strategic frequency plan has been drawn up. It will be published in 2003 and addresses trends in PMR/PAMR applications over the next ten years. Relevant are the bands at 410–420 / 420–430 MHz, 450–460 / 460–470 MHz and 870–876 / 915–921 MHz.

- Provision of information on spectrum utilisation in Europe in a public database (EFIS – ERO Frequency Information System; www.efis.dk) allowing European and German spectrum utilisations to be viewed and compared.

Preparations for WRC-2003
The year 2003 will see the next ITU World Radiocommunication Conference (WRC-2003) in Geneva. The ITU (International Telecommunication Union) is a specialised agency of the United Nations and responsible for telecoms issues at international level. RegTP is involved in the preparations for WRC-2003 and is a member of the relevant international preparatory bodies. There was a dual focus to activities in 2002; WLAN and the identification of spectrum for radio applications for public protection and disaster relief (PPDR). WLAN issues will be addressed at WRC-2003 with a view to the worldwide harmonisation of spectrum utilisation, the aim being to replicate at global level the 5 GHz solution CEPT has found for Europe by suitable determinations in the Radio Regulations.

Special importance is attached to the global harmonisation of spectrum for PPDR with the greater international cooperation between and among emergency public safety users. In respect of narrowband usage, WRC-2003 will seek to push through the European solution (spectrum at 400 MHz) for countries outside Europe as well. As far as wideband and broadband applications requiring high data rates (eg video transmissions) are concerned, further studies are likely to be necessary until WRC-2007 before suitable spectrum can be identified and made available worldwide.

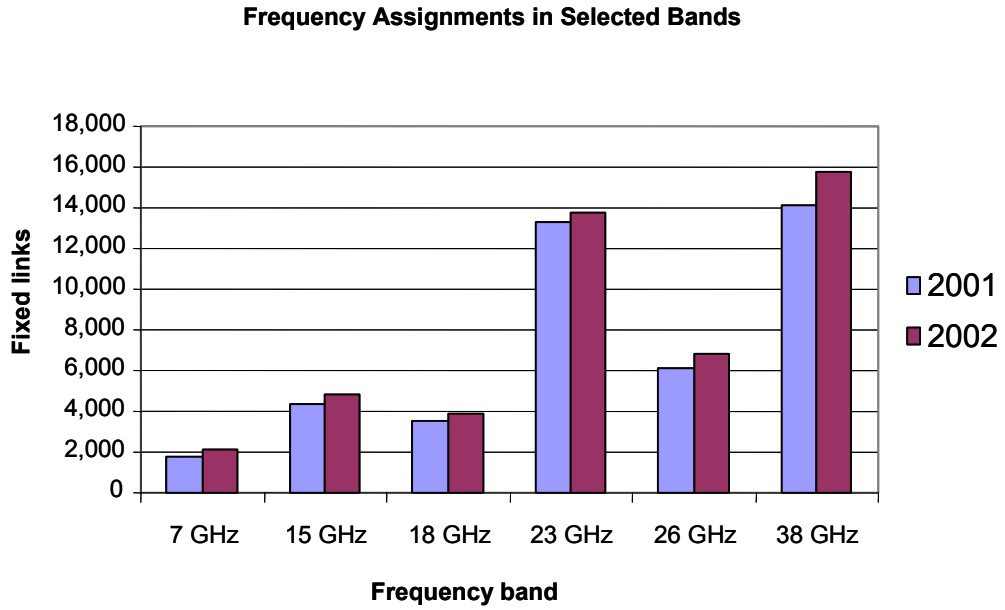
ITU Radiocommunication Conference for a Digital VHF/UHF Broadcasting Plan
In 2004 and 2005 the ITU is holding a Regional Radiocommunication Conference in two sessions to draw up a digital broadcasting plan for the VHF and UHF bands. This Conference will, amongst other things, revise the European Broadcasting Agreement, Stockholm, 1961 (ST 61), applicable to analogue broadcasting in the European Broadcasting Area, replacing it with a new one promoting DVB-T (terrestrial digital video broadcasting) and T-DAB (terrestrial digital audio broadcasting).

In the VHF bands the digital broadcasting plan will address both DVB-T and T-DAB, but will be reserved solely for DVB-T in the UHF bands. It will cover the European Broadcasting Area, the African Broadcasting Area and some neighbouring Asian countries as well. RegTP has provided considerable input to preparations, at national level in a group preparing the revision of ST 61 and at international level in the relevant CEPT and ITU bodies where it has important responsibilities in respect of Germany's and Europe's long term interests in the digitisation of broadcasting.

RegTP's main work items in 2002 were developing the planning basis and defining the technical parameters and procedures, spectrum investigations and developing technical and administrative procedures for planning and coordinating the CEPT Planning Meeting for digital broadcasting in the 1.5 GHz band. CEPT held a T-DAB Planning Meeting in the Netherlands in June 2002 to draw up a new Allotment Plan for the CEPT countries for T-DAB frequency blocks in the 1.5 GHz band. Given the complexity and difficulty of the matter, the results for Germany were very good. Here, RegTP was mainly responsible for the organisation of the Planning Meeting at national and international level.

Frequency Assignments / Fixed Point to Point Links
Frequencies continued to be in great demand in 2002, the main reason being companies' efforts to consolidate and extend their services and to provide infrastructure support for the new UMTS/IMT-2000 networks. Thus demand for fixed point to point links remains high. The overall capacity of the networks continued to rise in 2002. In operation in Germany at the end of 2002 were 49,376 fixed links. Frequencies were assigned in the year under review for 7,107 of these.

Demand was heaviest in the following bands:



Band	Total	New Assignments in 2002
7 GHz	2,057	332
15 GHz	4,768	397
18 GHz	3,884	470
23 GHz	13,723	1,082
26 GHz	6,877	1,032
38 GHz	15,763	1,693

Fixed Point to Multipoint Links for Transmission Paths in Telecoms Networks
Frequencies for fixed PMP links for transmission paths in telecoms networks are available in a subband of the 26 GHz range. They can be used for instance to connect mobile base stations with higher network elements, but cannot be used to access the customer on account of the limited spectrum available. The frequencies are assigned for a particular coverage area within which they may be used by an indefinite amount of radio equipment. Notification must be given before any such fixed PMP link system is put into operation. Around 100 new frequency assignments and more than 600 notifications were processed in 2002.

Fixed Point to Multipoint Links for Transmission Paths in UMTS/IMT–2000 Networks
A large number of transmission paths to connect the cells and the network nodes are needed for the operation of UMTS networks. These can be realised with fixed links in the shared-use bands between 7 and 38 GHz and by fixed PMP links in the 26 GHz band. In light of the expected heavy demand, part of the 28 GHz band has been dedicated for fixed links in the UMTS networks. This spectrum too is assigned for a particular coverage area. Under the assignments, fixed point to point and fixed point to multipoint systems may be operated. Licence holders can therefore implement transmission paths quickly and flexibly, in line with rollout requirements. The first assignments have been made.

International Frequency Coordination in the Fixed Service
If spectrum is to be used efficiently in border areas, coordination with Germany's neighbouring countries is required. In 2002, a total of 7,394 coordinations for German frequency usages in border areas were carried out. Over the same period, comments were required on 3,371 coordination requests from neighbouring countries. These included 85 cases of coordinating the transmitting and receiving frequencies of earth stations in the fixed satellite service. The coordination requests of operators in and outside Germany were granted once the active and passive compatibility of these usages with the fixed links operated in the same bands had been established. Further agreements for preferential frequencies, particularly for individual frequencies in the bands at 3.5 GHz, 26 GHz and 28 GHz, were made with the neighbouring countries in order to simplify the coordination of frequency usage in border areas.

Protection of Fixed Links
An ever more urgent issue is that of the protection of fixed links in connection with building works. In 2002, around 400 requests for assistance and information were processed. Roughly 80 percent of these had to do with planned wind power plants for the generation of alternative energy, and the other 20 percent with precautionary measures for avoiding collisions between radio equipment in the mobile networks and the various kinds of building works.

Frequency Usages for Earth Stations
In line with market requirements, RegTP made a general assignment of frequencies for Very Small Aperture Terminals (VSATs) in Order 3/2002 (Official Gazette 3/2002 of 20 February 2002), further simplifying its administrative procedures and VSAT use in Germany . As a rule, receive-only VSATs, but return channel systems too, can now be operated to deliver high speed Internet access without a frequency assignment for the station having to be applied for beforehand.

The new general assignment applies solely to VSATs with transmitting frequencies in the band at 14.0–14.25 GHz (reception areas 10.7–11.7 GHz and 12.5–12.75 GHz). It covers all those satellite terminals (earth stations) permitted to transmit at a maximum of 50 dBW EIRP, a maximum output power of 2 watts and only under the control of a satellite network system. Additionally, to prevent VSAT emissions causing interference to an aircraft's electronic systems, a minimum distance of 500 metres from the airport must be observed during transmission.

The general assignment stems from an ERC Decision (European Radiocommunications Committee, now the Electronic Communications Committee, or ECC). Germany is one of the first countries in Europe to transpose the Decision into national legislation. Once the general authorisation became effective, the number of earth stations needing to be licensed individually was reduced by more than 90 percent to around 900. Receive-only satellite earth stations could already be operated beforehand without individual assignment.

In the year under review, RegTP also made assignments for the satellite applications of 196 transmitting earth stations not covered by the general authorisation. These were larger stations for point to point transmissions (eg to route Internet traffic and for transmission paths in areas experiencing conflict) and for the provision of wide area coverage (eg for TV programmes), but also for portable Satellite News Gathering (SNG) systems. Coordination with fixed link systems sharing the same bands was necessary for 68 assignments (318 individual frequencies).

International Coordination of Satellite Systems
RegTP in 2002 submitted to the ITU in Geneva as part of its international coordination duties four publications for existing satellite network filings and three new filings, prompting 35 statements from foreign administrations. To date, Germany has filed 35 geostationary and 13 non-geostationary satellite systems with the ITU. Included in the ITU's Circulars were 132 objections to foreign filings, the aim of which is to protect German filings (and terrestrial radio services).

Broadcasting Assignments
RegTP in 2002 processed the following assignments for broadcasting services:
384 assignments for the very high frequency (VHF) band, 75 assignments for TV,
106 assignments for the high frequency (HF) band,
13 assignments for the medium frequency (MF) band,
13 assignments for T-DAB and 70 assignments for DVB-T.

Terrestrial Digital Audio Broadcasting (T-DAB)
Back in 1999, RegTP and the regional media supervisory authorities initiated the transition to commercial T-DAB operation. Altogether, a total of 1,264 assignments for commercial operation in Germany had been made by December 2002. To date, an

assignment has been made in each of the federal states Hamburg, Mecklenburg-Western Pomerania and Schleswig-Holstein; none has been made in Bremen.

Digital Video Broadcasting (DVB-T)
Commercial DVB-T operation began in Berlin/Brandenburg on 31 October 2002 on two frequencies and eight channels. The switchover to digital TV in the Berlin/Brandenburg region is being followed closely, particularly as analogue TV is scheduled to be switched off by August 2003.

The ITU, mainly on a German initiative, is preparing a two session Regional Radiocommunication Conference for Region 1 (Europe, Russia, Africa, Near East). The aim is to replace the current frequency plan for analogue broadcasting in the bands III and IV/V allocated to the broadcasting service and to draw up a frequency plan for an all-digital scenario. The switch to digital in Germany can then be completed by the end of 2010 at the latest.

In its ruling of 20 March 2002, RegTP set out its key elements for DVB-T spectrum award. Following notification of the federal states' national requirements, the frequency assignment procedure for Germany's federal states has now begun.

Mobile
Dealt with in 2002 were 9,900 cases (new assignments, modifications, withdrawals, handbacks and the like) in private business radio (PBR), 2,800 of which were new assignments. PBR systems carry the internal communications of industrial commercial users, public administration and public safety organisations. There were further cases for mobile data and telemetry and telecommand, eg remote control equipment, remote data retrieval, transport management systems, warning systems, 550 of which were new assignments. 7,900 cases, 7,800 of which were new assignments, were for radio equipment for the remote control of models. 3,100 cases, 1,900 of which were new assignments, were handled for other PMR applications such as paging and radio microphones.

Frequency Coordination for Mobile Services in Border Areas
The coordination of frequency usages is vital if efficient and interference-free spectrum use is to be secured. A fundamental part of this is coordination with usages in other countries. As the aim is to divide usage possibilities equally between countries in the border areas, restrictions necessarily result. These restrictions also apply to the UMTS/IMT-2000 bands. The basis for the coordination of UMTS/IMT-2000 systems in border areas is provided for in Europe in a CEPT Recommendation. The parameters and procedures are then specified in bilateral and multilateral agreements with Germany's neighbouring countries on the basis of the Recommendation and taking account of the scope it provides (eg as regards the permitted interference field strengths and how to calculate them). Following bilateral and multilateral negotiations between representatives from RegTP and regulators in Germany's neighbouring countries, RegTP was able by the end of May 2002 to complete agreements on coordination of UMTS/IMT-2000 systems in border areas with all the neighbouring countries. The frequency usage conditions in the UMTS/IMT-2000 licences contain a general note about coordinating stations operating in border areas and possible usage restrictions. Now that all the coordination agreements have been signed, the potential use of UMTS/IMT-2000 systems in border areas is clearly defined, giving the UMTS/IMT-2000 licence holders the planning certainty they need.

In the year under review, RegTP revised existing coordination agreements or drew up new ones with the neighbouring countries for other bands used by the mobile services.

These included:

- A coordination agreement with Poland and the Czech Republic on preferential frequency division in border areas in the band 876–880 / 921–925 MHz (to be used in future by public railways deploying GSM-R technology).

- The band at 380–385 / 390–395 MHz, set aside for digital usage by public safety emergency users (eg the police). Now that a coordination agreement has been signed with Poland and the Czech Republic, arrangements about the possibilities of use in border areas in this band are in place with all Germany's neighbouring countries.

- The revision of existing coordination agreements in the bands 146–174 MHz, 410–430 MHz and 440–470 MHz (used by private mobile radio and trunked radio, for instance) with various neighbouring countries. This was begun and has already been completed for some subbands.

Since the degree of harmonisation in Europe in the bands between 29 and 470 MHz is considerably lower, some of the usage restrictions in border areas are greater. Hence before spectrum can be made available for German users an enquiry must first often be made of one neighbour administration at least; conversely, this must be done when neighbouring countries wish to implement usages in their border areas. The purpose of these enquiries is to ensure interference-free use of radio stations in these areas. In 2002, around 3,600 coordinations were made for German and 2,500 for foreign radio stations.

Wireless Local Area Networks at 5 GHz
In its Official Gazette of 13 November 2002 RegTP declared that it was allocating spectrum for WLAN services in the 5 GHz band, thus creating the legal, technical and operating environment for their introduction in Germany. Under the provisions of this general authorisation, it is now possible for anyone to use these new frequencies free of charge. The spectrum is available for wireless transmission at very high data rates (54 Mbit/s as opposed to 11 Mbit/s in the 2.4 GHz band) in addition to that currently used in the 2.4 GHz band, a band shared by a number of other users. Providing additional spectrum for WLAN applications is intended to further spur mobile data in Germany. The general assignment of 455 MHz bandwidth in the 5 GHz range will ensure that no extra costs are incurred for using this spectrum and that interference here can be avoided. A host of applications is possible with this innovative technology. Most notably, it provides wireless access to the Internet at so-called hot spots such as airports, railway stations, hotels, cafés, shopping centres, etc. Further, its high speed data exchange capability between, say, the different parts of a university or hospital or company premises will open up diverse new areas of use, thus satisfying the steadily growing data communication requirements of businesses, scientific institutions and administrative authorities.

The conditions required to secure efficient use of the finite radio frequency resource and efficient and interference-free radiocommunications have been kept to the absolute minimum. Automatic transmit power control (TPC) and dynamic frequency selection (DFS) are needed besides the limits on maximum radiated power required for compatible use of the spectrum and a specification of channel spacing to avoid interference to other radio applications and degradation between and among WLAN services themselves. A specific technical standard has not been made mandatory. On the contrary, the frequency usage conditions have been drawn up to be as technologically neutral as possible. This technological neutrality is to enable manufacturers to provide the market with flexible, innovative solutions and thus to achieve high takeup with the consumer.

Temporary Use Assignments
RegTP assigns frequencies for temporary use to cover sporting, cultural or media events and state visits. Often, these assignments are for foreign visitors looking to operate equipment for a limited number of hours or days. They often require frequencies that are used in Germany for other purposes. In these cases RegTP must decide whether or not temporary use is possible, without detriment to other users.

The following assignments were made in 2002 for 159 events involving foreign visitors:

	Assignments in 2002			
State visits	80	assignments with	200	frequencies
Motor sports (excluding Formula 1)	198	assignments with	1,576	frequencies
Formula 1	119	assignments with	1,286	frequencies
Other events	365	assignments with	2,622	frequencies
Total:	**762**	**assignments with**	**5,684**	**frequencies**

Random checks were carried out for compliance with the assignments at 24 events. At 12 events, 43 cases of irregularities were found and six administrative offence procedures initiated.

Experimental Radio Services
In 2002 RegTP dealt with 750 frequency assignments, including 150 new assignments for experimental radio services. The focus was trials by the system houses manufacturing 3G (UMTS/IMT-2000) equipment and WLANs at 5 GHz. New assignments were chiefly granted for:

UMTS/IMT-2000 system development,
network buildout and development activities for digital trunked radio systems,
short range devices (SRD, Bluetooth),
WLANs at 5 GHz with
functions tests,
propagation conditions, and
capacity tests (data volumes).

Telecoms Technical Regulation

Concepts like the information society, convergence and multimedia only hint at the dramatic change – largely technology-driven – taking place between mass communications and personalised communications. Technical telecoms regulation sees itself facing a paradox as a result. Preparatory work for Ruling Chamber cases shows that the selection and deployment of technologies and systems can significantly affect the competitive assessment made. It may be concluded that it is not therefore a matter of withdrawing technical regulation, but of refocusing on its specific telecommunications origins.

This needs special attention to be given to converging networks and in particular to packet switching technology (eg Internet Protocol (IP)). These are blurring the dividing lines between all sorts of applications (eg voice or TV transmission over IP), so that access to services and applications is no longer primarily dependent on the choice of network access. On the one hand, the "new" technical possibilities and realities are only vaguely determined, for the most part, and a distinction hardly made between the systems and their application. However, the evolution of a medium is a highly complex process, not only technically, but economically and socially, too. Nor is the process immune from political considerations.

In the national and international standardisation bodies RegTP is currently addressing issues such as the analysis and implications of the new EU Directives, media convergence, software defined radio, satellite communications, use of coaxial cable for telephone and data transmission to interactive networks, radio compatibility, telecoms security, functions assignment for notified bodies, market watch, consumer protection and quality systems.

Experts from RegTP are involved in national and international working groups. In producing standards in groups at, for instance, the European Commission, the International Telecommunication Union (ITU), the European Conference of Postal and Telecommunications Administrations (CEPT), the European Telecommunications Standards Institute (ETSI), the International Standards Organisation/International Electrotechnical Commission (ISO/IEC), the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO), they actively contribute towards safeguarding national regulatory aims and a balanced representation of interests.

RegTP was represented in the year under review in

31 project teams and working groups at the CEPT European Radiocommunications Committee (ERC) and the European Committee for Telecommunications Regulatory Affairs (ECTRA),
52 bodies in the ITU Radiocommunication Sector,
17 bodies in the ITU Standardization Sector,
5 other ITU bodies
(eg Telecommunications Standards Advisory Group (TSAG)),
65 bodies at ETSI, including the Board and 3GPP,
20 international meetings
(eg Telecommunication Conformity Assessment and Market Surveillance Committee (TCAM), EU workshops),
100 national meetings (eg powerline technology, compatibility issues).

RegTP hosted 35 international meetings, attended by participants from a total of 52 countries.

Secure Communications, Network Integrity, Communication in Emergencies
The events of 11 September 2001, but also natural disasters such as the flooding of the Elbe and the substantial increase in the number of viruses and other Internet attacks, had an impact on the year under review. Numerous events addressing standardisation and technical regulation were held and new standardisation initiatives on telecoms security and security through telecoms launched.

The new EU package of directives requires Member States, with respect to emergency calls, to ensure that caller location information is made available to the authorities handling emergencies. As the deregulation and liberalisation of the telecoms market progresses, the first weaknesses are appearing in the integrity of the networks, since the many cases of interconnection using different technologies may lead to instability and marked quality problems. Analyses and studies have shown that there are no risk analyses, lists of requirements, arrangements and standards that reflect the current situation. The standardisation bodies such as ETSI and the ITU, but NATO and the European Commission as well, are seeking to remedy this through the agency of workshops, seminars and special working groups. Members of RegTP are actively involved in this work. A Recommendation on an Emergency Telephone Service was successfully introduced and adopted by the ITU; its implementation into technical regulations (protocols) is ongoing and will be secured with the chairmanship of a working group. RegTP is likewise actively involved in a similar recommendation for multimedia (the Internet) (http://www.itu.int/ITU-T/studygroups/com17/cssecurity.htm; http://www.itu.int/ITU-T/worksem/ets/index.html).

The European Telecommunications Standards Institute (ETSI) is addressing – by international agreement – Emergency Telecommunications, or EMTEL, as it is known. Requirements for communication between

- individuals and administrations / organisations (eg emergency calls),
- administrations / organisations between and among themselves (eg new public safety emergency system),
- administrations / organisations and individuals (eg warning services)

are compiled and implemented in technical recommendations and standards.

The EU has turned its attention to network integrity and "always on". The unexpected insolvencies of large network operators and hackers' successful Internet attacks have resulted in severe communications problems in some Member States. Bearing in mind the far-reaching consequences, the Commission therefore proposed that telecoms security be transferred from Member States' jurisdiction (pillar 3 of the EU Treaty) to Community jurisdiction (pillar 1), so as to be able to issue suitable directives and recommendations on averting danger. Representatives from RegTP are involved in this.

Interface Specifications
Drawing up specifications for air interfaces is a difficult activity. A total of 25 interface specifications were provided to the Federal Economics and Labour Ministry in the year under review, based on ETSI standards, ITU Recommendations or Minimum Operation Performance Standards, or MOPS, of the European association EUROCAE.

German R&TTE Act (FTEG)

The German Radio Equipment and Telecommunications Terminal Equipment Act (FTEG) became effective on 8 February 2001. It transposes into national legislation Directive 1999/5/EC of the European Parliament and of the Council on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity (RTTE Directive). The FTEG has considerably facilitated access to the market for manufacturers. The former – time-consuming and costly – national type approval regimes have been replaced by conformity assessment by the manufacturer, with a subsequent declaration of conformity. Initial experience of the new procedure is favourable. New products have thus been brought to market much more quickly.

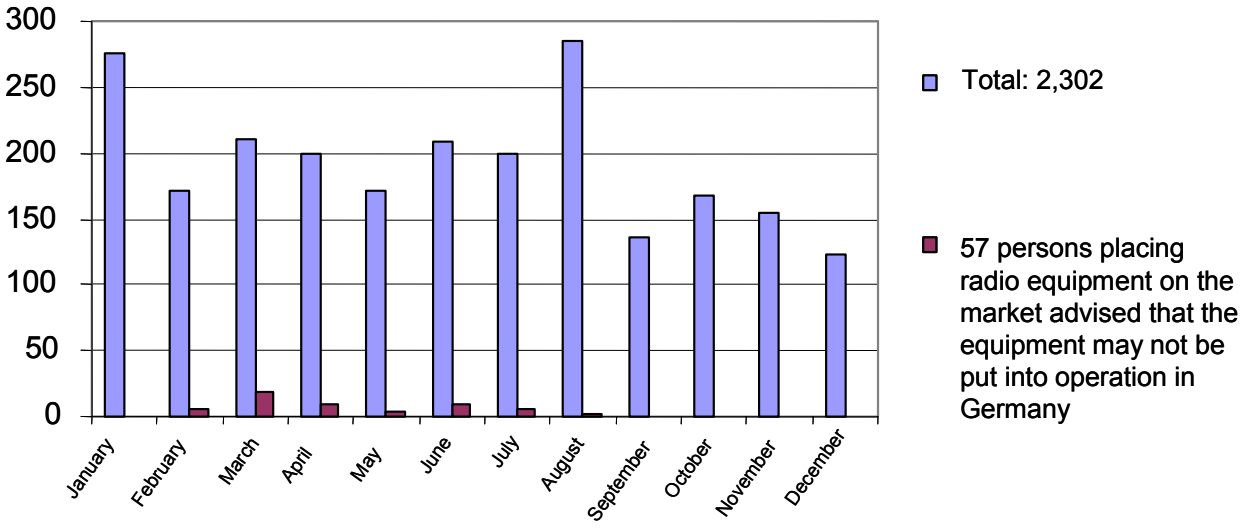
The new procedure for placing radio equipment and telecoms terminal equipment on the market continues to give rise to a host of questions on how the FTEG is to be applied. RegTP has posted explanatory notes on its website for all those with queries. The large number of contacts – close on 400 every month – are evidence of the public's need for this information. The e-mail address FTEG@regtp.de has also been set up to deal with further questions on application of the FTEG. This enabled a prompt response to the 100 or so queries received over the year. The experience gained in applying the RTTE Directive has been assimilated within the Telecommunication Conformity Assessment and Market Surveillance Committee, or TCAM, set up by the European Commission.

Problems to do with consistent application of the Directive have been solved with the active cooperation of the European partners, notably within the Administrative Cooperation Group, or ADCO, set up with the Commission's support to ensure consistent application and interpretation of the Directive throughout the Community.

Notifications on the Placing on the Market of Radio Equipment Operated on Non-Harmonised Frequencies

As stated in section 10(4) of the FTEG and Article 6(4) of the RTTE Directive, the manufacturer or person responsible for placing on the market radio equipment using frequency bands that are not harmonised throughout the Community must notify the national spectrum management authority (RegTP in Germany) of the intention to place such equipment on its national market no less than four weeks in advance of doing so. When it acknowledges receipt, RegTP also supplies information about the kind of frequency assignment and about restrictions on frequency usage in Germany. The aim is to secure efficient spectrum use.

**Notifications pursuant to Section 10(4) of the FTEG*
and Article 6(4) of the R&TTE Directive received in 2002**



* German Radio Equipment and Telecommunications Terminal Equipment Act

Currently, an average of 192 notifications per month are received. A specimen notification form (in German and English) is available on RegTP's website at http://www.regtp.de/tech_reg_tele/start/fs_06.html.

Public Telecoms Network Interfaces
Operators of public telecoms networks in TKG Licence Classes 1 to 4 are required under section 5 of the FTEG to make available and publish accurate and adequate technical specifications of their network interfaces. Notification is deemed given when RegTP is advised of the reference of the interface specifications, enabling publication in its Official Gazette.

Publication of the interfaces is intended to facilitate the design of telecoms terminal equipment supporting the use of all services provided over the interface and to allow all tests to be carried out in respect of the relevant essential requirements applicable to the terminal equipment. Following enactment of the FTEG on 8 February 2001, many operators complied with this legal requirement. A listing of the references published in RegTP's Official Gazette can be found on RegTP's website at http://www.regtp.de/tech_reg_tele/start/fs_06.html, and examples of interface specifications at http://portal.etsi.org/Portal_Common/home.asp.

Cable TV Networks
The focus of RegTP's work here was to ensure electromagnetic compatibility between cable and radio systems and between cable networks and public safety and emergency radio services in particular. Members of RegTP have been involved in, and chaired, diverse committees, working groups, etc, one example of which is the ETSI / CENELEC Joint Working Group on EMC of extensive networks. In numerous meetings the Group has sought to draw up a technical specification on the maximum permissible levels of electromagnetic radiation from telecoms networks, to draft a specification on the protection of transmitters and receivers used for safety and emergency purposes and to draw up test methods for measuring unwanted emissions from cable TV networks.

Carried out in the Return Channels Working Group chaired by RegTP was a series of tests on equipment used by public safety and emergency services (eg receivers of these users, HF aeronautical service receivers, ground stations for aeronautical service receivers). The aim was to investigate whether or not the Table 1 limits of Usage Provision 30 (NB30) might also be sufficient for frequencies below 30 MHz for safety-related radio services, provided a defined background noise was accepted. A large-scale campaign was launched to test coaxial cable shield quality, comprising more than 1,000 tests on five types of coaxial cable. It was established amongst other things that even double shield "DIY cable" complied with the required > 30 MHz (a_S = 85 dB for Class A material) and the applicable unit length surface transfer impedance below 30 MHz (Z_t = 5 mΩ/m).

Software Defined Radio

Good progress is being made in taking software defined radio (SDR) forward. The introduction of SDR could have far-reaching implications for regulatory principles and wireless technologies. SDR stations have the potential to change the way users communicate with each other using traditional services, and to promote efficient use of spectrum. Currently under discussion is SDR's impact on a number of functions of spectrum management and regulation – on frequency allocation and assignment, on placing equipment on the market, and on licensing, for instance. A TCAM subcommittee under German chairmanship was set up to look into the application of the R&TTE Directive in relation to SDR stations. Its terms of reference are to propose timely measures on the introduction of SDR, taking account of the legal framework in place in Europe. One of its activities has been to draw up a paper for public consultation to support work in the TCAM Group.

Together with partners from the industry, RegTP has begun to provide input for the European Commission's SCOUT[20] project. SCOUT aims to provide concepts for networks supporting reconfigurable mobile equipment and concepts for terminal reconfiguration that are intelligently customised and managed when used by mobile users for a wide range of wireless access technologies, taking into account the relationship between the customers, operators and regulators. A further goal is to extend all-IP mobile networks to support reconfigurability functions in the equipment by researching the system concepts in respect of the network and technologies required to support users within such a network. SCOUT findings are to inform activities in the relevant standardisation bodies, industrial forums and regulators such as the Institute of Electrical and Electronic Engineers (IEEE), ITU, TCAM, etc. RegTP's contribution to the project is the application of the R&TTE Directive to these terminals. It expects its participation to provide it with valuable information on assessing the future in respect of the technical possibilities and technical regulatory aspects of SDR.

Metering and Billing

With the advent of competition in the telecoms market, customers have come to expect better and cheaper services. And they expect their bills to be accurate. This means to begin with that the data for the individual services must be recorded correctly and the prices properly applied. As the consumer has no means of determining whether or not providers have established the charges in accordance with the contractual arrangements, provision is made in section 5 of the Telecommunications Customer Protection Ordinance (TKV) to ensure billing accuracy, so that the customer can be confident billing has taken place properly.

[20] Smart user-Centric cOmmUnication environmenT.

All providers of publicly available telecoms services whose prices are time and/or distance based and who have a contract with the customer to bill for these services are required to submit proof of the guaranteed accuracy of their metering and billing systems, notwithstanding the service provided, the bandwidth and the switching and transmission technology used. In the year under review, 75 compliance submissions were processed. A remedial report was required when failure to comply with the technical requirements had been established. Providers obliged to demonstrate compliance were advised of their obligation in this regard. Many providers had to comply with the section 5 requirement as a result of new services offered. Administrative fines proceedings were initiated in some cases. Numerous enquiries from service providers and quality assurance bodies were answered.

Market Surveillance under the EMC Act and the R&TTE Act
Some 65,000 new equipment types, or 250 million items of electrical or electronic equipment and components, are placed on the German market every year. This represents around 30 percent of the entire market of the European Economic Area. RegTP is tasked with inspecting and testing electrical products on the German market under the EMC Directive 89/336/EEC and the R&TTE Directive 1999/5/EC and the German implementing regulations – the German EMC Act and the R&TTE Act of 31 January 2001 respectively.

Verified are compliance with the CE marking requirements, the plausibility of the EC conformity declarations, compliance with the relevant EMC protection requirements, compliance with the essential requirements of the R&TTE Directive, information on intended use and any operating restrictions applicable to radio equipment and telecoms terminal equipment.

Market surveillance under the EMC Act and the R&TTE Act involved the inspection by RegTP of a total of 17,077 products in 2002 – 15,010 under the EMC Directive and 2,067 under the R&TTE Directive.

Breakdown by Product Group
EMC Directive (15,010 products)

Domestic appliances	27%	4,045 products
Power tools	18%	2,611 products
Lighting equipment	11%	1,620 products
IT/office equipment	16%	2,469 products
Consumer electronics	14%	2,170 products
Medical, scientific and industrial equipment	6%	954 products
Miscellaneous	8%	1,141 products

R&TTE Act (2,067 products)

Telecoms terminal equipment	40.49%	857 products
Radio equipment	41.46%	857 products
R&TTE Act combined devices	18.05%	373 products

Irregularities under the EMC Directive were found in the CE marking or conformity declaration of 614 of these items, ie 3.6 percent of the products checked.

In a European initiative, RegTP checked marking, conformity declarations and accompanying documents. It looked at 100 products, 69 percent of which were found to have irregularities. It also tested 5,151 items from 1,278 series of equipment and 147 one-off products. Its results showed 376 series of equipment and 28 one-off products, ie 29 percent and19 percent respectively, not to meet the EMC protection requirements or the essential requirements of the R&TTE Act.

The checks are made on representative samples of the different product groups in the German market, and the products grouped in line with the applicable testing standards. A scaled procedure was again used in 2002 to assess compliance with the requirements of section 3 of the EMC Act and section 3(1) para 2 of the R&TTE Act. This allows greater differentiation in dealing with breaches of the EMC Act. Initially, the offending party is given the opportunity to state their case. Only after this has happened and the records have been examined is a decision on further action – a ban on distribution, or another such administrative act – taken.

Over the year, 157 sales bans were imposed under the EMC Act and 154 under the R&TTE Act on grounds of non-compliance with the protection/essential requirements or marking faults. To date, 71 sales bans under the EMC Act and ten under the R&TTE Act have led to invocation of the safeguard clause.

Overview of tests
Results of tests on series of equipment

Breakdown by product group					
Product group	No of series tested	No of products tested	No of non-conforming series	No of non-conforming products	Quota in %
Domestic appliances	178	691	37	151	21
Power tools	176	731	52	221	30
Lighting equipment	202	839	80	343	40
IT/office equipment	227	886	69	268	30
Consumer electronics	198	777	61	247	31
Telecoms equipment	90	368	27	119	30
Radio equipment	102	448	18	84	18
Industrial equipment	40	147	12	48	30
Medical devices	1	5	1	5	100
Scientific equipment	7	27	0	0	0
Installation materials	50	203	18	76	36
Miscellaneous	1	3	0	0	0
R&TTE Act combined devices	6	26	1	4	17

As a rule, five items of each equipment type, or series, are tested.

Results of tests on one-off products

Breakdown by product group					
Product group	No of cases	No of products tested	No of non-conforming cases	No of non-conforming products	Quota in %
Domestic appliances	39	40	1	1	3
Power tools	5	6	0	0	0
Lighting equipment	3	4	1	2	50
IT/office equipment	47	50	17	18	36
Consumer electronics	6	7	3	3	43
Telecoms equipment	5	6	0	0	0
Radio equipment	2	2	1	1	50
Industrial equipment	6	6	1	1	17
Medical devices	0	0	0	0	0
Scientific equipment	8	8	0	0	0
Installation materials	26	26	4	4	15
Miscellaneous	0	0	0	0	0
R&TTE Act combined devices	0	0	0	0	0

Protection of Radio Services

Before new radio services are introduced, RegTP must test their compatibility with other services. This is to make sure that first, the new service does not cause undue interference to existing applications and second, that other radio services do not cause unacceptable interference to the new service. These compatibility studies are carried out in close cooperation with other international administrations and with the developers and potential operators of the new technologies. Hence RegTP is involved in radio compatibility issues in CEPT (CEPT/ECC WGSE (Spectrum Engineering)) and ITU bodies. Some topics are concerned with the preparation of new radio services on the agenda for WRC-2003. Although some are not yet on the agenda on account of short innovation cycles, their compatibility is already being studied at international level. An example is ultra wideband (UWB) applications currently being developed by the automotive industry for collision avoidance systems. But the radio services whose introduction was decided at one of the previous Conferences must be taken forward in line with technological advance. The definitive parameters need to be concretised for the protection of all the radio services concerned and their implementation prepared. Representative of the many tasks addressed are DVB-T (new generation of digital TV) compatibility issues, wireless LANs, short range devices (SRDs), fixed links and fixed wireless access, radio astronomy and 4G (UMTS successor generation).

DSL (Digital Subscriber Line) and powerline are examples of new transmission technologies delivered over existing cable networks and providing high speed service, particularly Internet access. Since, however, these networks have only limited screening effectiveness, top priority has been given to compatibility studies to protect radio services from unintentional radiation from cable networks and powerlines. Radiation limits are to be defined under EU Mandate M/313 by a joint ETSI / CENELEC Working Group and anchored in a harmonised European EMC standard. In CEPT ECC SE 35 other European administrations besides RegTP are looking to agree uniform limits which will ultimately be incorporated in the EMC standard. Work continues at national level to identify the special conditions for the protection of public safety and emergency services and to prepare the necessary measures.

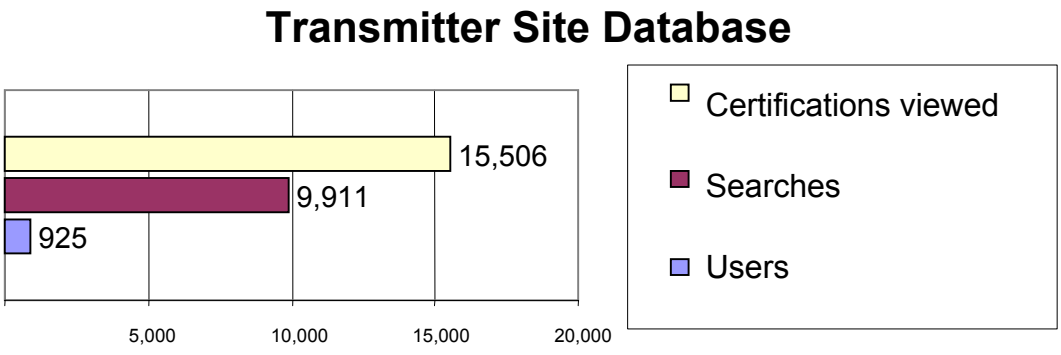
EMC Standardisation
The focus of RegTP activities in 2002 in the national and international standardisation bodies was the attempt to introduce permissible interference limits for systems, equipment and devices in the band above 1 GHz. RegTP experts provided reasoned, well received proposals for industrial, scientific and medical radio frequency equipment, information technology equipment and the classic EMC standards.

Advice on the Application of EMC Standards
Another focus of regulatory activity in 2002 was advice from the experts on the application and interpretation of EMC standards, of the EMC Act and the R&TTE Act and of the relevant European directives. The majority of queries made by phone, e-mail, in writing or by fax were answered within a few days to the complete satisfaction of the senders and callers. Consultation with members of the German Electrical Engineering Commission (DKE) was sought on more complex issues, and solutions and interpretations arrived at with the help of industry representatives. To guarantee the transparency of the administration's market surveillance procedures its internal instructions on application of the harmonised European EMC standards for testing equipment on the market were made public.

EMC and the Environment
The Ordinance concerning the Certification Procedure to Limit Exposure to Electromagnetic Fields (BEMFV) was enacted on 28 August 2002 under section 12 of the R&TTE Act. It sets out the procedure to guarantee the protection of persons in electromagnetic fields arising from the operation of radio and radar equipment, and represents the continuation of the safety requirements procedure introduced in Germany back in 1992. This is described in RegTP's Certificate of Safety information sheet.

Transmitter Site Database / Radio Equipment
Since 20 June 2002 regional and local authorities have had access to a password operated database of transmitter sites. Included are the sites of all radio equipment in operation for which a certificate of safety has been issued by RegTP. The current total is 51,000 sites, 41,000 of which are mobile sites. The certificate of safety lists the following information:

- site address,
- certificate number,
- date of issue,
- type of radio equipment,
- height at which the antenna is mounted,
- pointing direction of maximum radiation,
- safety distance(s), and
- local RegTP office.



Designation of Conformity Assessment Bodies
Recognition and Functions Assignment
The enactment of the Functions Assignment and Recognition Ordinance (BAnerkV) on 7 June 2002 tasked RegTP with recognising and assigning functions to conformity assessment bodies (CABs) in respect of radio equipment and telecoms terminal equipment and electromagnetic compatibility. The exact nature of the tasks is detailed in the Ordinance.

Appointing Notified Bodies and Recognising Competent Bodies in accordance with the EMC Act and Directive 1989/336/EEC
Recognising Notified Bodies in accordance with the R&TTE Act and Directive 1999/5/EC and Designating Conformity Assessment Bodies for Non-EU Countries
RegTP Order 28/2000 opened up the possibility for offices assigned specific functions under the Functions Assignment and Accreditation Ordinance of 14 June 1999 to carry out the tasks of a notified body according to Directive 1999/5/EC on a temporary basis. This transitional period ended with enactment of the Functions Assignment and Recognition Ordinance and the consequent repeal of the Functions Assignment and Accreditation Ordinance. Six bodies have submitted an application for recognition as a notified body under Directive 1999/5/EC. All the procedures had a successful outcome. Four notified bodies were appointed under the terms of the EMC Act and 21 competent bodies recognised.

Mutual Recognition Agreements
The designation of conformity assessment bodies for non-EU countries is another task deriving from the Functions Assignment and Recognition Ordinance. Several Mutual Recognition Agreements (MRAs) have been signed between the EU and non-EU countries with the aim of promoting trade by facilitating the process of bringing products to market. Besides the MRAs put in place in 2001 between the EU and Australia, New Zealand, the US and Canada, MRAs were signed in 2002 between the EU and Japan and Switzerland. Mutual recognition of conformity assessment procedures means that a country carries out a procedure within its own national borders according to the rules of the other country and the other country then recognises the procedure as if it had carried it out itself. RegTP has now performed several conformity assessment procedures to the legal frameworks of non-EU countries. Under the MRA with the US, nine CABs have now been designated and under that with Australia, one. Procedures with New Zealand, Canada, Japan and Switzerland will be carried out as soon as the European Commission has created the technical environment for doing so.

Quality System Certification
RegTP certifies quality systems to the DIN EN ISO 9000ff series of standards. Certified quality systems have long given the holders a competitive edge in the private sector. A number of statutory requirements have been introduced in recent years, however, obliging certain groups of service provider to demonstrate compliance with defined due care requirements, with a view to protecting the consumer. It is becoming more and more usual to demonstrate compliance by the presentation of a certificate issued for an approved quality system. Customers in the public sector in particular tend to make contract award dependent on proof of a certified quality system. Such certification also gives entrepreneurs greater legal certainty. In 2002, RegTP issued renewed certification for one company and carried out the required annual surveillance procedures for fourteen others.

Telecoms Legislation and Economic Policy Aspects
It has become clear that an interdisciplinary approach with input from technical, legal and economic experts is required if satisfactory solutions are to be found to issues of technical telecoms regulation. A policy section entitled Telecoms Legislation and Economic Policy Aspects of Technical Regulation was therefore set up in 2001 to provide this internal cooperation and to make it possible to deal with the legal and economic aspects of technical regulation at a deeper level. This section specifically addresses future areas of regulation and assists the other specialist sections whenever regulatory issues with a strong legal and/or economic content arise. Its main activities in 2002 were as follows:

- providing legal assistance in implementing the targets of the Ordinance concerning the Certification Procedure to Limit Exposure to Electromagnetic Fields (BEMFV), enacted in late August 2002, in the certification procedure for planning and setting up mobile transmitters;
- making a legal assessment of the requests received by RegTP from the public and local authorities for information on mobile transmitters;
- following through legal questions on the electromagnetic compatibility of telecoms equipment and telecoms networks;
- making a legal assessment of questions arising in connection with the application of the Telecoms Customer Protection Ordinance on billing accuracy and of the publication of telecoms providers' quality of service statistics;
- studying and developing co-regulation strategies to allow the telecoms industry itself to create uniform technical and operational specifications for numbering and interconnection with a view to strengthening competition in the telecoms markets through enhanced interaction between and among different operators' networks.

Radio Inspection Service

RegTP's national Radio Inspection Service (*PMD*) made another vital contribution in 2002 to making sure that spectrum was used efficiently and kept clear of undue interference.

Interference Investigations
Interference investigations account for more than a third of the Radio Inspection Service's annual labour capacity and are thus one of its core tasks. Top priority is given to clearing up cases of interference, especially where sensitive services and applications are concerned. Specially equipped vehicles, but also stationary facilities and ground-based direction finding systems, are predominantly used to investigate and resolve cases of radio interference. Compared to the previous year, there was only a slight difference in the number of cases handled.

Widespread use was again made in 2002 of the national number **0180 3232323** to report interference. Of the total number of cases in the category "Interference to transmitting and receiving stations", nearly 21 percent of the reports concerned the aeronautical mobile service and around 17 percent the land mobile service of the safety organisations. The remaining cases were distributed among the other radio services and applications.

Protection against Radio Frequency Fields
The Radio Inspection Service was busy last year working on uniform national and international test procedures in order to determine electromagnetic fields. The outcome was a new CEPT Recommendation. At national level, the Recommendation has fed into RegTP test instructions agreed with the federal states, creating the basis for regular EMF monitoring across the country. Public events in which the Radio Inspection Service took part, for instance the Science and Research Market in Mainz, provided the opportunity to introduce itself and to demonstrate various test scenarios in its work on protection against radio frequency fields.

Aeronautical Service
Of no lesser importance were the safety checks on compatibility between the frequencies used by the aeronautical service and radiated disturbance from CATV and broadcast receiving systems operating in the same band. In a large-scale campaign in 2002 the Radio Inspection Service sought out, over a total area of some 2,000 square kilometres in the approaches to Frankfurt am Main, Hamburg and Schwäbisch Hall airports, the CATV and broadcast receiving systems whose unwanted emissions fall into the bands used by the aeronautical service, causing interference. The sources of interference were traced, appropriate action taken to eliminate the interference and thus a vital contribution made to air safety.

Space Services
It is just as necessary to monitor spectrum use for satellite services – amongst which the radio astronomy service is counted as well as the commercially far more significant satellite services – as it is for terrestrial applications. With its monitoring station for space services in Riedstadt-Leeheim the Radio Inspection Service was able to help secure efficient and interference-free use of the radio spectrum.

Rights of Way

Under section 50(4) of the TKG, RegTP must give its approval before public ways can be used if the authorities responsible for their construction and maintenance are licence holders themselves or are merged with licence holders within the meaning of section 37(1) or (2) of the Restraints of Competition Act (GWB).

In 2002, this was the case in 94 towns and cities in Germany as these towns and cities – the local construction and maintenance entities at the same time – had merged with a city carrier. Against this background, RegTP granted approval to licence holders wishing to use public ways to install new or modify existing telecoms lines.

RegTP in 2002 issued around 7,300 approval notices to licence holders for building measures.

Electronic Signature

Since it came into being, RegTP has been the competent authority for the purposes of the Electronic Signatures Act (SigG), enacted in 1997. Both the Act and the corresponding Ordinance (SigV) were amended in 2001. Although this has not fundamentally altered RegTP's remit, change was also on the agenda in 2002.

Operation of the Root Certification Authority
One of RegTP's main tasks is operation of the Trust Centre as the root certification authority (CA). Here, the certificates for the signature keys of the accredited certification service providers (thus called in the statutes, better known as trust centres) are generated and managed, ie qualified certificates can be verified by anyone at any time in RegTP's directory service.

Accreditation of Certification Service Providers
Seven accreditation procedures were carried out by RegTP in 2002. Thus the number of voluntarily accredited certification service providers rose by almost 50 percent last year. In an accreditation procedure, the security of the trust centre's procedures is comprehensively tested by RegTP. Yet accreditation can only be pronounced when the operator's reliability and specialist knowledge of IT and legal matters in particular have been established and his security concept attested by a recognised evaluation and certification body as having been properly implemented, and thus the trust centre's high security level "state approved", as it were.

Besides accreditation, the Electronic Signatures Act makes provision for notification. Providers choosing this option need solely to notify RegTP that they are operating a certification service. After initial interest, the sole "notification only" provider decided in 2002 to undergo the quality tests, so that all qualified electronic signature providers have now opted for the secure accreditation route.

Quality Mark
RegTP in 2002 awarded the first quality marks referred to in section 15 of the Electronic Signatures Act, thus enhancing consumer confidence in modern electronic legal and business transactions. The quality mark bearing the word "accredited" is awarded to trust centres, and guarantees the consumer that any trust centre displaying the logo has been accredited by RegTP and meets the rigorous technical and administrative requirements of the Act.

The second quality mark – without the word "accredited" – is awarded for qualified electronic signature products meeting the high security standards required by the Act. These include products that make trust centre operations or consumer application environments secure, such as packages comprising a card reader, smart card and applications software. RegTP has now awarded 22 quality marks to trust centres and the first quality marks for products. More information on this is available on RegTP's website at http://www.regtp.de/elsig.

Monitoring Compliance with Statutory Requirements
As the competent authority for the purposes of the Electronic Signatures Act, RegTP's tasks also include thorough consulting prior to any security changes and monitoring the trust centres operating in Germany. It must, for instance, keep an eye on whether or not providers are complying with the terms of the Act and Ordinance and whether or not security levels are maintained when changes are made to the procedures set out in the security concept. Where appropriate, it must take suitable action to make sure that operators meet the high security requirements of the legislation.

Adjustment of Legal Provisions
The adoption in August 2002 of the Third Act Amending Legal Statutes on Administrative Procedures cleared the way for the use of qualified electronic signatures in areas governed by public law. During passage of the legislation, RegTP provided

comments on the bills and its expertise on questions of the interpretation of specific electronic signature provisions. Thus it was possible in 2002 to complete the process of giving qualified electronic signatures the same legal status as handwritten signatures, as required by European regulations.

Participation in International Bodies
RegTP's participation in national, European and international electronic signature bodies continued to grow in 2002 amid rising awareness, as a result of European requirements, of the importance of the technology and its specific issues. Germany plays a certain pioneering role in electronic signatures in light of its experience base, which goes back to 1997. Exchanging views and promoting the technology to secure smooth cross-border business transactions is an important part of Europe's harmonisation process in RegTP's view. It attaches special importance to helping produce and monitor standards within ISO/IEC, DIN/DKE, ITU, CEN/ISSS, EESSI, ETSI, etc and specifications within ISIS-MTT. Study of the testbed for the standardised ISIS-MTT specifications on interoperability has begun with a view to achieving interoperability between the different products currently on the market.

Set up in 2002 at RegTP's initiative was the Forum of European Supervisory Authorities for Electronic Signatures, or FESA. This forum meets regularly to exchange views and resolve cross border problems in the use of qualified electronic signatures. The number of members has risen steadily.

Postal Services Market

Postal Licences
DPAG has a statutory exclusive licence until 31 December 2007 (section 51(1) of the Postal Act). Until the end of 2007, providers other than DPAG can supply the following services which, by virtue of the definition in the statute, are not covered by DPAG's exclusive licence (section 51(1) second sentence of the Postal Act).

A Conveying on a profit basis letters weighing between 200 and 1,000 grammes, and/or letters costing more than five times the price payable on 31 December 1997 for corresponding postal items in the lowest weight category (NB: applicable until the end of 2002; new limits as from 1 January 2003, see below.)

B Conveying on a profit basis letters with identical contents and weighing over 50 grammes, with at least 50 letters per mailing.

C Conveying on a profit basis letters delivered by the sender to a document exchange and collected by the addressee from the same or another exchange operated by the same service provider, with the sender and addressee using the service under a permanent contract.

D Services distinct from universal services, with special features and of higher quality.

E Conveying on a profit basis letters collected on the sender's behalf from the sender and taken to the nearest DPAG acceptance point or another within the same community.

F Conveying on a profit basis letters collected on the addressee's behalf from DPAG PO boxes and delivered to the addressee.

The Third Act Amending the Postal Act of 16 August 2002 (Federal Law Gazette I page 3218) lowered the monopoly weight and price limits as follows:

Period	Weight per piece	Price	Source
01.01.03 to 31.12.05	more than 100g	At least three times the price of a corresponding postal item in the lowest weight category*)	Third Amending Act of 16.08.2002
01.01.06 to 31.12.07	more than 50g	At least two and a half times the price of a corresponding postal item in the lowest weight category*)	

*) Regarded as a "corresponding postal item in the lowest weight category" in respect of letter items are postcards, and in respect of addressed catalogues a catalogue not more than 20g in weight.

Two further services have been added:

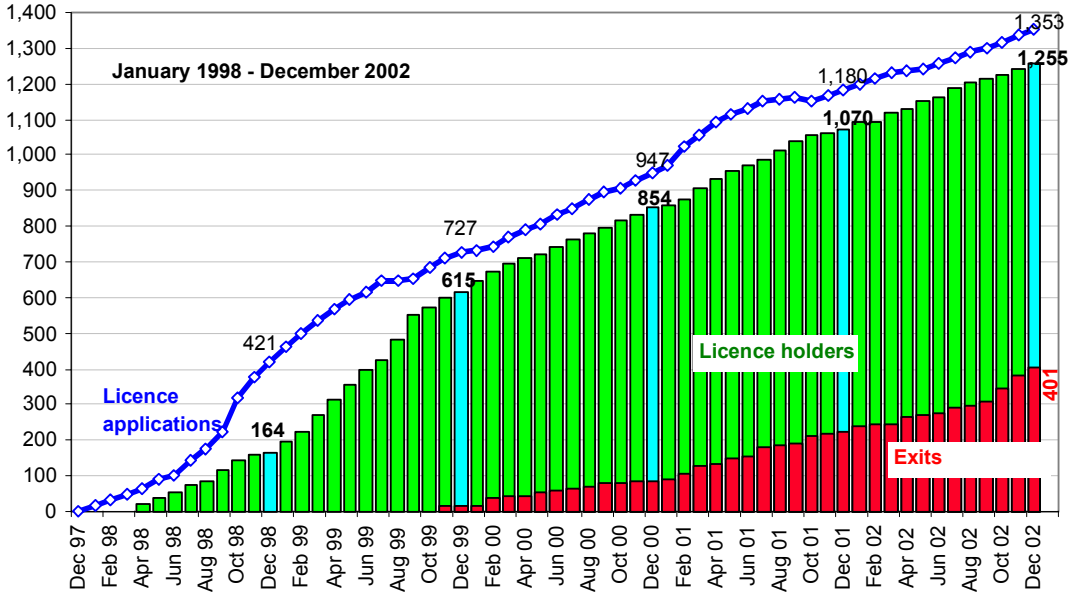
G Conveying on a profit basis outgoing letters destined for other countries (section 51(1) second sentence para 7 of the Postal Act), and

H Conveying on a profit basis letters from other countries to DPAG international mail acceptance points (section 51(1) second sentence para 8 of the Postal Act).

Applications, Licences and Exits from the Market

As of 31.12.2002	1998	1999	2000	2001	2002	Total
Applications	385	297	211	287	173	1,353
Licences granted	382	291	208	189	185	1,255
Licences denied	3	1	0	0	0	4
Exits	-	17	70	134	180	401

Licence Applications / Licence Holders / Exits

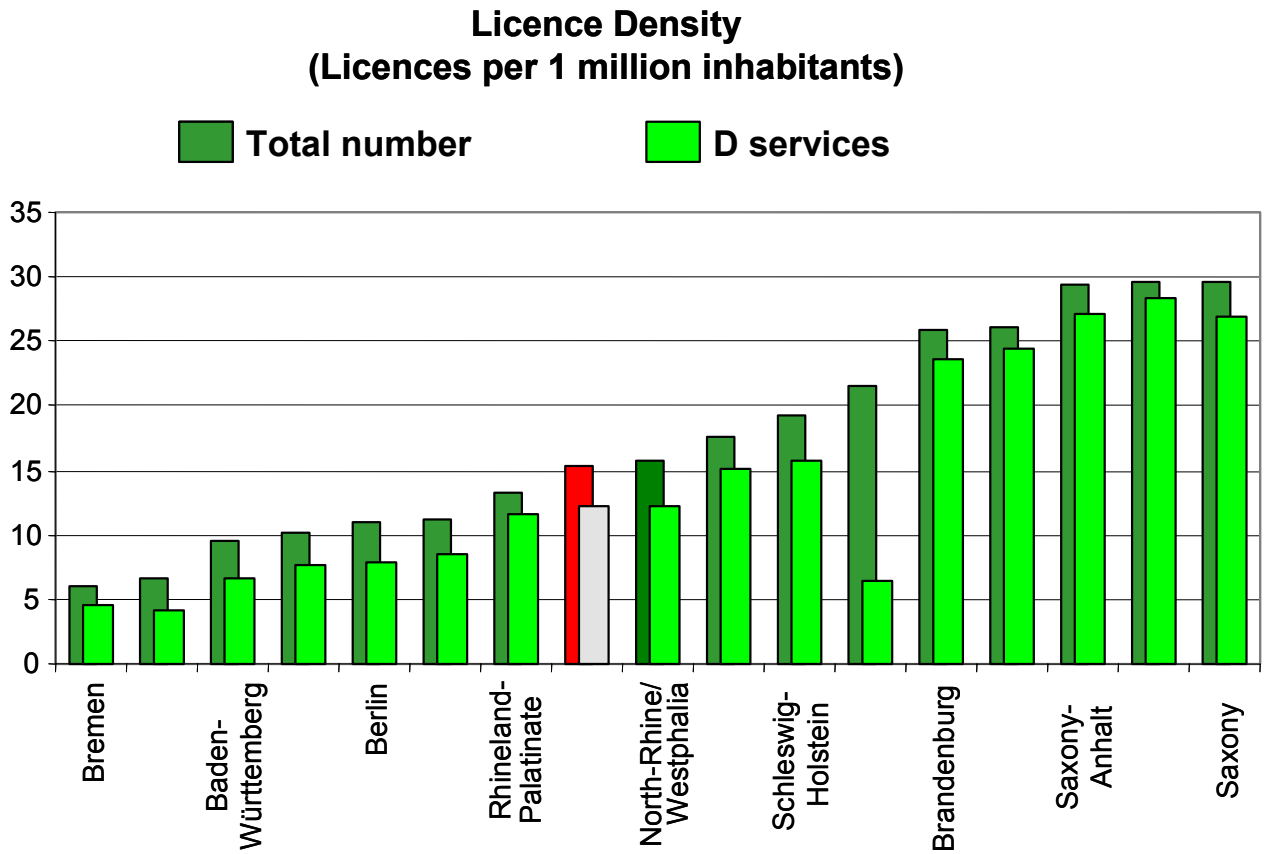


Breakdown of Licences by Federal State (as of 31 December 2002)

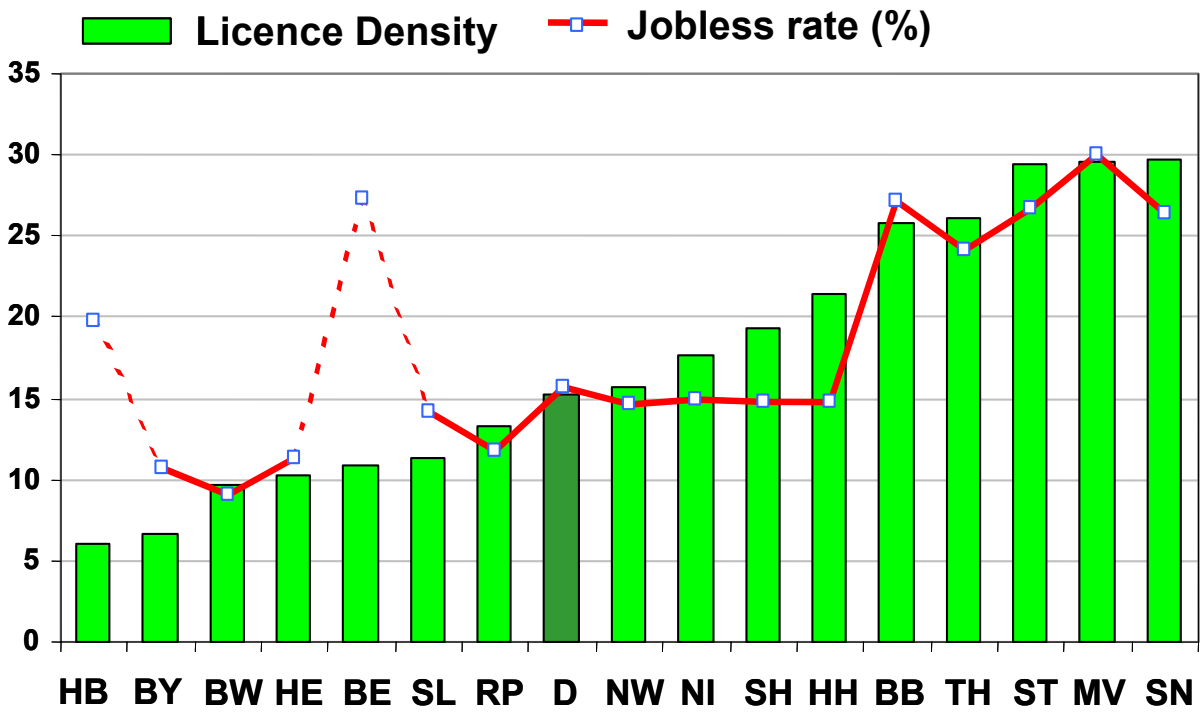
				Licensed activity [1]					
	Appli-cations	Li-cences	Density [2]	A	B	C	D	E	F
Baden-Württemberg	109	102	9.6	69	66	34	69	88	81
Bavaria	93	81	6.6	46	42	26	51	71	70
Berlin	38	37	10.9	22	21	14	27	33	30
Brandenburg	76	67	25.8	33	44	23	61	55	54
Bremen	4	4	6.1	4	4	2	3	3	2
Hamburg	38	37	21.4	23	18	5	11	32	34
Hesse	66	62	10.2	40	39	22	47	54	51
Mecklenburg-West. Pomerania	54	52	29.5	30	27	15	50	42	39
Lower Saxony	152	140	17.6	92	87	52	121	117	110
North-Rhine Westphalia	303	284	15.7	177	177	111	221	238	229
Rhineland Palatinate	55	54	13.3	39	38	28	47	49	48
Saarland	13	12	11.3	9	11	8	9	10	10
Saxony	150	130	29.7	86	87	38	118	105	97
Saxony-Anhalt	78	76	29.4	54	46	32	70	65	65
Schleswig-Holstein	56	54	19.3	46	43	29	44	45	45
Thuringia	68	63	26.1	34	40	18	59	52	50
Total:	**1,353**	**1,255**	**15.2**	**804**	**790**	**457**	**1,008**	**1,059**	**1,015**

[1] See "Postal Licences" for details of services A – F

[2] Licence density = number of licence holders per one million inhabitants



Licence density in the new federal states is consistently at the upper end of the scale. This indicates that much more use of the new business opportunities is being made there than in the old federal states. Moreover, there is a close link in the new states between the jobless rate and licence density (see below).



Use of Licence Rights
A licence authorises its holder to perform certain activities in accordance with the Postal Act and associated ordinances. The licence does not, however, oblige the holder to take up the activity as such.

To date, RegTP has granted licences to 1,255 companies to deliver letters. 91 licence holders are not currently, or are no longer, exercising their licence rights. 318 companies have surrendered their licence, 87 of these on account of the increased licence fee. 27 firms have been dissolved, a further 25 have ceased trading and 27 are known to be the subject of insolvency proceedings. Four licences were revoked after facts came to light that the holders did not have the necessary efficiency and reliability. Thus a maximum of 760 companies were active in the market at the end of 2002.

Licence Checks
Licences are granted upon application if the requirements are met, ie if there are no grounds for denial at the time of issue. Subsequently, the licence holder must make sure that this continues to be the case. Compliance is regularly monitored by RegTP. If faults are found, the licence holder is given a certain period of time in which to take remedial action. A follow up check is then made to determine whether or not the faults have really been eliminated for good. If the holder fails to remedy the faults within the given period, proceedings may be instituted, which could ultimately result in all or part of the licence being revoked.

Results of Checks
RegTP in 2002 carried out routine, on-site checks on 500 licence holders. Non-routine checks were made in another 30 cases. Routine checks concern licence holders' operations, compliance with the legislation and the terms and conditions of their licence, and the collection of market data. The checks are carried out by RegTP's regional offices. All in all, a positive picture has emerged. No serious breaches of licence terms have been found so far. This is also true as regards working conditions. More than 95 percent of the employees were covered by social insurance at the time of the check. In a number of cases, licence holders had been late notifying RegTP of a licence transfer, of ownership changes or of changes in the Commercial Register, but have now done so. As far as operations are concerned, the most frequent sticking point was the practical arrangements for meeting the time limits in order to qualify for higher quality. Generally speaking, however, faults found could be eliminated on site.

Most of the non-routine checks were occasioned by complaints from other licence holders or from addressees, mainly on account of unreliable delivery staff or subcontractors. The checks often helped to ease tensions between the parties concerned. In one case, the check led to the revocation of a licence granted in 1999; three further such cases are ongoing. Again, a number of providers were found to be operating without a licence. This was mostly due to unfamiliarity with the legal requirements. Meanwhile, the companies concerned have applied for, and been granted, the licence they need. No administrative fines proceedings were initiated in 2002.

Situation and Trends in the Postal Services Market
The German postal services market generated revenues of more than €23 billion in 2002. Around two thirds of the market – essentially, courier, express and parcel services, but also parts of the letter market – are already open to competition. Slightly less than two thirds of the revenues was generated by DPAG. The remaining third was shared by a number of providers, most notably of courier, express and parcel services.

Revenues of around €10.4bn are forecast for 2002 in the licensed area (conveyance of letters not exceeding 1,000g in weight). DPAG continues to hold just under 97 percent of the market, even though certain areas have been opened to competition.

Market Study

RegTP ran a market study in early 2002 among the licence holders, requesting data on their revenues and sales for 2001 (results) and 2002 (forecast or expected figures).

Revenues and Sales from Licensed Services (DPAG's included)

2000		2001		2002 (forecast)	
Revenues €	**Sales** Volume	**Revenues** €	**Sales** Volume	**Revenues** €	**Sales** Volume
10.3bn	16.6bn	10.2bn	16.5bn	10.4bn	17.4bn

Due to a DPAG correction, the figures differ from those in previous reports.

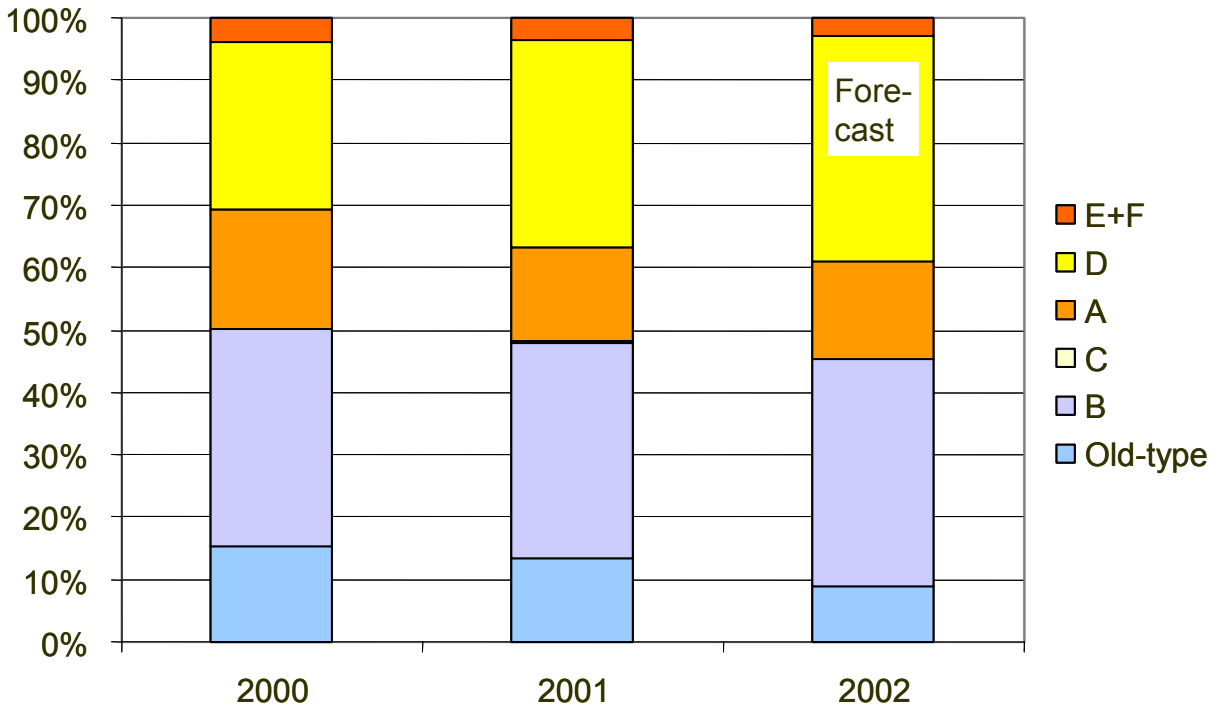
Licence Holders' Revenues (excluding DPAG's)
(€ million)

Licensed services	2000	2001	2002 (forecast)
A Letters > 200g or > €2.55	32.9	37.3	49.0
B Letters with identical contents > 50g	60.2	86.4	122.0
C Document exchange	0.5	0.5	0.5
D Higher quality services	46.5	82.9	122.0
E Mailing at DPAG acceptance points	4.0	4.8	5.5
F Collection from DPAG PO box facilities	2.9	3.7	4.0
Old-type licences (large mailings)	26.7	33.0	33.0
Total	**173.7**	**248.6**	**336.0**

Breakdown of Revenues by Service
There is a clear trend towards value added services (higher quality D services). In terms of revenue, these accounted in 2002 for over 36 percent of the market. The share of simple delivery services (notably B services and services provided under old-type licences) declined further to around 45 percent.

Breakdown of Revenues by Service

C service revenues too low to be recognised

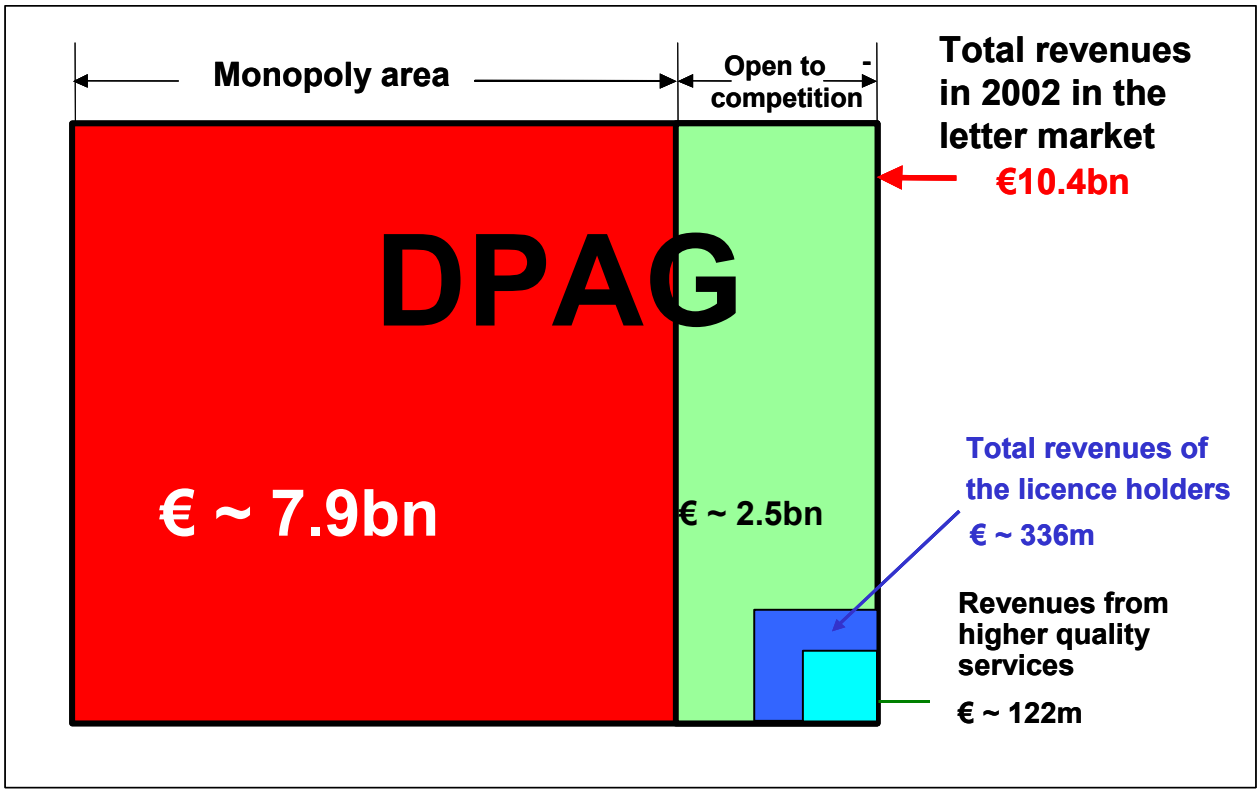


Breakdown of Revenues (old and new licences) by Company

Revenues	up to €10,000	€10,001 to €100,000	€100,001 to €500,000	€500,001 to €1,000,000	more than €1m
1998	30	51	26	3	10
1999	108	167	62	11	19
2000	91	178	129	23	19
2001	77	192	143	21	35
2002 (forecast)	*66*	*162*	*164*	*33*	*43*

The new licence holders are all small and medium sized enterprises (SMEs). In terms of volume, enterprises with annual revenues of less than €50m and fewer than 500 employees come under this category. Small enterprises are those with annual revenues of up to €0.5m, and medium sized those with annual revenues exceeding €0.5m. According to this definition, there were as many as 76 medium sized enterprises in 2002.

Market for Licensed Postal Services
(Delivery of letters up to 1,000g in weight)



Market Shares for Licensed Services (including statutory monopoly services)

	2000	2001	2002 (forecast)
Total revenues (€bn)	10.3	10.2	10.4
Licence holders' revenues (excluding DPAG's) (€m)	173.7	248.8	336.0
Licence holders' shares (%)	1.7	2.4	3.2
DPAG's share (%)	98.3	97.6	96.8
Revenues from higher quality services (€m)	46.5	83.0	122.0
Share of the higher quality service market (%)	0.45	0.81	1.2

By 2001 – that is, after four years – the licence holders had captured merely 2.4 percent of the market for the delivery of letters not exceeding 1,000g in weight.

According to the forecast for 2002, licence holders' share could rise to 3.2 percent. DPAG would then still hold 96.8 percent of the market, albeit a market that had grown 6.2 percent between 1998 (€9,827m) and 2002 (€10,431.7m).

Shares in the Fully Liberalised Letter Market

The delivery of letters weighing 200g and over or costing more than €2.55 and the delivery of letter items with identical contents and weighing over 50g (minimum of 50 pieces per mailing) are fully liberalised services (status: 31 December 2002) that can be provided by licence holders without any further requirements; in particular, added value is not stipulated.

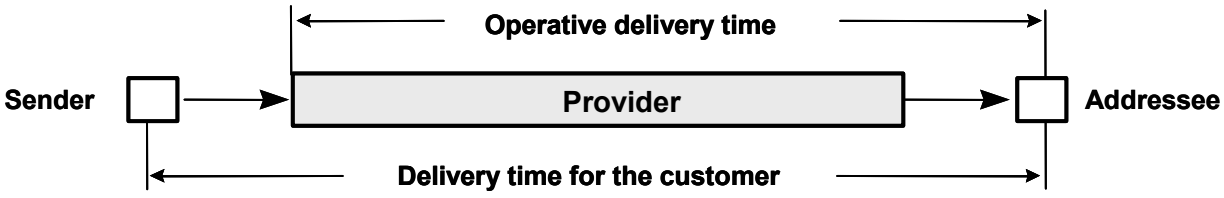
Figures in €m	2000	2001	2002 (forecast)
Total revenues	2,211	2,214	2,292
Licence holders' revenues (excluding DPAG)	120	157	204
Licence holders' share	5.4%	7.1%	8.9%
DPAG's share	94.6%	92.9%	91.1%

By 2001, the licence holders had thus captured 7.1 percent of the market. According to the forecast for 2002, this could rise to 8.9 percent. DPAG would then still hold over 90 percent of this fully liberalised segment, the volume of which had grown, however, by some 10 percent since 1998.

Letter Delivery Times

The Postal Universal Services Ordinance (*PUDLV*) requires, on average over the year, at least 80 percent of domestic letters posted on a working day – excluding large mailings with a minimum of 50 letters per mailing – to be delivered on the first day after posting (J+1) and 95 percent by the second working day after posting (J+2).

To this end, RegTP monitors the quality of the letter service. The results can be used to calculate the delivery times as seen by the consumer (from sender to addressee, as set out in the PUDLV), and the operator (from the operating system of the provider [DPAG] to the addressee).



Delivery time for the consumer means the time between posting a letter in a post box or at one of the operator's acceptance points at the normal times of business or day. The time starts as soon as the letter is out of the consumer's hands. Measured, then, is the time from end to end – from sender to addressee. Variable closing times (eg post box collections) do not have any bearing on the results.

As the PUDLV has the consumer's interests at heart, what matters is the day on which the letter was posted, and not the working day on which it was collected.

Delivery Time for the Consumer

Period	J+1 [1)]	J+2 [2)]
1998 (average)	88.1%	98.9%
1999 (average)	86.0%	98.8%
2000 (average)	86.7%	99.0%
2001 (average)	86.6%	98.8%
2002 (average)	86.9%	98.9%
PUDLV minimum	80.0%	95.0%

[1)] Percentage of letters delivered within one working day of posting
[2)] Percentage of letters delivered within two working days of posting

The PUDLV requires post box collections to be based on the dictates of business life. RegTP's measurements show a last collection at around 17:00 hours to meet this requirement. If 18:00 hours were taken instead, the percentage of letters delivered on the first working day after posting in 2002 from the consumer's point of view would then be not 86.9 percent, but only 83.3 percent – rather too close to the PUDLV minimum of 80 percent J+1.

Letter Prices and Comparative Price Levels
DPAG's prices on 31 December 2002 and as from 1 January 2003 for the main products provided under its exclusive licence were as follows:

			31.12.02	***as from 01.01.03***
-	Postcard		€0.51	*€0.45*
-	Standard letter	≤ 20g	€0.56	*€0.55*
-	Compact letter	≤ 50g	€1.12	*€1.00*
-	Large letter	< 200g	€1.53	*€1.44*
-	Maxi letter	< 200g	€2.25	*€2.20*

$$\textbf{Price level PL} = \sum_{i=1}^{i=n} P_i * g_i \qquad \text{where} \qquad g_i = \frac{m_i}{M}$$

where $m_1, m_2, \ldots m_i, \ldots m_n$ = volume of products/service **i**
M = total volume ($M = m_1 + m_2 \ldots + m_n$)
$P_1, P_2, \ldots P_i, \ldots P_n$ = price of products / services **i**
g_i = weighting

The volume is the volume of the product sold in Germany. This produces a price level for Germany (prices weighted by volume) of €0.75 (rounded) until the end of 2002 and of €0.71 (rounded) from January 2003.

The price level in itself says very little. It is only meaningful over time, when benchmarked against the price levels of other companies, or against international standards. Comparing year-on-year prices in Germany provides little information, since prices stayed the same between September 1997 and December 2002. Nor is a comparison with the prices charged by other companies in Germany possible since DPAG's restricted statutory monopoly currently prevents others from offering these products. Thus all that remains is an international comparison.

International Comparison
An international comparison of price levels as set out above can include various products with different pricing structures (see the table below for examples). It also irons out differences that could distort the comparison if it were restricted to one product only – eg a standard letter not more than 20g in weight.

Prices for Letters up to 50g

Prices for letters up to 50g	D [€] 2002	D [€] 2003	UK [£]	A [€]	GR [€]	F [€]	US [$]	B [€]
Standard letter (up to 20g)	0.56	0.55	0.27	0.51	0.35	0.46	0.37	0.49
Compact letter (20 to 50g)	1.12	1.00	0.27	0.58	0.47	0.69	0.60	0.79
Compact versus standard letter	+ 100%	+ 82%	+ 0%	+ 14%	+ 34%	+ 50%	+ 62%	+ 61%

As of 28 October 2002 (also from 1 January 2003 for Germany)

Peer countries included the EU countries, Norway and Switzerland, the US, Canada, Australia, New Zealand and Japan. Peer products were those that most closely matched DPAG's postcard, standard, compact, large and maxi letter products. Compared were the fastest delivery times in the ordinary letter service for which – as in Germany – there are no guaranteed, but expected, non-binding, delivery times. The price for each peer product was given in euros or the national currency. It was then weighted (g_i) in the same way as for the German price level. The weighted prices, added together, represent the price level in euros or the national currency.

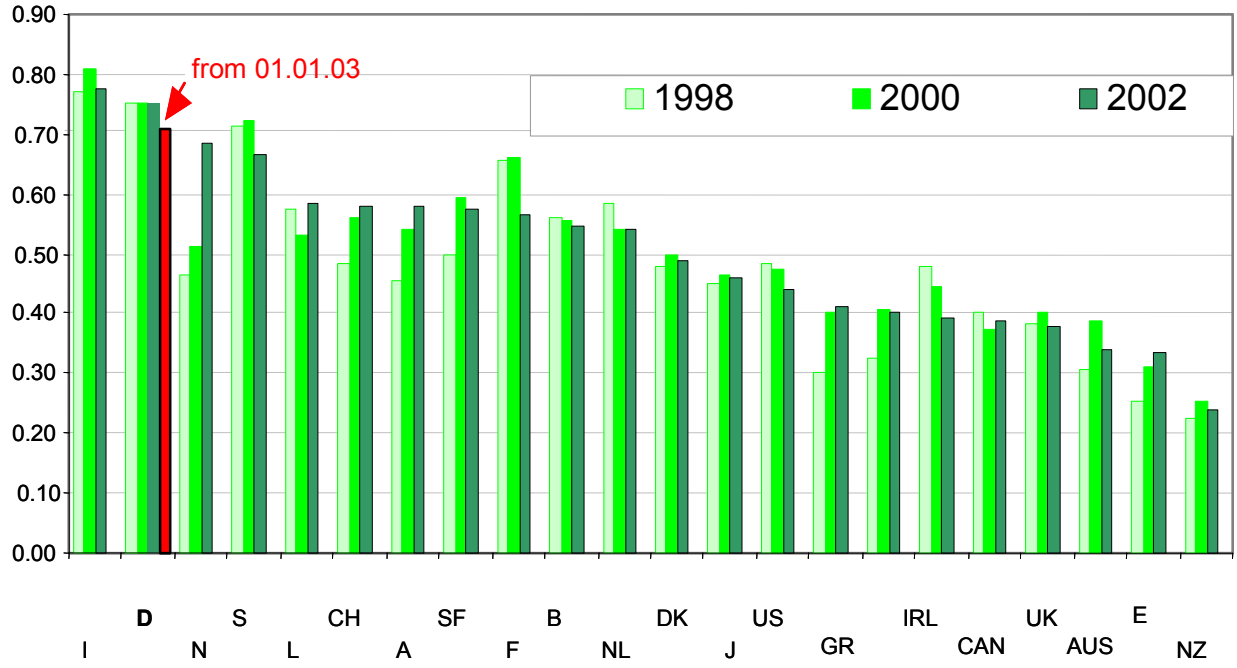
Peer countries' price levels in euros or national currency were then converted using the purchasing power parities (PPPs) calculated by the Federal Statistical Office with the German weighting scheme. The weighted goods and services included in the German basket are representative of total consumption expenditure (excluding rents and car purchases) of all German households. Converting the price levels in national currency with the OECD purchasing power parities is not appropriate here, since these are established with a US basket that is not representative of Germany. Conversion using exchange rates only would distort the results, since the prices would not then be adjusted to accommodate differences in purchasing power in the peer countries.

The delivery times for the peer products chosen differed (J+1 to J+3). This begs the question of whether, and to what extent, consumers have to pay for faster delivery if all they want is a set of basic services throughout the country, at affordable prices. Initially, faster delivery times impact only on costs. The US Postal Rate Commission has estimated, for instance, that cutting delivery times in the US from J+2 to J+1 for the zone up to 600 miles (approx 1,000km) would mean higher costs of around ten percent in the delivery chain as a whole. The extent to which such costs can be passed on to the consumer via the price depends on the intensity of competition; under a monopoly at any rate, they can. Expenditure on letter items is consumption expenditure, that is to say any conversion method not based on consumption expenditure but on costs or wages will distort the result. For the consumer, all that matters is price.

Price Levels for Letters

Price levels for letters in 1998, 2000 and 2002
(in Germany from 1 Jan 2003 also)

Euro (€)



Partial Services Offer; Access to PO Box Facilities and Changes of Address

To encourage competition in the market for licensed postal services, the Postal Act makes provision for end users and competitors to access the facilities of the dominant provider (sections 28 and 29). All such agreements must first be submitted to RegTP, so that, amongst other things, the dominant provider's compliance with the legal requirements may be monitored.

Partial Services

A partial service is a specific activity within the value chain not performed by the competitor itself. Competitors are entitled to request such partial services from a dominant provider of licensed services (section 28 of the Postal Act). RegTP determinations issued in September 2000 allowed both competitors and DPAG customers, for the first time, to hand over mail at DPAG's mail sorting centres (incoming and outgoing processing). The structure and number of such contracts duly concluded and submitted to RegTP in 2002 are shown in the table below. The contracts negotiated in the last few years, 2002 included, expired on 31 December 2002 since prices had only been approved until that date. Hence not only were new agreements signed but old ones updated with effect from 1 January 2003. These latter are not included in the table. Altogether, there were 280 contracts for individual letter items (outgoing processing: 97; incoming processing: 183) and 43 for letter items with identical contents.

Partial service contracts in 2002					
Type of mail ▶	Individual letter items			Infopost items	Total
Contracting party ▼	(1) outgoing	(2) incoming	(3) total of (1)+(2)	(4) incoming only	(5) all types of (3)+(4)
End users	100	261	361	93	454
Competitors	4	6	10	6	16
Total	104	267	371	99	470

As of 31 December 2002

PO Box Facilities
A dominant provider of licensed postal services must allow other postal service providers to deliver mail to its PO box facilities, against payment of a fee (section 29 of the Postal Act). DPAG in 2002 submitted 49 such agreements to RegTP. In February 2002, RegTP approved new contractual arrangements for DPAG, taking effect on 1 April 2002. 38 of these agreements were concluded prior to 2002 on the terms applicable then and were thus updated. Eleven were first time agreements, one of which was negotiated under the old set of rules.

Changes of Address
A dominant provider must allow other postal service providers access to its information on changes of address, against payment of a fee (section 29(2) in conjunction with subsection (1) of the Postal Act). DPAG in 2002 submitted to RegTP 101 contracts for access to change of address information. Of these, five were for the transmission of updated addresses at the provider's request ("New for Old" scheme) and one for the automatic transmission of change of address data. As regards the rates payable, only the latter type was based on an earlier RegTP determination.

RegTP in April 2002 approved a rates proposal from DPAG, taking effect on 1 May 2002, for a so-called black box procedure. This provides encrypted electronic address matching, and was developed especially for alternative providers to prevent data misuse as a result of, say, sale of address information. 95 such agreements have already been signed, 62 of which are first time contracts and 31 updates of older New for Old or automatic transmission contract variants.

Legal Proceedings (Postal Market)
DPAG continued in 2002 to contest the award of licences for higher quality services. After its initial twin track approach (administrative and civil courts), it stopped applying to the civil courts for injunctions in 2001 and 2002, just taking action before the administrative courts. It was noticeable in the year under review that competing companies increasingly faced trademark law issues. DPAG claimed, for instance, that it had the sole right to use the term "Post" and to apply a particular postmark. However, its action concerning use of the term "Post" was dismissed by Cologne higher regional court on 26 October 2001 as being non-appealable.

Administrative Court Proceedings
DPAG in 2002 again took action before Cologne administrative court in more than 200 cases to rescind licences for higher quality services. However, since 11 May 2002 (as a result of the amended section 80 of the TKG (in conjunction with section 44 of the

Postal Act) which became effective with the Post and Telecommunications Statute Law Revision Act), all such action must be preceded by a protest procedure at RegTP. After the court's 1999 ruling that same-day delivery constituted higher value within the meaning of section 51(1) second sentence para 4 of the Postal Act, DPAG withdraw its complaints and lodged no new ones. Now the subject of protests and action are licence holders offering overnight delivery (collection from 17:00 hours and delivery not later than 12:00 hours on the following day), day-certain or specially secure delivery. The court has also ruled on several test cases, deeming, as already said, same-day, but not overnight delivery as higher quality. The court had likewise pronounced in favour of the competitors on 13 November 2001 when it dismissed action by DPAG contesting licence grant to competitors for day-certain delivery, endorsing RegTP's view that this, too, had added value in terms of section 51(1) second sentence para 4 of the Postal Act and thus did not fall under the exclusive licence. A decision from Münster higher administrative court on licence award – notably on which services qualify under section 51(1) second sentence para 4 of the Postal Act as higher quality – had been expected in 2002 but is still outstanding. Moreover, a final decision is only likely after the Federal Administrative Court has pronounced on the matter, and thus even longer in coming.

Civil Court Proceedings
In the year under review DPAG instituted no civil court proceedings against higher quality service providers. The case law of the regional and higher regional courts made in the years prior to 2002 differs. RegTP's interpretation of section 51(1) second sentence para 4 of the Postal Act is shared by a clear majority of the higher regional courts. Five judgments have supported the licence holders as opposed to one against.

Ruling Chambers

Ruling Chamber 1
Telecoms and Postal Licensing and Universal Services,
Scarce Radio Spectrum Resources

Key Elements for DVB-T Spectrum Award
The President's Chamber on 3 April 2002 published under section 47(5) second sentence, second part, in conjunction with sections 11(1) and (6), 10 and 73(3) of the Telecommunications Act, or TKG, its Key Elements on Spectrum Award for Terrestrial Digital Broadcasting, most notably Video Broadcasting, and for Media and Teleservices (Terrestrial Digital Video Broadcasting, or DVB-T) (see Order 6/2002 in RegTP's Official Gazette 6/2002 of 3 April 2002). This creates a single regulatory framework for future spectrum award and marks the successful conclusion of the regulatory preparations for the – now imminent – switch to digital TV.

The key elements set out the procedure for future rulings on all spectrum assigned under section 47(5) second sentence, second part, in conjunction with sections 11(1) and (6), 10 and 73(3) of the TKG. The standard procedure will be competitive tendering in accordance with section 11(6) of the TKG, preceded by an application (first come, first served) procedure. The key elements also specify the rules, in line with section 11(6) fifth sentence of the TKG. Now that the state authorities have established their broadcasting requirements, DVB-T spectrum award can kick off. In the first stage, applications for frequency assignment can be made to RegTP within a period of six weeks of proceedings having been opened, and only when the number of applications

exceeds the spectrum available will RegTP conduct competitive tendering in a second stage.

It was decided to issue key elements governing later award procedures as well since it cannot be ruled out that more applications will be made than spectrum is available. A situation of scarcity then requires frequencies to be awarded by competitive tendering (sections 47(5) second sentence, 10 and 11 of the TKG), and this in turn requires a hearing beforehand (section 11(1) of the TKG) and a Chamber decision taken in consultation with the Advisory Council (cf section 11(1) in conjunction with section 73(3) of the TKG). So that any competitive tendering can be carried out quickly and efficiently, the ground rules were to be established beforehand. The aim of an advance hearing for a number of similar cases is to avoid multiple, and more or less identical, section 11 hearings and duplication for the Advisory Council, and thus to shorten each separate assignment procedure.

To leave no doubt about the federal states' responsibility for broadcasting, the key elements explicitly state that they address telecoms regulation issues only. At the wish of the Advisory Council, agreement was reached with the broadcasting experts of the federal states in light of section 5(2) of the Frequency Assignment Ordinance. The required consultation with the Federal Cartel Office (BKartA) on the market definition undertaken likewise took place. On 18 April 2002 the Advisory Council's participation as set out in section 73(3) of the TKG was completed.

A particularly important signal for the forthcoming digitisation of terrestrial broadcasting is that all the federal states agree to this approach. For their part, they are now concerned with defining the media policy targets for the phased conversion to digital TV, set to begin in centres of population. The first frequencies for regular operation in Berlin and Brandenburg have already been awarded, and digital terrestrial transmissions made on eight channels since 1 November 2002. The federal states were also able to agree on common nationwide coverage requirements, for the implementation of which RegTP on 27 November 2002 launched an award procedure.

Price Cap Regulation in the Postal Markets
In a price cap procedure required under section 21(1) para 2 of the Postal Act, Ruling Chamber 1 on 26 July 2002 set the benchmarks for the average rate of change in the price of services in a basket.

Three baskets were formed: one for monopoly postal services, one for services provided in competition, and one for partial services. The baskets contain around 80 percent of the licensed postal services (delivery of letter items not more than 1,000g in weight). Price levels were lowered on 1 January 2003 by a nominal 7.2 percent (4.7 percent in real terms) in the monopoly services basket and by a nominal 6.5 percent (4.0 percent in real terms) in the partial services basket. Price levels in the basket of services provided in competition were raised on 1 January 2003 by 0.7 percent. As from 2004, price levels in all baskets will change by the rate of inflation minus 1.8 percent. This regime is applicable until 31 December 2007.

RegTP's ruling marks the first lowering of price levels in the postal service. For the first time, German consumers are benefiting from DPAG's efficiency gains of the last few years. Planning certainty for all market players is thus given for the next five years, enabling better adjustment to the time when the market is fully opened to competition.

Factors taken into account in setting the price level targets were, amongst other things, DPAG's universal service obligation, non-standard pay levels, social insurance benefits and other payments DPAG's competitors are not required to make. Within the regulatory framework the decision is thus a fitting balance, reflecting all the relevant interests and elements.

Ruling Chamber 2
Rates Regulation, Rates subject to Approval for Transmission Paths (Licence Class 3) and Voice Telephony (Licence Class 4)
Under the provisions of the TKG, the rates and rate-related components in the general terms and conditions for the provision of Class 3 transmission paths and Class 4 voice telephony – provided the licence holder is dominant within the meaning of section 19 of the Restraints of Competition Act (GWB) in the relevant market – are subject under section 25(1) of the TKG and as provided for by sections 24 and 27 of the TKG to approval by RegTP.

Ruling Chamber 2, whose remit includes section 25 rates regulation, took decisions in 2002 on a total of 32 price proposals, inviting altogether 188 parties to the public oral proceedings.

Rates for the Provision of Transmission Paths
Subject to approval are mainly the prices for leased lines offered by DTAG in the form of analogue standard leased lines (SFV), digital standard leased lines and digital carrier leased lines (CFV), and the prices for long lease VHF sound/TV transmitters. This price regulation is designed to protect the consumer and to secure fair and efficient competition in the market as carrier leased lines, in particular, are needed by alternative providers to build out their own networks.

The Chamber handled a total of eight cases on these issues in the year under review; five rates regulation procedures for leased lines and three rates regulation procedures for broadcasting. Leased line rates regulation, involving complex investigations, was concerned specifically with two procedures for analogue standard leased lines (aSFV) and two for digital standard leased lines (dSFV) and digital carrier leased lines (dCFV), that is to say for *Comfort Service* and for express fault repair respectively. The fifth case addressed the price of international carrier leased lines (ICC) providing access to border repeater stations and submarine cable termination points which, although classed as special network access, closely resemble carrier leased lines. Decisions on the price proposals were to be taken on the basis of the costs of efficient service provision for the individual service (section 27(1) para 1 of the TKG).

To assess the price proposals for digital standard and carrier leased lines the Chamber again used the comparative international leased line price table, the methodology of which was published in RegTP Official Gazette No 4 of 23 February 2000, Communication 112, following a public consultation.

Individual items not eligible for approval according to the criteria of section 24 of the TKG were approved by the Chamber in modified form.

Rates for the Provision of Telephone Service
To date, solely DTAG's rates and rate-related components in its general terms and conditions for the provision of Licence Class 4 telephone service have been subject to approval, since it is currently the only dominant company in the relevant product and geographic markets.

Mileage and Bespoke Charges for the First Time Provision of an Analogue Telephone Line
The determinations issued on 25 and 26 November 2002 with regard to DTAG's planned increase in connection charges for analogue lines should be mentioned here.

Thus charges were in future to include, besides the one-off connection charge, mileage and bespoke charges if a subscriber line module for the line had to be installed for the first time (mileage and work done in cabling the outside plant termination point up to the first subscriber line module on the subscriber's premises). Accordingly, the customer would have had to pay, in addition to the one-off connection charge of €45.45 (not including VAT), a standard bespoke charge of €12.78 (not including VAT) for each 15 minutes of practical work begun as well as a minimum mileage charge of €40.90 (net).

However, the applications were turned down on policy grounds. The rates regulation provisions, especially those protecting the consumer from anti-competitive pricing, only allow bespoke charges by way of exception, when it is not possible to make a standard determination of the relevant activities. Standard charges alone can prevent customers from being surprised by a hefty bill for the installation of a telephone line. Yet there was no apparent reason why a departure from a standard charge would have been justified by way of exception in the case of first time installation.

Ex Post Review of DTAG's Prices for "Closed User Group" Voice Communication Services
DTAG offers voice communication services to "closed" – its designation – user groups. This offer includes so-called Telekom Designed Networks (TDNs), Telekom Virtual Private Networks (T-VPNs) and *BestPrice* tariff variants. The common denominator of all three is that they do not, in DTAG's view, constitute an offer to the public.

The regulatory questions arising from these offers about the existence and extent of ex ante approval obligations have already been the subject of a Chamber procedure which has now gone to the courts (Determination BK2b 01/010 of 15 October 2001). In addition, the Chamber in 2002 received complaints of anti-competitive practices with regard to these DTAG offers. As a result, the Chamber in October 2002 launched two probes into DTAG's agreed prices for voice communication services.

As a precaution, to prevent detriment to competition before final clarification of the view put forward by RegTP in the Determination, the prices were treated in the two cases as section 25(2) prices.

Ruling Chamber 2 pointed out that if the contrary view set out in Determination BK2b 01/010 prevailed, this ex post control was not a substitute for approval procedures for the prices of third party communication with the closed user group.

Outcomes
Applying the same substantive criteria as in the ex ante approval procedure, the probe showed that in both contractual set ups, individual charges listed in the main points contained discounts as referred to in section 24(2) para 2 of the TKG prejudicing the competitive opportunities of other companies in a telecoms market. DTAG was therefore requested to adjust these charges forthwith, not later than 31 March 2003, to cover costs in the given tariff structures. In the event of DTAG failing to comply, the charges would be rendered invalid as from 1 April 2003 and the execution of the two contracts prohibited from the same date (sections 30(5) and 29 of the TKG). Also, in both cases execution of the contract was prohibited in respect of individual locations/subscribers cited in the main points, as provided for by section 29(2) second sentence of the TKG.

Ruling Chamber 3
Special Control of Anti-Competitive Practices in the Telecoms Market, Ex Post Telecoms Regulation;Special Control Cases
Ruling Chamber 3's activities in 2002 were basically concerned with two important cases, both addressing similar aspects of wholesale products DTAG makes available to its competitors. The subject of both cases was not pricing (the remit of other Ruling Chambers), but the other terms and conditions of provisioning.

Transmission Paths
The determinations of 31 May 2002 and 4 July 2002 called on DTAG to make fundamental changes to the terms on which it provides transmission paths to its competitors. The main aim of the determination was to improve the competitors' position in the retail segment of the transmission path market. Triggering the case was DTAG's dismal track record in 2000 and 2001 – which it does not deny – for leased line delivery.

DTAG currently offers no wholesale products for end customers that would allow alternative providers to compete with it on an equal footing. Facilities in its Carrier Leased Line Service Level Agreement are not suitable for this segment of the market. On the contrary, the contractual terms are drawn up in such a way as to make the predominant use of lines use by the competitors to build their own backbone network. However, in order to serve their own customers, competitors currently have to use DTAG's general terms and conditions products, which DTAG offers its own customers as well. DTAG provides these as standard leased lines (SFV) and leased lines for data communications (DDV). As a result, alternative providers are already disadvantaged by their contractual terms, more than an environment of fair competition allows, as they have no margin at all. This is compounded by the fact of DTAG in 2000 and 2001 having systematically supplied its own end customers before the competitors. Also, the lack of guaranteed delivery times in the general terms and conditions for transmission paths meant that the competitors had no kind of certainty at all about when the input would actually be supplied. Consequently, the competitors could not give their end customers any guarantees. This was the situation that the determinations aimed to remedy.

DTAG was mandated by RegTP to amend its Carrier Leased Lines Service Level Agreement to include services in which at least one end of the line terminated at the end user's. The aim was to achieve a marked improvement in the competitors' position in the retail market. The Chamber also set binding delivery periods for these transmission paths. DTAG was also required to pay penalties when it failed through its own fault to meet the deadlines for providing all transmission paths competitors bought as wholesale products, ie the new offerings to be included in the agreement and those already part of

it (such transmission paths as serve competitors' network build, eg to link up colocation rooms).

Local Loop
An essentially similar problem was at the heart of the second case. Also as regards access to the last mile, the local loop, DTAG often failed in 2000 and 2001 to supply in timely manner. Proceedings concerning the terms on which competitors could rent loops from DTAG comprised in all some 20 points in DTAG's contracts. Yet the two most urgent issues were the need to impose penalties for failure to keep to schedule and the need for a statement of ordering intentions.

Delivery times for the provision of colocation rooms for local loops and for the loops themselves had already been set in 2000 by the Chamber and included by DTAG in its contracts. Yet subsequent compliance was seldom. In its Determinations of 1 July 2002 and 10 July 2002 the Chamber ruled that penalties would be payable when deadlines were missed for reasons not beyond DTAG's control. A statement of ordering intentions representing a trade-off between none at all, as the competitors called for, and the complex system that DTAG had called for in the proceedings, was also mandated. The mandated arrangement gives DTAG the information it needs on the volumes competitors are likely to order without requirements having to be so detailed as to seriously compromise competitors' planning.

Various other issues besides these two main ones were addressed by the Chamber. These include access by the competitors to information in specific databases via an electronic interface, the use of switching systems in colocation rooms and access to fibre loops.

In both main cases – transmission paths and local loops – DTAG has sought to have immediate enforcement suspended. Both cases are now before Münster higher administrative court. A decision is expected in 2003.

Ruling Chamber 4
Special Network Access, including Interconnection
Section 39 Rates Regulation
In 2002, Ruling Chamber 4 had to decide on more than 23 price proposals for special network access. Proceedings attended by more than 20 competing companies were again – as in previous years – not uncommon. In the year under review, a total of 288 requests to attend cases were granted. Major proceedings were accordingly complex. Below is an overview of the most important rulings in 2002.

Line Sharing
A ruling was made on 15 March 2002 (BK 4a-02-001/E of 7 January 2002) approving line sharing prices. For line sharing, the loop is divided into a high frequency and a lower frequency portion. Thus DTAG can continue to use the lower portion for voice transmission, while a competitor uses the high frequency portion for data transmission (typically for high speed Internet access using DSL).

The ruling specified that competitors pay DTAG a monthly rental of €4.77 for access to the high frequency portion of the loop. DTAG had originally wanted €14.65. Two questions were crucial in determining the charge: first, whether or not it was reasonable to allow DTAG to include copper pair costs in the rental, and second, the extent to which

additional specific costs (primarily for installing the splitter at the exchange, additional fault repair, billing and relevant common costs) reflected efficient operator costs.

In its ruling of 15 March 2002, RegTP concluded that the costs of the copper pair should not be taken into account in fixing the line sharing price, essentially for two reasons.

No extra costs were incurred for the line sharing product. It was clear that the costs of the copper line were not increased by shared use. Added costs were limited to the cost of installing the splitter at the exchange and the cost of special line sharing products and services including higher fault repair charges. The costs of the line were fully recovered by the connection and call charges paid by the consumer and therefore could not be included a second time. Finally, DTAG itself had not included any pro rata line costs in calculating its T-DSL prices.

Also approved besides the monthly rental were the one-off provisioning and termination charges DTAG receives from competing providers. These, however, were amended by a ruling of 8 July 2002 and brought into line with the one-off charges for access to the local loop approved in April 2002 by Determination BK 4a-02-004/E of 31 January 2002 (see below). The price for connection, without any extra work being necessary at the customer's premises, for instance, was €74.91 after the adjustment. A termination charge of €72.18 was approved. The Chamber had reserved the right to change the one-off line sharing charges approved in the first instance by the Determination issued on 15 March 2002 to match those for access to the local loop, scheduled for approval shortly afterwards, as individual work items were identical. The line sharing charges have been approved until 30 June 2003.

One-Off Provisioning and Termination Charges for Access to the Local Loop
In Determination BK 4a-02-004/E of 11 April 2002 RegTP approved new provisioning and termination charges for access to DTAG's loops. These are non-recurrent charges, payable by competitors on top of the monthly rental, for leasing or returning loops to DTAG. Decisions were taken on the one-off charges for 17 bundled and unbundled access variants in all. A provisioning charge of €70.56 was approved for the most common variant, simple transfer of a two-wire copper pair without work at the end customer's. In its filing of 31 January 2002 DTAG had wanted €84.47 – less than the prevailing price of €92.59. The charges for the other two-wire copper pair variants (transfer with work at the end customer's, new lines) were reduced by between 6 percent and 22 percent over the previously approved charges and by between 4 percent and 13 percent compared with DTAG's price proposals.

The termination charges for most access variants likewise fell below previous levels. Competitors are now required to pay only €34.94 instead of €38.06 for the termination of an ordinary two-wire copper pair when the customer switches operator or returns to DTAG. When the customer does not switch operator at the same time, the termination charge falls from €59.24 to €50.71. These prices were arrived at on the basis of a rigorous, detailed cost analysis by the Chamber and the specialist department and with reference to a special report.

The results of the cost analysis did not justify the deeper cuts many of the competitors had called for. Any added efficiency gains from the introduction of an electronic interface for ordering loops that the competitors wanted and of a so-called MDF carousel illustrating how work was to progress when customers switched provider could not be taken into account since the consultations between the network operators concerned

had not been completed at the time of the ruling in mid-April. Moreover, these were, in the Chamber's view, new and different services that would first have to be contractually agreed, particularly as they would continue to be provided in the old form – without an electronic interface and without an MDF carousel – as the competitors wished. The one-off provisioning and termination charges were approved until the end of June 2003 at the latest. A fresh decision on the level of current charges for access to the local loop will be taken not later than 31 March 2003.

Prices for Interconnection Links and Associated Services
Subject to approval under section 39 of the TKG are, besides the conveyance charges, the rates for interconnection links (ICAs) offered by DTAG in different variants – Customer Sited and Physical Colocation for instance, both with subvariants –, and the configuration measures required for interconnection. In its Determination of 31 October 2002 (BK4d-02-026/E 29 August 2002) RegTP approved the rates for interconnection links and configuration measures as from 1 November 2002. The approved annual charges and one-off provisioning charges for DTAG's so-called intra-building link and its rates for configuration measures were 40 percent less than what it had proposed. Yet some of the rates approved were higher than those approved in the previous period. This was not due to higher DTAG prices, however, but to a more accurate breakdown by origin of various cost components, to more detailed DTAG cost statements and to higher hourly rates than those applicable in the previous procedure.

The one-off provisioning charges and monthly rentals for interconnection links in the Physical Colocation and Customer Sited variants and for additional bespoke services have been approved until 31 March 2004. The rates for configuration measures have been approved until 30 September 2003 only. This is to enable a thorough investigation of the configuration measures with a view to achieving greater efficiency and greater use of synergies and subsequent adjustment of the rates, as many of the competitors had called for in the proceedings.

Approval of the Rates for Optional and Additional Interconnect Services
In its Determination of 29 November 2002 (BK4a-02-033/E 24 September 2002) the Chamber approved the rates for the so-called optional and additional services DTAG provides to its interconnect partners, with effect from 1 December 2002. Under the product name Optional and Additional Services (*O- und Z-Leistungen*), DTAG offers its interconnect partners, apart from the basic origination and termination services, calls between various fixed and/or mobile networks via DTAG's network (transit services), origination and/or termination of calls to service numbers (0190 numbers), shared cost services (0180 numbers), freephone numbers (0800 numbers), public recorded information services, online services, vote call numbers (0137 numbers) and the like.

Whereas approval of the rates for the basic interconnect services *Telekom-B.1* (Termination in Deutsche Telekom's network) and *Telekom-B.2* (Origination from Deutsche Telekom's network) was limited in the last decision of 12 October 2001 to 30 November 2003, approval of the rates for the optional and additional services was granted until 30 November 2002 only, the reason being that approval had to be based in the first instance on forecast traffic volumes and routing on account of the conversion to Element Based Charging, or EBC. Thus the rates had to be approved anew on 1 December 2002. Only slight changes were made. The reason for the differences is mainly discrepancies between actual call volumes and routing from those forecast, and the termination rates DTAG pays third operators. Discussed at length during the ten-week approval procedure were prices for the *Telekom-O.12* service (Calls originating in

Deutsche Telekom's national telephone network to the online service connected to the interconnect partner's telephone network), especially the 20 percent extra DTAG was seeking to charge for the added network dimensioning that the online traffic would, it believed, necessitate, the approval of a component for a query at the ported numbers server (RNPS query) in the O.2 transit service, and of a component for the so-called IN query in value added services and lastly, the question of dominance in the *Telekom-O.3* market (Calls via Deutsche Telekom's telephone network to national mobile networks).

The Determination of 29 November 2002 set out that the extra online charge DTAG had incorporated in its price proposal could not be recognised, if only because its cost statements were insufficiently detailed. Nor could prices be approved on a comparable markets basis, since the rates for the basic termination and origination services on which calculations for the *O.12* and *O.14* services were made already took account of the online traffic. The outcome, not approving any extra charge for the online traffic, was also borne out by international price comparisons with the UK and France, which assume – almost – identical costs for Internet and voice calls.

Not eligible for approval either were the components for ported number and IN queries. Here, too, DTAG had failed to submit sufficiently clear and comprehensible cost statements. A comparable markets approach was not possible. Yet competitors will not be able to rely on there not being extra charges in future for ported number and IN queries. This was explicitly pointed out in the Determination of 29 November 2002. As regards the *Telekom-O.3* service, the Determination still assumes dominance on the part of DTAG. This assumption is based on a wide-ranging market survey carried out by RegTP, requesting data from 33 companies including DTAG and sanctioned by the Federal Cartel Office. Approval runs until 30 November 2003.

Section 37 Interconnection
In 2002, Ruling Chamber 4 received a total of 25 requests from competing operators for an interconnection order as provided for by section 37 of the TKG. An order was issued in 18 cases. In seven cases the request for an order was withdrawn. In response to attendance requests, 253 invitations were issued to companies to attend the various proceedings.

Conversion to Element Based Charging
Following the introduction on 1 January 2002 of the Element Based Charging (EBC) scheme laid down in Determination BK4a-01-026/E 3 August 2001 for the billing of mutally provided conveyance services, the Chamber was required in the year under review to address a number of technical and operational issues of EBC interconnection since contractual arrangements with DTAG had not materialised. The main issues needing resolution were ordering and provisioning procedures for new areas of interconnect service, arrangements in the case of late provision of duly ordered areas of interconnect service ("as-if pricing"), and routing arrangements, most notably the technical implementation of automatic overflow routing.

Last year also saw proceedings that were attributable to consolidation in the German telecoms market. For instance, the issue at stake in one case was the legal right to interconnection versus a breach of civil law duties, that is to say from what time persistently late payment can negate entitlement. RegTP did issue an interconnect order in this case but made it contingent upon complete payment to DTAG of all outstanding

amounts within a reasonable period of time. This enabled the company concerned to secure further interconnection by paying promptly.

The Chamber also dealt with two cases in which DTAG wished to terminate the interconnection agreements on account of the companies' insolvency. This would have been the end of the road for the two companies. The Chamber therefore ordered interconnection for a limited period in light of the aim of the insolvency proceedings to draw up a recovery plan. Thus both companies were given enough time to negotiate with potential investors about how the business and/or network operations were to be carried on. Advance payment arrangements were included in the Determinations so as to protect DTAG from further bad debt losses.

Request for a Mobile Network Interconnection Order
With Ruling Chamber 4's Determination of 19 April 2002 (BK 4a-02-006/Z) RegTP rejected an application made on 8 February 2002 for a section 37 interconnection order with the D1 mobile network run by *T-Mobile Deutschland GmbH*. The company had sought to oblige *T-Mobile* to terminate calls from its own fixed network in *T-Mobile's* D1 network and also to feed calls originating in the D1 network to its fixed network. Ordering this origination service was designed to introduce carrier selection in the mobile networks, initially in the D1 network.

The request for the termination service in the D1 mobile network to be ordered had to be turned down because the Chamber concluded, after investigating extensively in the ten-week proceedings, that negotiations between the parties had not failed – failure of negotiations being the precondition for intervention. Nor could a section 37 order be issued for provision of the origination service to enable carrier selection in the D1 network. The company specifically did not want the service to include every call originating in the D1 network, but a "restricted" service that excluded calls from customers of service providers, from roaming customers and from prepaid users – thus also excluding them from carrier selection. The company wanted initially to receive calls from direct *T-Mobile* customers only; only these users were to be given a choice of carrier. *T-Mobile* was thus to give an undertaking to provide a regular, up to date listing of registered customers for the purpose of such filtering. Because this transmission of data was not in itself an interconnect service, the Chamber rejected the application on this point too. Issuing an order solely for the origination service as such was not an option, since the company explicitly did not want this and the Chamber, in reaching its decision, was required to heed the grounds for appeal as stated in section 9(3) of the Network Access Ordinance (NZV). Consequently, the Chamber did not need to address other legal issues of the introduction of carrier selection in the mobile networks – and in particular, the question of grandfathering and the mobile licences.

Call Origination Flat Rate for Narrowband Internet Access
In its Determination of 11 June 2002 the Chamber issued an order for the provision of a wholesale flat rate for narrowband Internet traffic. The order required DTAG to provide, on an unmetered basis, new interconnected entrants with Internet access for calls originating from its national telephone network. This was to take place over special interconnect links at 475 points of interconnection. A company operating an IP platform in Germany had made an application to this effect in mid-March 2002, after failing to sign an agreement with DTAG. Essentially, the ruling was made in light of the following:

- DTAG's general obligation to grant competing companies access to its network that is reflective of their requirements. In the past two years, individual IP platform

operators had repeatedly called for DTAG to introduce a call origination Internet access flat rate in conjunction with interconnection.

- The improved communication between and among users of public telecoms networks referred to in section 36 second sentence of the TKG. In RegTP's view, unmetered access to online services is far more conducive to achieving enhanced communication than a metered product. First, a flat rate means that capacity can be better utilised and troughs levelled off, and second, a flat rate encourages users to spend more time online and to make greater use of the communication and information facilities the Internet provides.

The call origination flat rate was also mandated because DTAG, as a dominant company within the meaning of section 35(2) first sentence of the TKG, must undertake to give competitors access to its telecoms network on the same terms as it applies to itself. A key factor here was that DTAG has been applying an internal online wholesale flat rate since early 2001.

Traffic was ordered to be handed over at 475 main connection points, this being the lower network level for interconnection purposes. The same had also to apply to unmetered access for interconnect partners as applies to all other conveyance services. However, the Chamber viewed DTAG's proposed flat rate as inhibiting competition. Competitors would have had to interconnect with DTAG's network at more than 1,600 points in order to be eligible for the flat rate throughout the country. The high investments competing companies would have needed to make to qualify would have made market entry more or less impossible economically, or at the very least, significantly more difficult. The creation of fair, sustained competition in the market for wholesale products for online services and hence indirectly in the online services market as well would have been unduly hindered before it had even got off the ground.

The ruling of 11 June 2002 is subject to revocation in the event that DTAG itself no longer uses unmetered billing, wholly or in part, for calls to its Internet platform, or that six months after provision of the service by DTAG there is no general retail flat rate based on this wholesale product for access to online services in the network of the company requesting interconnection. That said, the 11 June ruling has not yet been implemented. Cologne administrative court ordered suspensory effect on 10 October 2002 in response to DTAG's appeal, and at the time of publication Münster higher administrative court had not yet ruled on RegTP's protest.

Ruling Chamber 5
Postal Rates Regulation and Special Control of Anti-Competitive Practices in the Postal Market

Under ex ante rates regulation, RegTP in 2002 had to decide on a number of DPAG price proposals. In the past, RegTP had had to issue numerous orders under section 31 of the Postal Act for access to PO box facilities under section 29(1) of the Act. Thus DPAG in late 2001 submitted its price proposals for this access. Drawing on its experience and the input from Cologne administrative court in respect of these order proceedings, the Chamber was able to define a procedure for access to PO box facilities that accommodated both DPAG's interests and the competitors' needs. The Chamber concluded that the prices should be split into a fixed component and a variable component. A charge – which has to reflect efficient operator costs – of €0.58 per deposit process plus €0.04 per piece was therefore set for the period 1 April 2002 to 30 June 2004.

Ruling Chamber 5, on DPAG's application, also had to determine the charges for access to change of address information provided under section 29(2) of the Postal Act using DPAG's new black box procedure. This provides for the transmission of relocation addresses in encrypted form. In the past, RegTP had repeatedly had to issue section 31 orders for change of address information, and had stipulated variants without encrypted data transmission. With a view to the replacement of these New for Old and change of address data transmission services by the new black box procedure, the charges were set under the proviso that the benefits of the new procedure as put forward by DPAG really were delivered under normal operating conditions. Here, too, the rates were to be split into a fixed and a variable component. Again, the charges had to reflect efficient operator costs, in line with sections 19ff of the Postal Act. A one-off installation charge of €59.64 and a charge of €0.16 per matching address were agreed for the period 1 May 2002 to 30 June 2004.

Lastly, a price cap ruling was required on the prices proposed by DPAG for a basket of postal services. Compliance was examined with the baskets defined in the previous proceedings, which had set benchmarks for the price cap regulation of letters not more than 1,000g in weight and addressed catalogues not more than 100g in weight (see Ruling Chamber 1's Determination of 26 July 2002 reported on earlier), the prescribed price cuts and side constraints. DPAG had complied with these requirements, so that the rates it had filed for were approved within the prescribed period of two weeks for the period 1 January 2003 to 31 December 2003. Approval was contingent on monopoly and competitive products not being grouped together for any price cuts.

Preliminary investigations had also been conducted in 2001 on a section 32 abuse case. This concerned DPAG's practice of returning so-called found letters. Found letters are letters delivered in the first instance by competitors but which then find their way into DPAG's system, having, say, been wrongly delivered and put into DPAG's letter boxes. How these letters should be dealt with had been a matter of dispute between DPAG and its competitors. DPAG and its competitors finally agreed on a different procedure, initially by way of a trial, in the preliminary proceedings. DPAG was to collect and promptly hand over to the provider identified on the item as the deliverer all such found letters; handover was to take place in mail centres at agreed times. An appraisal of the procedure in 2002 showed that it can, and should, be kept up. Despite a few teething troubles which have now been resolved, the procedure has proved a success.

A further complaint about the restrictions written into DPAG's liability rules for parcel deliveries was brought to a conclusion. After discussing the matter, DPAG was willing to drop the restrictions.

In another case, complaints were received toward the end of the year from competitors claiming that DPAG had unlawfully registered its datestamp with the German Patent and Trade Mark Office (DPMA) as a trade mark, subsequently prohibiting its use by means of a declaration of forbearance under threat of penalty. DPAG was initially persuaded, notwithstanding the DPMA's jurisdiction, to extend the changeover period for the competitors. Moreover, DPAG promised to come up with a proposal by January 2003 that would allow competitors to use a different design circular datestamp in order to resolve the disputed matter of circular datestamps.

Preliminary investigations following a complaint about DPAG's prices for its philately products were discontinued in 2002. The prices were not subject to regulatory approval, nor did they give cause for complaint. What still needs to be clarified, however, is

whether or not uncancelled postage stamps can be given as freebies under postal regulations. In part, the complaint also touched on the area of section 43(1) in conjunction with section 54 of the Postal Act, which grants DPAG the exclusive right to use postage stamps bearing the inscription "Deutschland" for the period of the statutory exclusive licence. As DPAG cited these provisions in asserting its rights, the complaint was regarded as unfounded.

A review of DPAG's relocation form was also completed in 2002. This had been on the agenda for some time. It had initially been put back until the Postal Data Protection Ordinance (PDSV), which also deals with relocation addresses, was signed into law. After the Ordinance became effective DPAG submitted a new relocation form, revised in form and content, accommodating the requirements of both the Ordinance and the Postal Act.

Finally, the Chamber had to decide on the status of DPAG's pick up and delivery service "*Hin + Weg*". Specifically it had to identify whether or not prices were subject to approval. DPAG was advised that its prices for this product in the licensed area of the market below 1,000g required regulatory approval under section 19ff of the Postal Act. It was requested to submit a price proposal accordingly. The part of the market between 1,000g and 2kg is subject only to section 25 ex post regulation, if necessary.

Approving rates for the service of documents in accordance with the provisions of the relevant rules of procedure and legislation on the rules of service in administrative procedure is a special sort of regulation. In line with section 34 of the Postal Act, the criteria set out in section 20(1) and (2) of the Postal Act are applied to all providers of such qualified services. Otherwise, the arrangements concern dominant companies only. The extension of the ruling has not caused any problems so far in administration and practical application. The level of the rates typically applied for and mostly approved averages around €4.00, excluding VAT. DPAG, by contrast, is asking for €5.60 as from 2003. A number of mainly regional licence holders' rates have been approved, but also those of national licence holders. Altogether in 2002, rates for service of documents were approved in 62 cases.

Ruling Chamber Proceedings
2002

Chamber	Rates regulation		Control of anti-competitive practices		Licensing		Frequency award	Interconnection orders		Others		Total	Invitations to attend
	T	P	T	P	T	P		T	P*)	T	P	T and P	T and P
1	-	1	-	-	-	-	1	-	-	-	-	2	3
2	32	-	-	-	-	-	-	-	-	0	-	32	188
3	12	-	20	-	-	-	-	-	-	-	-	32	93
4	23	-	-	-	-	-	-	25	-	-	-	48	541**)
5	-	103	-	4	-	-	-	-	7	-	-	114	4
Total	67	104	20	4	-	-	1	25	7	-	-	228	829

*) Access to PO box facilities, change of address data and partial services
**) 288 invitations to attend rates proceedings
253 invitations to attend interconnection proceedings

The Regulatory Authority

Basis and Scope of Activities

RegTP was set up on 1 January 1998 as a structurally separate and independent higher federal authority within the scope of business of the Federal Economics and Labour Ministry, with its seat in Bonn.

RegTP's remit includes, most notably, keeping a check on the dominant position of the former monopoly operators DTAG and DPAG, creating a level playing field to help new entrants in the telecoms and postal markets and taking the telecoms and postal markets forward in line with the provisions of the TKG and the Postal Act.

It also has tasks ensuing from the various laws relevant to its remit, such as the Radio Equipment and Telecommunications Terminal Equipment Act, the Amateur Radio Act, the Electromagnetic Compatibility Act, the Electronic Signatures Act and the associated ordinances.

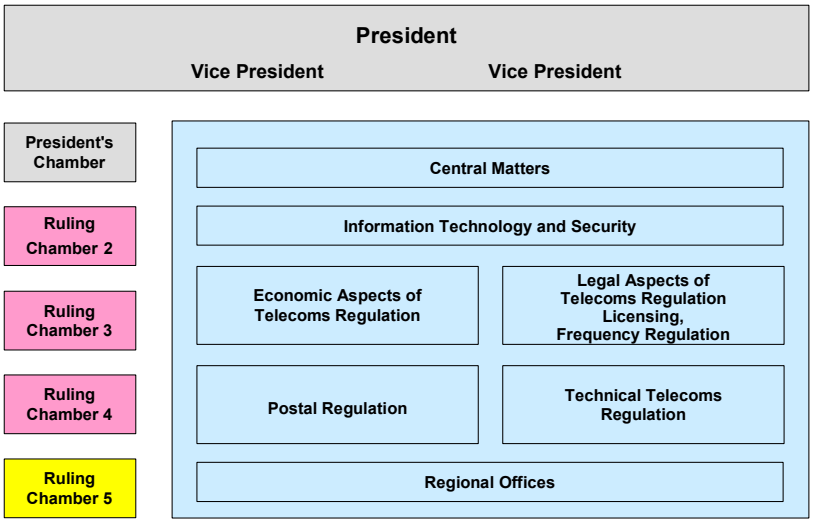
RegTP sees itself as champion of the consumer. Besides regulation of the telecoms and postal markets it has a range of other activities, including the following:

providing input on standardisation issues,
managing spectrum and numbering resources,
investigating and resolving radio interference,
monitoring trends in the market, and
advising consumers on new regulations and their implications in the young telecoms and postal markets.

Organisation

RegTP's organisational structure is streamlined and task-oriented, enabling it to address its many-layered tasks efficiently.

RegTP's Organisational Structure



Key areas in telecoms in which RegTP issues determinations are universal service, rate approval, and open network provision and interconnection. In the postal sector, RegTP is mainly concerned with the public service commitment, inviting tenders and approving rates. RegTP's main departments address central administrative and specialist matters such as the economic and legal aspects of regulating and licensing telecoms and postal services, and technical issues of spectrum management, standardisation and numbering. To better integrate RegTP's executive tasks, a separate department oversees and coordinates work at the Regional Offices, which act as local points of contact for the consumer and the industry. The Regional Offices provide advice on, for instance, the provisions of the TKG, licensing requirements, frequency assignment and EMC regulations. They issue radio operator licences and transmitter site certificates, hold examinations for flight telephony operator and radio amateur licences, and assign frequencies for mobile, aeronautical, and CB radio equipment. They also have state of the art fixed and mobile facilities for round the clock monitoring and resolution of interference and other irregularities. The regional staff also monitor compliance with licence terms and conditions.

Human Resources Management
Proactive HR management, which puts the right people in the right place and thus enhances motivation, is a priority at RegTP. Resources thus tapped are used to perform tasks in a cost-effective and efficient manner. RegTP's highly interdisciplinary field of activity requires experts from a wide range of backgrounds such as law, economics, engineering, mathematics, information technology, and administration. RegTP has around 2,260 members of staff whose posts are taken from four civil service grades (senior, upper, medium, basic), also applicable to the 230 or so non-civil servants.

In 2002, RegTP again provided places for trainees. In all, 16 young office communication trainees took advantage of this opportunity.

Analysis of staff according to grades:
Senior grade (around 200 members, including some 65 graduate engineers)
These posts are filled by legal experts and economics and business economics graduates with various specialisations. Many are communications engineers. A small number are graduates in disciplines specific to their particular field of work.

Upper grade (around 800 members, including some 670 engineering and technical specialists)
Most of the non-technical staff are administrative and business economics graduates from higher education colleges. Most of the technical staff are communications engineers.

Medium grade (around 1,165 members, including some 515 technical staff)
By far the majority of non-technical staff have completed civil service traineeships in administration. The technical staff have had vocational training as telecoms mechanics or communications technicians.

Basic grade (around 80 members, including 23 technical staff)
These staff, most of whom have completed apprenticeships, work in a variety of areas such as internal administration and messenger services.

Budget
RegTP's income and expenditure is budgeted for in Section 09, Chapter 0910 of the federal budget. For the most part, this Chapter is incorporated in flexible budget management. The tables below show RegTP's income and expenditure budget for 2002 and 2003, and performance for 2002:

Income:

Type of income	2002 target €'000	2002 performance €'000	2003 target €'000
Administrative income	120,822	–15,557	227,786
including: Fees and contributions payable under the TKG	92,600	–12,760	161,000
Other fees and contributions	27,400	–3,664	66,000
Other administrative income	822	867	786
Other income	46	20	25
Total income	120,868	–15,537	227,811

The minus figures in the administrative income column are due to the repayment of fees and contributions ordered by Cologne administrative court and the Federal Administrative Court in cases concerning the EMC Contributions Ordinance, the Telecommunications Number Fee Ordinance and the Telecommunications Licence Fee Ordinance.

Expenditure:

Type of expenditure	2002 target €'000	2002 performance €'000	2002 performance v target	2003 target €'000
Staff costs	86,262	89,543	103.8%	86,318
General administrative expenditure and appropriations	35,922	29,106	81.0%	35,493
Investments	17,763	22,490	126.6%	18,050
Total expenditure	139,947	141,139	100.9%	139,861

Additional expenditure as a result of using remaining expenditure from the financial year 2001 under more flexible rules.

Administrative Fines Proceedings
Enforcing the law, in particular in matters of spectrum management and technical regulation, RegTP in 2002 opened investigations in 1,600 cases on suspicion of an administrative offence. Some 1,500 cases were settled. Fines were imposed on 600 occasions and cautions given on 450 others. Fines and cautions were assessed at around €310,000.

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