AUTORITÉ DE RÉGULATION DES TÉLÉCOMMUNICATIONS

RÉPUBLIQUE FRANÇAISE

Annual Report

2001

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ART Autorité de Régulation des Télécommunications
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Contents

Calendar of the year's highlights

January

1 January – France has 29.7 million mobile telephony customers, a penetration rate of 49.4%.

3 January – Mr Michel Feneyrol, a senior telecoms engineer, and Mr Jacques Douffiagues, a former government minister, are appointed for six-year terms as members of ART. They replace Mr Yvon Le Bars and Mr Roger Chinaud, whose terms of office expire.

25 January – Jean-Michel Hubert, chairman of ART, appoints Jean Marimbert to the post of director-general to replace Pierre-Alain Jeanneney.

31 January – The deadline for submitting applications for third-generation mobile telephony licences expires. Two applications are submitted - by France Télécom Mobiles and SFR - for the four licences available. ART announces that a second call for applications will be held at a later date.

February

6 February – ART publishes a study on the relationship between telecoms operators and consumers.

8 February – ART asks France Télécom to modify its reference offer allowing other operators to access its local loop. ART proposed that FT should make additional efforts to create new lines and review a number of tariffs.

20 February – ART publishes the findings of a survey carried out in 2000 into the quality of service offered by mobile telephony networks in mainland France.

March

2 March – ART announces its decision on a request for an out-of-court settlement lodged by France Télécom in connection with its new reference offer on allowing other operators to access its local loop.

– ART announces its decision on a dispute between Liberty Surf Télécom and France Télécom regarding the tariff structure for France Télécom's ADSL Connect ATM offering. This offering should give France Télécom's rivals access to the support network for ADSL services.

20 March – The European Commission adopts a communication on the conditions for developing UMTS. The Commission comes out in favour of sharing third-generation mobile network infrastructure.

April

4 April – The European Council of Ministers adopts three political agreements on proposals for directives concerning
- the common regulatory framework for elec-

tronic communication networks and services
- network and services licences
- universal service and users' rights.

– ART takes two decisions on France Télécom's reference offer for local loop unbundling. ART warns France Télécom to implement its decision of 8 February 2001 and it compels the operator to modify new items in its reference offer.

9 April – ART launches a call for comments regarding the frequency resources for professional digital networks for private or shared used in the upper UHF band in the Paris metropolitan area.

May

18 May – ART adopts a decision on a dispute between France Télécom and 9 Télécom Réseau regarding third-party billing of shared-revenue services. This decision compels France Télécom to provide those operators that do not have their own local loop with a third-party billing service in return for 1.5% of billed sales, and to conclude a contract with 9 Télécom Réseau to this end.

23 May – ART launches a call for comments on the conditions for extending carrier selection and preselection to local calls, i.e. calls within local sorting zones.

– ART and the telecommunications minister launch a public consultation on the principles and conditions governing the implementation of the ENUM protocol project. This is the first truly convergent project between the Internet and the telecommunications sphere. The protocol consists of converting e.164 telephone numbers into Internet domain names.

31 May – ART publishes the results of the procedure to select operators for granting UMTS licences: SFR and France Télécom Mobiles are selected. On this occasion, ART confirms its proposal to organise another call for applications and suggests reconsidering the licence payment schedule.

June

France Télécom Mobiles SA becomes Orange SA

7 June – ART publishes guidelines on interconnection tariffs for mobile operators with 'significant market power' (SMP) on the national interconnection market (Orange SA and SFR), with the aim of achieving lower tariffs for fixed-to-mobile calls.

14 June – ART publishes the findings of its annual statistical survey of the national telecommunications services market for 1999. At the same time it launches the survey for 2000.

19 June – ART announces its decision on the new tariffs offered by France Télécom for Internet service providers so that they can provide Internet access using ADSL technology.

22 June – Local numbering for fixed telephony switches from six digits to 10 digits in Guadeloupe, French Guiana and Martinique. The switch had already been made on Réunion island. Numbering for mobile telephony is also changed throughout the overseas départements.

– France Télécom lodges an appeal with the Paris Court of Appeals on the legality of ART's decision of 18 May settling a dispute regarding the management of shared-revenue services.

July

5 July – Following consultation leading to an agreement with the ministry of defence, ART stipulates the conditions for using Bluetooth and HiperLAN equipment.

6 July – ART publishes the findings of an initial

survey assessing the geographical coverage of the mobile telephony networks. Out of the 40 cantons (districts) tested, average coverage was 80%.

16 July – ART publishes the results of the public consultation on the ENUM project.

17 July – A law on social, educational and cultural provisions is adopted.

- Article 26 updates the list of freely established installations, defined in Article L.33-3 of the Post and Telecommunications Code, to include those radioelectric equipment (scramblers) that can be used to render mobile telephones inoperable in theatres and cinemas.
- Article 19 amends Article L.1511-6 of the Local Authority General Code to facilitate the intervention of those authorities in the telecommunications sector.
- Article 20 adds a first paragraph on building owners to Article 1 of the law of 2 July 1966 on the installation of receiving antennas.

18 July – ART defines the conditions and timetable for selecting the carrier for local calls within local sorting zones. In so doing, ART paves the way for the total opening to competition of the market for calls made within a given département.

25 July – The government transposes several directives on telecommunications via an edict amending the Post and Telecommunications Code.

26 July – Pursuant to an action brought by ART on 4 February 2000 regarding a customised package offered to Renault by France Télécom, the competition authority published its decision to fine the operator some ¤6 million for abusing its dominant position.

August

2 August – ART publishes a recommendation on the provision by France Télécom of leased lines allowing third-party operators to link their points of presence (POP) to their customers' sites.

17 August – The Paris Court of Appeals refuses the application for a deferment lodged by France Télécom on 3 August concerning the application of ART's decision of 18 May 2001 on opening up shared-revenue services to competition.

September

1 September – In accordance with ART's request, France Télécom launches a Internet flat-rate interconnection service allowing other operators to pay for interconnection according to the capacity used, independently of the number of minutes carried.

26 September – ART's decision of 18 July 2001 setting out the conditions and timetable for introdicing local-call carrier selection is approved by the telecommunications minister.

October

16 October– The government establishes new financial provisions whereby operator holding a UMTS licence pay an initial fixed fee of ¤619 million and subsequently a variable fee based on turnover. The licence period is extended from 15 to 20 years.

November

7 November – ART starts three surveys on the status of competition on three markets: Internet collection, high-speed optical fibre infrastructure and interconnection.

– ART adopts a decision on a dispute between Free Télécom (an ISP) and France Télécom. The decision allows Free Télécom to set its own "per-minute" Internet access rates.

16 November – With regard to fixed-to-mobile phone calls, ART announces a drop of some 40% over three years in the average price of call termination charges, i.e. the fee paid by the fixed operator to the mobile operator for terminating its calls. This decision is applied to both SMP mobile operators active on the national interconnection market: Orange SA (formerly France Télécom Mobiles) and SFR. In addition, on 1 January 2003 ART will align call termination tariffs for incoming international calls on those for national calls.

– In connection with a dispute between Liberty Surf Télécom and France Télécom, ART confirms that Internet service providers are free to choose which ADSL modem they can distribute to their customers.

21 November – ART adopts a decision leading to the postponement of the date for eliminating the old numbering formats for shared-cost and shared-revenue services. The new deadline is set at 4 February 2003.

30 November – The government sets the variable part of the fee applicable to operators holding a UMTS licence at 1%.

– ART approves France Télécom's standard interconnection offering for 2002.

– ART submits to the telecommunications minister the planned assessments of the cost of universal service and the contributions by the operators for 2002.

December

6 December – In anticipation of the application of Article 26 of the Act of 17 July 2001, ART launches a call for comments on the use in France of equipment making it possible to prevent the operation of mobile telephones (via scramblers) in theatres and cinemas.

10 December – ART announces its analysis on the technical methods for sharing infrastructure compatible with the conditions for issuing UMTS licences.

12 December – ART launches a public consultation on the provision of telecommunication services using frequencies not specifically assigned to their user in the 2.4 GHz and 5 GHz bands. These bands are currently reserved for radio local area networks (RLANs).

– In accordance with the European Commission and the Council of Ministers, the European Parliament adopts four legislative resolutions with a view to adopting four directives on:
- a common regulatory framework for electronic communication networks and services;
- access to, and interconnection of, electronic communications networks and associated facilities (Access Directive);
- authorisations for electronic communication networks and services;
- universal service and on the rights of users with respect to electronic communication networks and services.

It also adopts a resolution on the 'spectrum' decision regarding radio frequencies. Once officially adopted by the Council and published in the OJEC, these new directives must be transposed into national legislation within 15 months.

13 December – ART publishes the findings of a second survey on the coverage of mobile telephony networks in 60 districts. Combined with the findings of the first survey carried out in spring, they show average coverage of 83% in the 100 districts tested.

14 December – ART submits to the telecommunications minister its proposal on methods and conditions for awarding those UMTS

licences remaining to be issued following the first call for applications. This decision takes account of the arrangements announced by the government relating to fees and duration of licences. According to the timetable, applications must be submitted by 16 May 2002 and ART is to publish its report and justified selection by the following 30 September at the latest.

– A decision by ART supplements the decision of 25 July 2001 establishing the list of SMP operators on a telecommunications market.

20 December – In an action brought by Télé 2 and Cegetel, the competition authority orders a halt to the marketing by France Télécom of four flat-rate offers for local calls, in accordance with the opinion issued by ART.

21 December– ART announces its decision on a dispute between UPC France and France Télécom regarding the interconnection tariffs of UPC France for incoming and outgoing calls on its network, and regarding the conditions for implementing the portability of geographical numbers.

29 December – The call for applications for the two remaining UMTS licences is published by the telecommunications minister.

31 December – Competition is extended to include local calls, which are now open to carrier selection and preselection. Subscriber can now select their telephone operator for calls within a given département, as had already been the case since 1 January 1998 for long-distance and international calls and since 1 November 2000 for fixed-to-mobile calls.

January 2002

9 January – ART fines France Télécom ¤5 million for failing to implement a decision taken in November 2000 on a dispute between France Télécom and Sonera France regarding Sonera France's access to France Télécom's network for the provision of a directory enquiry service.

Opinions and decisions issued by ART in 2001

In 2001, ART issued a total of 1,229 opinions, recommendations and decisions (1,099 decisions, 129 opinions, 1 recommendation), compared with 458, 1,047, 1,159 and 1,365 opinions and decisions, respectively, in 1997, 1998, 1999 and 2000. The opinions and decisions can be categorised according to legal significance and area of application.

Guidelines and recommendations

ART adopted:
- 3 decisions on guidelines
- 1 recommendation on leased lines.

Opinions

ART issued 129 opinions, of which:
- 20 on draft legislation or regulations
- 72 on France Télécom's tariff decisions
- 7 issued to the competition authority
- 2 on operators' social tariffs
- 28 on conformity of radio equipment to basic requirements.

Decisions taken on the basis of ART's shared jurisdiction

ART took 75 decisions in the context of the powers shared with the telecommunications minister. They fell into the following three categories, in ascending order of legal significance:
- 63 pertaining to the examination of applications for licences for the establishment (and operation) of a public network or for the provision of a telephone service

- 5 decisions concerning proposals for evaluating the cost of the universal service
- 7 decisions submitted to the minister for approval.

Decisions taken on the basis of ART's own powers

ART took 1021 decisions that came under its powers:

- 15 decisions with general consequences, classified according to area of application
  - 4 on numbering
  - 4 on frequency resources
  - 3 on ART's organisation and operation
  - 3 on network authorisations
  - 1 on terminal equipment

- 1,006 individual decisions, classified according to area of application
  - 26 on interconnection and network access
  - 2 establishing the list of operators with significant power in the telecommunications market
  - 21 on dispute settlements
  - 178 on numbering resources
  - 2 on carrier selection
  - 398 on frequency resources
  - 3 on penalties
  - 334 on licences for independent networks (not including frequency allocation);
  - 5 on conformity approval and certification of terminal equipment
  - 37 on the acceptance of installers.

Part one

Review of general regulatory action in 2001

Chapter 1

Licences

I. Summary of licences

A. Licences issued at 31 December 2001: summary of applications assessed for valid licences

Licensed company	Type of licence	Remarks	Date of order	Published in Official Journal
21st Century	2		04/05/00	08/06/00
3U Telecom	1		09/06/00	11/07/00
9 Telecom Réseau	1	Under the name Netco	18/12/97	30/12/97
	1	Change of name from Netco	29/06/98	10/07/98
ADP Telecom (*)	1	Takeover of the Lex1 business of Aéroports de Paris	03/07/01	26/07/01
AFRIPA Telecom France	1	Satellite	10/03/99	08/04/99
Altitude	1	Wireless local loop 2 regions	04/08/00	03/09/00
Atos Multimédia	3		26/05/99	07/07/99
Atout	LLU 2	Exp unbundling - revoked on 15/01/2001	08/11/00	28/11/00
	LLU 2	Extended to 15/06/01	29/12/00	12/01/01
	LLU 2	Extended to 31/12/01	15/06/01	29/06/01
AUCS Communications Service VOF	1		07/12/99	29/12/99
Belgacom France	1	LEX6 under the name Belgacom Teleport	07/02/97	06/03/97
	1	Revoking of LEX6 - full licence	29/04/98	29/05/98
	1	Change of name from Belgacom Teleport	20/10/98	28/10/98
	1	Geographical extension	18/08/99	10/09/99
	1	Change to WLL in 7 regions (1st call)	04/08/00	03/09/00
	1	Change to WLL in 2 regions (2nd call)	19/01/01	20/02/01

Bouygues Télécom	mobiles	DCS F3	08/12/94	04/01/95
	mobiles	Amendment to DCS F3 licence	17/11/98	18/12/98
	mobiles	Amended	17/08/00	13/09/00
	mobiles	Amendment incoming calls	13/09/00	11/10/00
	mobiles	Amended	22/12/00	03/01/01
Bouygues Télécom Caraïbes	mobiles	GSM DOM5	19/07/01	19/08/01
Broadband Optical Access France	2	Infrared network	15/06/01	11/07/01
Broadnet France SAS	1	Wireless local loop 14 regions (1st call)	04/09/00	03/09/00
	1	Change to WLL in 1 region (2nd call)	19/01/01	20/02/01
BT France	2	ALT5	06/10/97	24/10/97
	2	Extension to French overseas départements	22/11/99	19/12/99
Cable & Wireless	3		26/08/98	25/09/98
	1	L33-1 extension to 10 regions	22/12/99	18/01/00
	1	L33-1 extension to 21 regions	17/08/01	25/08/01
Carrier 1 France	1	6 regions	11/05/99	04/06/99
	1	18 regions	18/05/01	21/05/01
Cegetel (*)	2	ALT8 under the name Cegetel Entreprises	14/10/97	11/11/97
	1	ALT8 compliance	11/03/98	19/03/98
	1	Extension to French overseas départements under the name Cegetel Entreprises	02/12/99	18/01/00
	1	Change of name from Cegetel Entreprises to Cegetel	17/09/01	28/09/01
Cegetel La Réunion	1	Wireless local loop 1 o.s. département	04/08/00	03/09/00
Cignal Global Communications France	3	IP voice	28/07/99	24/08/99
COLT Télécommunications France	2	ALT3	12/12/96	17/12/96
	1	L34-1 extension	12/03/98	19/03/98
	1	Second extension	13/01/99	07/02/99
	1	ALT3 compliance-extension	02/12/99	21/12/99
	1	Correction following compliance	05/01/00	26/01/00
Completel SAS	1	(ex D2PC)	17/11/98	13/12/98
	1	Geographical extension	07/11/00	28/11/00
Danup	2	Internet service provider	20/10/99	16/11/99
DAUPHIN Télécom	mobiles	Under the name Saint-Martin Téléphone	19/10/98	17/11/98
	mobiles	Change of name from Saint-Martin Téléphone	10/03/99	02/04/99
	1	Complete amendment (including fixed)	10/02/00	11/03/00
DOLPHIN Telecom	1		30/03/00	10/05/00
Dynegy France Communications SARL	2	Under the name Titan Communications	29/07/99	26/08/99
	2	Change of name from Titan Communications to Iaxis France	29/08/00	07/09/00
	2	Change of name from Iaxis France	14/09/01	26/09/01
Easynet (*)	1		06/08/99	27/08/99
Energis (Switzerland) AG	1	Under the name Unisource Carrier Services	17/11/98	13/12/98
	1	Change of name from Unisource Carrier Services	17/05/00	26/05/00
Equant Télécommunications SA	1	L33 Paris metropolitan area and L34 metropolitan France	20/06/00	13/07/00

Estel	1		05/11/98	25/11/98
Est Vidéocommunications	OWC 2	"Online wireless carrier" trial Licence expires 15/08/03	18/07/01	15/08/01
Eutelsat SA	2	Satellite	16/08/01	18/08/01
Farland Services France	2		20/01/99	09/02/99
	2	Geographical extension	19/07/00	29/07/00
Fibernet SAS	2	14 regions	21/08/00	12/09/00
FirstMark Communications France (*)	1	Wireless local loop in metropolitan France	04/08/00	03/09/00
FLAG Atlantic France	2		04/05/00	07/06/00
France Caraïbe Mobiles (*)	mobiles	GSM DOM 2	14/06/96	16/07/96
	mobiles	Extension to Guyana	22/09/98	20/10/98
	mobiles	Amendment to GSM DOM2 licence	03/09/99	06/10/99
	mobiles	Amended	22/12/00	03/01/01
France CitéVision	2	Part of cable network	25/09/00	14/10/00
	2	Extension to 5 regions	20/08/01	29/08/01
France Télécom (*)	mobiles	Bi Bop (Pointel)	27/11/91	30/11/91
	mobiles	Satellite Aircom	21/02/92	18/03/92
	1	Nationwide coverage	12/03/98	19/03/98
France Telecom Mobiles La Réunion SA	mobiles	GSM DOM 4	24/04/01	15/05/01
Free Telecom	1	Mainly Internet service provider under the name Linx	09/11/99	05/12/99
	1	extension and change of name from Linx	14/12/00	23/12/00
GC Pan European Crossing France	2		10/03/99	04/04/99
	1		11/05/00	11/06/00
Gensat France	2	Satellite	06/07/99	03/08/99
Gensat France	2	Satellite network Mayotte	26/04/01	20/05/01
Graphtel	3		16/09/98	07/10/98
GTS Network (Ireland) (*)	2	18 regions	12/03/01	31/03/01
HOT Telecommunications (Deutschland) GmbH	2	Satellite	28/08/01	21/09/01
Dynegy France Communications SARL	2	Under the name Titan Communications	29/07/99	26/08/99
	2	Change of name from Titan Communications to Iaxis France	29/08/00	07/09/00
	2	Change of name from Iaxis France	14/09/01	26/09/01
Infomobile	mobiles	Ermes E3	26/11/93	17/12/93
	mobiles		25/09/98	18/10/98
Interoute Communications France	3		28/07/98	14/08/98
Iridium Italia S.p.A	mobiles		28/10/98	10/11/98
IS Production	LLU 2	Exp unbundling ends 15/01/01	31/10/00	25/11/00
	LLU 2	Extended to 15/06/01	29/12/00	12/01/01
	LLU 2	Extended to 31/12/01	15/06/01	29/06/01
Kaptech (*)	1		19/09/00	08/10/00
Kast telecom	3		02/02/99	19/02/99
	1	L33-1 extension	02/03/00	01/04/00

KDD	3		23/09/98	22/10/98
Kertel	1	Under the name Rhodium	16/04/98	10/05/98
	1	Change of name from Rhodium	29/06/98	09/07/98
	1	Geographical extension + satellite	25/05/99	16/06/99
	1	Extension to French overseas départements	09/02/00	03/03/00
KPN Eurovoice BV	3		19/04/00	31/05/00
KPN Qwest Assets France	2	Under the name Eurorings Assets France	30/06/99	27/07/99
	2	Change of name from Eurorings Assets France and geographical extension	10/01/00	04/02/00
	2	Extension: 19 regions	19/01/01	20/02/01
LambdaNet Communications France SAS	1	Metropolitan France	09/06/00	06/07/00
Landtel France SAS	1	Wireless local loop 7 regions	04/08/00	03/09/00
LCR Telecom	3	Under the name Golden Line Technology	07/07/98	31/07/98
	3	Change of name from Golden Line Technology	18/03/99	
Level 3 Communications	1		23/12/98	20/01/99
	1	Geographical extension	07/06/01	16/06/01
Liberty Surf Telecom	3	Under the name AXS Telecom	17/06/98	09/07/98
	1	L.33-1 extension under the name AXS Telecom	24/03/99	21/04/99
	1	Change of name from AXS Telecom to Liberty Surf Telecom	28/11/00	12/12/00
Louis Dreyfus Communications (*)	2	Licence for Louis Dreyfus Communications	06/03/00	17/03/00
	1	L. 34-1 extension	11/07/01	24/07/01
Marconi France Télécommunications SAS	3		17/02/99	12/03/99
	3	Extension of coverage area	26/07/00	03/08/00
Metromedia Fiber Network France	2	Pan-European network	07/10/99	05/11/99
MFS Communications SA	2	ALT4	12/12/96	17/12/96
	1	ALT4 amendment	16/04/98	10/05/98
	1	Extension to the whole of France	16/12/98	12/01/99
Multicoms	2	Satellite under the name MCN SAT Services	16/12/98	09/01/99
	2	Change of name from MCN SAT Services	10/10/00	24/10/00
Naxos	2	ALT6 for Telcité	16/04/98	10/05/98
	2	Licence for Naxos	24/11/99	21/12/99
NETs SA	2		06/10/98	27/10/98
	2	Geographical extension	05/01/01	27/01/01
NTL France SAS	1	Cable operator	07/08/00	05/09/00
One Tel	3		17/11/98	13/12/98
	1	L33-1 extension to 7 regions	24/10/00	21/11/00
Orange France (*)	mobiles	GSM F1 under the name France Telecom Mobiles SA	17/08/00	10/09/00
	mobiles	Amendment under the name France Telecom Mobiles SA	22/12/00	03/01/01
	mobiles	Harmonisation with FTM La Réunion	24/04/01	04/05/01
	mobiles	Change of name GSM F1 + 2G 3G roaming	18/07/01	21/08/01
Orange France (*)	mobiles	UMTS licence	18/07/01	21/08/01
Outre-mer Telecom (*)	1	Under the name Infotel	29/04/98	29/05/98
	1	Change of name from Infotel to Informatique Télématique	21/04/99	16/05/99

	1	Change of name from Informatique Télématique (formerly Infotel)	15/01/01	25/01/01
Outre-mer Telecom (*)	mobiles	GSM DOM 3	30/11/00	25/02/01
Phone Systems & Network	3		17/06/98	12/07/98
	1	L33-1 extension	10/03/99	09/04/99
Primus Télécommunications France SA (*)	1	Under the name Télécontinent	16/09/98	06/10/98
	1	Change of name from Télécontinent	15/03/01	27/03/01
Priority Telecom France	1	Cable operator in 13 regions	28/08/01	28/09/01
Prosodie (*)	3	Awarded to the new company	29/10/99	24/11/99
Saint Martin & Saint Barthélémy Tel Cell SARL	mobiles	In Guadeloupe GSM DOM6	23/07/01	22/08/01
Saint Martin Mobiles SA	mobiles		04/07/91	26/07/91
	mobiles	Extended to 30 September 2001	26/07/01	03/08/01
	mobiles	Licence renewed until 30 September 2006	30/09/01	21/10/01
SAS SPM Telecom	mobiles	St Pierre et Miquelon	21/06/00	08/07/00
Société Française du Radiotéléphone (SFR) (*)	mobiles	GSM F2	25/03/91	26/03/91
	mobiles	Amended GSM F2 licence	17/11/98	18/12/98
	mobiles	Amendment incoming calls GSM F2	13/09/00	04/10/00
	mobiles	Amendment GSM F2 2G 3G roaming	18/07/01	21/08/01
Société Française du Radiotéléphone (SFR)	mobiles	UMTS licence	18/07/01	21/08/01
Siris	1		18/12/97	30/12/97
Skybridge Communications	2	Satellite	09/02/00	11/03/00
Skyline (*)	DBL 2	Exp unbundling ends 15/01/01	07/07/00	28/07/00
	DBL 2	Extension exp unbundling ends 15/01/01	24/10/00	21/11/00
	DBL 2	Extended to 15/06/01	29/12/00	12/01/01
	DBL 2	Extended to 31/12/01	15/06/01	29/06/01
Squadran	1	Wireless local loop in metropolitan France under the name Fortel	04/08/00	03/09/00
	1	Change of name from Fortel to Squadran	20/09/01	02/10/01
Star Telecommunications (France)	1	Pan-European network	26/10/99	23/11/99
Société Réunionnaise de Radiotéléphone (SRR)	mobiles	GSM DOM 1	23/02/95	30/03/95
	mobiles	GSM DOM1 amendment	29/01/01	21/02/01
Storm Telecommunications Ltd	1		27/04/99	18/05/99
	1	L.33-1 extension	30/10/00	28/11/00
Suez Lyonnaise Télécom	1	LEX4 (AUXIPAR SA)	27/12/96	10/01/97
	1	Revoking of LEX4 and full licence	02/10/98	23/10/98
	1	Extension to some cable networks	23/08/01	01/09/01
Swisscom France	1		15/10/99	07/11/99
Tachyon Netherlands BV	2	satellite	14/03/01	06/04/01
TDF	mobiles	Operator	03/07/87	05/07/87
Télé 2 France	1	Allocation of the prefix 4	16/04/98	10/05/98

Télécom Developpement	2	ALT2	28/11/96	01/12/96
	1	L34-1 extension	18/12/97	30/12/97
Teleglobe	3		30/06/98	02/08/98
	1	L.33-1 extension	02/02/99	19/02/99
	1	L33-1/L34-1 extension	15/11/01	07/12/01
Telenor	3		02/08/01	01/09/01
Tiscali France SA	1	Under the name A Telecom	17/06/98	17/07/98
	1	Change of name from A Telecom	17/01/01	27/01/01
Télévision Française 1 SA (TF1)	1	Satellite data transmission	11/07/01	08/08/01
Telia	1		20/07/99	21/08/99
	1	Geographical extension	05/06/00	30/06/00
TESAM (Globalstar)	mobiles		17/11/98	11/12/98
TGN Euro Link SA	2	ALT1 under the name Eurotunnel Développement SA	21/11/96	23/11/96
	2	Change of name from Eurotunnel éveloppement SA to Eurotunnel Telecom SA	29/04/98	12/05/98
	2	Change of name from Eurotunnel Telecom SA	25/06/01	06/07/01
TI France	2	French section of the pan-European network	24/10/00	17/11/00
Trading com	3	Time broker	21/03/00	28/04/00
TyCom Networks (France)	2	7 regions	13/04/01	13/05/01
UPC France	1	Under the name Mediaréseaux	17/06/98	04/07/98
	1	Geographical extension	07/03/00	01/04/00
	1	Change of name from Médiaréseaux	10/10/00	24/10/00
Ventelo France	1	Under the name Omnicom	18/12/97	30/12/97
	1	Change of name from Omnicom to GTS Omnicom	17/03/00	26/03/00
	1	Change of name from GTS Omnicom to Ventelo France	07/12/01	18/12/04
Verizon Global Solution France SAS	2		05/07/01	03/08/01
Versatel Telecom Europe BV (*)	2	Pan-European network	10/05/00	08/06/00
Viatel Opérations SA	1	12 regions	05/06/98	02/07/98
	1	National L33-1 extension	22/11/99	11/12/99
Viatel France	3	Under the name Econophone (Destia)	28/07/98	14/08/98
	3	Change of name from Econophone (Destia)	24/04/01	04/05/01
Vine Telecom Network Limited	1	Pan-European network	05/01/00	25/01/00
Western Telecom	3		17/06/98	09/07/98
XTS Network	3	IP voice o.s. départements + metropolitan France	10/04/00	16/05/00
XTS Network Caraïbes	1	Wireless local loop 1 o.s. département	04/08/00	03/09/00
XTS Network Océan Indien	1	Wireless local loop 3 o.s. départements	04/08/00	03/09/00

(*) *Company belonging to a group that previously held other licences, now revoked or not renewed, under the same name or under the name of other subsidiary companies.*

Types of licence

1: public network + telephone service (L.33-1 + L.34-1)

2: public network (L.33-1)

3: telephone service (L.34-1)

WLL: experimental licence for the wireless local loop (before calls for applications launched in 2000)

LLU: experimental licence for local loop unbundling (before 1 January 2001)

OWC: trial in online wireless carrier technology (OWC)

B. Summary of applications assessed for expired licences (not renewed or revoked) in 2001

Company	Type of licence	Remarks	Date of decree	Published in Official Journal
360networks (France)	2	Pan-European network	08/01/01	27/01/01
	2	Revoked after company was put into liquidation	08/11/01	20/11/01
Aéroports de Paris (A.D.P.)	1	LEX1 - licence expired 31/07/01 licence not renewed	31/07/96	01/08/96
Atlantic Télécom (First Telecom)	3		17/06/98	09/07/98
	1	L.33-1 extension	14/12/99	18/01/00
	LLU 2	Exp unbundling ends 15/01/01	24/10/00	22/11/00
	LLU 2	Extended to 15/06/01	29/12/00	12/01/01
	1	Revoked after company was put into liquidation	08/11/01	20/11/01
BLR Services	1	Wireless local loop 8 regions (1st call)	04/08/00	03/09/00
	1	Change to WLL in 3 regions (2nd call)	19/01/01	20/02/01
	1	Revoked	20/12/01	23/12/01
Cegetel Caraïbes	1	Wireless local loop 2 o.s. départements	04/08/00	03/09/00
	1	Revoked	20/12/01	23/12/01
Covad Communications Group Inc	LLU 2	Exp unbundling ends 15/01/01	07/07/00	29/07/00
	LLU 2	Extended to 15/06/01 licence not renewed	29/12/00	12/01/01
Easynet *	LLU 2	Exp unbundling ends 15/01/01	24/10/00	21/11/00
	LLU 2	Extended to 15/06/01 licence not renewed	29/12/00	12/01/01
EGN BV	WLL	Licence not renewed	02/06/99	30/06/99
Enron Broadband services France	2	Paris metropolitan area	30/03/01	26/04/01
	2	Revoked	20/12/01	23/12/01
E*Messages Wireless Informations Services France	mobiles	Ermes E1 under the name France Telecom Mobiles Radiomessagerie (FTMR)	26/11/93	17/12/93
	mobiles	Alphapage under the name FTMR	13/11/87	14/11/87
	mobiles	Change of Ermes E1 licence name from FTMR	26/09/00	04/10/00
	mobiles	Change of alphapage licence name from FTMR	26/09/00	04/10/00
	mobiles	Licence renewed for 15 years	27/03/01	26/04/01
	mobiles	Revoked	24/12/01	29/12/01
Facilicom International	1	Under the name FCI Carrier Services	17/11/98	11/12/98
	1	Change of name from FCI Carrier Services	22/02/99	04/03/99
	1	Revoked after company was put into liquidation	08/11/01	20/11/01
France Câbles et Radio	mobiles	TFTS	23/02/95	21/03/95
	mobiles	TFTS revoked	24/12/01	29/12/01

Global TeleSystems Europe BV(Groupe GTS)	2	ALT7 under the name Hermes Europe Raitel	22/10/97	19/11/97
	2	Geographical extension	26/08/98	25/09/98
	2	Change of name from Hermes Europe Raitel	11/02/00	17/03/00
	2	Revoked	12/03/01	31/03/01
Global Metro Networks France SAS	2	Paris metropolitan area network	06/10/00	28/10/00
	2	Revoked	20/12/01	23/12/01
HighwayOne AG	LLU 2	Exp unbundling ends 15/01/01	07/07/00	29/07/00
	LLU 2	Extension exp unbundling ends 15/01/01	01/12/00	15/12/00
	LLU 2	Extended to 15/06/01 – experimental licence not renewed	29/12/00	12/01/01
ICS	3		11/02/99	28/02/99
	3	Revoked	01/06/01	13/06/01
IDT Europe B.V.	3		16/04/99	11/05/99
	3	Revoked	26/10/01	07/11/01
Intercall	3		22/03/99	17/04/99
	3	Revoked	24/12/01	29/12/01
LDI (Net-Net)	3	(Trade name Netnet)	17/06/98	09/07/98
	2	Revoked after company was put into liquidation	08/11/01	20/11/01
Mangoosta	LLU 2	Unbundling under the name Speedcom – ends 15/01/01	28/06/00	26/07/00
	LLU 2	Change of name from Speedcom – extension ends 15/01/01	08/11/00	28/11/00
	LLU 2	Extended to 15/06/01	29/12/00	12/01/01
	1	18 regions	03/01/01	08/02/01
	1	Revoked after company was put into liquidation	08/11/01	20/11/01
Mannesmann Ipulsys France	3	Under the name OTelO Communication	03/06/99	30/06/99
	3	Change of name from OTelO Communication	11/07/00	21/07/00
	3	Revoked after company was dissolved	03/08/01	14/08/01
Media Overseas	1	Wireless local loop - Guyana	16/02/01	11/03/01
	1	Revoked	20/12/01	23/12/01
Mobicom	3		19/10/98	17/11/98
	3	Revoked after company was put into liquidation	08/11/01	20/11/01
NETESI SpA	LLU 2	Unbundling under the name MTLcom – ends 15/01/01	07/07/00	29/07/00
	LLU 2	Change of name from MTLcom + extension ends 15/01/01	31/10/00	25/11/00
	LLU 2	Extended to 15/06/01 - experimental licence not renewed	29/12/00	12/01/01
Novaxess SAS	LLU 2	Exp unbundling ends 15/01/01	15/11/00	14/12/00
	LLU 2	Extended to 15/06/01 - experimental licence not renewed	29/12/00	12/01/01
Objectif BL	LLU 2	Exp unbundling ends 15/01/01	06/07/00	29/07/00
	LLU 2	Extension exp unbundling ends 15/01/01	24/10/00	22/11/00
	LLU 2	Extended to 15/06/01	29/12/00	12/01/01
	1	Unbundling	10/05/01	01/06/01

	1	Revoked	06/08/01	17/08/01
Primus Telecommunications SA	3		29/04/98	29/05/98
	3	Revoked after takeover by Telecontinent	19/03/01	27/03/01
QS Communications AG	LLU 2	Exp unbundling ends 15/01/01 - experimental licence not renewed	08/11/00	29/11/00
riodata NV	LLU 2	Exp unbundling ends 15/01/01 - experimental licence not renewed	24/10/00	24/11/00
RSL Com	1		12/05/98	30/05/98
	1	Revoked	24/12/01	29/12/01
Subitéo (Fast Point Networks)	LLU 2	Exp unbundling under the name Fast Point Networks ends 15/01/01	31/10/00	25/11/00
	LLU 2	Extended to 15/06/01 - experimental licence not renewed	29/12/00	12/01/01
Uniglobe	1		08/07/98	25/07/98
	1	Revoked	24/12/01	29/12/01
VersaPoint (groupe Versatel)	LLU 2	Exp unbundling ends 15/01/01	24/10/00	18/11/00
	LLU 2	Extended to 15/06/01	29/12/00	12/01/01
	LLU 2	Revoked	15/03/01	29/03/01
WinStar Communications SA	2		15/06/99	09/07/99
	2	Revoked after company was put into liquidation	08/11/01	20/11/01
WorldXChange	3		17/06/98	07/07/98
	3	Revoked after company was put into liquidation	08/11/01	20/11/01

** : companies that hold another valid licence under the same name*

Types of licence

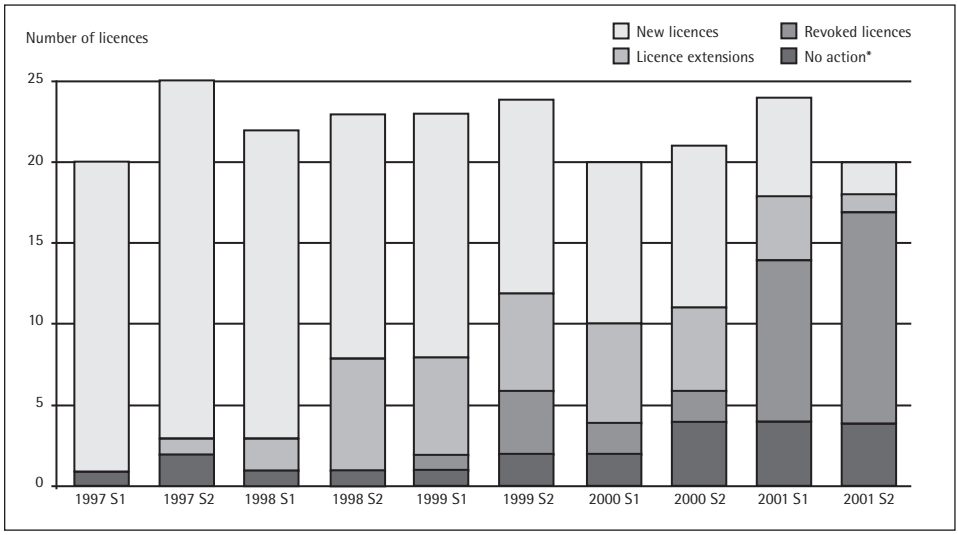
1 : public network + telephone service (L.33-1 + L.34-1)
2 : public network (L.33-1)
3 : telephone service (L.34-1)

WLL: experimental licence for the wireless local loop (before calls for applications launched in 2000)
LLU: experimental licence for local loop unbundling (before 1 January 2001)

C. Licence applications assessed between 1998 and 2001

The chart below shows the number of licence applications assessed every six months by ART since 1997. These include new applications, applications to extend the area covered by the licence, applications to revoke licences, and applications that did not result in the issuance of a licence.

Licence applications assessments for fixed-wire telecommunications projects



** No-action requests (i.e. those not giving rise to the issuance of a licence) are defined as requests withdrawn by the applicant for various reasons (e.g. a change of strategy by the parent company) while they are being processed by ART.*

II. Assessment periods

The assessment periods for licence applications are set by the decree of 13 January 1999[1], which transposes Directive 97/13/EC[2] and defines Article R.9-8 of the Posts and Telecommunications Code. Some amendments to licences (e.g. change of company name or revocation) are not included in these assessments, the timeframe for which is set by the regulatory framework. This type of application is much easier and faster to process than licence applications. For this reason, these types of application (35 in 2001) were not included in the calculation of average timeframes shown below.

The table below shows the average timeframes for assessing L.33-1 and L.34-1 licence applications and extensions in 2001. The figures for 2000 are indicated in brackets for the sake of comparison.

1 Decree No.99-25 of 13 January 1999 on the examination of licence applications for the establishment and operation of public telecommunications networks and for the provision of a public telephone service, published in the O.J. on 15 January 1999, p. 738.

2 Directive 97/13/EC of the European Parliament and Council of 10 April 1997 on the common framework for general licences and individual licences in the telecommunications services sector, published in the O.J.E.C. L117 on 7 May 1997, p.15.

Type of application	No of applications	ART average time*	Ministry** average time	Combined average time
New L.33-1 ou L33-1/L34-1 application	13 (13)	65 days (63)	51 days (57)	116 days (120)
Ext of L33-1 ou L33-1/L34-1 licences	6 (7)	71 days (84)	41 days (46)	112 days (130)
All L33-1 ou L33-1/L34-1 applications	19 (20)	67 days (72)	48 days (53)	115 days (125)
Legal time limit for L.33-1	-	90 days	30 days	120 days
(L33-1) trials	4 (21)	65 days (40)	25 days (35)	90 days (75)
Legal time limit for L.33-1	-	90 days	30 days	120 days
New L34-1 licence	1 (3)	35 days (43)	44 days (56)	79 days (99)
L34-1extension	1 (1)	27 days (35)	35 days (54)	62 days (89)
All L34-1 applications	2 (4)	31 days (41)	39 days (55)	70 days (96)
Legal time limit for L.34-1	-	28 days	14 days	42 days

Only complete applications received between 01/01/2001 and 31/12/2001 are counted in the table above. Applications received in 2000 but only completed in 2001 are also included. Conversely, complete applications received in 2000 but processed in 2001 appear in the 2000 statistics.

**ART average time: time between the date the application is received and the date it is forwarded to the minister.*
*** Ministry average time: time between the date the application is forwarded to the minister and the publication of the licence decree in the Official Journal.*

The first point to emphasise is that the average periods shown include non-working days. Average times that take only working days into account would thus be slightly shorter than those calculated.

In some cases, the extra work induced by particular questions slightly increased the assessment times. Furthermore, the average time encompasses all the applications assessed, including a small number of applications that required special attention for an exceptional reason, such as a change in the shareholder structure during the assessment or a change to the original project. Excluding the L.33-1 application that took the longest time to process, the average time for this type of application comes down to 64 days.

In general, therefore, ART complied with the application assessment times stipulated in the Posts and Telecommunications Code. As the law stands, however, it should be stressed that only complete licence applications can be assessed[1]. If an application is incomplete, a request for the missing information is sent, which delays the start of assessment by ART.

As soon as ART has completed its request assessment, the application file is sent to the telecommunications minister, who then issues the licence.

1 According to the terms of Articles R.9-5 and R.9-6 of the Posts and Telecommunications Code.

Chapter 2

Frequencies and numbers

I. Frequency assignment and management

Under the Act of 26 July 1996[1], ART is responsible for allocating frequency resources to operators and users of civil radiocommunications and, pursuant to Article 16, for managing and allocating audio and television transmission frequencies.

A. Issues dealt with at European and international levels

In 2001, a pivotal year between two World Radiocommunication Conferences, ART's share of the international work on frequencies was divided between monitoring and implementing the results of the 2000 conference and preparing for the 2003 conference.

1. Implementing results of 2000 World Radiocommunication Conference

a. Additional IMT 2000 frequency bands

The 2000 conference earmarked the 1.8 GHz and 2.5-2.7 GHz bands for IMT 2000[2], along with the 900 MHz band. This should allow the different regions of the world to adopt new frequency bands for IMT 2000, in addition to the core bands identified at the 1992 conference.

ART took part in the discussions on this issue at the European Conference of Postal and Telecommunications Administrations (CEPT) and through Study Group 8[3] of the ITU in charge of radiocommunication (UIT-R).

ART stressed the advantages of an open organisation of the 2.5-2.7 GHz band until the additional frequency needs for the UMTS networks have been assessed.

1 Act No. 96-659 of 26 July 1996, published in the O.J. on 27 July 1996, p.1384.
2 Worldwide standards for third-generation mobile systems, including UMTS.
3 Commission in charge of the mobile service, radiodetermination and amateur radio, including the related satellites.

In this regard, ART also contributed to drafting the CEPT's preliminary report in response to mandate 4 of the European Commission on national procedures for reworking this frequency band.

Regarding the definition of the principles for using the 1.8 GHz band for IMT 2000 systems, ART voiced the concerns of the GSM operators currently using the band. ART's work mainly consisted in implementing, at the European (CEPT) and global (UIT-R) levels, decisions from the 2000 World Radiocommunication Conference on the use of the additional 1.8 GHz and 2.5 GHz bands.

b. The high-density fixed service

ART contributed to the work on updating the national frequency distribution table[1]. The new edition gives ART responsibility for allocating six frequency bands in the high-density fixed service earmarked at the 2000 World Radiocommunication Conference.

2. Preparing for the 2003 World Radiocommunication Conference

In 2001, ART was involved in various national working groups laying the groundwork for the 2003 World Radiocommunication Conference. It also participated in the CEPT's working groups, notably those on frequency management (WGFM), spectrum engineering (WGSE) and the conference preparatory group (CPG), which were responsible for initiating joint European positions for this first year.

In particular, ART focused on:

- preparing items for the agenda of the 2003 World Radiocommunication Conference relating to the introduction of the mobile service in the 5150-5725 MHz frequency band,
- the future development of IMT 2000,
- the positioning of interactive applications in terrestrial wireless multimedia,
- reviewing the use of the 13.75-14 GHz frequency band,
- aligning global allocations for the amateur radio service in the 7 MHz frequency range.

3. Issues dealt with at European level

a. Working groups

At the same time, ART continued contributing to the work on frequency harmonisation led by the Electronic Communications Committee (ECC[2]) of the Conference of European Postal and Telecommunications Administrations and, hence, to its working groups on frequency management and spectrum engineering.

The year 2001 was also an important year for the activities of the European Radiocommunications Committee (ERC) and the European Committee of Telecommunications Regulatory Affairs (ECTRA), amalgamated into the ECC.

In connection with the work of the ERC, and working with the National Frequencies Agency (ANFr), ART expressed its positions on the proposals to adopt the decisions prepared by the working groups. For example, 14 of the 18 decisions adopted by the ERC concerning short-range devices and the decision on the harmonisation of frequencies for the direct mode of the terrestrial digital mobile systems will be

1 2001 edition.

2 The new Electronic Communications Committee (ECC), now encompasses the activities of the European Radiocommunications Committee (ERC) and the European Committee of Telecommunications Regulatory Affairs (ECTRA). The new committee's mandate covers both the radiocommunications and the telecommunications sectors.

applied at national level. For these ERC decisions to become applicable in France, they need to be adopted by ART decisions and published in the Official Journal after consultation with the Radiocommunications Advisory Committee.

ART was actively involved in the work of the CEPT's frequency management working group and its various sub-groups on professional mobile radio networks (PMRs), the fixed service, the fixed-satellite service and outside broadcast links. The working group addressed numerous issues: the definition of a strategic plan for use of the 862-870 MHz frequency band; the scheduled termination of earmarking frequency bands for cordless telephones (CT2); the creation of a database of European frequency registers; the revision of the use of ERMES and TFTS frequencies; and the revision of the main recommendation on short-range devices.

In conjunction with ANFr, ART also participated in the work of the CEPT's working group on engineering the radio spectrum. The working group was mainly involved in defining the frequency plans for the fixed service in the 32, 52 and 57 GHz bands, in adopting constructive recommendations on the conditions of deployment of the MWS[1] systems operating in the 40.5-43.5 GHz band and in planning parameters for fixed-service digital systems. The CEPT published reports on compatibility between different radiocommunications services on the basis of this work, particularly concerning the introduction of short-range systems operating in the 2.4 GHz frequency band, e.g. Bluetooth.

b. Coordination in border regions

ART participated actively in various meetings on frequency coordination in border regions, led by the National Frequencies Agency and aimed in particular at finalising several multilateral agreements. As a rule, these agreements are intended to facilitate and optimise the use of the frequencies allocated to ART in French border regions. The main agreements signed in 2001 for the mobile service covered:

- shared use of the 410-430 MHz frequency band by France and Italy, signed in Fréjus on 15 June 2001;
- shared use of UMTS frequencies by France, Belgium, Germany, Luxembourg, the Netherlands and Switzerland, signed in Brussels on 30 November 2001;
- approval of arrangements between mobile radio network operators signed in Saint Dié on 17 October 2001 by the administrations of France, Belgium, Germany, Luxembourg, the Netherlands and Switzerland.

Several agreements in progress, mainly relating to the 150 MHz and 400 MHz frequency ranges and the GSM and UMTS bands, should be finalised in 2002.

c. Berlin agreement (former Vienna agreement)

ART also participated in drafting the Berlin agreement signed by France on 14 September 2001. The agreement, on coordination procedures for the mobile and fixed services in border areas, is not covered by the activities of the member administrations of the CEPT. It is mainly designed to harmonise and therefore facilitate frequency coordination in border areas with most of France's neighbouring countries. Pursuant to this general agreement, ART closely monitored progress on electronic interchange of coordination data and the associated software application (Harmonised Calculation Method).

1 Multimédia Wireless System.

B. Issues dealt with at domestic level

ART's national work in 2001 continued in the same vein as 2000, with an increase in assignments for fixed services and fixed-satellite services and an update of the national frequencies register with operator files.

1. Significant changes in the frequency bands used

As a result of ART's participation in ministerial working groups, consultations with operators and contributions to the working groups of the ANFr, significant changes were made in terms of the frequency bands used. To update the national frequencies register, ART assigned 8,478 frequencies and cancelled 9,547. This update covered the data files for most of the frequency bands used by the operators.

ART, in close collaboration with ANFr, GITEP[1] and the operators, drafted decisions on the general technical and operating conditions for the point-to-point fixed-service radio networks in the 23 GHz and 38 GHz bands. These draft decisions were submitted to the Radiocommunications Advisory Committee in 2001 and are currently being approved. ART and the operators participate actively in the commission that deals with issues related to easements (CSS).

In 2001 14,894 applications were lodged. Of this total, 4,689 were for new licences, 6,122 for amendments and 2,392 for licence cancellations. The year saw new developments in IRIS software, with the implementation of ICS Manager and ICS Telecom. Development of the software continued with minor changes and the inclusion of new functions such as invoicing for fixed services and fixed-satellite services. The software, which includes the administrative management of frequencies and technical coordination, will make it possible to expand international technical coordination requested by neighbouring countries. An international coordination unit was set up at the end of the year.

2. Video links

In 2001 the ANFr finalised its work on identifying video channels. ART was given responsibility for managing these channels under the mandate it received pursuant to the 1996 Telecommunications Act[2]. Ten digital channels were allocated to ART and recorded on the national frequency distribution table for this service.

3. Remote sound broadcasting

As part of its work on managing audio and television transmission frequencies, ART set up and managed a working group that involved most of the players in the audiovisual sector concerned by the use of radio links for remote sound broadcasting. The working group identified the national frequency needs for this service. This information was forwarded to the National Frequencies Agency's commission on spectrum review so that the needs expressed by ART are taken into account.

4. Website

ART made two updates – in May and October 2001 – to the database of frequency bands that it is empowered to allocate. This database can be accessed via the Services section of ART's website. The information in this database, intended for the industry and users, can be vie-

1 Industry, Technology, Information and Communications Group (formerly Professional Telecommunications and Electronics Industries Group).

2 Act No. 96-659 of 26 July 1996, published in the O.J. on 27 July 1996, p.11384.

wed using a multi-criteria search engine that searches on the basis of frequency band, use or system.

II. Management of the national numbering plan

In 2001, ART adopted 182 decisions on numbering. These decisions fell into the following categories:

- Four general decisions, including one on changes to the numbering plan in the overseas départements;
- 178 decisions relating to the general management of numbering resources; these decisions can be further broken down into 120 allocation decisions, 9 reservation decisions, 10 decisions regarding transfers from one operator to another and 39 decisions to revoke licences or modify conditions for use.

Situation of the numbering resources in late 2001

	No. of numbers
"E" prefixes allocated	6
16XY prefixes allocated	28
16XY prefixes reserved	0
10XY special numbers allocated	14
10XY special numbers reserved	0
Short numbers (3BPQ) allocated	117
Short numbers (3BPQ) reserved	5
Mobile numbers allocated	61300000
Mobile numbers reserved	1000000
Fixed non-geographic numbers allocated	13701000
Fixed non-geographic numbers reserved	320000
Fixed geographic numbers allocated	145670000
Fixed geographic numbers reserved	130000

Distribution of short numbers allocated or reserved per service category

Short numbers (3BPQ) for card services or similar	30
Short numbers (3BPQ) for dual-dialling carrier network selection	11
Short numbers (3BPQ) allocated for other uses	81
Total	122

A. Changing the numbering plan in the overseas départements

The final phase in adapting the numbering plan in the overseas départements was completed on 22 June 2001. Since that date, numbers within the overseas départements have ten digits and mobile numbers all begin with 06, as in metropolitan France. To facilitate the transition, however, the old mobile numbers beginning with 0262, 0590, 0594 and 0596 remained valid until 23 October 2001.

B. Operational management of geographic numbers

ART continues to make G'NUM available to industry specialists. G'NUM is a computer application that offers a detailed description of the use of blocks of geographic numbers. At the end of 2001, there were 17 subscribers. ART updates the application on the basis of information exchanged between operators, in accordance with the guidelines on operational management of numbering resources.

C. Number portability

1. Background: portability and the French numbering plan

Portability refers to the possibility for subscribers to a telecommunications operator to keep the same number if they change operator. Portability is an obligation set forth in both national[1] and supranational[2] legislation. It refers only to inter-network portability, i.e. between two operators, and not intra-operator portability (within the same operator). Regarding intra-operator portability, fixed-network subscribers may keep the same number if they do not change address, or if they move within the same basic numbering area.

Portability fosters open competition and allows consumers who wish to keep the same number to choose freely between operators.

The different number families described in the French numbering plan generate a corresponding amount of portability sub-applications, because the requirements, particularly in terms of network, are not the same for all the families. The different families are:

- Fixed geographic numbers, of the type 0Z AB PQ MC DU, where Z ranges from 1 to 5;
- Fixed non-geographic numbers, which cover three number families:
  - Freephone numbers, which take the form 0800 PQ MC DU or 0805 PQ MC DU, marketed mainly by France Télécom under the brand "Numéro Vert". With these numbers, the caller is not charged;
  - Shared-cost numbers, which take the form 0810, 0811, 0820, 0821, 0825 or 0826 PQ MC DU, marketed by France Télécom under the brands "Numéro Azur" and "Numéro Indigo". The cost of the call is shared by the caller and the service provider, with the charge to the caller being either based on a local call or a single price within metropolitan France.
  - Shared-revenue numbers, of type 0890, 0891, 0892, 0893, 0897, 0898 or 0899 PQ MC DU, on which revenues are shared between the operator that allocated the number and the service provider;
- Mobile numbers, of type 06 AB PQ MC DU, operated mainly by the three operators present in the French market: Orange France, SFR and Bouygues Télécom.

The legislation also provides for a system of personal numbers, but this has not yet been implemented. A personal number is one that fixed-service subscribers will be able to keep for life, regardless of changes of operator and geographical location within the country. Although the personal number implies portability, this is a specific number family. Subscribers wishing to benefit from a personal number would first have to give up their existing numbers, which is contrary to the very definition of portability.

2. Significant progress on portability in 2001

In 2001, all operators made special efforts to introduce or plan for portability offers.

1 The Posts and Telecommunications Code.

2 European directives.

The portability of fixed geographic numbers is operational but is not yet widespread, owing to the small number of players in the local loop and unbundling market. To date portability has mainly been offered by cable operators. Since this market is set to grow, portability of geographic numbers could also expand. ART will encourage operators as a whole to implement powerful systems to provide consumers with quality service.

Portability of fixed non-geographic numbers was opened on 1 July 2001 for freephone numbers and on 1 January 2002 for shared-cost numbers. Under the aegis of ART, the operators formed special working groups to establish the technical, legal and commercial conditions for the portability of these numbers. Portability is extremely important for these families of numbers, because the public or customers remember them. Admittedly, the fact that a subscriber must first abandon an existing number, in the absence of portability, is an obstacle to free competition. Portability will be extended to the last segment of fixed non-geographic numbers, i.e. shared-revenue numbers, at a later stage. The technical and legal conditions are more complex than for the other numbers in this family. Portability is scheduled to open in December 2002.

The portability of mobile numbers is the biggest component of the various portability offers in terms of estimated volumes of numbers ported. In 2001, the mobile operators jointly forwarded to ART a full implementation plan for mobile number portability. The whole plan was approved by ART, in conjunction with consumer groups. Mobile portability will be opened on 30 June 2003, after which date all subscribers (pre-paid and post-paid) will be able to keep the same number if they change mobile operator. Portability does not, however, exempt subscribers from their contractual obligations towards their initial operators. Portability will therefore only apply when a subscriber takes out a new subscription. Mobile number portability will not be affected by the technological changes related to third-generation mobile telephony (UMTS).

In 2002, portability will be offered for all the number segments except mobile numbers, which will be covered at the end of June 2003. At that date, France will therefore have fulfilled its obligations in terms of portability, alongside all the other European Union countries.

Chapter 3

Universal service

Universal service consists in providing all and sundry with a quality phone service at an affordable price, a nationwide payphone service, a telephone directory and a directory enquiries service, and making provision for social tariffs. It is funded jointly by the operators. ART is responsible for assessing the net cost of universal service on an annual basis and for defining the breakdown of operator contributions.

I. Assessment of the cost of providing universal service from 1997 to 2001

The net costs of providing universal service, assessed by ART for the years 1997 to 2001, are summarised below.

Universal service cost assessment (€ million)

		1997	1998	1999	2000	2001
Universal service cost cost components		final	final	final	provisional	provisional
Imbalance in France Télécom's pricing structure	M€	278.07	309.17	51.68	0	0
	Ct/min	0.1037	0.1037	0.0022		
Geographical averaging (unprofitable zones + unprofitable subscribers)	M€	417.10	329.14	175.93	220.44	229.28
Unprofitable zones			197.42	114.95	196.35	192.39
Unprofitable subscribers			131.72	60.98	24.09	36.89
	Ct/min	0.1555	0.1098	0.0076		
Nationwide provision of public payphones	M€	28.51	23.32	25.1528.20		
Social tariffs	M€	69.517	0	0	184.62	158.24
Directory and directory enquiries service	M€		0	0	0	0
Total	M€	764.68	666.81	250.93	430.21	415.73

Shaded areas: financing via additional charges on top of interconnection tariffs

II. Decision of the Court of Justice of the European Communities

A. Background

On 12 May 1998, the Association Française des Operateurs Privés en Télécommunications[1] and the Association des Operateurs de Services de Télécommunications[2] filed a complaint with the European Commission concerning non-compliance with Articles 86 and 90 of the Treaty of Rome and with three directives (90/388/EEC[3], 96/19/EC[4] and 97/33/EC[5]), following the adoption of French regulations on universal service.

The complainants asked the Commission to:

- initiate proceedings under Article 90 (1)[6] and (3) of the Treaty against the French State for having adopted and applied measures whose purpose and effect were to strengthen the dominant position of France Télécom on the telecommunications infrastructure, telephone services, directories, directory enquiries and public payphone markets in France,
- initiate proceedings against the French State, under Article 169 of the Treaty, for failure to comply with obligations regarding the transposition of directives 90/388/EEC and 97/33EC,
- take official note that France Télécom has infringed Article 86 of the Treaty by abusing its dominant position on the telecommunications infrastructures, telephone services, directories, directory enquiries and public payphone markets in France.

The complainants consider that the French regulations infringe Article 90 (1) of the Treaty by the fact that:

- they impose upon France Télécom's competitors a disproportionate charge for their contribution to universal service, due to:

  - the absence of a mechanism to offset the profits generated by the directory service against the costs of supplying other components of universal service,
  - the method used to calculate the contribution of new entrants,
  - the methods used to calculate the costs of universal service,
  - the fact that intangible profits earned by France Télécom through provision of the universal service are not taken into account,
  - the lack of incentives to provide universal service under economically viable conditions.

- they strengthen the dominant position of France Télécom.

On 27 April 2000, the European Commission decided to bring France before the Court of Jus-

1 AFOPT.

2 AOST.

3 Commission Directive 90/388/EEC of 28 June 1990, concerning competition in the telecommunications services markets, published in the OJEC on 24 July 1990 p. 10.

4 Commission Directive 96/19/EC of 13 March 1996 amending directive 90/388/with regard to the implementation of full competition in telecommunications markets, published in the OJEC L74 on 22 March 1996 p. 13.

5 Directive 97/33/EC of the European Parliament and of the Council of 30 June 1997 on "interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of Open Network Provision (ONP)", published in O.J.E.C. L199 of 26 July 1997, p. 32.

6 Article 90 (1) of the Treaty states that: "In the case of public undertakings and undertakings to which Member States grant special or exclusive rights, Member States shall neither enact nor maintain in force any measure contrary to the rules contained in this Treaty, in particular to those rules provided for in Article 7 and Articles 85 to 94".

tice of the European Communities, on the grounds that the methods used to calculate and finance the cost of a universal telecommunications service were not in compliance with European directives. The purpose of this action was not to question the principles of universal service or a specific financing mechanism; the European executive wanted to ensure that the system in place did not give rise to excessive charges for new entrants required to contribute to the financing of universal service.

The Commission indicated that the decision to bring France before the court followed infringement proceedings which resulted in "significant progress", but did not resolve all difficulties. In particular, it stated that France has modified its method for defining the scope and net costs of universal service, thereby permitting more accurate evaluation. It also stated that the response of the French authorities to the reasoned opinion sent by the Commission in July 1999 – the final stage in the infringement proceedings before referring the matter to the European court – announced "two new areas of progress", notably with regard to clarifying the method used to factor social tariffs into the cost of universal service.

On 31 July 2000, the French government submitted its statement of defence to the European Commission. The Commission in turn issued a reply in which it essentially restated the arguments contained in its original motion. On 23 November 2000, the French government submitted its rejoinder.

On 6 December 2001, the Court ruling on the financing of the universal service in telecommunications and on the contributions of new entrants, dated 6 December 2001, stipulated that the Republic of France had failed to comply with its obligations pursuant to the said directives and ordered it to pay costs.

B. Context and responsibilities of each participant

The Posts and Telecommunications code defines the methods used to calculate the cost of universal service. Specifically, the Code makes provisions for:

- the three net cost components of universal service (art. R. 20-31)
- the formula for calculating the cost of tariff imbalance (art. R. 20-32)
- the method for calculating the net cost of geographical averaging (art. R. 20-33)
- the method for calculating the net cost of social tariffs (art. R. 20-34)
- the method for calculating the net cost of public payphones (art. R. 20-35)
- the methods for calculating the net cost of obligations corresponding to the provision of a directory enquiries service and a subscriber directory in printed and electronic form (art. R.20-36).

ART has implemented the provisions of the Code. Each year, it has informed the Minister of the final and provisional assessments of the costs of universal service and the corresponding operator contributions, and the Minister has ratified these evaluations and contributions.

The court ruling primarily censures the provisions of the Code applied by ART. This ruling, condemning France for failure to comply with obligations, recognises the right to claim compensation for damages and opens the way for operators to initiate individual proceedings against the State, before the French administrative tribunals, with a view to obtaining compensation for losses arising from undue payment of universal service contributions.

To bring the Code into line with the Court ruling, the regulatory system will need to be reviewed. This will involve extending the cal-

culation of geographical averaging to include intangible benefits and the income and costs of the ex-directory service, and by excluding profitable subscribers from the calculation of tariff imbalance.

C. Nature of the objections and positions of the Commission, of France and of the Court

1. First objection: Implementation of shared financing of universal service in 1997

The European Commission considers that:

- the link between the dismantling of the monopoly and the financing of universal service by third-party operators is explicit in the directives;
- there is no legal basis for obliging France Télécom's competitors to contribute to the financing of universal service for 1997.

The Court ruling notes that the Commission's first objection is warranted. Note that the Court did not follow the recommendations of the advocate general, who requested that mobile operators be exempted from contributing to universal service.

Consequently, France should reimburse the sums paid by operators in 1997 to contribute to the cost of universal service.

2. Second objection: Tariff rebalancing

The Commission considered that as France Télécom's tariffs had not been rebalanced on 1 January 1998, a rebalancing schedule should have been submitted before 11 January 1997, the deadline set by Directive 96/19 EC. French law actually provides for tariff rebalancing to be completed by 31 December 2000 at the latest, though no precise schedule is defined.

The court ruling notes that the second objection raised by the Commission is warranted. It is a complaint for the record, with no financial implications.

3. Third objection: C1 (tariff imbalance) calculating principle and method

The Commission has complained to the French authorities for:

- including profitable residential subscribers in the cost of universal service;
- lack of transparency in the calculation of C1 and, especially, in the method used to determine Pe (balanced subscription level).

The Court ruling notes that the Commission's third objection is warranted, without questioning the legitimacy of the tariff imbalance cost component.

Consequently:

- the number N, as defined in the code, should be modified to take account of non-profitable residential lines only;
- Pe must be modified so that it corresponds to a scope of service identical to that corresponding to P. Contrary to what is indicated in the Court ruling, the itemised billing service is indeed within the scope of P.

4. Fourth objection: Lack of justification for certain components of the net cost of universal service

The Commission complained to the French authorities for setting a fixed rate for certain components of the cost of universal service, in breach of the obligation to perform a specific calculation in accordance with Article 5, section 3 of the directive 97/33. Hence:

- the net cost corresponding to non-profitable subscribers in profitable zones should not have been established on a fixed-rate basis for 1997 and 1998;
- the net cost of universal service for 1997 should not have been established on a fixed rate basis;

• the contribution paid to France Télécom to offset the cost of certain social tariffs was fixed arbitrarily in 1997 and 1998.

The court ruling notes that the fourth objection formulated by the Commission is warranted.

• As regards the fixed 1% contribution for non-profitable subscribers in profitable zones, Article R.20-33 III states that "until appropriate models and accounting methods have been established, the net costs are fixed at 1% of telephony services turnover". This temporary provision covers the year 1998 only. Starting in 1999, ART developed and applied a model to assess the corresponding net cost.

• For 1998, the net cost corresponding to non-profitable subscribers can be recalculated retroactively on the basis of final data supplied by France Télécom and of the non-profitable subscriber model developed by ART for 1999 and corrected in accordance with the ruling of the Court of Justice of the European Communities.

• For 1997, the net cost of universal service was annulled by the Court ruling concerning the first objection.

• With regard to the contribution corresponding to social tariffs for 1997 and 1998, the Court of Justice ruling has no financial consequences, given that the provisional amounts paid by operators have already been reimbursed.

5. Fifth objection: Methods used to calculate the net cost of certain components of universal service

The Commission complained to France for:

• incorrectly calculating the net cost of "non-profitable zones" by omitting to take certain services into account (ex-directory service in 1997, 1998 and 1999, and "comfort services" in 1997 and 1998);

• using accounting costs in its cost evaluation of non-profitable zones in 1998;

• not taking account of the intangible benefits to France Télécom of providing universal service.

The court ruling notes that the fifth objection formulated by the Commission is warranted.

• The revenues of "comfort" services were taken into account to calculate the final costs of universal service for 1998. The fact that the costs and revenues of the ex-directory service are taken into account in geographical averaging means that they must be deducted from the "directory and directory enquiries" component.

• The accounting data included provisional components for 1998. Moreover, it is not possible, after the fact, to reconstitute provisional costs for 1998. Consequently, the 1998 audited data must be used.

• With regard to intangible benefits, ART will need to take account of all intangible benefits and not simply those linked to brand image, whose impact was assessed in studies conducted in previous years. The calculation method will be specified in an implementing decree.

6. Sixth objection: Absence of published information on operator contributions

The Commission complained to the French authorities for not transposing into French law the provision of Article 5, section 5, second paragraph of the directive 97/33/EC[1] which states that "national regulatory authorities

1 Directive 97/33/EC op.cit.

shall ensure that an annual report is published giving the calculated cost of universal service obligations, and identifying the contributions made by all the parties involved". In the notice served on 24 July 1998, the Commission added that the provisions of Article R.20-39, second paragraph, were contrary to the provisions of the directive in that they provided for operator contributions to remain confidential.

The court ruling notes that the sixth objection formulated by the Commission is justified. It is a complaint for the record.

The CJEC ruling implies that operator contributions to universal service should be published. However, it should be noted that as these contributions give information on the volume of operator traffic, they are corporate secrets. Though this causes difficulties for provisional annual reports, it is much less of a problem for the final annual reports, which are published one year after the financial year in question.

III. Consequences of this decision

The Court ruling indicates that net costs were over-estimated from 1998 to 2002[1]. Further to this ruling, on 13 March 2002, the minister of telecommunications addressed a letter to the Chairman of ART stipulating that "the regulatory provisions on the financing of universal service will need to be amended to transpose relevant European law with appropriate rigour" and indicating a new set of methods to calculate the costs associated with universal service obligations.

Further to this letter, ART adopted a decision, dated 23 April 2002, evaluating the net costs resulting from the universal service obligations for the years concerned. In particular, the new provisions guarantee firstly that the possible commercial advantage derived from providing universal service will be taken into account and secondly that revenues from the ex-directory service will be taken into account when calculating the net cost resulting from the geographical averaging obligation.

This decision, under which the dispute settlement will result in reimbursement of excess payments made by operators other than France Télécom since 1997, has been submitted to the minister of telecommunications to be officially recorded.

1 On a provisional basis for 2002.

Chapter 4

Approval of France Télécom's tariffs in 2001

Prior approval of the retail tariffs of operators holding a dominant position on the market – until now France Télécom has been the only operator in this situation – is an essential aspect of regulation. It ensures that tariffs do not hinder the entry of new competitors and that tariffs of the universal service are affordable.

Tariff decisions are submitted for approval or for information. In some cases, an ART opinion can be issued in respect of several tariff decisions.

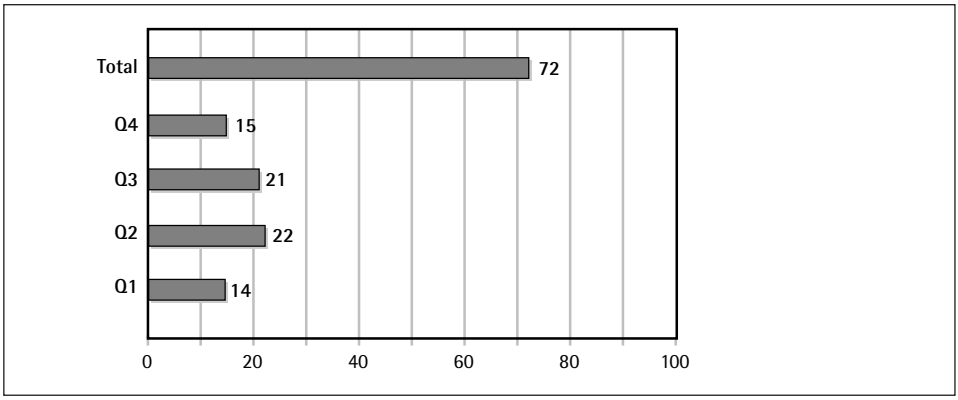
I. Opinions on individual pricing decisions

In 2001, France Télécom sent ART 135 tariff decisions – 95 for an opinion and 40 for information (excluding mobiles). ART thus received 95 requests for an opinion on tariff decisions relating to the creation, experimentation with or generalisation of new services, changes in prices, especially for new tariff options for the telephone service, the changeover to the euro, and high-speed Internet access.

Of these 95 requests, 90 were examined by ART and 5 were still in the process of examination at 31 December 2001. In some cases, ART grouped several tariff decisions in the same opinion, thus reducing the number of opinions issued.

As at 31 December 2001, ART had thus issued 72 public opinions on France Télécom's tariff decisions.

Number of opinions issued by ART



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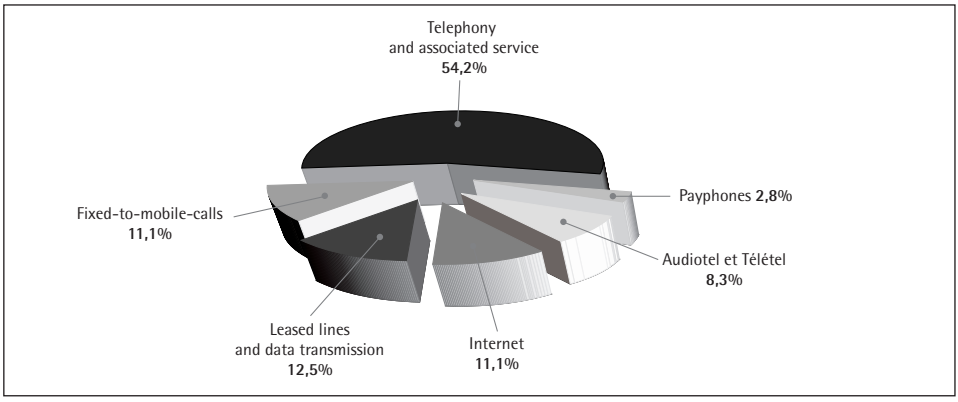
Analysis of ART opinions



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II. Analysis of opinions

The breakdown of the opinions issued by ART by area of application is as follows:

- 54.2 % for telephony and associated services, of which:
  - 26.4 % for tariff options;
  - 11.1 % for advanced services, including 6.9 % for freephone and shared-cost numbers;
- 2.8 % for payphones;
- 8.3 % for Audiotel and Télétel (shared-revenue and videotex services);
- 11.1 % for the Internet;
- 12.5 % for leased lines and data transmission;
- 11.1 % for fixed-to-mobile calls.

All in all, almost half of the opinions issued by ART in 2001 concerned tariff options, fixed-to-mobile calls or the Internet.

III. Favourable/Unfavourable opinions

Of the 90 tariff decisions examined by ART:

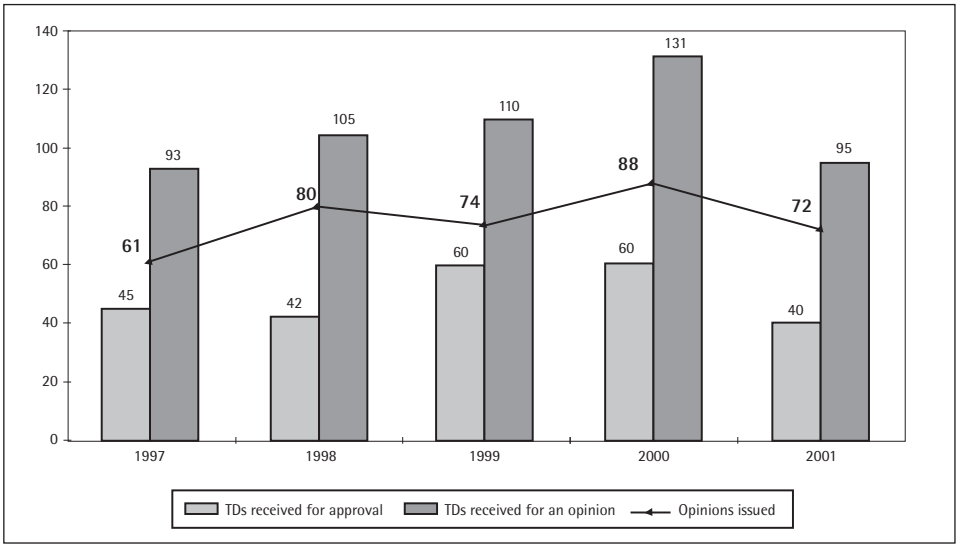
- 72 tariff decisions (80%) received a favourable opinion: Of these:
  - 69 decisions received ministerial approval: 39 (57%) by tacit agreement and 30 (43%) via a specific ministerial decision;
  - The ministers suspended 2 decisions. These concerned respectively: changes in the services offered with flat-rate access to the network[1], and changes to prices to calls to Indigo (local-rate) numbers[2];
  - 1 tariff decision was awaiting ministerial decision. It concerned a change to the pricing for the 3611 service (videotex directory).

- 18 tariff decisions (20%) received partly or wholly unfavourable opinions (14 actual opinions) from ART. Of these:

- 2 decisions (11%) were not approved by the ministers. These concerned promotional offers related to "Ma Ligne Locale"[3] (monthly subscriptions for local calls) and to the "Formule Pro Locale"[4] contracts (monthly subscriptions for local calls for business users).
- The ministers suspended 7 decisions (39%).

1 Opinion No. 01-538 dated 06 June 2001 and referred to in the O.J. on 04 August 2001, p.12705.
2 Opinion No. 01-784 dated 27 July 2001 and referred to in the O.J. on 18 September 2001, p.14828.
3 Opinion No. 01-305 dated 23 March 2001 and referred to in the O.J. on 19 May 2001, p.8038.
4 Opinion No. 01-374 dated 11 April 2001 and referred to in the O.J. on 22 June 2001, p.9932.
5 Opinion No. 01-757 dated 25 July 2001 and referred to in the O.J. on 18 September 2001, p.14828.
6 Opinion No. 01-852 dated 05 September 2001 and referred to in the O.J. on 20 November 2001, p.18448.
7 Opinion No. 01-1002 dated 17 October 2001 and referred to in the O.J. on 1 March 2002, p.3949.
8 Opinion No. 01-885 dated 12 September 2001 and referred to in the O.J. on 20 November 2001, p.18448.
9 Opinion No. 01-1150 dated 14 December 2001 and referred to in the O.J. on 08 February 2002, p.2609.

Indicators


140
120
100
80
60
40
20
0
1997
1998
1999
2000
2001
45
93
42
105
60
110
60
131
40
95
61
80
74
88
72
TDs received for approval
TDs received for an opinion
Opinions issued

Chapter 5

Regulation and consumers

In 2001 ART pursued its consumer information and assistance activities. Moreover, it sought to involve consumers in its action by organising selective consultation exercises (public consultations, formal or informal meetings) in order to discuss topical issues, such as the opening of local sorting zones (LSZ), with market participants.

I. Informing consumers

The objective is to supply consumers with the information they need to gain a clear understanding of the sector now that it is fully opened up to competition.

Four years ago ART drew up a file of licensed operators and distributors[1] to enable consumers to find out about market participants and the services they offer. The file contains the main information for each licensed company: address, type of service, coverage area and contact details for sales and customer service departments.

This information is posted on ART's website. It is also contained in a booklet that is revised regularly to take account of the sector's continuous development. A new edition will be available in the first half of 2002. The booklet is free and can be obtained on request. It is also distributed at trade fairs.

These documents are constantly updated to incorporate new data supplied by the operators and distributors. They are designed to enable all interested parties – not just individuals but also companies and government departments – to identify the operator(s) most likely to meet their telecommunications requirements.

1 Distributors, which sell or manage mobile telephone subscriptions on behalf of the operators.

II. Monitoring operators' activities

One of ART's main duties is to ensure that licensed operators respect their commitments. ART has two sources of information for monitoring operators' activities: an annual study of the behaviour of participants in the telecommunications sector, and correspondence from consumers complaining about anomalies.

A. Studying the participants' behaviour

One way of differentiating between operators' offers is to look at commercial aspects such as pricing, contractual clauses, customer information, distribution channels and dispute handling. Opening the market to competition has forced operators to pay increasing attention to the commercial side of their business. ART's goal is to ensure that the practices they adopt fulfil their primary purpose, namely to deliver genuine consumer benefits.

ART has taken the necessary measures to obtain reliable information about these practices, notably as regards the general public. The direct survey of the public to measure consumers' perception of their relationship with operators and telecoms service providers provided reliable and objective information. After the first survey conducted at the end of 2000, a new survey was launched at the beginning of 2002.

B. Correspondence from consumers

The number of letters ART receives from consumers has grown steadily over the past four years. This year, almost 1,000 consumers wrote to ART to request information about its decisions (13%, mainly regarding the opening of the LSZ and tariff decisions on local flat rates), to complain about operator defaults (21%) or to request assistance in settling disputes out of court (66%).

This correspondence pales in comparison to the volume of letters processed by operators' customer service departments. Nevertheless, it is sufficient to highlight the main difficulties encountered by consumers. Because of their speed, e-mails sent to ART are a particularly useful way of identifying any technical or commercial shortcomings in an operator's services.

1. A few statistics

The mobile sector sparked the most correspondence from consumers in 2001, accounting for 58% of total feedback, compared with 33% for the fixed sector. The Internet, cable and telephone cards together accounted for only 9% of the correspondence processed. This percentage has remained stable for a year, after increasing substantially in 2000.

The most frequent types of disputes concerned the following:

- Contract-related problems;
- Prices and billing;
- Technical problems;
- Disputes relating to poor levels of customer service.

More than half of the total correspondence related to problems with the contract: more than 500 letters concerned matters such as breach or misunderstanding of contractual commitments, unilateral changes, cancellation period and cancellation conditions.

There were also many problems with prices and billing (222 letters relating directly to a dispute over billing) often in connection with problems with the contract.

Technical problems are more common in the mobile sector. These are both coverage problems – defective handsets, network saturation - and unlocking problems. The increasing incidence of mobile phone theft is another problem for users.

The last category, which accounts for an equivalent percentage in all three sectors (fixed, mobile and Internet), confirms the insufficient level of customer service observed in the past few years. Problems such as unanswered enquiries, unfulfilled promises, and insufficient or inaccessible information have prompted customers to turn to ART.

A new type of dispute, relating to indirect distribution, emerged in 2001. Some operators use companies to sell handsets and subscriptions. Some of these distributors – which ART does not know because they do not hold licences – have engaged in questionable and even fraudulent commercial practices. Others were hit by the economic slump in the sector in 2001 and closed their businesses, leaving their customers, who were often also their creditors, with no-one to turn to.

It is vital to conduct an information campaign so that potential customers, often recruited over the Internet, can better distinguish between licensed operators and companies that are only distributors. More general action could also be taken with regard to operators to clarify the chain of responsibilities, particularly when a distributor goes out of business.

2. Results per market

a. Fixed telephony

• Inadequate information: the 8 prefix and subscriptions

Contradictory developments, particularly the disagreements over France Télécom's local subscriptions in 2001, had repercussions on consumers' questions and disputes, causing both confusion and complaints. "All-inclusive" subscriptions, modelled on practices in the mobile sector, were marketed by France Télécom after ART, followed by the competition authority, asked for an amendment and a change in coverage. Paradoxically, these subscriptions sparked a large number of requests for both legal and practical information. Consumers had trouble understanding the reason for the distinction on their bills between the subscription price, local calls and Internet connection time.

Some also had trouble using their subscription after the preselection was extended to local calls. Moreover, some had difficulty terminating their subscriptions or accessing the 8 selection prefix allocated to France Télécom. The problems with accessing the 8 prefix clearly result from a lack of information, particularly from France Télécom. Although the operator finally agreed to allow consumers to combine preselection of a rival operator with the use of its own local subscriptions, occasional problems persist, and these cause dissatisfaction.

• Extension of preselection to local calls

Preselection was introduced in 2000. After a consultation with the operators and consumer groups in the first half of 2001, preselection was extended to local calls in 2002.

The affected consumers suffered from a lack of information on preselection and its extension. Consumers did not understand the notion of local sorting zone (LSZ). Confusion about France Télécom's and other operators' pricing zones led to numerous billing disputes and, in some cases, caused consumers to abandon the preselection option.

In addition, some operators conducted aggressive cold-calling campaigns in 2001, as demonstrated by the complaints from many consumers who were preselected without their leave after simply asking for information. Other operators offered special benefits on condition that the consumer subscribe to the preselection option. Other consumers complained about the time taken to process their requests to cancel the preselection offer.

Occasional problems related to the elimination of the LSZ arose when the lines were on a restricted service (either voluntarily, such as for some local councils, or following unpaid bills): subscribers were unable to use the services of the other operators.

Lastly, one question that still has not been completely resolved has arisen frequently since the beginning of 2002: this is the possibility of combining services from a France Télécom subscription (call transfer, caller ID) with extended preselection.

• Technical problems

Several types of technical problems have been encountered:

- Network saturation at some operators
Many questions relate to the quality of the telephone networks and the solutions for users when the networks are inaccessible, either totally (e.g. for international calls) or partially (e.g. for certain services).

- Upgrading France Télécom's network for the extension of preselection
The extension of competition to local calls sparked complaints from subscribers connected to older France Télécom exchanges that do not support this service. ART's decision[1] gave France Télécom until 1 June 2002 to eliminate LSZs for local calls in the areas causing particular technical problems. France Télécom must provide its competitors with the list of these zones and upgrade them by 1 June 2003. Some subscribers have stressed the lack of transparency on the reasons and schedule for the implementation of these changes.

b. Mobile telephony

• Problems due to insufficient information

Problems arising from unilateral changes to terms and conditions while a contract was in force were often attributable to the fact that consumers were insufficiently informed beforehand. Many consumers have complained that these changes to contracts are not indicated in a written amendment that has to be signed by the customer. Even though consumers do not have any argument with the actual changes, they find it hard to decipher the tariff changes (increase, change in time credit or billing period), which are often simply indicated on the bill sent to the customer.

Market participants should work together to raise awareness. Because informing consumers in writing has proved insufficient, it would be advisable to complement information campaigns with voice mail or SMS messages. Consumers must learn to master technology that is becoming more effective but also more complicated. They must also adapt to a market that is open to competition with numerous service providers.

• Technical problems

Most new contracts contain clauses which allow consumers to cancel the contract in the event of insufficient coverage. This fact should reduce the number of disputes caused by faulty networks. In 2001, complaints about network saturation were on the increase. However, they corresponded to specific periods and often concerned targeted regions or consumers. However, causes of dissatisfaction persist.

1 Decision No.01-691 of 18 July 2001 setting forth the conditions and deadlines for the implementation of carrier selection for local calls within the local sorting zones, published in the O.J. on 30 September 2001, p. 15477.

The problem of stolen and damaged handsets has not yet been resolved and continues to generate requests for action by ART. Because operators provide them with a free first handset, consumers do not understand why they have to continue to make monthly payments if it is lost, stolen or broken, or to pay for a replacement handset.

Problems related to SIM unlocking again sparked many letters, around 100 in 2001, which was 10% of the total. The technical requirements of the three mobile telephony operators stipulate that unlocking codes are provided free of charge on request six months after the telephone is first used. In practice, operators do not comply with this requirement. Action needs to be taken with regard to the three mobile operators to resolve this problem.

• Commercial practices

In 2001, as in 2000, ART took note of questionable commercial practices by certain distributors. These include cold-calling senior citizens, selling in the street or in public places, giving inaccurate information on the conditions for withdrawing from or cancelling contracts, forgery, forcing consumers to subscribe for optional services or games, and canvassing at the time of another purchase. These practices, which have received considerable attention in the media, but are fortunately rare, convey a negative image of the sector. Most of these problems can be attributed to indirect distributors because they are paid on a commission basis.

c. Internet

There was also an increase in correspondence relative to the Internet, a field that is less strictly regulated than the telephone sector. In particular, the emergence of non-subscription offers led to many complaints when access providers were unable to provide the services they had proposed. In addition, as in the other sectors, difficulties terminating contracts with subscriptions were reported, as well as unanswered consumers' letters.

Chapitre 6

ART's international action

I. International relations

In addition to its contribution to preparing France's position and international negotiations, ART has also developed an independent international activity, which is growing.

A. Guiding principles of ART's international action

ART's international action is governed by the relevant provisions of the 1996 Telecommunications Act[1] :

"At the request of the telecommunications minister, the telecommunications regulatory authority shall participate in the preparation of the French position in international negotiations on telecommunications issues. At the request of the minister, it shall participate in representing France in the relevant international and European Union organisations".

These provisions recall the principle that it is the telecommunications minister and, by delegation, the bodies that report to him, who represents France internationally. The Act establishes an open framework, which allows ART to be involved in representing France in international bodies – including the European Union – on the minister's request.

ART's international action is aimed at ensuring that France's positions take into account its expertise, fine-grained analysis of the issues and protection of the interests of all the French actors concerned. ART strives to achieve the best compromise between the competencies attributed respectively to ART and to the ministry of industry – in coordination with the ministry of foreign affairs, the ministry of foreign trade and Ubifrance, the general secretariat of the interministerial committee on economic affairs reporting to the prime minister – and consistency in the issues discussed in the various international bodies and meetings.

In practice, France is often doubly represented

1 Act No. 96-659 of 26 July 1996, published in the O.J. on 27 July 1996, p.11384, Article L.36-5 of the Posts and Telecommunications Code.

or, if not, there is constant consultation between ART and the ministries concerned. In 2001, for example, ART was asked to represent France in Turkey and China on sector committees on telecommunications and at international conferences on new communications technologies to promote French know-how and experience in market regulation.

When, on the minister's request, ART represents France in an international body, and on the condition that there is no incompatibility regarding either form or content, it takes the necessary steps for the minister to monitor its participation. For example, ART attended regional telecommunications conferences in Hong Kong and the Global Symposium for Regulators in Geneva, organised by the International Telecommunication Union (ITU).

ART agrees to hold information meetings before or after such conferences on the request of the minister. It also forwards a report on the meetings it attends as head of delegation.

B. ART's institutional positioning

1. European Union activities

ART participates regularly in the telecommunications meetings organised by the general secretariat of the interministerial committee. In the Working Party on Economic Questions, ART participated as an expert in the discussions on the European Union's new telecommunications regulatory framework: The "Framework" directive, the "Access" directive, the "Authorisation" directive, the "Universal Service" directive and the "Radio Spectrum" decision.

2. Other international activities

In other international activities, ART is required to express its opinion on issues that come under its competence, according to the allocation of responsibilities to the various working groups:

• International Telecommunication Union (ITU):

As an expert on the ITU Council, ART participates in the Plenipotentiary Conference, the World Telecommunication Development Conference, the World Radiocommunication Conference and the World Telecommunication Standardisation Assembly. ART is actively involved in the work of the ITU-T[1] and ITU-R study groups; contributes to preparing France's positions and participates in international negotiations within the framework established by ANFr; and reports on issues of regulation and fine-tuning in ITU-D Study Group 1.

• European Telecommunications Standards Institute (ETSI)

ART participates on behalf of the French government in ETSI's standardisation work, in cooperation with AFNOR and For@tech. It is also a member of the ETSI Council.

• European Conference of Postal and Telecommunications Administrations (CEPT)

ART participated in ECTRA plenaries and working groups and in the ad hoc working groups on coordination with ITU activities, and now takes part in ECC[2] plenaries and its working groups on interconnection and numbering.

1 Study Commission 3 on pricing and compatibility in ITU's Standardisation Sector.

2 New Electronic Communications Committee, which has taken over the activities formerly organised by ECTRA and ERC within the CEPT.

• Organisation for Economic Cooperation and Development (OECD)

At the OECD, ART participates in the work of the Information, Computer and Communications Policy Committee (ICCP), the Working Party on Competition and Regulation and the Working Party on Telecommunications and Information Services Policies.

C. Cooperation in 2001

The trend of 1999 and 2000 continued with strong growth in demand for advice and expertise from many institutions.

1. ART's portfolio of cooperation activities

Drawing on its expertise and international reputation, ART has built up a portfolio of cooperation activities with its different partners and counterparts from countries outside the EU.

ART's positioning in international cooperation on regulation is in line with the objectives pursued by European Union directives and ITU policy as defined by the World Telecommunication Development Conference in Istanbul and the Plenipotentiary Conference in Minneapolis.

It mainly takes the form of bilateral and multilateral relations in the two cross-cutting activities of institutional and technical cooperation.

<table>
<tr><td rowspan="6">Cooperation actions</td><td colspan="4">ART's portfolio of cooperation activities</td></tr>
<tr><td rowspan="3">Institutional</td><td colspan="2">Bilateral relations</td><td>Multilateral relations</td></tr>
<tr><td colspan="2">Evaluation mission</td><td rowspan="3">ITU - T/D
CEPT - ECC
EU - IRG (other countries)</td></tr>
<tr><td colspan="2">Training</td></tr>
<tr><td colspan="2">Cooperation agreement</td></tr>
<tr><td rowspan="3">Technical</td><td rowspan="3">Aspects of regulation</td><td>Technical</td><td>Information Society</td></tr>
<tr><td>Economic</td><td rowspan="2">International symposium on regulation in French- speaking countries</td></tr>
<tr><td>Legal</td></tr>
</table>

ART was involved in the following types of cooperation and technical assistance with its counterparts:

- cooperation agreements (e.g. with ANRT of Morocco in July 2001);
- evaluation mission (Federal Republic of Yugoslavia in April 2001);
- training in regulation-related issues, to build the institutional capacities of partner regulators (ART hosted a number of interns over the year).

2. Bilateral relations

• Relations with North America and the Caribbean

A specialist in European affairs from the International Bureau of the US Federal Communications Commission will complete an internship of several months at ART. Tracey Weisler received a grant to study regulatory developments in Europe, particularly the process that led to the implementation of the Group of European Regulators.

• Relations with Asia and the Pacific

ART places great importance on dialogue with other actors in the telecommunications sector, such as research centres.

The French regulator enjoyed a fruitful exchange with the Research Institute for Telecommunications and Economics (RITE) in Japan, which enquired about the French system of taxes and fees for telecommunications licences.

Senior staff and experts from the Japanese telecommunications ministry visited ART in January 2002 to find out about the economic model based on ART's method for calculating long-run average incremental costs (LRIC), the legal basis of the economic model and its use for calculating interconnection tariffs.

• Relations with Europe and the CIS

A delegation from Ukraine's incumbent operator visited ART's International Department in March 2002 for a presentation of regulation in France, in view of the establishment of a Ukrainian regulatory authority in the near future.

Since the beginning of 2002, ART has also participated in the programme of workshops implemented by the Independent Regulators' Group (IRG) for the national regulatory authorities in the transition countries that will join the European Union from 2004.

• Relations with sub-Saharan Africa

ART organised several internships for staff and supervisors from African regulatory authorities, including those of Cameroon, Côte d'Ivoire and Burundi.

These training programmes covered technical, economic and legal aspects of regulation.

ART also entered into a rewarding cooperation relationship with Mactar Sek, chairman of the newly established Telecommunications Regulatory Agency in Senegal.

• Relations with the Arab states

On 10 July 2001, ART signed a cooperation agreement with the National Telecommunications Regulatory Agency (ANRT) in Morocco. This agreement officialised the excellent relations that have developed over the past few years between the French and Moroccan regulators. The agreement made it possible for the Chairman of ANRT to participate in the first Forum on Telecommunication Regulation in Africa and in the Arab States in September 2001, and for exchanges of experts to take place at specialised seminars on interconnection and radio frequency management in 2002.

ART was honoured to host representatives from Mauritania's Multisectoral Authority for a one-week study trip on technical, legal, economic and financial aspects of regulation.

ART congratulated the heads of two newly established regulatory bodies in French-speaking countries in 2001: Kamel Ayadi, Chairman of the National Telecommunications Authority of Tunisia, and Amar Tou, Chairman of the Posts and Telecommunications Regulatory Authority of Algeria, and expressed its support.

3. Multilateral relations

ART participated in two meetings in 2001/2002 to promote exchanges of information and experience on major regulation-related issues with regulators in other countries.

ART took part in the ITU's Global Symposium for Regulators from 3-5 December 2001 on the theme of independent, effective regulation. On 4 December, ART organised a meeting between regulators from French-speaking countries, sponsored by the International Organisation of Francophonie, with a view to an international symposium on regulation in French-speaking countries.

ART's Chairman took part in the ITU's third World Telecommunication Development Conference (WTDC-02), held in Istanbul from 18-27 March 2002.

II. International interconnection

Until recently, the routing of international calls was based on a system of cooperation between operators with national monopolies. Interconnection between the operators of two countries was priced according to the accounting rate system. However, this system, set up under the aegis of the ITU, has since run into difficulties for the following reasons:

- technological development, with features such as call-back and rerouting;
- the liberalisation of the main telecommunications markets, with the emergence of competitors for the incumbent operators and strong downward pressure on communications prices, especially for international calls.

Though the accounting rates system is still applied, average rates have been divided by three over the last five years. This drop is having a major impact on many countries and on the very concept of international standardisation. The simultaneous arrival of the Internet protocol has brought major changes that need to be clearly identified. Considering that it was important to understand and analyse these changes, ART hired Ovum to conduct a study at the end of 2001. The study should enhance the regulator's understanding of the complex processes at work in this market, in particular the changing market power of the various actors.

A. Developments in remuneration systems

1. The continued existence of the accounting rates system

Although still used, in particular for calls involving a developing country, the accounting rates system now only applies to a minority of international telecommunications traffic.

a. A system used to make existing infrastructure profitable

This system of remuneration is based on a model where monopolies engage in bilateral negotiation. As the number of international operators increased in the wake of technological and regulatory developments, it was thought that such a mechanism would soon become obsolete.

It is the high level of accounting rates which has led to calls for reform and given rise to evasion strategies on the part of operators in liberalised countries. The two main strategies are to reverse the direction of a call ("call-back") or to reroute the calls from a country where accounting rates are lower than in the country that received the call.

But in most cases, international telecommunications are still handled by the incumbent operators and the accounting rates system remains in use. Their infrastructures are used according to the half-circuit principle, with each operator routing a call up to the "virtual" half-way point of the call. Hence, even if these infrastructures are significantly more expensive than more recent ones, the operators concerned continue to use them, preferring to make them profitable rather than render them inactive.

There has been strong pressure to lower the accounting rates on this infrastructure. These artificially high accounting rates are holding back the development of international telecommunications. Two initiatives have been taken to match them more closely to costs.

b. The FCC Benchmarks

The US Federal Communications Commission, through a unilateral initiative, has brought a significant decrease in accounting rates across the world. According to a survey by the FCC, the average accounting rate fell from 0.9 euros in 1995, to 0.6 euros in 1998 and 0.4 euros in 2000.

The benchmarks[1] were implemented in 1997. They were first applied at the beginning of 1999 to the category of the richest countries. The application of these benchmarks to the categories of lower-income countries according to World Bank and ITU classifications, sparked only a few objections from the countries concerned. In particular, the negotiations on the implementation of benchmarks avoided the "enforcement"[2] procedure.

c. The ITU framework

At the same time, the ITU also implemented a multilateral framework to reduce the accounting rates. A specialised group was set up to examine the question from early 1998 to 1999. It produced target values for settlement rates based on line density[3] (and not on income like the FCC) and including transit taxes. Although these target values were adopted by the World Telecommunication Standardisation Assembly in October 2000, they seem to have fallen short of expectations.

This result illustrates the difficulty of reaching a consensus on a multilateral basis, even at a time when the economic implications of international interconnection are more and more significant. For example, the settlement rate payments by the USA to the rest of the world, which totalled €3 billion in 1990, rose to €6.3 billion in 1996 before falling back to €5.2 billion in 1999[4].

In this context, the ITU seeks to act as a forum for exchange of information and experience. However, growing competition is making it

1 Under the Benchmark system, US operators may not exceed benchmark values fixed by the FCC according to the average income of each country. Implementation of these Benchmarks extends from 1999 for the richest countries to 2002 for the poorest countries with low line density.

2 According to this procedure, if the negotiation between two operators from two different countries fails, it will be transferred and pursued at government level between the two countries.

3 Line density is the number of fixed lines for 100 inhabitants.

4 Source: FCC.

increasingly difficult to obtain a consensus on economic issues among all its members. The interests of western players from liberalised countries operating in a fiercely competitive market are diverging ever further from those of countries whose first priority is to develop infrastructures and whose market is often too small to attract private investors or to generate the economies of scale that come with increased traffic.

2. The emergence of new payment systems linked to the Internet

In this steadily growing market, the Internet protocol acts as a catalyst. As the driving force behind the deployment of Internet traffic, it supports two types of regulation: peering and transit.

Peering – an arrangement between similarly-sized Internet service providers, or "peers" – avoids monetary transactions. It is based on the reciprocal use of the partner's network. This system is less and less used. Increasing concentration in the market is reducing the number of providers that can attain the critical mass required to enter a peering agreement, particularly with major US providers like WorldCom.

In practice, more and more traffic is now covered by transit agreements. These agreements include the payment of a monthly fee authorising the service provider concerned to connect to the network of another larger Internet service provider.

B. Impact of these developments

The impact of these technical and regulatory developments is being felt in a number of different areas.

1. Payments

As detailed above, the USA – the country paying the largest sums to developing countries – has taken measures to continue to increase its international traffic, while decreasing its settlement rate payments.

However, these reductions in settlement rate payments have not always been passed on to the end user. The trend in margins of US operators also shows that, although both retail tariffs and settlement rates are coming down, the full reduction has not always been passed on to consumers.

The emergence of new payment systems is also changing financial flows. The payment system for traffic using the Internet protocol (whether Voice over IP or Internet traffic) does recoup investment costs in the same way as payments based on the accounting rate system. Therefore, all participants, including the largest private players, have to seek external sources of revenue generation. The current context in the financial markets makes this particularly vital.

2. Developing countries

For developing countries, there are several financial consequences that hamper their longer-term prospects for market development.

For certain countries, income from settlement rate payments represents between 10% and 30% of foreign exchange earnings. So a decrease in this income would have immediate economic consequences for these countries, extending well beyond the telecommunications sector alone.

The most direct consequence of a fall in income from international telecommunications is that it often impedes the development of infrastructures that are still lacking in some of the-

se countries. Although in the past this income was not always invested primarily in these countries' telecommunications networks, a possible decrease in this revenue nevertheless raises problems. Although these countries need to finance the development of their networks, their income from settlement rate payments is falling, sometimes quite sharply, and private investors are not attracted to zones where prospects for growth in traffic are poor.

3. International standardisation

International work on this question thus faces a contradiction: although it seems necessary to expand international cooperation between private-sector players and regulators in developed and developing countries alike, the interests of these different players are diverging more and more. The prospects for genuine international cooperation therefore remain uncertain.

a. The work of ITU-T Study Group 3

ITU-T Study Group 3 is working to strengthen this cooperation. After some effort, it succeeded in having the World Telecommunication Standardisation Assembly adopt Annex E of Recommendation D-140[1] setting target values for the accounting rates and transit payment systems. It also convinced WTSA to adopt Recommendation D-50[2] on international Internet connections.

But despite these successes, it is not necessarily the vocation of Study Group 3 to oversee such activities over the upcoming study period. Many are expressing the opinion that this Study Group, and the ITU in general, should serve solely as a forum for dialogue. Whatever the final outcome, ART sees the ITU as a vital instrument for bringing together players from very different horizons and reconciling points of view that have often been divergent.

b. Work on IP telephony

The third World Telecommunication Policy Forum (WTPF) was held in Geneva in March 2001. ART was asked to participate in the preparatory work for the forum, alongside other experts from different countries. The forum led to agreements on several technical, economic and regulatory points.

In particular, a group of experts from countries involved in ITU-D[3] was asked to continue the work initiated at the WTPF. The group met three times in 2001 and produced a report for the World Telecommunication Development Conference[4]. ART was also actively involved in the work of this group of experts, in particular for the sections of the report that deal with regulation.

C. The regulator's actions

1. Equivalent treatment and the concept of international interconnection

Before 1997, intra-EU traffic was treated as international traffic. However, the new European regulatory framework, especially with

1 Recommendation D-140 is entitled "Accounting rate principles for international telephone services".

2 Recommendation D-50 recommends that "government bodies handling the supply of international Internet connections negotiate and conclude bilateral commercial agreements to establish direct international Internet connections, taking account of the possible need for compensation between the said government bodies in relation to the value of components such as traffic flow, number of routing channels, geographical coverage and international transmission costs".

3 ITU Development.

4 Istanbul Conference in March 2002.

advent of the ONP directives, fosters the creation of a single telecommunications market. Cross-border intra-EU traffic is therefore tending to be treated as national traffic. There have been few disputes over the concept of equivalent treatment in the framework.

Moreover, in the countries where the electronic communications sector has been liberalised, after the dichotomy between the incumbent international telecommunications operators and newcomers that appeared in 1999 and sharpened in 2000, there was more financial consolidation in 2001.

2. The CEPT's role

Since the ERC[1] and ECTRA[2], committees dependent on the CEPT, were amalgamated in 2001 into the Electronic Communications Committee (ECC), access and interconnection issues are now treated under the broader heading of electronic communications.

ART is keen to ensure that the new committee maintains a balance between the different components in the sector. ART is especially concerned that telecommunications regulation issues, particularly their economic implications and numbering, be treated at an appropriately high level.

ART has therefore elected to take part in the work of these committees. It has chaired the Project Team on Numbering for several years. In 2001, an ART representative became chairman of the Project Team on economic and regulatory aspects of access and interconnection. ART's involvement is strengthened by its contribution to the work of the Task Group on reviewing the organisation of the working groups and project teams for the beginning of 2003.

ART supports the idea of a role for the ECC in the CEPT as a forum for dialogue and collaboration between EU countries and central and eastern European countries. This body is particularly useful for the candidate countries for EU membership, for sharing experiences and, more importantly, to prepare the necessary regulatory adjustments. But the CEPT could also offer broader cooperation with the countries that have only just begun to adapt their regulations. These are countries that do not have a short- or medium-term objective of joining the EU.

III. Standardisation

Several different types of organisation work on standardisation: national, regional and international standardisation organisations, forums[3], and policy and technical bodies that deal with the Internet (ICANN, IAB and W3C).

In some standardisation bodies, the regulator is involved directly in advocating regulatory guidelines and defending essential principles[4] for long-term market development. In a competitive market environment, the actors do not always take these principles into account. In addition, the standardisation bodies in direct contact with the Research and Development function act as a technology watch, offering visibility on medium-term developments and trends, the interplay of actors, and instances of inappropriate promotion in the light of the state of research and development. The regulator

1 European Radiocommunications Committee.

2 European Committee for Telecommunications Regulatory Affairs.

3 These bodies have different objectives: drafting specifications, interoperability tests, advocacy, etc.

4 These principles are mainly: interoperability of networks and services; standard interfaces which guarantee an open model; coexisting competing radio systems; a competitive framework between operators and service providers; and freedom of choice for consumers.

is thus keeping abreast of research in preparation for future discussions when the products are launched on the market.

Of course, to be influential in the debates on international standardisation generally requires the prior organisation of an ad hoc working group – such as ART's ENUM working group – or participation in consultation bodies at national level: CFCT UIT, GIN, ad hoc GIN and CF ETSI. Standardisation bodies, to which the regulator must indicate its guidelines, break down into numerous policy and technical consultation groups on the margins of the bodies steered by the regulator. Therefore, although the regulator may participate in some forums (UMTS forum) or associations (GSM association), institutional bodies such as the ITU and ETSI are its natural, priority forums.

This chapter looks at ART's participation in ITU-T and ETSI. ART's action in ITU-D and ITU-R will be covered separately[1]. The regulator's presence in the national coordination bodies that deal with standardisation for information technologies is also outlined. This presence, significantly strengthened in 2002, enhances the regulator's legitimacy in these areas.

A. ITU-T

The International Telecommunication Union (ITU), headquartered in Geneva, is an international organisation in the United Nations system through which governments and the private sector coordinate telecommunications networks and services at global level. ITU has 189 member states, 656 sector members (operators and manufacturers) and 36 associate members.

ITU is divided into three sectors: ITU-R (Radiocommunication), ITU-T (Standardisation) and ITU-D (Development).

In ITU-T, 13 study groups are in charge of implementing telecommunications standardisation, in particular by issuing Recommendations with global application. More than 2,800 Recommendations are currently in force.

ART participates in two of these study groups, which deal mainly with regulatory aspects:

- Study Group 2, which deals with the following areas: operational aspects of service provision, networks and performance, definition of services, numbering, routing and mobility;
- Study Group 3, which deals with the following areas: pricing and accounting principles, related economic and policy issues.

ART is also interested in the work of the Special Study Groups (SSGs) tracked by the ministry of economy, finance and industry, which oversee issues related to IMT 2000.

Apart from its active role in the Study Groups, in 2001 ART participated in the World Telecommunication Policy Forum on IP telephony and the Telecommunication Standardisation Advisory Group (TSAG).

The TSAG agreed to promote the creation of a focus group reporting to it that would have more flexible working methods than those habitually used at the ITU. Six (or more) members of the ITU could decide to work together on a topic that has not already been studied and could draft technical specifications that may be adopted as Recommendations by ITU-T.

In 2001, ITU-T also initiated a draft Recommendation on ENUM. It is also working with the Internet Society (ISOC) on number management.

In September 2001, the Director of the ITU's Telecommunication Standardisation Bureau,

1 See above in this chapter and Chapter 2 on frequency management.

Houlin Zhao, visited the French administration (STSI and ART). Mr Zhao's visit was an opportunity to take stock of France's expectations of the ITU.

In 2002, ART will take part in the meetings of Study Group 2[1] and 3[2], the TSAG[3] and the Plenipotentiary Conference to be held in Marrakesh from 23 September to 18 October.

B. ETSI

1. ETSI's activities

The European Telecommunications Standardisation Institute (ETSI) is one of the three EU standardisation bodies together with the European Committee for Standardisation (CEN) and the European Committee for Electrotechnical Standardisation (CENELEC)[4]. CEN has a multi-sector scope. CENELEC covers electrotechnical issues and ETSI the telecommunications sector. The "Framework" Directive[5] recently adopted by the European Parliament and Council has implicitly confirmed the status of the three organisations.

ETSI differs from the other two bodies by its membership: the organisation has full members from the CEPT's geographical zone – equipment manufacturers, operators, service providers, administrations, users – and associate members and observers.

Since the last General Assembly held in November 2001, ETSI has had 923 members (equipment manufacturers, operators, service providers, etc.) from 55 countries:

- 677 full members from 35 countries,
- 54 observers,
- 192 associate members from 20 countries.

In recent years, in order to favour a policy in line with a globalising environment, ETSI has opened up more widely to associate members[6]. The associate members now benefit from almost the same rights as full members. ETSI's mandate sometimes requires reconciling an internal contradiction: drafting European standards applicable to the world market. Under pressure from equipment manufacturers, which make up a majority of ETSI's members and which are favourable to the development of international specifications, ETSI is trying indirectly to position its specifications at the international level, although it does not have the status of an international standardisation body recognised by the WTO.

ETSI's policy is innovative in a number of respects: work with forums[7], design of standardisation projects with other partners[8], involvement in Internet policy (ICANN[9]), interoperability sessions[10], and agreements and partnerships with regional forums and standardisation bodies, etc. This policy reflects the major changes to standardisation in the

1 7-17 May and 26 November-6 December 2002.
2 10-14 June and 9-13 December 2002.
3 17-21 June 2002.
4 See Directive 98/34/EC of the European Parliament and Council of 22 June 1998 setting forth an information procedure in the area of technical standards and regulations, published in the OJEC L 204 of 21 July 1998 p.37.
5 Directive on a common regulatory framework for electronic communications networks and services (see Volume 1, Chapter 2, section on the new European regulatory framework).
6 Non-member actors from CEPT countries.
7 See the website: http://www.forapolis.com
8 3 GPP, MESA and SC PP.
9 Attended ICANN PSO (ICANN = Internet Corporation for Assignment of Names and Numbers).
10 IPV6, Bluetooth and other interoperability tests.

telecommunications sector. This is one of the reasons why, at European level, conflicts of competence, particularly with CEN, are set to become more and more frequent.

2. ART's contribution to ETSI

ART plays an active role in ETSI's strategic bodies: the General Assembly, the Board and the Finance Committee. It also makes occasional contributions to the Operational Coordination Group (OCG) and the European Telecommunications Standards Awareness Group (ETSAG). ART is regularly involved in other bodies or follows their work. These are the ERM and SES committees, 3GPP SA, EP TIPHON and the M-Comm committee. ART is also a key player in the French Commission for ETSI (CF-ETSI), a national consultation body for ETSI.

3. Highlights of 2001

a. The PAS procedure

At the last General Assembly, in November 2001, ETSI approved a document on a simplified procedure for the adoption of Publicly Available Specifications (PAS), i.e. specifications from a source external to ETSI that could be accepted as an ETSI standard document. This procedure, which transposes the principle of technological neutrality in standardisation, could be key for the future, which is why ART is following its implementation closely.

The PAS procedure fosters competition between "system reference frameworks". In contrast, the procedures for adopting ETSI documents and for voting in the technical bodies (71% rule) remain unchanged. While waiting for the results of this PAS procedure and its acceptance by the market actors, the current monitoring mechanism remains in force.

ART has participated actively in discussion of this issue at national level. It contributed to the work of the Board and will support the PAS procedure within the abovementioned framework. Mechanisms for supervision and arbitration in standardisation must be maintained, particularly for security-related questions.

b. Ensure that the public interest is taken into account in the standardisation process

To ensure that the European public interest is taken into account sufficiently upstream of ART's standardisation process, ART, on behalf of the ministry of industry, actively supported the creation of a Public Interest Competence Centre (PICC) in ETSI. This initiative, supported by governments and the European Commission, met with the opposition of private actors on financial grounds. The parties finally reached a consensus[1].

c. Participation in the Finance Committee

The General Assembly of November 2001 accepted the application of an ART representative to join the Finance Committee, proposed by the ministry of industry. This appointment strengthens the representation of government bodies on the committee.

d. Involvement in ICANN and IETF

ETSI is involved in the two facets of the Internet: policy (Internet Corporation for Assigned Names and Numbers - ICANN) and technical (Internet Engineering Task Force - IETF). For the past few years, it has had two seats on ICANN's Policy Supporting Organisation (ICANN PSO).

1 For more information on the relevant texts and initiatives, see ETSI's web portal: http://www.etsi.org/technicalfocus/home.htm.

In 2001, the Board sought to sensitise members to the issues addressed by ICANN PSO and ICANN. In addition, ETSI obtained corporate member status at ISOC, to which IETF[1] is attached. Workshops run jointly by ETSI, ISOC and IETF are planned. Because it defines the positions of ETSI's representatives in these bodies, the Board is an entry point for transmitting opinions or messages to the policy and technical arms. Through its involvement on the Board, ART contributes to discussions on the Internet in conjunction with the ministry of industry and the ministry of foreign affairs.

e. Participation in the work on ENUM

ETSI contributes to the work on ENUM: it is drafting a document entitled Implementation of ENUM in Europe. After initiating a public consultation on the project, ART contributes actively to the French working group on ENUM.

f. Meeting with the Director-General of ETSI

Initiated by ART, the meeting between the Director-General of ETSI and the Chairman of ART was an opportunity to voice the regulator's concerns to ETSI. The Director-General also held bilateral meetings with Telia, Ericsson, Teledenmark and NTA in 2001.

g. Adopting guidelines in France

ART drafted guidelines for 2002. Validated by the ministry of industry and the National Frequencies Agency, these express the French government's position with regard to ETSI and are designed to serve as communication channel for other French actors. The guidelines will give rise to specific actions on ETSI's Board and its various technical bodies.

On the request of ETSI's marketing department, ART presented papers on interconnection and numbering, including ENUM, at the meeting of the ITU's Centre of Excellence for the Arab Region on regulation issues in the telecommunications sector. ART may present papers again, notably at the European @lis project.

ETSI also began a Technical Organisation Review, covering reorganisation of the technical bodies and new working methods. ART will contribute to this new cycle of reforms. Given the generally limited resources for standardisation activities, reorganisation was one of the objectives pursued by the regulator. This objective is shared by equipment manufacturers and operators whose standardisation resources have been falling for several months. The basic principles guiding the standardisation work of a European standardisation body should nevertheless be maintained. These are: transparency, openness, impartiality, maintenance, access to publications, adherence to the ETSI rules on patents, efficiency, responsibility and consistency[2].

C. Increased involvement of ART in national consultation bodies

1. CFCT-UIT

The French Coordination Committee for ITU Standardisation Work (CFCT-UIT) was set up to coordinate France's contributions to ITU-T. The committee's first meeting was held on 4 October 2001. The committee, steered by ART, will organise two or three meetings in 2002. Under its mandate to coordinate ITU-T standardisation work, CFCT-UIT contributes to the preparation of meetings of the governing bodies of ITU, discusses general questions relating to ITU's

1 Internet Engineering Task Force.

2 See ETSI document: ETSI GA#38 doc 14 Strategic Guideline 3, available on ETSI's website.

organisation and issues opinions or proposals on France's policy to ITU.

Through the committee, France could become a driving force in ITU, by proposing initiatives for identifying subjects for studies and improving the operation and efficiency of the various ITU bodies.

2. CF ETSI

The French Commission for ETSI (CF ETSI), chaired by a representative from the ministry responsible for telecommunications (DiGITIP-STSI), is one of the commissions for standardisation in the field of information and communication technologies and is steered by AFNOR. This oversight function was previously exercised by France Télécom. The commission is made up of all the French members of ETSI.

Every month, CF ETSI examines the standards proposed in the areas that concern it. After a public survey, it holds a vote and issues a national position on the texts. It examines any matters of potential relevance to the members of ETSI and prepares ETSI's General Assemblies.

As well as participating actively in work on ETSI's general policy, ART follows more closely the work related to its own mandate, particularly in the field of radiocommunication, numbering and service quality.

3. Interministerial Standards Group (GIN)

The Interministerial Standardisation Group (GIN) consists of the different ministerial representatives in charge of standards, with a view to assisting the telecommunications minister to set national and international policy guidelines on standards. An ad hoc committee on the information society was set up within GIN on 25 January 2002. The role of the committee is to assist GIN in this sector and coordinate the work of the various actors in this field. ART will participate in its work, particularly to introduce the theme of telecommunications. Two meetings are scheduled for 2002.

4. AFNOR Forums Observatory

To improve visibility on all the forums relating to information technologies, AFNOR initiated an observatory project, with State funding for the design phase[1]. The work of this body would be to:

- inventory and qualify forums;
- identify the main documents produced;
- evaluate ways to participate and exert influence in these forums;
- anticipate strategies of the forums seeking official recognition;
- raise awareness in the industry of the forums and the issues discussed there.

Unlike the main national players in standardisation (telecoms equipment manufacturers, incumbent telecoms operators), the regulator rarely participates in forums and does not have its own observatory of them. Because of its involvement a long way upstream in the definition of the specifications of this observatory, ART now sits on the observatory project steering committee alongside Alcatel, Bull, Inria, the CNRS, France Télécom, the ministry of industry and the ministry of research, and takes part in the editorial committee.

5. COS ICT

AFNOR plays a coordinating role on standardisation across the various fields related to information technologies. The "telecom-

1 Source: GIN, 22 June 2001.

munications and networks" component of AFNOR is clearly weakened by competition from ETSI. However, the issues addressed by the ICT strategic committee (COS ICT) confirm AFNOR's ambitions. COS ICT's priority issues for 2002 attest to this: telecommunications and technology convergence, openness to standards and maintaining the structuring role of standards, and new architectures (peer to peer, applications servers, web services, network security, access to information). ART's sound knowledge of the national market in telecommunications standardisation and its technical competence are qualities that will strengthen its participation in COS ICT.

Part 2

Regulatory actions in the various markets

Chapter 1

Fixed telephony

I. Operators and licences

A. Summary

At 31 December 2001, France had 97 operators licensed to set up and operate a public fixed telephone network (L.33-1) and/or to provide public fixed telephone service (L.34-1):

Licences as for 31 december 2001	Licensed companies L. 33-1	Licensed companies L. 33-1 et L. 34-1	Licensed companies L. 34-1	TOTAL
Licences published in O.J. (fixed)	27	55	14	96
Valid trial licences	1			1
Total fixed service	28	55	14	97

B. Licensed operators

Operators licensed under Article L. 33-1 as of 31 December 2001

21STCentury Communications	Louis Dreyfus Communications
Broadband Optical Access France	Metromedia Fiber Network France
BT France	Multicoms
Danup	Naxos
Dynegy France Communications SARL	Nets SA
Eutelsat SA	Skybridge Communications
Farland Services France	Tachyon Netherlands BV
Fibernet SAS	Télévision Française 1 SA (TF1)
Flag Atlantic France	TGN Euro Link SA
France Cité Vision	TI France
Gensat France	TyCom Networks (France)
GTS Network (Ireland) Limited	Verizon Global Solution France SAS
HOT Telecommunications (Deutschland) GmbH	VersaTel Telecom Europe BV
KPNQwest Assets France	

Operators licensed under Articles L. 33-1 and L. 34-1 as of 31 December 2001

3U Telecom	Estel	Squadran
9 Telecom Reseau	FirstMark Communications France	Star Télécommunications (France)
ADP Télécom	France Télécom	Storm Telecommunication Ltd
Afripa Telecom France	Free Telecom	Suez Lyonnaise Telecom
Altitude	GC Pan European Crossing France	Swisscom France
AUCS Communications	Kaptech	T-Systems Siris (Siris)
Belgacom France	Kast telecom	Télé 2 France
Broadnet France SAS	Kertel	Télécom Développement
Cable and Wireless France	Lambdanet Communications France SAS	Teleglobe France SAS
Carrier 1	Landtel France SAS	Telia France
Cegetel	Level 3 Communication	Tiscali France SA
Cegetel La Réunion	Liberty Surf Telecom	UPC France
Colt Télécommunications France	MFS Communications SA	Ventelo France SA (GTS-Omnicom)
Completel SAS	NTL France SAS	Viatel Opérations SA
Dauphin Télécom	One Tel	Vine Telecom Networks Limited
Dolphin Telecom	Outre-mer Telecom (fixe)	XTS Network Caraïbes
Easynet	Phone Systems and Network	XTS Network océan indien
Energis (Switzerland) AG	Primus Télécommunications France SA	Equant Télécommunications SA
Priority Telecom France		

Operators licensed under Article L. 34-1 as of 31 December 2001

Atos Multimédia	Marconi France Telecommunications SAS
Cignal Global Communications France	Prosodie
Graphtel	Telenor Global Services AS
Interoute Communications	Trading com
KDD France	Viatel France
KPN Eurovoice	Western Telecom
LCR Telecom	XTS Network

II. The price of fixed telephony

One of ART's missions is to monitor prices in the markets open to competition. It has therefore introduced monitoring mechanisms based on local and long-distance calls as well as on baskets of fixed-telephony consumption profiles in specific user categories (viz. residential and business subscribers).

A. Consumption baskets

The consumption baskets defined by ART are used at present to evaluate changes in France Télécom's prices for fixed telephone services. They may eventually be extended to all operators. The following elements can be used to determine trends in 2001 and those observed since 1997.

A telephone bill is made up of several items: the subscription charge, consumption of national calls (local, near-local, long distance), international calls, directory enquiries, calls to special numbers (toll-free numbers, shared-cost numbers, shared-revenue telephone and telematics numbers), to mobile phones and to access the Internet. These items moved in different directions in 2001: subscription charges remained stable, after rising across the board each year since 1997, while the prices of national and international calls went down.

To obtain a concise reading of price trends, it is necessary to define consumption baskets reflecting the overall pattern derived from the combined movements in all these components.

ART has therefore begun to establish simplified indices that will show recent trends in the incumbent operator's tariffs. These indices will be enhanced in several ways: the composition of the baskets will be further fine-tuned; additional services will be factored in; and, possibly, tariff options – including flat-rate offers – will be taken into account.

These consumption baskets make it possible to track trends in the average bill in a given category of user (residential or business subscribers). The assessment is made using a constant structure and level of consumption, meaning that price is taken into account but volume is not.

Call volumes tend to grow because of, for example, increased fixed-to-mobile and Internet traffic, with the result that the bills being paid are larger. The consumption baskets do not take into account the impact of volume.

These consumption baskets are also a statistical tool for monitoring the market.

Assuming a constant volume of consumption, the average bill (subscription plus national calls) went down for all user categories in 2001.

- It decreased by 2.1% for households, from €25.44, including VAT, to €24.90, including VAT, per month.
- It decreased by 2.9% for companies, from €35.43, excluding VAT, to €34.40, excluding VAT, per month.

The price trends per telephone line for the residential basket (subscription plus national calls) and the company basket (subscription plus national calls) is shown in the tables below for the period 1996-2001.

1996 = 100	1996	1997	1998	1999	2000	2001
Residential basket prices (tax included)	100	98	92	94	92	90
Monthly quantities per line						
Subsciption: 1	€7.87	€9.99	€10.37	€11.64	€12.02	€12.55
Calls: 245 minutes	€19.75	€17.07	€15.18	€14.48	€13.42	€12.35
- local: 184 minutes						
- near-local: 22 minutes						
- intercity: 39 minutes						
Total	€27,63	€27,06	€25,55	2€6,12	€25,44	€24,90

1996 = 100	1996	1997	1998	1999	2000	2001
Business basket prices (excl. VAT)	100	89	79	78	74	72
Monthly quantities per line						
Subsciption: 1	€8.60	€9.90	€11.29	€12.79	€13.35	€14.21
Calls: 350 minutes	€39.10	€32.40	€26.86	€24.72	€22.08	€20.19
- local: 220 minutes						
- near-local: 42 minutes						
- intercity: 88 minutes						
Total	€47.70	€42.30	€38.15	€37.50	€35.43	€34.40

An examination of the period 1996-2001 using the chosen methodology[1] reveals several facts:

- tariffs declined in all user categories;

- the price decline of about 28% for the business basket[2] was greater than the decline for the residential basket, which was only 10%;

- the decrease was especially significant for intercity calls, with a drop of about 60% for residential and business subscribers alike; the price of local calls went down 11% for residential subscribers and 14% for business subscribers;

- the price of the telephone subscription now represents a significant proportion of the bill for all user categories:
  - about 50% for households, compared with 28% in 1996;
  - about 41% for businesses, compared with 18% in 1996;

- in 5 years, the subscription price has increased substantially, with a rise of 59.4% for residential customers (equivalent to 4.7 euro, VAT included).

Methodology

Basis of assessment: Only the subscription to the telephone service and the most common national calls are taken into account; international calls and calls to mobile phones, teletex and shared-revenue numbers are not included.

Rates became more varied over the period with the introduction of rate options intended for specific customer segments. Most of these options were flat rates for calls to particular destinations (local or national), volume- or duration-based declining rates (Modulance, Temporalis, etc.) or special rates for frequently called numbers (Primaliste, etc.). The simplified consumption baskets shown here do not take into account these options.

1 See box below.

2 Owing to the fact that calls (whose prices were declining) represented a larger share of the bill in this customer segment, while the subscription (whose price was rising) represented a smaller share.

Methodology

Basis of assessment: Only the subscription to the telephone service and the most common national calls are taken into account; international calls and calls to mobile phones, teletex and shared-revenue numbers are not included.

Rates became more varied over the period with the introduction of rate options intended for specific customer segments. Most of these options were flat rates for calls to particular destinations (local or national), volume- or duration-based declining rates (Modulance, Temporalis, etc.) or special rates for frequently called numbers (Primaliste, etc.). The simplified consumption baskets shown here do not take into account these options.
Structure of consumption: The structure of consumption is the traditional consumption, as observed in 1996; the level and structure of consumption are constant over time; thus, the recent development of Internet consumption is not

B. Prices of national calls

The long-distance market has been open to competition since 1 January 1998. As of April 2002, significant progress had been made in eliminating the local sorting zone everywhere in France, thereby allowing the local-call market to be opened up as well. Competition in this segment is only just beginning.

ART has calculated an average price per minute based on the public tariffs of the main operators serving this market and on a typical residential customer profile. Using a traffic sample giving the structure of consumption in France – a breakdown of calls by duration, average call duration, and a breakdown of calls by time period – a tool was created to show the trends in the incumbent operator's tariffs and to compare these tariffs with those of new entrants. This average price, which reflects the structure of a consumer's consumption, is one component of the system ART uses for tariff tracking.

It has also calculated France Télécom's average price in the residential market and compared it with those of the main competitors. The average price for new entrants is determined by weighting each one's average price by the volume of traffic during the year in question.

1. Prices in the long-distance market

A comparison of the average price per minute of national long-distance calls in the residential market during the last quarter of 2001 shows that France Télécom's main competitors are continuing to charge very competitive prices. Their rates are lower than France Télécom's average price, taking into account its Primaliste offer[1].

If France Télécom's average price per minute is given a value of 100, the average price of competing operators is 69, equivalent to 0.055 euro, including VAT.

During the past three years, i.e. from 1999 to 2001, the average price of long-distance calls in the residential market has declined by an average of:

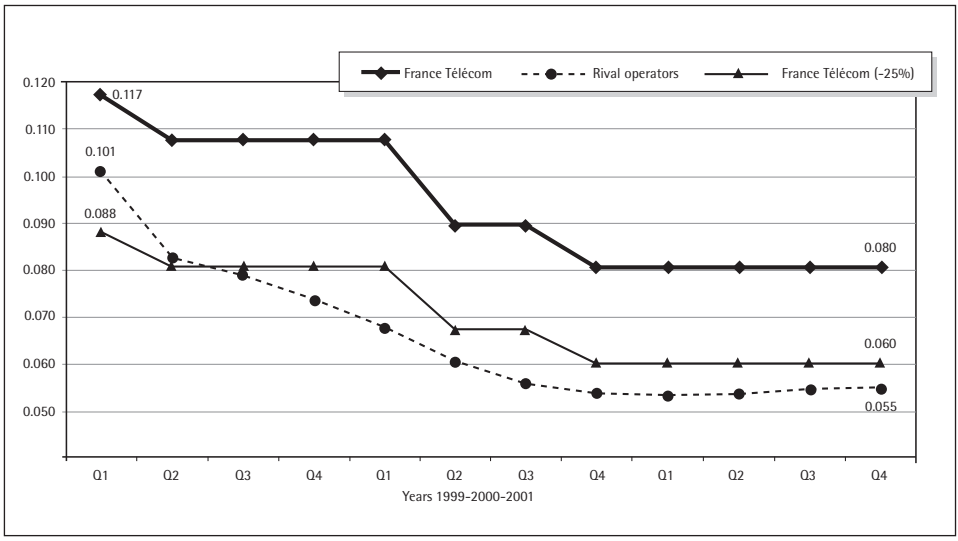
- 26.8% for France Télécom;
- 35.7% for France Télécom's main rivals, i.e. Cégétel, Télé 2 and 9 Telecom.

However, these competitors' average prices in this market went up by about 1.7% during the second half of 2001. It should be noted that France Télécom did not propose any tariff changes in this market segment in 2001.

1 Optimal tariff option in this market: a 25% reduction on the price of calls since the end of 2000.

The figure below show this tariff trend, using an average price calculated for each quarter:

Residential Market
Trend in the price of long-distance communications (>50km)
(euros incl. VAT per minute)



Opening the long-distance market to competition has brought substantial price benefits to consumers.

2. Prices in the local-call market

With the opening of the local-call market to competition, France Télécom's main competitors have offered quite competitive prices in the residential segment.

Assigning a value of 100 to France Télécom's average base price per minute, the average price of its competitors works out to 95, equivalent to 0.04 euro, VAT included.

III. Long-distance and international calls

A. The market

1. Revenue and volume trends for long-distance calls

Long-distance revenues in general have been decreasing, with an especially sharp decline for intercity calls (-12.2%).

Conversely, the volumes of intercity and international calls have increased by 0.8% and 3.3%, respectively, over one year. The revenue and volume trends reflect the decline in the average price in this market over the past 4 years.

Revenues

€ millions	1998	1999	2000	2001	Growth in 2001(%)
Intercity calls	3,071	2,578	2,006	1,762	-12.2%
International calls	1,139	961	897	866	-3.5%

Volumes

millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
Intercity calls	27,507	28,219	27,801	28,016	+0.8%
International calls	3,764	4,057	4,454	4,599	+3.3%

Number subscribers with carrier selection and preselection

Units	31/12/98	31/12/99	31/12/00	31/12/01	Growth in 2001 (%)
Number of subscribers with selection and/or preselection	861,186	2,769,111	5,953,396	7,968,537	+33.8%
of which a subscription for call-by-call selection	N/A	N/A	4,453,936	5,148,627	+15.6%
of which a subscription for preselection	N/A	N/A	1,499,460	2,819,910	+88.1%

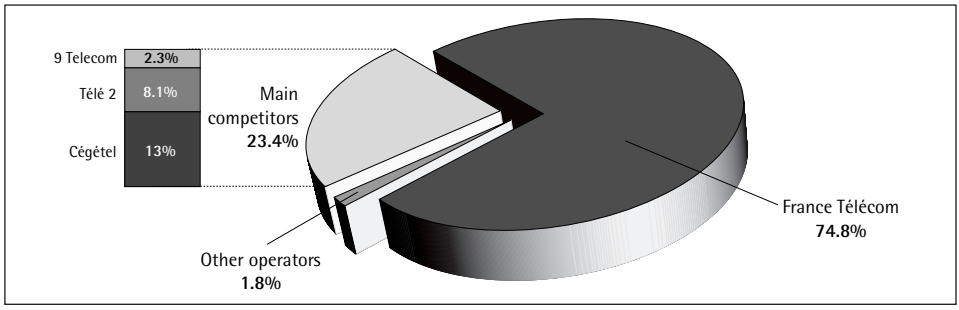
N/A: Not available

The number of subscribers to the carrier selection service and to the preselection service, (introduced on 17 January 2000), rose substantially in 2001. The number of call-by-call selection subscriptions went up by 15.6% in one year, while the number of preselection subscriptions rose by 88.1%. There was increased reliance on alternative operators in 2001.

Price movements were accompanied by steady growth in the market share of France Télécom's competitors. According to data published by France Télécom, this market share grew in volume from 5.1% to 36% between 31 December 1998 and 31 December 2001.

For example, France Télécom's main rivals had a 25% volume share of national long-distance calls in the residential market at the end of 2000, as shown in the graph below.

Residential market
Analysis of volumes of national long-distance calls
(at 31 Dec. 2000)



2. Phone cards and payphones

a. Phone cards

Revenues

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Subsciber cards and prepaid cards	217	315	332	298	-10.2%

Volumes

Millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
Total - Subsciber cards and prepaid cards	1,298	1,899	2,611	2,124	-18.7%

Trend in card units

Units	1998	1999	2000	2001	Growth in 2001 (%)
Nomber of prepaid cards sold	5,359,755	30,732,378	44,397,831	31,900,327	-28.1%
Nomber of subscriber cards as of 31/12	2,793,625	3,099,289	3,204,180	3,929,430	+22.6%

On the whole, the indicators for the phone card market trended downwards in 2001. The withdrawal by a major operator from this market is the reason for the decline of 10.2% in revenues, 18.7% in volume and 28.1% in card units.

b. Payphones

Revenues

€ millions	1998	1999	2000	2001	Growth in 2001 (%)
Payphones	728	651	516	471	-8.8%

Volumes

€ millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
Payphones	4,306	3,334	2,397	1,945	-18.8%

Cards

Units	1998	1999	2000	2001	Growth in 2001 (%)
Payphones	242,872	241,721	229,620	215,471	-6.2%

The payphone market is shrinking. The number of public telephones was 215,471, down 6.2% from 2000. Likewise, revenues decreased by 8.8% and the volume of minutes by 18.8%. It can be assumed that mobile phones are being used instead of payphones.

B. ART's action

1. Licences granted or revoked

a. New licences

During 2001, ten decrees granting a licence to establish a public long-distance telecommunications network and/or to provide public telephone services were published in the Official Journal.

The 10 companies that entered the long-distance telecommunications market in France in 2001 are:

360networks (France)	Tachyon Netherlands BV
Enron Broadband Services France	Telenor Global Services AS
Eutelsat SA	Télévision Française 1 SA (TF1)
GTS Network (Ireland) Limited	TyCom Networks (France)
HOT Telecommunications (Deutschland) GmbH	Verizon Global Solution France SAS

All but one of these operators were granted a licence to establish and operate a public telecommunications network[1] in this market. The exception was one operator who requested a license to provide public telephone services only[2].

	Licences L. 33-1	Licences L. 34-1	Licences L. 33-1 & L. 34-1
Total	**9**	**1**	**0**
of which satellite	4		
of which carrier	1		
of which other projects	4	1	

Four companies entered the telecommunications market in France with the aim of providing services, and in particular Internet access, by satellite in some cases two-way. Among the operators who entered the long-distance market in 2001, these four public satellite networks account for 68% of new jobs, 79% of revenue projected five years hence and a likely 93% of total investment over the next five years.

b. Licences revoked

In 2001, 16 orders were issued revoking licences in the long-distance telecommunications market:

	Revocations L. 33-1 & L. 34-1	Revocations L. 33-1	Revocations L. 34-1
Total	**3**	**4**	**9**
of which **satellite**	1		
of which **pan-European**		1	
of which **VoIP**			1
of which **other projects**	2	3	8

1 Licences under Article L. 33-1 of the Posts and Telecommunications Code.

2 Licences under Article L. 34-1 of the Posts and Telecommunications Code.

The companies whose licence was revoked are:

360networks (France)	LDI (NETnet)
Atlantic Telecom (First Telecom)	Mannesmann Ipulsys France
Enron Broadband Services France	Mobicom
Facilicom International	Primus Télécommunications SA
Global Metro Network France	Uniglobe
Global TeleSystem Europe BV	VersaPoint (SAS)
ICS	Winstar Communications SA
IDT Europe BV	World-X-change communications SARL
Intercall	

• Licences revoked in the year of their publication in the Official Journal

Among the companies operating a public telecommunications network or providing long-distance public telephone service that asked for their licences to be revoked, two were terminating their operations in the same year they entered the market: Enron Broadband Services (EBS) France and 360networks (France). These two were licensed only to establish a public network.

• The effects of restructuring, liquidations and take-overs

The downturn in the telecommunications market prompted several international companies to restructure their activities in Europe and France, with the result that they interrupted their licensed activity in France. Global TeleSystem Europe BV, Intercall, IDT Europe BV, ICS and Primus Télécommunications had their licence revoked in 2001, while Enron terminated its telecommunications activities in Europe. Uniglobe has maintained a commercial representation in France, but no longer operates a network in this market.

Five long-distance operators were placed in official receivership in 2001 after failing to find a buyer or selling part of their assets: Facilicom International, 360networks, LDI, Mobicom and World-X-change Communications. Most of the companies placed in receivership were licensed to provide public telephone service but not to establish a public network.

One long-distance operator, Atlantic Télécom, also sold some of its assets after it was in receivership.

c. Modified licences

In 2001, 17 licences were modified. To pursue their deployment, nine operators requested an extension of the coverage area specified in their licence. Eight of them hold a licence granted under Article L. 33-1 alone or Articles L. 33-1 and L. 34-1 jointly. Eight operators asked that their licence be modified to show a change in their company's name.

Extension of the licensed coverage area	CHANGE OF COMPANY NAME	
	New name	Former name
Cable and Wireless France	Iaxis France	Dynegy France Communications
Carrier 1	Infotel	Outre-mer Telecom (fixe)
KPNQwest Assets France	Primus Télécommunications	Primus Télécommunications France
Level 3 Communications		
Louis Dreyfus Communications	Eurotunnel Telecom	TGN Euro Link
Nets SA	A Telecom	Tiscali France
Teleglobe France	GTS Omnicom	Ventelo France

The names were changed because of a buyout or restructuring of the groups of which these operators are a part. Four operators changed their name because of the policy of an international group: Dynegy France Communications, TGN Euro Link, Tiscali France and Ventelo France.

2. Monitoring the compliance of operators having a carrier selection "E" prefix

Since there are very few one-digit "E" numbers for carrier selection, requirements for their allocation were defined in an ART decision of 16 July 1997[1]. In accordance with the objectives set forth in the law, these requirements are intended to encourage the deployment of telecommunications networks in order to foster regional development and long-lasting competition on services that will benefit users.

The resulting obligations have been included in the operator specifications. Compliance with these requirements was checked for the first time during the summer of 1999 (after 18 months) and a second time during 2001 (after 36 months[2]).

a. Allocation requirements for the carrier selection "E" numbers

• Possession of an L.33-1/L.34-1 national licence

The first requirement for the allocation of an "E" number is to have a national licence under Articles L. 33-1 and L. 34-1 authorising the establishment and operation of a public telecommunications network for the purpose of providing public telephone service.

The national licence issued under L. 33-1 calls for the operator to establish and operate its own transmission infrastructures in each of the 22 metropolitan regions. The timetable to be observed is the one that the operator presented in its applications for the licence and an "E" number.

• Requirements concerning interconnection points

In this context, an interconnection point is a point of presence connected to the operator's network by a fixed link (the operator's proprietary transmission link or leased transmission capacity) and available for interconnection if another operator requests it. Consequently, an interconnection point does not necessarily mean that an interconnection has been established with France Télécom at this point.

1 Decision no. 97-196 of 16 July 1997 concerning the method for allocating a one digit carrier selection prefix, published in the Official Journal of 2 August 1997, p. 11518.

2 Concerning these deadlines, see the section below devoted to the requirements for allocating "E" numbers.

The operator undertakes to establish:

- at least 1 interconnection point per region of metropolitan France no more than 18 months after its licence has been amended to entitle it to an "E" number;
- at least 2 interconnection points per region of metropolitan France no more than 36 months after its licence has been amended to entitle it to an "E" number;
- at least 3 interconnection points per region of metropolitan France (in those having at least 3 départements) no more than 10 years after its licence has been amended to entitle it to an "E" number.

This requirement, like the preceding one, is made so that operators deploy networks and points of presence in all regions of metropolitan France.

• Requirement concerning the long-distance transmission infrastructure established by the operator

This requirement is assessed using the following ratio: transmission capacity on proprietary infrastructures required to operate the network to meet the contractual objectives / total transmission capacity used by the licensed network, with the capacities expressed in km.Mbits/s[1]. The operator undertakes to achieve:

- a ratio higher than 40% within 18 months of its licence's being amended to entitle it to an "E" number;
- a ratio higher than 60% within 36 months of its licence's being amended to entitle it to an "E" number.

This requirement, in conjunction with the two preceding ones, is intended to encourage the deployment of a network made up of a minimum of transmission installations established and operated by the operator itself, with the aim of promoting competition on long-distance infrastructures.

b. Checking compliance with the "E" allocation requirements after 36 months

• First check after 18 months

The requirements for the allocation of an "E" number specify that the first check is to take place 18 months after its licence has been amended to entitle it to an "E" number. A check was accordingly performed in the summer of 1999 for 9 Telecom Réseau, GTS-Omnicom, Siris and Télécom Développement, all of which satisfied the requirements.

The 18-month check fell in January 2000 for two other operators, Esprit Télécom and Télé 2. Following a restructuring by GTS in France, Esprit Telecom returned the "6" that had been allocated to it, and its licence was revoked. As a result, only Télé 2 was subject to checking in January 2000, and its performance was found to be satisfactory.

• 36-month check

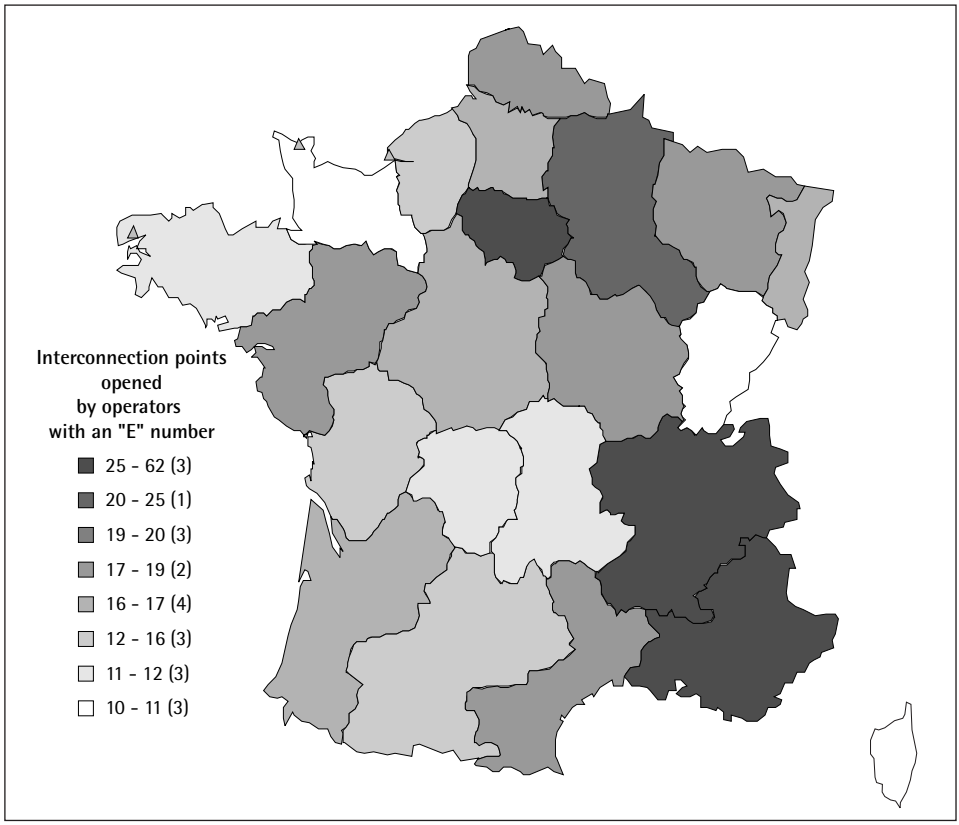
For four operators with an "E" number (9 Telecom Réseau, GTS-Omnicom, Siris and Télécom Développement), the 36-month check fell on 30 December 2000. For a fifth (Télé 2), it was on 3 July 2001. The checks were thus carried out in January and February 2001 and in August and September 2001. Information supplied to ART indicates that each of these operators now has at least two interconnection points in each region of metropolitan France and more than 60% of its transmission capacity on its proprietary infrastructures, as required.

1 "Only terrestrial transmission capacities between the network components (exchange, cross-connect unit, etc.) are taken into account; the connections to the end users are not."

The information supplied is summarised in the table below:

Interconnection points	at least 2 per region in metropolitan France and per operator: a total of 10 to 60 points per region.
Regions covered by an operator's proprietary installations	from 15 to 21 depending on the operator
Ratio of operators' proprietary transmission infrastructures	from 65.8% to 99.9%
Operators' proprietary transmission installations	a total of about 21,500 km (about 17,000 km at 18 months)
Investments already made in network deployment (cumulative since 1997)	about 6 billion francs (€910 million) (about 2.7 billion francs, or €410 million, at 18 months)

The map below shows the number of interconnection points opened by the five operators in each region.



This second check shows that the "E" allocation system has achieved its objectives. In fact, the 5 operators that underwent the 36-month check have deployed a more extensive national network in a shorter timeframe than most of the other network and service operators.

The next check to see whether these operators are meeting their obligations will be performed at the end of the 10-year period. For Ventelo, 9 Telecom Réseau, Telecom Développement, Siris, this will be on 30 December 2007 and for Télé 2 on 3 July 2008.

3. Tariff opinions

Base tariffs changed very little in 2001. The exceptions were those for telephone calls between metropolitan France and the overseas départements and those for international calls. Most tariff offers involved changes in certain flat rates and rate options. On the whole, pricing decisions on long-distance calls concerned:

- **for calls between metropolitan France and the overseas "départements"**
  - the promotion of and changes in the Tropic'France flat rates
  - changes in the price for calls between metropolitan France and the overseas départements
  - the marketing of new offers: the Option Plus au Départ des DOM offers
- **for national long-distance calls**
  - modification of the Plan Gagnant National offer
  - marketing of new products: the Libre Cours 24 Heures sur 24 flat rates, the Plan Tarifaire rate options
  - rate promotions for residential customers
  - the trial offer of Mes Numéros Week-end
- **for international calls**
  new international call rates for business customers
- **as part of the changeover to the euro**
  changes in flat-rate tariffs and rate options

Opinion number	Opinion date	Tariff decision number	Subject	Reception date
78	17/1/01	2000410	Promotion of the Tropic'France flat rates	27/12/00
78	17/1/01	2000409	Changes in Tropic'France flat rates	27/12/00
269	7/3/01	2001432	Modification of the Plan Gagnant National offer	16/2/01
329	28/3/01	2001438	The new Forfaits Libre Cours 24h sur 24 flat-rate offer	6/3/01
413	25/4/01	2001454	Changes in Tropic'France flat rates	26/3/01
415	25/4/01	2001449	Changes in call rates between metropolitan France and the overseas départements	21/3/01
507	30/5/01	2001500	Marketing of the Plan Tarifaire Marché Affaires rate option	7/5/01
507	30/5/01	2001484	Marketing of the Plan Tarifaire Marché Résidentiel rate option	7/5/01
547	8/6/01	2001492	Changes in international call rates for business customers	7/5/01
736	18/7/01	2001546	Rate promotion for the general public	5/7/01
827	29/8/01	2001566	Mes Numéros Week-end trial offer	30/7/01
969	10/10/01	2001587	Changes in flat rates and rate options in the residential market as part of the changeover to the euro	19/9/01
1036	31/10/01	2001577	Marketing of the Option Plus au Départ des DOM offer (professional market)	19/9/01
1036	31/10/01	2001576	Marketing of the Option Plus au Départ des DOM offer (residential market)	19/9/01

a. Telephone calls between metropolitan France and the overseas départements

• Tropic'France flat rates

France Télécom proposed modifying two tariffs. First, the operator ran a promotion on the Tropic'France flat rates from 1 February to 31 March 2001, during the carnival period overseas, and lowered these flat rates by 7% as of January 2001[1]. The operator also reduced these same four flat rates by 8% as of April 2001[2]. The Tropic'France flat rates are thus reduced by an average of 15%. These flat rates are for residential customers. By paying a monthly subscription, customers benefit from flat rates for calls from metropolitan France to the overseas départements or from an overseas départements to metropolitan France.

ART noted that the change in the Tropic'France flat rates was in line with the costs generated by the telephone service between metropolitan France and the overseas départements and that the proposed prices did not threaten competition in this market. It gave a favourable opinion for each of these decisions, judging that the proposed prices benefited residential consumers.

• Base tariffs

During April 2001, France Télécom presented a decision to lower the price of calls between metropolitan France and the overseas départements and territories. The proposed price reductions represented, on average, an 11% decrease in the residential market and a 15% decrease in the professional market. France Télécom also calculates that third-party operators were handling over 25% of the traffic in the combined markets in December 2000.

ART analysed the tariffs proposed by France Télécom, taking into account existing tariff options that allow customers to benefit from lower base tariffs. Judging that France Télécom's proposed tariffs did not undermine effective competition in the market between metropolitan France and the overseas départements and territories, and that this decision benefits consumers, ART issued a favourable opinion[3].

• Tariff options

In September 2001, France Télécom presented two tariff decisions concerning the marketing of two new tariff options called, respectively, Option Plus au Départ des Départements d'Outre-mer (residential market) and Option Plus au Départ des Départements d'Outre-mer (professional market). With these options, subscribers located in an overseas département can benefit from special rates for certain calls made from their fixed terminal by paying a monthly subscription. These are long-distance calls, either international, to metropolitan France, to other overseas départements, to overseas territories and to mobile phones. According to information supplied by France Télécom, the average saving on the bill (including the Option Plus subscription charge) is about 16%.

These tariff decisions round out others concerning the marketing of these same tariff options for calls originating in metropolitan France. These options apply to near-local, long-distance and international calls as well as calls to the overseas départements and territories and to national mobile phones[4].

1 Opinion no. 01-78 of 17 January 2001, mentioned in the O.J. of 6 March 2001, p. 3516, and opinion no. 01-413 of 25 April 2001, mentioned in the O.J. of 22 June, p. 9932.

2 Opinion no. 01-413 of 25 April 2001, mentioned in the O.J. of 22 June p. 9932.

3 Opinion no. 01-415 of 25 April 2001, mentioned in the O.J. of 22 June p. 9932.

4 Opinion no. 01-507 of 30 May 2001, mentioned in the O.J. of 1 March 2001 p. 3949.

ART issued a favourable opinion on these two decisions of France Télécom, judging that, on the whole, the proposed offers would benefit consumers. It asked to receive a report on 31 July 2002 concerning the marketing of the offer, in particular indicating the number of subscriber sign-ups and the number of minutes per type of call in each market[1].

b. Long-distance calls

• Flat rates

In March 2001, France Télécom rounded out its Libre Cours flat rates with a new offer having no time-of-day restrictions called Forfaits Libre Cours 24 Heures sur 24. The type of calls covered by these flat rates is the same. With the Libre Cours offers, residential customers pay a monthly subscription to benefit from a flat rate on a fixed volume of national calls (near-local and long-distance). These flat rates are applicable from 6 pm to 8 am on weekdays and all day on Saturdays, Sundays and holidays.

ART analysed each France Télécom offer to be sure that the tariffs did not contravene the rules for fair competition. It concluded that the average revenue for each of the Forfaits Libre Cours 24 Heures sur 24 is greater than the costs incurred by France Télécom and that it does not cause a scissor effect on pricing in the market concerned. It issued a favourable opinion, judging that this pricing decision benefits consumers[2].

• Tariff options

In early 2001, France Télécom wanted to include the metropolitan France–overseas départements traffic and the traffic between the overseas départements in the Plan Gagnant National offer. It also wished to lower the two-month minimum entitling customers to a lower rate. With the volume-based offer Plan Gagnant National, residential customers receive reductions based on their two-month consumption.

ART issued a favourable opinion after making sure that these modifications would not cause a scissor effect with regard to competing operators who want to market an equivalent offer, relying on the interconnection services of France Télécom[3].

In May 2001, France Télécom wished to market to new tariff options called Plan Tarifaire Marché Résidentiels and Plan Tarifaire Marché Affaires. With the Plan Tarifaire, subscribers in metropolitan France benefit from a special rate schedule for calls from a fixed terminal by paying a monthly subscription fee. It applies to near-local, long-distance and international calls as well as calls to the overseas départements and territories and to mobile phones in France.

ART's analysis consisted in evaluating the percentages by which the Plan Tarifaire rates would reduce France Télécom's general price schedule and in comparing the price levels that the Plan Tarifaire options would give with the costs that an efficient third-party operator would bear marketing a similar offer using the interconnection services of France Télécom. It observed that the revenue levels a third-party operator could count on under such conditions were compatible with its costs. As a consequence, ART issued a favourable opinion on these pricing decisions[4].

In July 2001, France Télécom proposed conducting a promotion on national calls,

1 Opinion no. 01-1036 of 31 October 2001, mentioned in the O.J. of 1 March 2001 p. 3949.
2 Opinion no. 01-329 of 28 March 2001, mentioned in the O.J. of 19 May 2001 p.8038.
3 Opinion no. 01-269 of 7 March 2001, mentioned in the O.J. of 19 May 2001 p.8038.
4 Opinion no. 01-507 of 30 May 2001, mentioned in the O.J. of 4 August 2001 p.12705.

excluding local calls, from midnight on Saturday, 27 October 2001 until midnight on Sunday, 28 October 2001. In this promotion, France Télécom would offer customers with a residential subscription in metropolitan France a flat rate for one hour of near-local and long-distance calls in France.

Given the temporary nature of the reduction, ART issued a favourable opinion on this pricing decision, judging that this offer did not threaten the operations of France Télécom's competitors in the market concerned[1].

In July 2001, France Télécom proposed marketing an experimental offer for residential customers called Mes Numéros Week-end. This tariff decision consisted in offering unlimited calls to three national telephone numbers, excluding local numbers, from midnight on Saturday to 11.59 pm on Sunday, for an irreducible 6-month period, starting from the subscription date.

ART noted that this decision was France Télécom's first unlimited call offer. ART judged that it could be beneficial to a large number of consumers and at the same time have an appreciable effect on competitive conditions in the targeted market segment. As a consequence, it decided that the long-term marketing of such an offer would have to satisfy two essential conditions: the offer must not be predatory and it must not have a scissor effect on prices for other operators who wish to market an equivalent offer using the interconnection services of France Télécom. ART issued a favourable opinion on this decision on condition that the number of subscribers does not exceed 100,000[2].

• International calls

In May 2001, France Télécom proposed decreasing the price of certain international calls in the professional market. This decision called for lowering the average price of calls to all tariff zones except zone 6 (Albania, Cyprus, Malta, etc.). This would mean an average decrease of about 9% to all international destinations.

To issue an opinion on this pricing decision, ART evaluated the average costs for international telephone service by dividing international destinations into three groups. It analysed the tariffs proposed by France Télécom in relation to these three cost categories, taking into account existing tariff options that offered a reduction in the base price for calls. ART issued a favourable opinion, judging that the changes in international call rates remained, on the whole, in line with changes in costs and that they benefited consumers[3].

• Conversion of prices into euro

In September 2001, France Télécom presented a pricing decision concerning a modification of flat rates and tariff options in the residential market as part of the conversion of prices into euro. The tariff options and flat rates affected by this decision are the following: Forfait Ligne Tchatche, Ma Ligne Locale, Primaliste, Forfait Local, Forfait Libre Cours, Forfait Libre Cours 24/24, Forfaits Tropic'France, Plan Gagnant National, Option Plus and Numéris Itoo.

According to France Télécom, the purpose of this decision is to obtain prices in euro, including tax, that are easier to communicate to customers than those given by a simple conversion of francs to euro. The result would be price reductions for consumers of up to 11.7%.

1 Opinion no. 01-736 of 18 July 2001, mentioned in the O.J. of 19 December 2001 p.20162.

2 Opinion no. 01-827 of 29 August 2001, mentioned in the O.J. of 14 December 2001 p.19873.

3 Opinion no. 01-547 of 8 June 2001, mentioned in the O.J. of 4 August 2001 p.12705.

ART analysed each of France Télécom's offers to be sure that the tariff level did not interfere with the conditions for fair competition. Except for the change in the tariffs of the Ma Ligne Locale promotion (local calls), it issued a favourable opinion, on condition that the subscription price for Numéris Itoo was set at 25.50 euro, tax included, instead of 25 euro, tax included.

It issued an unfavourable opinion on the change in tariffs for the Ma Ligne Locale promotion, judging that:

- it would be untimely to lower the average price of local calls before carrier selection for local calls was actually implemented.
- it would result in a scissor effect on prices owing to the tariff levels of the flat-rate offers[1].

4. Customised offers

The competition authority, by its decision of 23 July 2001[2] in a matter referred to it by ART on 4 February 2000 in application of provisions of Article L. 36-10 of the Posts and Telecommunications Code, sanctioned France Télécom for abuse of dominant position in a customised contract negotiated with one of its customers in 1999.

The competition authority's ruling addressed two grounds of complaint:

- The first concerns the practice of proposing and negotiating with its client a global offer covering all calls that other operators could not compete against in the same conditions. The competition authority noted that France Télécom had proposed and its client had accepted a tariff offer that depended on the client's committing to a global volume of calls, including both local and long-distance calls, before carrier selection had been extended to local calls. The authority concluded that although the contract did distinguish in the end between these services, this global offer was negotiated "with the aim of slowing new entrants' penetration of the market" and therefore constituted an abuse of dominant position by France Télécom.

- The second grievance concerns the scissor effect generated by the fixed-to-mobile tariffs offered to this client. The competition authority noted that the proposed tariffs generated such an effect because an efficient rival operator with a local loop and interconnection to the network would not be able to charge similar tariffs, the reason being that they were lower than the mobile termination fee, in particular when the call was to an Itinéris number. This practice creates an "artificial barrier to market entry" and, according to this decision, constitutes an abuse of dominant position by France Télécom. It should be pointed out that with this decision, the competition authority made a fundamental judgement for the first time with regard to the notion of tariff scissors and characterised it as an abuse of dominant position, applying the method customarily used by ART.

The competition authority set a fine of 40 million francs (¤6.1 million). In accordance with the order of 1986, the authority justified the sanction on the basis of the seriousness of the practices and the detrimental effect on the economy. Their seriousness is established by their being performed by the dominant operator during the second year after fixed telephony was opened to competition. It is aggravated by France Télécom's awareness of the competition authority's opinion on this question, issued in 1998. The authority also noted that these practices were prejudicial to the economy, since their purpose was to erect an entry barrier to a competitive market.

1 Opinion no. 01-969 of 10 October 2001, mentioned in the O.J. of 1 March 2002, p. 3949.

2 Decision no. 2001-D-46 of the competition authority of 23 July 2001 concerning practices of France Télécom in a customised contract in 1999, published in the BOCCRF no. 14 of 24 September 2001.

IV. Local calls

A. The market

1. Trends in revenues and volumes (excluding Internet)

Revenues

€ millions	1998	1999	2000	2001	Growth in 2001 (%)
Local calls excluding Internet and fixed-to-mobile	3,598	3,437	3,007	2,493	-17.1%

Volumes

Millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
Local calls excluding Internet and fixed-to-mobile	84,212	80,920	77,037	72,632	-5.7%

Local-call revenue and volume continued to fall, with declines of 17.1% and 5.7%, respectively, for the year.

2. Trends in competition

Until 31 December 2001, competition in the local-call segment was limited mostly to the offers of a few operators with local-loop networks.

This situation changed with the introduction of the optional elimination of local-call sorting. Since 1 January 2002, any operator can, if it and its clients wish, carry calls within the département. This system gives operators the possibility to have a closer link with the customer, while awaiting the deployment of alternative, broad-scale offers (unbundling of the local loop, wireless local loop).

According to information supplied by France Télécom in April 2002, during the examination of the France Plus flat rates, nearly 20 operators, including the main ones, have asked France Télécom to eliminate local-call sorting.

- For 11 of them, local-call sorting was eliminated in all geographic areas in metropolitan France.
- For 5 of them, it was eliminated in the regions the operators requested.
- The other requests concerning national coverage were being dealt with at the time this report was written.

Substantial progress has been made in eliminating local sorting zones across France, permitting the actual opening of the local-call market.

B. ART's action

1. Extension of call-by-call carrier selection and preselection to local calls

After broad consultation with consumer associations and operators, ART defined the condi-

tions and deadlines, starting from 31 December 2001, for implementing call-by-call carrier selection and preselection for local calls. These measures were set forth in a decision of 18 July 2001[1], which was ratified by decree on 26 September 2001.

a. Why had local calls been excluded from carrier selection and preselection?

The consultation conducted by ART in 1997 to define the conditions for introducing call-by-call carrier selection showed that the conditions for developing networks to compete with France Télécom's prevented operators from handling local calls in an economically viable manner.

Therefore, in the initial phase of competition, ART followed the example of most other European countries by introducing a sorting system that excluded local calls from carrier selection. The conditions for this system are set forth in a decision of 17 October 1997[2], which was ratified by ministerial decree.

As a result of this sorting system, which is used today for both call-by-call selection and preselection, the France Télécom network turned over to the rival operator selected by each customer only calls to subscribers located outside a predetermined area called the "local sorting zone". Except in the Paris metropolitan area (Île-de-France) and Corsica, this zone coincides with the administrative area of the département. Consequently, France Télécom continued to handle all local calls or calls within the local sorting zone.

The technical and economic conditions that justified maintaining this system have evolved so that now operators can consider launching commercial offers including local calls in reasonable economic conditions.

ART took this new situation into account in approving France Télécom's 2001 standard interconnection offer, which provided the possibility for any operator interconnected with the incumbent operator to obtain, upon request, the extension of call-by-call selection and preselection to local calls "during the fourth quarter of 2001".

b. The conditions for implementing the decision between operators

ART has made a thorough analysis, in consultation with all operators and several consumer associations. By doing so, it has identified various options for introducing these new services and for evaluating their impact on the development of competition and on users' access to them.

ART has concluded that only a comprehensive extension, as was used to extend carrier selection to fixed-to-mobile calls in November 2000, would permit effective development of consumer-beneficial competition in the local calls market, without obliging customers to bear, directly or indirectly, unnecessary extra costs.

ART therefore decided that each operator can, if it wishes, extend all its call-by-call selection and preselection services simultaneously and globally to local calls as of 31 December 2001.

In more precise terms, France Télécom must satisfy within six weeks all requests that operators submit after 15 November 2001. Since some areas of France Télécom's network are still connected to old-generation local exchanges,

1 Decision no. 01-691 of 18 July 2001, published in the O.J. of 30 September 2001 p. 15477.

2 Decision no. 97-345 of 17 October 1997 concerning the definition of local sorting, published in the JO of 19 December 1997, p. 18432.

ART has asked the incumbent operator for a detailed description of the geographic areas concerned as well as a timetable ending no later than 1 June 2002 for opening them to the services.

ART has also issued recommendations concerning what operators are to do to inform their present customers about the consequences of their extending service to local calls.

c. Essential information for consumers from the operator

When operators decide to extend their preselection services to local calls, ART asks them to be sure to provide detailed information beforehand to their customers who have already subscribed to preselection for long-distance calls. This information should reach them in time to allow them to make a decision with a full understanding of:

- the technical conditions and price of the offer;
- the possibilities for using other operators for their local calls.

ART decided in particular that at least two initiatives to inform customers, who remain France Télécom subscribers, should be taken before the operational extension of preselection in a zone.

d. The practical consequences for consumers who are already call-by-call selection or preselection subscribers

The practical consequences of this extension for consumers who already have a call-by-call selection or preselection contract are as follows:

• For customers who have a call-by-call selection contract with an operator other than France Télécom for all long-distance, international and fixed-to-mobile calls:

- This operator must inform these customers in advance of the date its service will be extended to local calls and the applicable tariffs.
- After this extension date, if a customer wants this operator to handle his local calls, he simply dials the operator's prefix, just as he already does for his national, international and fixed-to-mobile calls.
- If a customer wants France Télécom to continue to handle his local calls, he dials the number as he usually does, beginning with "0".

• For customers who have a preselection contract with an operator other than France Télécom:

- This operator must inform these customers at least twice in advance of the date preselection will be extended to local calls and the tariffs applicable to these calls.
- After this date, if the subscriber dials a number beginning with "0", the local call will be handled automatically by this operator.
- If the subscriber no longer wants this operator's preselection service, he can cancel the entire preselection service at no charge and use France Télécom's by default or sign up for preselection with another operator.
- If the customer does not want this operator to handle his local calls but does want to keep its preselection service, he simply replaces the "0" with the prefix of another operator, including the "8" to use France Télécom, when dialling. As a consequence:
  - corporate clients should program their PABXs so that this call-by-call selection is done automatically;
  - residential subscribers will have to dial one of these prefixes before their party's number each time they make a call.

• For customers covered by public contract procedures, the operators will have to take tech-

nical steps to ensure that the initially subscribed services continue regardless of the carrier selection mechanisms used.

France Télécom continues to provide the physical connection for customers, which corresponds to the subscription on their bill, and to handle calls to special numbers, short numbers and emergency numbers.

2. Tariff opinions

During 2001, France Télécom submitted several local-call tariff decisions to ART for an opinion.

a. France Télécom's tariff decision concerning the marketing of Forfait Multitiligne[1]

This decision concerned the marketing of flat rates on local calls and calls to non-geographic Internet numbers in the professional market. Six monthly flat rates, for 10 hours to 100 hours, were proposed.

ART issued an unfavourable opinion[2] on this tariff decision of France Télécom. It judged that the Forfait Multiligne offer could not be marketed before a local-call carrier selection system[3] was actually in place. Allowing France Télécom to market flat rates that provided substantial savings on local calls a few weeks before this system was introduced, and thus before other operators had an opportunity to propose equivalent offers, would have given France Télécom a competitive advantage.

ART also concluded that the tariffs for some of the proposed flat rates could generate a scissor effect.

b. France Télécom's tariff decisions concerning its range of 24/24 local-call residential flat rates[4] **and the marketing of the Forfait Local Pro/PME tariff option**[5]

These decisions were submitted to ART for an opinion on 3 December 2001.

The purpose of the decision on the range of 24/24 local-call flat rates was:

- to suspend the marketing of the MaLigne Locale offers, which France Télécom began proposing to residential customers in autumn 2000. These offers consisted of a flat rate that included the basic subscription and a monthly flat rate for calls (local and Internet access);

- to discontinue the marketing of the Ligne Tchatche offer. This offer, marketed since October 1999, allowed customers who already had a telephone line to obtain a second line by paying flat rate that included the subscription and a flat amount for local calls;

- to create a new range of local-calls and Internet-access flat rates for residential customers. Four flat rates, for 3 hours to 20 hours of calls, were planned.

The aim of the decision concerning the marketing of the Forfait Local Pro/PME tariff option was:

- to suspend the Ligne Pro Locale offers for business customers, which worked on the same principle as the Ma Ligne Locale offers for residential customers;

- to create a new range of local-call and Internet-access flat rates for customers who

1 Decision no. 01-564.

2 Opinion no. 01-886, of 14 September 2001.

3 See ART decision no. 01-691 of 18 July 2001, specifying the conditions and the deadlines for introducing local-call carrier selection within local sorting zones.

4 Decision 01-625.

5 Decision 01-626.

have a Professionnel, Professionnel Présence, or Professionnel Numéris contract. Two flat rates for 3 or 6 hours, applicable 24 hours a day, were proposed.

These 2 decisions must be seen in relation to matters that Télé 2 and Cegetel brought before the competition authority on 9 and 12 October 2001, respectively, concerning offers combining local calls and services on which France Télécom was alleged to have a monopoly.

With its decision of 19 December 2001[1], the competition authority ordered France Télécom to suspend the marketing to new subscribers of certain offers, including Ma Ligne Locale, Ligne Pro Locale and Ligne Tchatche, and to modify these offers by separating the local calls from the subscription and Internet access. New offers marketed by France Télécom are to include this separation.

ART issued an unfavourable opinion[2] on the tariff decisions no. 01-625 and no. 01-626 on the ground that they only partially respected the instructions given by the competition authority in the aforementioned decision. In particular, the proposed local-call flat rates included Internet access, in disregard of the competition authority's demand that these calls be separated out.

c. Modifications made by France Télécom

In response to the competition authority's aforementioned decision and ART's unfavourable opinions, France Télécom proposed a series of modifications to the Forfaits Locaux 24/24 Résidentiels, Forfait Local Pro/PME and Forfait Multiligne offers.

The following modifications were made:

- Internet-access calls were no longer included in the flat rates.
- These options became accessible call by call to customers who opted for carrier selection.
- Tariffs in the Forfait Multiligne offer were modified to avoid a scissor effect on prices.

These modifications adequately responded to ART's objections to these offers.

In view of these changes, the local-call flat rates were approved on 9 January 2002.

The 24/24 local-call residential flat rates were subsequently marketed by France Télécom under the name "Les Heures Locales". The Forfait Local Pro/PME and the Forfait Multiligne, which are intended for professionals, were also marketed and brought together in a single product range.

3. The opinions to the competition authority

The competition authority's decision in the cases referred by Télé 2 and Cegetel concerning four France Télécom offers[3] – Ma Ligne Locale, Ligne Pro Locale, Ligne Tchatche and Option Plus – applies to several offers previously marketed by France Télécom to professional and residential customers:

1 Decision of the competition authority no. 01-MC-06 of 19 December 2001 concerning grievances and requests for protective measures brought by Télé 2 and Cégétel against France Télécom, concerning four of its tariff offers: MaLigne Locale, Ligne Pro Locale, Forfait Local et Ligne Tchatche, published in the BOCCRF no. 4 of 28 February 2002, p. 169.

2 ART opinion no. 01-1207, of 21 December 2001, on tariff decisions no. 2001625 concerning the creation of a range of local-call 24/24 residential flat rates and no. 2001626 concerning the marketing of the new tariff Forfait Local PRO/PME and changes in the tariff option Forfait Multiligne.

3 Decision no. 01-MC-06 of 19 December 2001 already cited.

• Ma Ligne Locale, Ligne Pro Locale and Ligne Tchatche, are flat-rate offers: Marketed by France Télécom since autumn 2000, these include the basic subscription and a monthly flat rate for calls (local and Internet access). In accordance with established jurisprudence, the competition authority ruled that combining in a single flat rate a service on which the operator has a virtual monopoly (i.e subcription) and services that are about to be opened to competition with the extension of carrier selection to local calls would violate the rules of competition.

• Forfait Local: The flat rate is for calls only, though both local calls and Internet access are included. The competition authority ruled that including both types of calls would undermine competition because competitors are not in a position to propose comparable offers.

• Option Plus: With this offer, residential and business customers benefit from special tariffs on their near-local, long-distance, international and fixed-to-mobile calls. The competition authority objected to this offer for two reasons:

- France Télécom ran a major advertising campaign coupling Option Plus with the Ma Ligne Locale and Ligne Pro Locale offers, thus combining services on which it has a monopoly with ones on which it has competitors.

- France Télécom presented Option Plus as incompatible with a preselection contract with a competing operator, thereby encouraging customers to cancel preselection contracts in order to benefit from its Option Plus offer.

The competition authority concluded that these practices "could have as their aim to hinder the growth of competition in the local-call market, while distorting competition with long-distance operators, who are unable to propose such offers". Its analysis is much the same as those in the opinions ART communicated to the authority in this matter[1].

Moreover, considering the particular context in which the condemned practices occurred (i.e. on the eve of the extension of carrier selection to local calls), the competition authority, like ART in its opinions, judged that these practices warranted protective measures. It therefore ordered France Télécom:

• to suspend the marketing of Ma Ligne Locale, Ligne Pro Locale and Ligne Tchatche, Forfait Local, since they combined services on which France Télécom had a monopoly with services on which it had competition, and to modify these offers so as to separate the types of services;

• to suspend the advertising campaign in question and not to repeat it;

• to cease presenting Option Plus as incompatible with the preselection service of a competing operator and to inform clients of this situation.

1 ART opinion no.01-1058 of 7 November 2001 concerning the competition authority's request for an opinion on the petition for protective measures presented by Télé 2 France aimed at ending anti-competitive practices of France Télécom. Opinion no.01-1084 of 14 November 2001 concerning the competition authority's request for an opinion on the petition for protective measures presented by Cegetel relating to practices of France Télécom.

Chapter 2

Value-added services:

I. The market

Advanced or value-added services comprise:

- services that are free for the caller (the call and access and subscription costs are charged to the service provider);
- shared-revenue services (premium-rate telematic and audio "kiosks"): the operator charges the caller for the full cost of the service and pays a portion of the amount received to the service provider;
- shared-cost services, where only a portion of the cost of the call is charged to the caller.
- television, video-conferencing and special routing services.

All these services are accessible from both the fixed and mobile telephone networks.

Change in revenues

€ millions	1998	1999	2000	2001	Growth in 2001 (%)
Total advanced services *Fixed operators*	NA	NA	1,603	1,442	-10.0%
Total advanced services *Mobile operators*	NA	NA	239	352	+47.2%
Total advanced services	1,370	1,648	1,842	1,795	-2.6%

Change in volume

En millions de minutes	1998	1999	2000	2001	Growth in 2001 (%)
Total advanced services *Fixed operators*	NA	NA	9,144	8,876	-2.9%
Total advanced services *Mobile operators*	NA	NA	1,224	1,818	+48.5%
Total advanced services	7,366	8,407	10,368	10,694	+3.1%

The mobile operators are developing these services for their subscribers, generating almost 50% growth on 2000 in terms of both value and volume. This was sufficient to offset the decline on the fixed networks.

II. ART's action

1. Third-party billing

a. Background

Third-party billing for shared-revenue services has been on the agenda since 1998. It is vital for operators that want to offer routing and billing services to Audiotel service providers, because users access Audiotel services without a subscription, via a "kiosk" configuration.

In its 1999 standard interconnection offer, France Télécom indicated that it would submit, by 30 June 1999, the conditions and timeframe for making billing services available. In the end, the service was made available later, when the 2000 standard interconnection offer was approved.

Citing reasons related to the existing ethical framework, France Télécom first refused, then finally included a service in the 2000 standard interconnection offer that was strictly limited by two provisions: the offer was limited to price brackets that did not exceed ¤0.34/min and France Télécom could suspend the offer if one of the services provided through the operator's network did not comply with the ethical framework governing France Télécom's own activity.

France Télécom also stipulated that the operators' shared-revenue services must appear on a separate bill from the ordinary bill; that a separate payment order must be used; and that France Télécom would not be responsible for collecting unpaid bills for other operators.

When the 2001 standard interconnection offer came up for approval, the operators argued that the service proposed by France Télécom was not economically viable. ART therefore asked France Télécom to amend its offer. France Télécom offered to introduce a single payment order and to include other operators' shared-revenue services on the ordinary bill from September 2001. The ordinary bill would be divided into three sections: a summary document that indicates totals for the services provided by France Télécom and by third-party operators, enabling the customer to pay all these services with a single payment; the France Télécom bill; and the bill for third-party operators' shared-revenue services. The conditions for the new offer were presented in March 2001 and approved by ART. The question of responsibility for collecting unpaid bills has not yet been settled.

b. Dispute between 9 Télécom Réseau and France Télécom

After France Télécom's standard interconnection offer was approved, 9 Télécom Réseau began negotiations with France Télécom to obtain a billing service similar to the one that France Télécom offers for shared-cost services (i.e. a single bill with collection of unpaid bills by France Télécom). The price of this service was to be the same as the price that 9 Télécom Réseau charges for France Télécom's shared-revenue services that use 9 Télécom Réseau's local loop.

France Télécom refused to provide the service that 9 Télécom Réseau requested, particularly regarding payment collection and postponed the discussion on price conditions until the presentation of the offer in March 2001.

9 Télécom Réseau, which considered that its request was reasonable and could be implemented within a short time, put in a dispute settlement application.

c. ART's decision

In the light of the above, on 18 May 2001 ART decided that France Télécom should accede to 9 Télécom Réseau's request for interconnection including billing for shared-revenue services for price brackets not exceeding ¤0.34/min. France Télécom's fee for the billing service, including a single payment order, collection, customer service and provision of the necessary information for collecting unpaid bills, was set at a rate of 1.5% of the revenues billed.

ART also decided that France Télécom's own shared-revenue services should appear under the same conditions as those of third-party operators on the third section of the ordinary bill.

France Télécom appealed against this decision: the incumbent operator contested the fee for the billing service. On 26 February 2002, the Paris Appeals Court ordered an investigation to determine the amount of France Télécom's fee for the billing service described above. The conclusions of this investigation had not been presented when this report went to print.

2. Tariff opinions

ART's opinions mainly related to the pricing of Audiotel and Télétel services, which account for around 8.3% of the opinions issued by ART in 2001.

a. Audiotel (shared-revenue service)

In May 2001, France Télécom submitted a proposal for a new price bracket of ¤0.15 incl. VAT per minute for the Audiotel service that uses the series of non-geographic numbers beginning with 0890 PQMCDU. According to France Télécom, the new price responds to market demand, in particular from service providers, who would thus have a broader range of price brackets to choose from. ART issued a favourable response, finding that the offer is in the interests of users and does not jeopardise competition[1].

In June 2001, France Télécom submitted a proposal to offer a range of Audiotel rates based on connection time, an optional service for Audiotel service providers. The service allows owners of Audiotel numbers to modulate the price of the call by taking responsibility for some phases of the connection to their services. Finding this offer to be in the interests of users, ART issued a favourable response to this decision, on the condition that the functionalities linked to the pricing scheme are open and accessible to third-party operators, so they can offer the same type of service[2].

Over the summer, France Télécom wanted to change the existing offer of an additional monthly subscription for the allocation of an Audiotel access number chosen by the subscriber. The new offer covers all the possible combinations of ten-digit Audiotel numbers and ranks them from the hardest to memorise to the easiest.

The new offer is a simplification of the existing offer, with two subscription prices instead of eight as before. ART also found that this measure was likely to prompt Audiotel service providers to ask to change their Audiotel access numbers, because of the increase in the monthly subscription price for the allocation of a chosen access number, and because of the category change of access numbers (from standard numbers to mnemonics). ART therefore requested that the migration timeframe for service

1 Opinion No. 01-570 dated 15 June 2001 and referred to in the O.J. on 04 August 2001, p.12705.

2 Opinion No. 01-692 dated 11 July 2001 and referred to in the O.J. on 18 September 2001, p.14828.

providers affected by the increase in their subscription and that want to change their Audiotel access numbers be extended until the implementation of portability for shared-revenue numbers.

Consequently, ART requested that the access providers that have numbers that will be affected by price increases under the new offer (around 7% of Audiotel access numbers in service), be able to keep their existing numbers without an increase in price until 31 March 2002. Subject to this condition, ART issued a favourable opinion[1].

b. Télétel

ART issued a favourable opinion in June 2001[2] on a tariff decision that would change the price of calls to the Télétel access service. The change, of marginal impact, is the result of conversion to euros of the prices for this service.

3. Dispute between Sonera and France Télécom

Sonera France and France Télécom were involved in a dispute on access to France Télécom's network, more specifically on the provision of a service of directory enquiries service with connection of the caller to an advisor. In its decision of 15 November 2000[3], ART allowed Sonera France a choice in relation to the services provided by France Télécom under the access agreement. Sonera could choose between:

- a service of traffic collection, traffic termination and third-party billing/collection for its service of directory enquiries service and call-forwarding;

- A service of third-party billing/collection for its service of directory enquiries service and call-forwarding, if traffic collection and termination are provided by another operator;

Whichever option was chosen, Sonera France was to be free to set its prices for the end customer.

The decision, notified to France Télécom and Sonera France on 15 November 2000, was to give rise to a contract in the month following the notification.

However, the contract that France Télécom proposed to Sonera on 15 December did not comply with the conditions set forth in the decision. After several months of negotiations between the parties during which no compliant contract was signed, ART informed France Télécom that it was initiating a penalty procedure against it for failing to execute the decision of 15 November 2000.

After due process, the examiners found that France Télécom had not executed ART's decision in full. Indeed, despite a contract signed in May 2001 and an amendment to this contract signed in June 2001:

- France Télécom refused to offer a contract for only a billing/collection service as set forth in Article 2;

1 Opinion No. 01-892 dated 14 September 2001 and referred to in the O.J. on 20 November 2001, p.18448.

2 Opinion No. 01-607 dated 4 August 2001 and referred to in the O.J. on 20 November 2001, p.12705.

3 Decision No. 00-1194 of 15 November 2000 settling a dispute between Sonera France and France Télécom on access to France Télécom's network for the provision of a recorded information service, published in the O.J. on 24 December 2000, p.20828.

• Sonera France is not free to set prices because France Télécom does not want it to, not because it is technically impossible;

• The services provided do not allow all the functionalities requested by Sonera France, in particular the accessibility of its number and ability to forward calls to certain numbers.

Subsequent to France Télécom and Sonera's comments on the examination report and after the hearing of 21 December 2001, ART supported some of the complaints notified[1] by the examiners and fined France Télécom €5 million[2] .

There was no appeal against this decision.

1 i.e. the delay of 180 days before the contracts were signed and the refusal to offer a contract in compliance with Article 2 of the decision.

2 Decision No. 02-34 of ART of 9 January 2002 imposing a fine against France Télécom, pursuant to Article L.36-11 of the Posts and Telecommunications Code, because of France Télécom's failure to fully execute ART Decision No. 00-1194 of 15 November 2000 settling a dispute between Sonera France and France Télécom pursuant to Article L.36-8 of the Posts and Telecommunications Code.

Chapter 3

Mobile telephony

I. Licences and operators

At 31 December 2001, France had 16 operators licensed to establish and operate a mobile public telephone network (L.33-1) and to provide mobile public telephone service (L.34-1). They are listed in the following table.

Mobile operators licensed under Articles L. 33-1 and L. 34-1 at 31 December 2001

Bouygues Télécom	Infomobile	SAS SPM Télécom
Bouygues Télécom Caraïbes	Iridium Italia Spa	SFR (GSM)
Dauphin Télécom	Orange France SA (GSM)	SFR (UMTS)
France Caraïbe Mobiles	Orange France SA (UMTS)	SRR
France Télécom Mobile La Réunion SA	Outre-mer Télécom	TDF
E*Message Wireless Information Services France SA	Saint-Martin & Saint-Barthélemy TelCell SARL	TE.SA.M.

Licences issued at 31 December 2001
summary of information on mobile licences in effect at the present time

Licensed company	Type of licence	Observations	Date of issuance	Publication in Official Journal
Bouygues Télécom	mobile	DCS F3	08/12/94	04/01/95
		Modification DCS F3 licence	17/11/98	18/12/98
		Modification	17/08/00	13/09/00
		Modification incoming calls	13/09/00	11/10/00
		Modification	22/12/00	03/01/01

Licensed company	Type of licence	Observations	Date of issuance	Publication in Official Journal
Bouygues Télécom Caraïbes	mobile	GSM DOM5	19/07/01	19/08/01
DAUPHIN Télécom	Fixed-mobile	under the name Saint-Martin Téléphone	19/10/98	17/11/98
		change of name, Saint-Martin Téléphone	10/03/99	02/04/99
		Complete modification	10/02/00	11/03/00
France Caraïbe Mobiles (*)	mobile	GSM DOM 2	14/06/96	16/07/96
		Extension to French Guiana	22/09/98	20/10/98
		Modification of the GSM DOM2 licence	03/09/99	06/10/99
		Modification	22/12/00	03/01/01
France Télécom Mobiles La Réunion SA	mobile	GSM DOM 4	24/04/01	15/05/01
E*Message Wireless Information Services France (*)	mobile	Alphapage under the name FTMR	13/11/87	14/11/87
		Change of name of FTMR alphapage licence	26/09/00	04/10/00
		Renewal of the licence for 15 years	27/03/01	26/04/01
Infomobile	mobile	Ermes E3	26/11/93	17/12/93
		Modification (FLEX licence)	25/09/98	18/10/98
Iridium Italia S.p.A	mobile		28/10/98	10/11/98
Orange France (*)	mobile	GSM F1under the name France Telecom Mobiles SA	17/08/00	10/09/00
		Modification under the name France Telecom Mobiles SA	22/12/00	03/01/01
		Harmonisation with FTM La Réunion	24/04/01	04/05/01
		Name change GSM F1 + roaming 2G 3G	18/07/01	21/08/01
Orange France (*)	mobile	UMTS licence	18/07/01	21/08/01
Outre-mer Télécom (*)	mobile	GSM DOM 3	30/11/00	25/02/01
Saint Martin & Saint-Barthélémy Tel Cell SARL	mobile	in Guadeloupe GSM DOM6	23/07/01	22/08/01
Saint Martin Mobiles SA	mobile	Initial licence	04/07/91	26/07/91
		Extension until 30 september 2001	26/07/01	03/08/01
		Renouvellement de l'autorisation jusqu'au 30 septembre 2006	30/09/01	21/10/01
SAS SPM Telecom	mobile	Saint-Pierre et Miquelon	21/06/00	08/07/00

Licensed company	Type of licence	Observations	Date of issuance	Publication in Official Journal
Société Française du Radiotéléphone (SFR) (*)	mobile	GSM F2	25/03/91	26/03/91
		Modification of GSM F2 licence	17/11/98	18/12/98
		Modification of GSM F2 for incoming calls	13/09/00	04/10/00
		Modification of GSM F2 roaming 2G/3G	18/07/01	21/08/01
Société Française du Radiotéléphone (SFR)	mobile	UMTS licence	18/07/01	21/08/01
Société Réunionnaise de Radiotéléphone (SRR)	mobile	GSM DOM 1 modification of GSM DOM 1	23/02/95 29/01/01	30/03/95 21/02/01
TDF	mobile	Operator	03/07/87	05/07/87
TESAM (Globalstar)	mobile		17/11/98	11/12/98

**) A company belonging to a group that has had other licences which are now revoked or non-renewed, under the same name or the name of other subsidiaries. Unrenewed and revoked licences are listed below.*

Summary of information on mobile licences that are no longer in effect because they were not renewed and/or revoked at 31 December 2001.

Licensed company	Type of licence	Observations	Date of issuance	Publication in Official Journal
SE*Message Wireless Information Services France*	mobiles	ERMES E1under the name France Télécom Mobiles Radiomessagerie (FTMR)	26/11/93	17/12/93
		Change of name on the Ermes E1 licence of FTMR	26/09/00	04/10/00
		Revocation of Ermes E1	24/12/01	29/12/01
France Câbles et Radio	mobiles	TFTS	23/02/95	21/03/95
		Revocation of TFTS	24/12/01	29/12/01
France Caraïbe Mobiles*	mobiles	AMPS maritime radiotelephone (FAB)	12/03/91	27/03/91
		from FAB to France Caraïbe Mobile	01/08/96	09/08/96
France Télécom *	mobiles	GSM F1	25/03/91	26/03/91
		Modification of GSM F1	17/11/98	18/12/98
		Revocation of GSM F1	17/08/00	10/09/00
	mobiles	Radiocom 2000	12/02/96	19/03/96
		Revocation of Radiocom 2000	31/08/00	08/09/00
	mobiles	Bi Bop (Pointel)	27/11/91	30/11/91
		Revocation of Bi Bop	20/01/99	30/01/99
	mobiles	Radio-maritime service	12/09/96	29/09/96
		Revocation of Radiomaritime	28/12/01	9/01/02

Licensed company	Type of licence	Observations	Date of issuance	Publication in Official Journal
France Télécom Mobiles1800	mobile	DCS R1	08/12/94	04/01/95
		Revocation of DCS R1	26/08/99	07/09/99
Kapt (groupe Kaptech)	mobile	CT2 CAI (PROLOGOS)	27/04/95	11/05/95
		Revocation	25/01/00	18/02/00
Société Française du Radiotéléphone * (SFR)	mobile	NMT	22/02/88	21/04/88
		Revocation of NMT	07/08/00	12/08/00
	mobile	DCS R2	08/12/94	04/01/95
		Revocation of DCS R2	26/08/99	07/09/99
Société Française de Transmission de Données par Radio TDR	mobile	Ermes E2	26/11/93	17/12/93
		Revocation of Ermes E2	27/01/00	18/02/00

(*) Companies that also have another licence in effect under this name (see above)

II. The market

A. Recent market trends

1. The total market (metropolitan France and the overseas départements (DOM))

a. Trend in the number of subscribers

At 31 December 2001, over 36.9 million people in France had a mobile phone, giving a penetration rate of 61.6%[1]. The number of mobile lines thus exceeded the number of fixed lines. The annual growth rate for mobile users in 2001 was 24.6% (compared with 44% in 2000), which represents more than 7.3 million new customers.

Prepaid cards accounted for the largest share of the growth in mobile users, contributing 65% of the net gain. The growth rate was approximately 19.5% for customers choosing a subscription or flat rate.

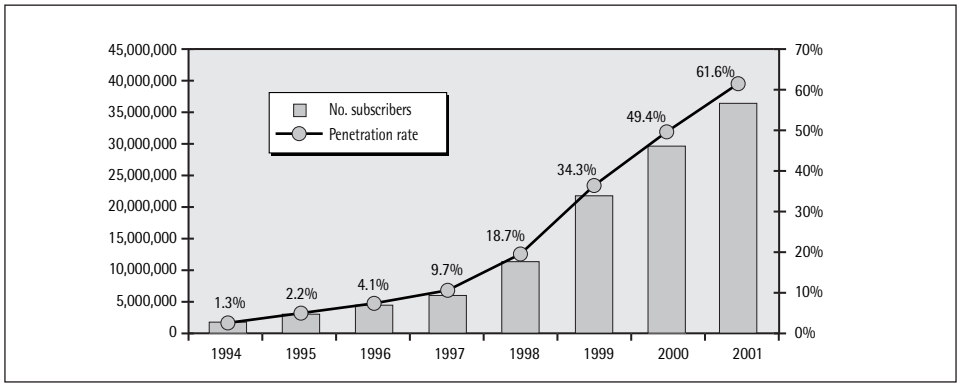
The differences between the market shares of the various types of subscriptions narrowed. Flat rates shrank to 51.1% of the market in 2001, or a difference of 822,260 subscribers.

Trend in the number of subscribers

In units	31/12/98	31/12/99	31/12/00	31/12/01	Growth in 2001 (%)
Mobile telephony	11,210,100	20,619,563	29,644,771	37,028,266	+24.9%
of which flat rates	N/A	13,261,159	15,838,312	18,925,263	+19.5%
of which prepaid cards	N/A	7,279,489	13,806,459	18,103,003	+31.1%

1 The penetration rate is calculated by dividing the total number of radiotelephone customers by the population of France, which was 60,082,000 people, according the National Statistical Institute (INSEE) census of July 1999.

Number of customers and penetration rate at 31 December



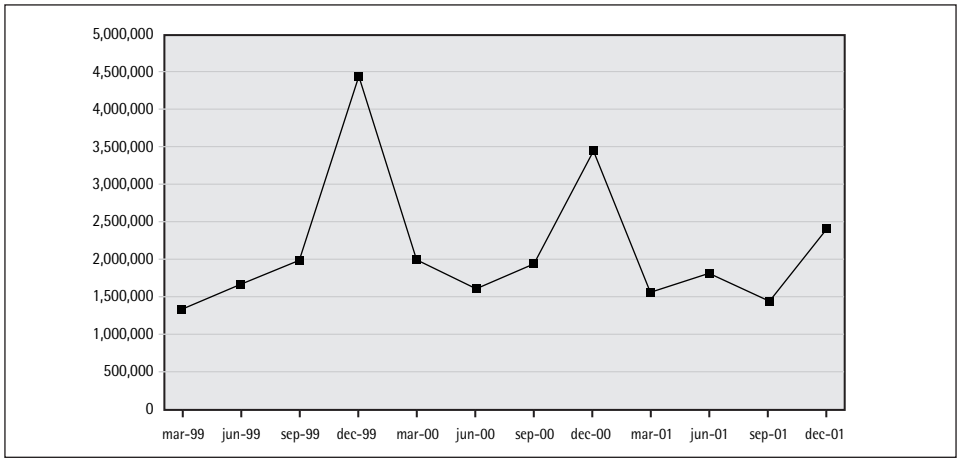
The graph above shows the trend in the number of customers and the mobile penetration rate.

There was a net increase of 7.3 million customers in 2001. The year began with a net increase of about 1.6 million in the first quarter, compared with over 2 million a year earlier. A possible explanation for the smaller net gain in the first quarter of 2001 is less aggressive marketing by operators. In June 2001, the net gain in new customers was 1.8 million. As of the third quarter, there was an appreciable decline in net sales compared with the same period in 1999 and 2000.

This relative slowdown in growth compared with 2000 continued in the fourth quarter, when the net quarterly gain was 2.4 million customers, compared with 3.4 million a year earlier.

The following graph shows the quarterly growth trend for mobile-phone customers over the past three years.

Net quarterly sales in the French radiotelephone market



At 31 December 2001, Orange France, SFR and Bouygues Télécom had, respectively, 17.8 million, 12.6 million and 6.6 million customers.

Net growth in customers for the three operators between 31 December 2000 and 2001 is shown in the table below.

Growth in subscriber base, by operator (France and overseas départements)

	31 décembre	
	2000	2001
Groupe Orange	4 259 800	3 511 900
Groupe SFR	2 825 000	2 395 500
Groupe Bouygues Télécom	1 977 500	1 408 700
Total	**9 062 300**	**7 316 100**

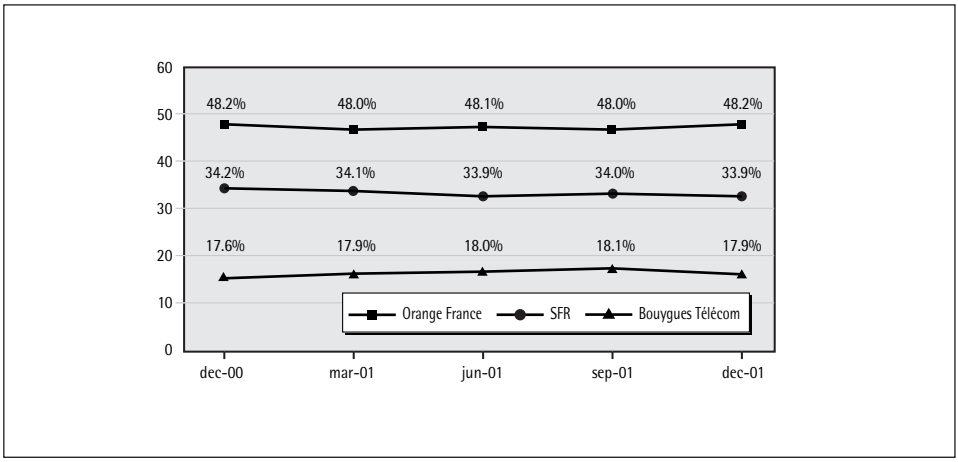
Orange France attracted 48% of the new customers in 2001, compared with 47% in 2000. This small improvement allowed it to maintain a stable market share of 48%, which even increased slightly to 48.2% in December 2001.

SFR, the second-ranking French mobile operator, recorded an annual new-customer market share of 32.7% in 2001, compared with 31.2% in 2000. Its overall market share went down by 0.3 points between 31 December 2000 and 2001.

Bouygues Télécom signed up 1.4 million customers in 2001, or a 19.3% share of new customers, compared with 21.8% in 2000. Bouygues Télécom's market share grew to 18.1% between December 2000 and September 2001, before falling back to its March 2001 level of 17.9%.

The graph below shows the trends in the three operators' market shares during 2001.

Operators' market share (%)



b. Revenue and volume trends

• Terrestrial mobile telephony (outgoing calls)

The following tables show the trends in terrestrial mobile telephony revenues and volumes.

Trends in revenues

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Mobile telephony	3,782	5,377	7,761	9,859	+27.0%
of which flat rayes	N/A	4,939	6,851	8 ,03	+24.1%
of which prepaid cards	N/A	438	910	1,356	+49.0%

Breakdown of revenues

	1999	2000	2001
Flat rates	91.85%	88.27%	86.25%
Prepaid cards	8.15%	11.73%	13.75%

Trends in volumes

En millions de minutes	1998	1999	2000	2001	Growth in 2001 (%)
Mobile telephony	9,968	20,571	35,500	44,237	+24.6%
of which flat rayes	N/A	N/A	31,945	39,216	+22.8%
of which prepaid cards	N/A	N/A	3,555	5,021	+41.2%

Breakdown of volume	2000	2001
Flat rates	89.99%	88.65%
Prepaid cards	10.01%	11.35%

In 2001, the growth in mobile-telephony revenues remained strong, with a gain of 27.0% over 2000. Flat-rate subscriptions generated most of the revenue, though the share from prepaid cards grew to 13.75%.

Flat-rate subscribers, who accounted for nearly 90% of volume again this year, consumed slightly more than 39 billion minutes in 2001.

• Calls to mobiles

Trends in revenues

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Calls to mobiles	1,716	2,253	2,728	2,899	+6.2%

Trends in volumes

Millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
Calls to mobiles	3,811	5,600	7,649	9,396	+22.8%

Calls to mobiles increased both in value and in volume. This type of call has been open to carrier selection since November 2000.

• Data communication services on mobile networks

There was strong growth in data communication services on mobile networks, as the following table shows.

Data communication services on mobile networks

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Data communication	N/A	N/A	151	390	+157.6%
of which SMS	N/A	N/A	150	377	+150.2%
of which mobile à Internet access	N/A	N/A	< 1	13	+1772.9%

In 2000, 1.472 billion SMS were billed to mobile customers. In 2001, this number rose by 119.3% to 3.228 billion short messages sent. SMS represents a significant revenue stream for the mobile operators in the data communication market, while Internet access services on mobile networks have got off to a slow start.

• Other mobile services

The number of subscribers to paging services decreased by 16.3%, from 229,409 at year-end 2000 to 191,950 at 31 December 2001.

Trends in revenue

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Radio paging	99	41	28	16	-41.9%
Professionnal networks, satellitebased mobile networks	161	80	1	2	+154.3%

Trends in volume

Millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
Radio paging	97	39	24	15	-36,8%
Professionnal networks, satellitebased mobile networks	0,2	1,1	0,1	0,6	+460,6%

c. Consumption and revenue data

The following tables give the breakdown of subscriber consumption and the trend in consumption per subscriber.

Calls to fixed telephones rank second in the breakdown of outgoing mobile traffic, representing 40% of the volume. By comparison, in 1999 they were the leading category, at 57.3%. The trend reversed in 2000, when they accounted for only 45.6% of the volume.

Calls between national mobile networks represented 56.6% of the volume, with on-net calls (both parties subscribe to the same operator) accounting for the largest share.

Trends in revenue

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Mobile telephone calls		5,537	7,738	9,859	+27.4%
Of which internationnal	N/A	204	269	367	+36.6%

Trends in volume

millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
mobile telephone calls	9,968	20,571	35,640	44,237	+24.1%
of which mobile-to-fixed	N/A	11,789	16,269	17,718	+8.9%
of which on-net	N/A	4,880	11,715	16,053	+37.0%
of which mobile-to-third-party-mobile	N/A	3,609	6,840	9,562	+39.8%
of which mobile-to-international	N/A	293	498	688	+38.1%
of which roaming outgoing	N/A	N/A	318	396	+24.4%

The volumes of international traffic originating in France and of calls made by French subscribers when abroad remain marginal.

The average monthly revenue per subscriber went down again. The decline in average volume reflects the larger proportion of prepaid customers in net customer growth.

Average monthly revenue and volume (outgoing calls) per subscriber

	1998	1999	2000	2001	Growth in 2001 (%)
Average monthly revenue per subscriber (in euros)	37.0	29.1	25.7	24.6	-4.0%
Average monthly volume per subscriber (in minutes)	97.6	107.7	118.2	110.6	-6.4%

The breakdown of the average revenues and volumes per subscriber shows the differing consumption between the two types of subscriptions.

Breakdown between flat-rate and prepaid subscribers

	flat-rate		prepaid	
	1998	1999	2000	2001
Average monthly revenue per subscriber (in euros)	39.2	40.8	7.2	7.1
Average monthly volume per subscriber (in minutes)	183	188	28.1	26.2

2. The overseas départements

During 2001, the number of mobile customers in the overseas départements (DOM) rose 70.9%, from 0.6 million to 1 million (0.44 million new customers). Growth in the DOM thus remained strong in 2001, though weaker than the 100% gain in 2000.

GSM licences were also issued to new operators in the DOM in 2001. They will begin operating soon, which should give the market a boost.

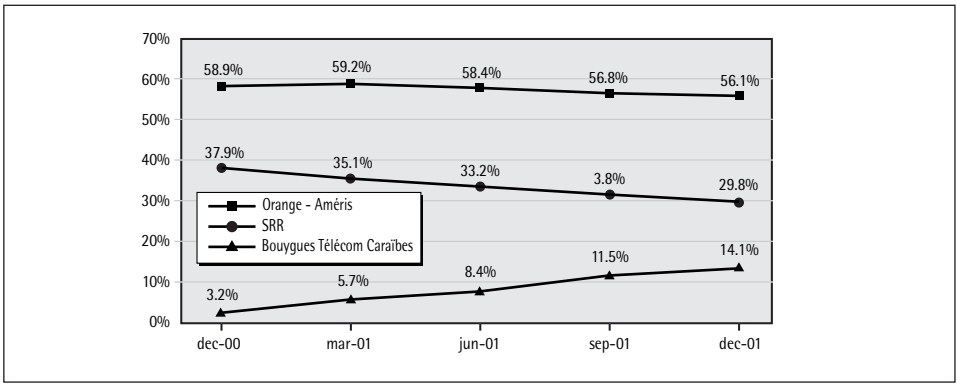
The table below shows the geographic presence of the three operators at 31 December 2001.

Operators' geographical presence

	Orange	SFR	Bouygues Télécom
Guadeloupe	"Orange Caraïbes"		"Bouygues Télécome (Caraïbes)"
Martinique	"Orange Caraïbes"		"Bouygues Télécome (Caraïbes)"
Guyane	"Orange Caraïbes"		
La Réunion	"Orange La Réunion"	"SFR"	

The graph below shows the market shares of the operators in the DOM between 31 December 2000 and 2001.

Operators' market share in overseas départements



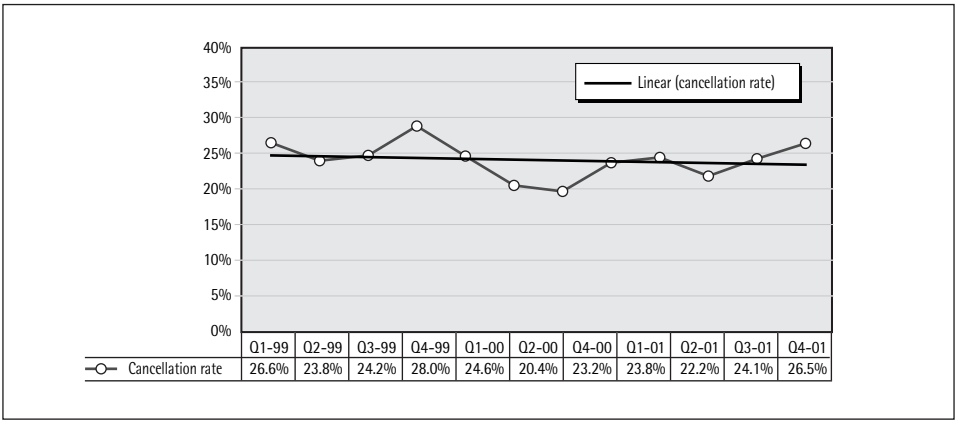
3. Subscription cancellations

In 2001, 7.8 million customers in metropolitan France cancelled their subscription, compared with 5.3 million in the previous year.

The annual cancellation rate is calculated by dividing the number cancellations during a given period by the average number of subscribers during the same period. The cancellation rate was 24.0% for 2001 as a whole, compared with 21.4% in 2000. The cancellation rate increased for all three operators in 2001.

The following graph shows the trend in the annual cancellation rate by quarter since 1 January 1999.

Annual cancellation rates



	Q1-99	Q2-99	Q3-99	Q4-99	Q1-00	Q2-00	Q4-00	Q1-01	Q2-01	Q3-01	Q4-01
Cancellation rate	26.6%	23.8%	24.2%	28.0%	24.6%	20.4%	23.2%	23.8%	22.2%	24.1%	26.5%

NB: The data on cancellations does not take into account the DOM.

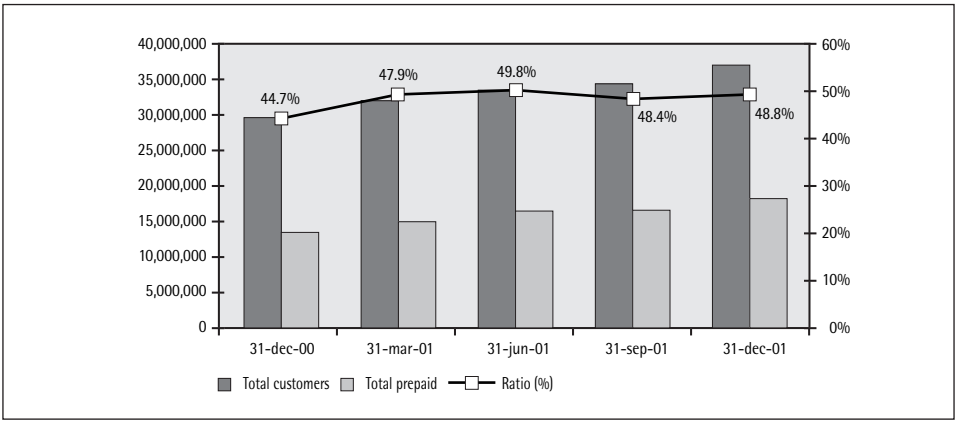
It should be noted that a large share of the cancellations are due to customers switching from subscription to prepaid or vice versa.

4. Prepaid customers

The number of prepaid customers continued to grow in 2001. At 31 December 2001, they represented 48.8% of all mobile customers, an increase of 4.1 percentage points in one year. There were then more than 18 million prepaid-card holders in France, compared with about 13 million a year earlier. It should be noted that the proportion of prepaid customers rose as high as 49.8% of the total mobile market at the end of June 2001.

The graph below shows the trend in the share of prepaid customers in total customers.

Ratio of prepaid customers to total customers



The following table shows the trend in the share of prepaid customers in total customers for each operator. Orange is the only operator that has not recorded a significant increase in prepaid customers.

Percentage of prepaid customers per operator

	31-déc-00	31-mars-01	30-juin-01	30-sept-01	31-déc-01
Orange	45.0%	49.8%	51.6%	47.2%	47.0%
SFR	42.6%	43.9%	46.5%	48.3%	19.5%
Bouygues	48.2%	50.4%	51.3%	51.5%	52.4%

Prepaid cards contributed 65% of net sales in 2001.

B. The arrival of mobile data services

1. Several stages in the organisation of third-generation mobile telephony

GPRS, referred to as "generation 2.5", now appears to be a key stepping-stone on the way to third-generation, UMTS mobile telephony in France and Europe. The mobile networks are being structured for data services in several stages.

• New operators in the market

The year 2000 witnessed the relative failure of WAP on circuit-switched GSM networks, following a roll-out with no doubt overly optimistic expectations. One explanation for the failure was marketing campaigns that did not match the services actually offered; two others were slow data transmission speeds and the inadequate displays on handsets. Unlike GSM, GPRS is a data-oriented system that offers higher transmission speeds than GSM. The success of GPRS should demonstrate that delivering data services across mobile networks is technically, commercially and economically sound.

Heated discussions have already led to the emergence of new classifications for players working alongside those involved in third-generation mobile telephony. In addition to the mobile operators and traditional equipment makers, there are now suppliers of hosting services, gateways, servers, software and portals as well as content providers and technical intermediaries. Mobile handsets are also changing, with new parametering functions that are crucial to accessing the new mobile services over on the data networks. The new GPRS-based services will be delivered through always-on connections with packet-switched transmission, a technology better suited to data, at speeds three to four times faster than is possible with GSM. And there also will be new methods of marketing and billing the services (for example, billing by megabyte).

• New business models

The relative failure of WAP on GSM coincided with explosive growth in the use of short message services (SMS), or "mobile e-mail". Most of this traffic consists of personal communication. However, SMS can be used to send and receive alphanumeric messages with a mobile handset in every form of mobile Internet utilisation: interpersonal, man-to-machine, machine-to-man and machine-to-machine. Enhancements to SMS are now being planned that will offer new possibilities for content formats such as extended messages (EMS) and multimedia messages (MMS). Intended for the public at large, MMS is a decisive step in structuring third-generation mobile communication, with the introduction of the

premium-rate business model to offer added-value services through this medium.

• **Billing by volume**

Designed essentially for voice communication, the GSM networks must evolve to respond to the market's expectations and to the new uses of the Internet. Integrating GPRS in existing mobile networks and bandwidths is a first step. However, this also creates prospects for billing by the volume of data transferred.

• **New content formats**

The previously mentioned WAP technology marked a first step in sending new content formats. More innovations have followed since its introduction. Despite the success of SMS – a rudimentary GSM tool that all GSM handsets on the market have supported for many years – this system is limited in terms of the services that it can deliver. Using EMS and MMS to send new message formats – audio, images and video – on mobile networks creates new prospects for growth.

Each of these steps has prompted debate, controversy, conflict and negotiations among the players in this sector. As a consequence, ART is called on regularly to intervene. In November 2000, for example, when new players were arriving in this fledgling market with the introduction of the first WAP services, ART published recommendations for the development of the mobile Internet. These recommendations are just as relevant and instructive for the market today as they were then.

There were two highlights in the mobile services market in 2001:

• The surge in SMS use and work on the kiosk business model

• The development of GPRS and its launch in the corporate market

2. The surge in SMS use and the "kiosk" project

With monthly growth in SMS traffic of about 20% during 2001[1], more than 3 billion SMS messages were sent over the three French mobile phone networks. The traffic is still interpersonal (mobile to mobile) for the most part and proportionate to each mobile operator's customer base. To stimulate SMS use, the operators' flat-rate offers now include some SMS credit in addition to the call volume. As a result, this type of traffic is contributing a growing share of the mobile operators' revenues.

Personal messaging, which got a "network-effect" lift in late 1999 when the networks of the three French mobile operators were interconnected for SMS, accounts for about 90% of total SMS traffic. During 2001, the mobile operators launched an "SMS kiosk" project aimed at generating revenue growth with other types of SMS-based applications and services. With its capacity to send and receive alphanumeric messages from a mobile terminal for all types of mobile Internet applications, SMS is certain to come into ever-wider use.

As part of the kiosk project, a short internal number at the mobile operators is used to select the service that will send the message. According to the rules for number management, ART has no role in defining the internal numbering plans of the mobile operators' networks. However, the Posts and Telecommunications Code allows the regulator the possibility to take action[2]. In particular, any plan to offer a service with the same short number from all the mobile networks implies a common numbering plan that is different from purely internal numbering plans.

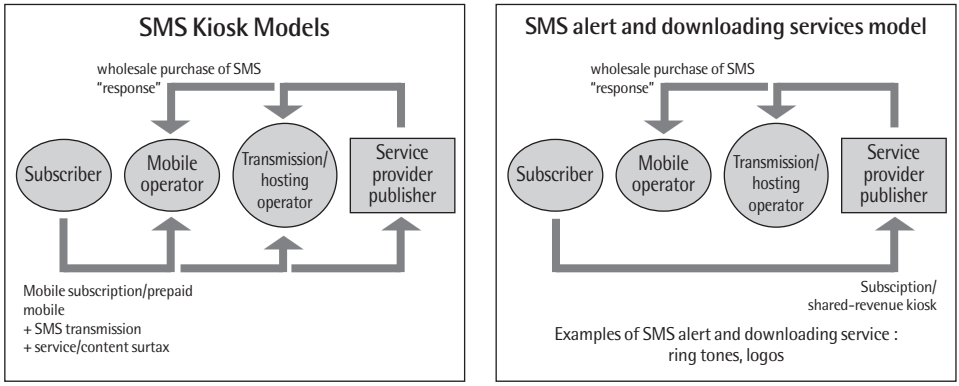
1 Le Monde interactif, 30 May 2001.

2 Articles L 34.10 and 36.7 of the PTC.

In the current phase of the market's construction, ART has intentionally limited itself to calling attention to the major lines of its recommendations concerning mobile Internet so that the market does not crystallise around any given model. However, the development of third-generation mobile telephony is raising structural issues that ART is monitoring closely.

In particular, a pay-for-service Internet model is introduced, which can be built around several business models, including the kiosk.

Examples of business models



Besides the need to upgrade the mobile operators' information and billing systems to respond to new requirements in providing services, the kiosk model raises several other issues. These include the status and the degree of openness of the entity managing the numbers; the rules for managing and assigning short numbers; billing for third parties and payment of third-party service providers, etc. This model has several advantages that can aid in the migration to third-generation mobile. For example, an SMS kiosk has an audience of France's 37 million mobile subscribers from the moment it is launched. To be successful, however, this project must attract loyal users, stimulate innovation in services, encourage the emergence of new players in the chain and support the introduction and profitable application of a new business model descending from the Minitel and similar to i-mode[1]. ART will remain very attentive to developments in this sector and in touch with everyone active in it.

3. The slow development of GPRS

GPRS is benefiting from the previous investments in GSM. By upgrading some components of the radio access network and deploying an IP backbone and a few routers, a mobile operator can rapidly offer the same coverage as with its GSM network. Upgrading a GSM network to GPRS is thus simpler and less costly than constructing a new network from scratch. This will also enable operators to quickly gain technical experience that will be valuable later on for such things as deploying UMTS,

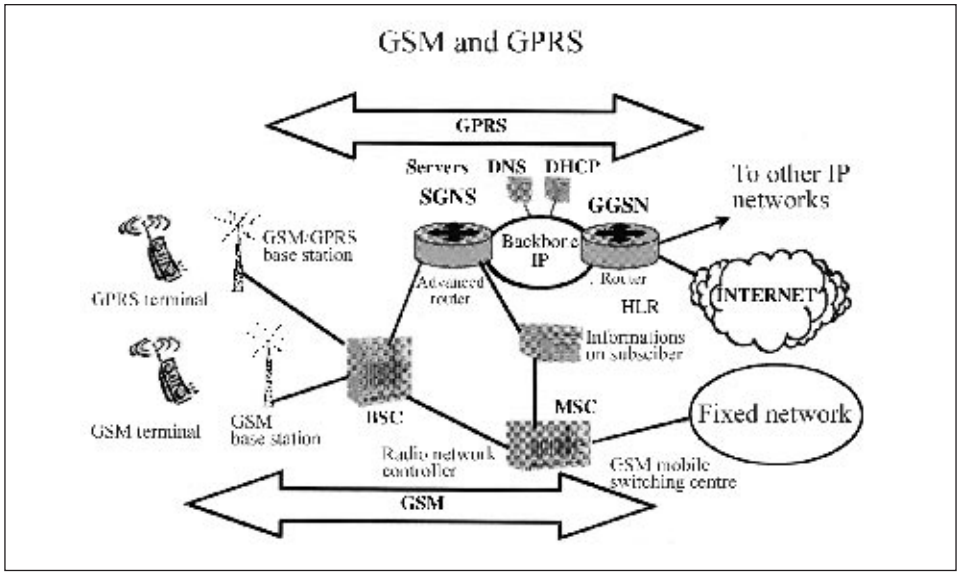
1 Third-generation mobile service developed by the Japanese operator NTT DoCoMo offering multimedia services.

concluding agreements with service providers, testing consumer response and cultivating a demand for mobile multimedia services.

However, the GPRS networks do lead to some radical changes from the technical and economic standpoints. GPRS brings:

- the need for mobile operators to decide whether to focus on voice or GPRS subscribers;
- new rules for international roaming (the mechanisms are different from those with GSM);
- several levels of service (actual speeds of 20 kbits/s to 40 kbits/s);
- opportunities for billing (by volume, etc.); the operators are currently testing their rate schedules;
- an evolving business model, characterised by new billing methods, types of services, players, etc.

GPRS is thus a major break with past systems, which explains why it is being deployed progressively.



4. The prospects for joint development of GPRS and UMTS

As with GSM, there will be three GPRS networks in France. While GSM is targeted to the mass market (a high penetration rate), the mobile operators rolling out GPRS are giving priority to the corporate segment for the time being. The marketing of GPRS has begun, chiefly on a trial basis, in certain professional markets, but it is likely to be offered to the general public during 2002.

The development of this intermediate generation, which could continue in operation for several years while UMTS is being deployed, will thus open the way to third-generation mobile telephony. In all likelihood, strong growth in UMTS use will not be seen before late 2003 or early 2004.

Whether services are used and are successful will depend to a large extent on the replacement of mobile handsets. The launch of GPRS in 2001 will undoubtedly be followed in 2002

by the first debates and conflicts among the companies involved. Controversies will arise over the choice of business model or the methods for paying the service providers. The structure of mobile Internet access, like that of fixed-line access, could be determined by the settlement of disputes over interconnection and access.

The range of GPRS terminals, which vary in performance, is growing steadily. Like SMS today, GPRS will soon be just one function among others at its level. Then will come UMTS, which will be able to deliver far more efficient services to consumers, thanks to much faster transmission speeds than are possible with GPRS. UMTS is thus expected to surpass the limitations of GPRS and open the door to new and more interesting services like video, high-speed Internet connections, positioning and many others.

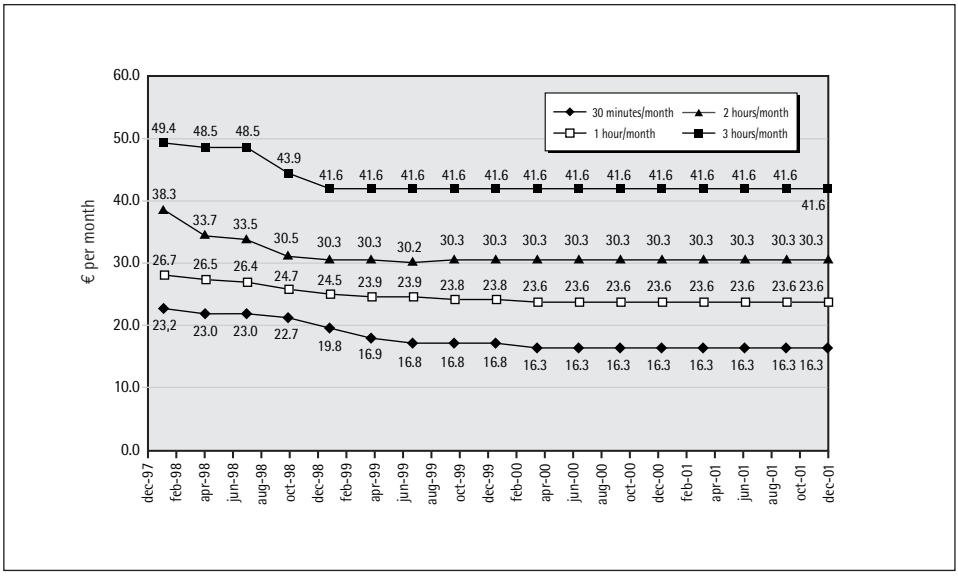
ART continues to place its confidence in the third-generation mobile systems. They represent a true technological leap forward and have the power to renew the strong growth in mobile telecommunications that began with GSM, by offering consumers a range of innovative services based on a cutting-edge technology.

C. Mobile telephone tariffs

The prices of mobile offers went down between early 1998 and early 1999 and stabilised thereafter.

The graph below shows the arithmetical average of the best tariff options offered by the mobile operators from 1998 to 2001 for the four baskets considered (30 minutes, one hour, two hours and three hours per month).

Pricing plans, 1998-2001[1]



1 See Volume 1 for an analysis of percentage trends.

III. ART's action

A. GSM

1. Mobile operators with significant market power

Each year, in accordance with Article L.36-7 of the Posts and Telecommunications Code, ART draws up a list of operators having significant market power (SMP) in several markets in the telecommunications sector. These SMP operators may then be subject in certain cases to stricter obligations.

In the mobile telephone sector, the operators designated as having significant market power in the national interconnection market must align their interconnection tariffs, and in particular the call termination charges on their network, with their costs.

In accordance with recommendations of the European Commission[1], the measure used for the national interconnection market is the value and volume of calls terminating on the network of a fixed or mobile operator, regardless of whether the calls originated on their own network ("internal" interconnection) or on another operator's network. Therefore, this is only traffic of local-loop operators.

The value of the market shares of Orange and SFR have exceed the 25% threshold since 1999, so they have been designated SMP operators in the interconnection market for the years 2000 to 2002[2].

Therefore, as in 2000 and 2001, Orange and SFR are obligated to align their interconnection fees with their costs in 2002. Bouygues does not have this obligation.

2. Fixed-to-mobile calls

a. Call-routing and inter-operator-payment mechanisms

In the case of a fixed-to-mobile call, the mobile operator terminating the call charges the fixed operator interconnected with its network a call termination charge. The one or more fixed operators routing the call before the mobile operator does earn the difference between the retail price billed to the final customer and the termination fee paid over to the mobile operator.

Two important changes were made to the system of call routing and inter-operator payment on 1 November 2000.

- Carrier selection, until then applicable only to inter-city calls between fixed-phone subscribers and for international calls, was extended to fixed-to-mobile calls. Thus, a fixed-phone subscriber could choose, either call by call or with preselection, a fixed operator other than France Télécom to route his calls between the local loop and the mobile network.

- Until then, retail prices for fixed-to-mobile calls had been set by the mobile operators, who also determined the call termination charge on their network. They thus had com-

1 European Commission recommendation ONPCOM 99-03 of 13 January 1999.

2 Decision no. 99-767 of 15 September 1999 establishing for 2000 the list of operators having significant market power in a telecommunications market, published in the O.J. of 1 December 1999, p.17883. Decision no. 00-813 of 28 July 2000 establishing for 2001 the list of operators having significant market power in a telecommunications market, published in the O.J. of 28 September 2000, p. 15326.
Decision no. 01-1206 of 14 December 2001, supplementing Decision no. 01- 750 of 25 July 2001 establishing for 2002 the list of operators having significant market power in a telecommunications market, published in the O.J. of 30 January 2002, p.2030.

plete control over how much would be withheld by the fixed operator upstream from their network. Henceforth, the fixed operators were to set the retail prices.

These two measures increased competition in the fixed-to-mobile market by allowing the fixed operator to decide how much it would withhold for the call and the retail price that it would charge to the final customer.

However, the amount charged by the mobile operator for call termination on its network is a significant proportion of the price billed to the caller, which limits the fixed operator's leeway in setting the retail price. For example, on a retail price of ¤0.35-0.37 per minute on average in 2001, the mobile operator's termination fee was nearly 75% of the retail price.

Besides the matter of competition between fixed operators on the amount withheld, regulation of the termination fee on the mobile networks is important to lower the retail prices of fixed-to-mobile calls. In France in 2000, these represented a volume of 7.7 billion minutes (less than one-third of the volume of inter-city calls between fixed-phone subscribers) and revenues of ¤2.75 billion (36% more than for inter-city calls).

ART deals with the question of fixed-to-mobile calls in two ways:

- regulating the call termination charges of the SMP operators;

- issuing an opinion as part of the approval of France Télécom's retail tariffs for fixed-to-mobile calls.

b. Cost-alignment obligations for SMP mobile operators

• Guidelines indicating the rules and reporting procedure for mobile operators

After issuing the decision declaring France Télécom Mobiles and SFR to be SMP mobile operators in the interconnection market in 2000[1], ART indicated that it would prepare guidelines, in consultation with the mobile operators, for the interconnection tariffs of the SMP mobile operators in that market.

Work got under way with the mobile operators, enabling ART to obtain information on the SMP operators' costs as of 2000.

Further consultations led to the drafting of guidelines. These were presented to the interconnection committee on 16 March 2001, and the final version was approved by ART[2].

These are technical guidelines that set forth the rules for cost alignment and for the data to be transmitted to ART. By clarifying the framework for monitoring the call termination charges of the SMP operators, they should reduce the number of disputes and help to provide objective elements to assess the economics of the mobile sector and to judge whether European directives are being followed.

• Decreases in the call termination charges of Orange and SFR during 2002-2004

After the guidelines were approved, ART asked Orange and SFR to communicate their costs in 2000 so that it could evaluate the current level of termination fees.

1 Decision no. 99-823 of 30 September 1999, supplementing Decision no. 99-767 of 15 September 1999 establishing for 2000 the list of operators having significant market power in a telecommunications market, published in the O.J. of 1 December 1999, p. 17884.

2 Decision no. 01-458 of 11 May 2001 adopting guidelines on interconnection tariff conditions for mobile operators having significant market power in the national interconnection market, published in the O.J. of 30 June 2001, p. 10476.

After examining the data provided by SFR and Orange, ART decided[1] to lower the average amount of SFR and Orange's termination fees over the 2002-2004 period according to the following schedule:

- €0.20123 per minute from 1 March 2002 to 31 December 2002
- €0.17074 per minute from 1 January 2003 to 31 December 2003
- €0.14940 per minute from 1 January 2004 to 31 December 2004.

These values correspond to annual decreases of about 15% between 2001 and 2002, 15% between 2002 and 2003, and 12.5% between 2003 and 2004, or a decrease of nearly 40% from the beginning of the third year.

This ART decision is in direct line with the two successive 20% decreases that were implemented:

- in the autumn of 1999, following a round-table that ART conducted with the three mobile operators;
- in 2000, following ART's settlement of a dispute between MFS WorldCom and France Télécom Mobiles.

By electing to reduce the price over three years, ART was seeking to give visibility to the market in response to legitimate concerns. Visibility for the operators is also an assurance for consumers that they will continue to see significant price decreases.

Without making any direct judgement on the mobile operators' pricing structures, ART also asked them to take into consideration consumers' concerns regarding the minimum first-minute charge.

Last, in this decision ART addressed the question of the international re-routing practised because of the difference between national and international termination fees. Since the latter are lower, it is advantageous in certain cases to route calls (inefficiently) through a foreign country to benefit from a lower termination fee. ART decided that Orange and SFR should modify their termination fees for international calls as of 1 January 2003 so that the price charged per minute for the termination of a fixed-to-mobile call would be the same whether the call was national or international in origin.

In December, SFR and Orange communicated their tariffs that are applicable as of 1 March 2002. ART confirmed that these tariffs provided average revenue of ¤0.20123 per minute. It also noted that both operators had shortened the indivisible billing period from 60 to 50 seconds. ART expressed its desire that consumers benefit from the lower interconnection prices and the changes to the tariff schedule as of 1 March 2002.

c. The trend in fixed-to-mobile retail prices in 2001

In 2001, ART issued two favourable opinions relating to changes in tariffs that resulted from the decreases in the mobile operators' call termination charges:

- an opinion[2] relating to the change in the tariffs for calls to the SFR and France Télé-

1 Decision no. 01-970 of 16 November 2001 concerning the level of the call termination charge on the Orange France network, published in the O.J. on 27 January 2002, p. 1878, and Decision no. 01-971 of 16 November 2001 concerning the level of the call termination charge on the Société Française du Radiotéléphone (SFR) network, published in the O.J. of 27 January 2002, p. 1880.

2 Opinion no. 01-49 of 10 January 2001 on the tariff decisions of France Télécom no. 2000371 and no. 2000372 concerning the price of fixed calls to Itinéris and SFR mobiles for residential customers, professional customers and companies, and no. 2000380 concerning the creation of fixed-to-mobile tariff options, mentioned in the O.J. of 6 March 2001, p. 3516.

com Mobiles networks, which followed the settlement of the dispute between MFS and France Télécom Mobiles[1];

• an opinion[2] relating to the change in tariffs for fixed-to-mobile calls to Bouygues Télécom's network after Bouygues Télécom lowered its termination fee.

3. The 2001 mobile network quality survey

For the fifth consecutive year, ART, in co-operation with the operators and consumer associations, conducted a survey to assess the quality of service on the mobile telephone networks in metropolitan France, as it is perceived daily by the three operators' customers. The survey assessed the dropped-call rate and sound quality as well as service availability.

This survey was conducted by Thales Idatys over a six-week period between mid-October and the end of November 2001, in normal mobile-phone utilisation conditions.

The methodology and the specifications were defined by a working group made up of representatives of the mobile operators and consumer and user associations.

The results of this survey were published on 15 February 2002 and are posted on ART's website.

a. The main differences from the 2001 survey

The survey in 2001 was different in a number of ways from the one conducted in 2000.

• Data services are included for the first time in the 2001 survey. SMS quality was assessed, particularly in terms of the reception time and integrity of the short messages. It is now essential to include a service in this quality assessment once many consumers are regularly using it. This approach is likely to be repeated and expanded in future surveys .

• The survey conducted in 2001, like the one in 2000, provided data on how service quality in the major urban areas varied from hour to hour. However, by analysing 10 time segments (from noon to 10 pm), compared with just 6 in 2000 (noon to 2 pm and 5 pm 9 p.m.), this survey gave a more precise picture of the variations in quality on the networks during the day and thus a better assessment of the situation during peak hours.

• In 2001 assessments on high-speed train lines, which were first done in 1999 but then omitted in 2000, were conducted once again. The tests on board commuter trains were carried out for the third consecutive year.

b. The main conclusions from the 2001 survey

Several conclusions can be drawn from the results of the survey.

• In large urban areas, the call success rate (calls set up and held for at least 2 minutes) has stabilised above 95%, which is a very good result considering the sharp increase in mobile telephone customers (growth of more than 24% between 31 December 2000 and 31 December 2001).

• However, the proportion of calls with perfect sound quality can vary greatly depending on the geographic location, time of day or type of usage.

1 ART decision no. 00-1092 of 13 October 2000 concerning a dispute between MFS Communications and France Télécom Mobiles relating to the interconnection for routing traffic to the radioelectric network of France Télécom Mobiles, published in the O.J. of 10 December 2000, p. 19612.

2 Opinion no. 01-294 of 23 March 2001.

• In urban areas with more than 400,000 inhabitants, the quality of service varies according to network load, as it did in 2000. Thus, in France's 12 largest cities, the failure-to-connect and dropped-call rates can double between off-peak and peak hours, which, as a matter of fact, are not always the same for the three operators. However, as in 2000, the impact for users is still relatively small.

• The tests of SMS show excellent service reliability, as all the messages sent and accepted by the network were received error-free in less than a few minutes. These new tests point the way to the future quality assessment of other data services (WAP, MMS, etc.) based on the GSM, GPRS and even UMTS technologies.

• Last, the test results for the high-speed trains are significantly better than in 1999, reflecting the operators' efforts to improve service. However, much more progress still needs to be made, which is also true on commuter trains.

4. Mobile coverage

Regional development is central to regulation, since it is one of the objectives set for regulation by the 1996 Act. Therefore, it is altogether natural that ART contribute to work on the geographic coverage of mobile networks.

ART conducted two surveys in 2001 to assess mobile network coverage. The first, carried out in June 2001, took in 40 cantons; the second, in October-November 2001, took in 60. ART thus tested coverage in a total of 100 cantons in 2001.

In preparation for these surveys, ART ordered two preliminary studies. The first was intended to define the protocol for assessing coverage in the survey. The second set up a system to classify all the French cantons according to three characteristics of crucial relevance to mobile coverage (population density, physical relief and the amount of wooded areas). ART then used this system to construct the sample of the 100 cantons included in the survey.

Coverage was measured as the probability that a person outside a building could make a call lasting at least one minute, with satisfactory sound quality, from any point on any road in the geographic area under assessment.

The tests were made in each canton over an average distance of 150 kms, on all types of roads, going in every direction in the canton and crossing all communes. The test vehicle drove past the town hall in each commune.

Considering the number of cantons selected, the results of these surveys do not allow definitive conclusions to be drawn for France as a whole. They did, however, reveal major differences between the cantons, and within a given canton, between the operators. Thus, 74 out of the 100 cantons have coverage of more than 90% by at least one operator and 20 have coverage of less than 60% by at least one operator. The average coverage in these cantons for the three operators combined is 83%.

ART also believed it would be useful to make the methodology it had developed available to départements that were interested in using such tests to improve their knowledge of the coverage in their territory.

ART therefore signed a declaration of intent with the Assemblée des Départements de France (departmental assemnly, ADF), which appeared to be an excellent organisation to co-operate with in promoting such tests because of its close and ongoing collaboration with all the départements.

This initiative was designed as a way to make informed decisions about coverage targets in the départements and to contribute to the implementation of policies laid down at the meeting of the interministerial committee on regional development (CIADT) on 9 July 2001. This implementation called in particular for the territorial authorities to make known their mobile network coverage requirements.

Besides providing information to the interested public authorities with a view to future talks with the operators, this survey supplied objective bases for discussing the status of mobile coverage at the local level, which is a controversial subject without the results of the most rigorous field tests possible.

In 2001, ART signed two agreements, with the Meuse and Tarn départements. Since then, a number of other départements have joined in this initiative.

It is important to recall that ART has also contributed to the work on mobile network coverage through its decision[1] "concerning the opinion of ART on the Government's draft report to Parliament on the regional coverage of the mobile telephone networks". In this decision, ART emphasised in particular the need to rely on local roaming as a solution, since this would achieve the public interest objective of better coverage at a lower cost.

ART will remain attentive to the issue of mobile telephone network coverage and to the implementation of the CIADT initiatives.

5. Mobile telephony in the overseas départements (DOM)

a. A new situation: a market open to competition

After receiving the responses to the call for comments published on 2 July 2000, ART examined, as they were filed, the complete applications of the GSM operators holding a national licence as well as local projects for deploying GSM networks in these départements. During 2001, ART reviewed licence applications for the subsidiaries of the licensed operators in metropolitan France, applications for additional frequencies for the networks licensed in 2000, as well as new applications.

1 Decision no. 01-595 of 19 June 2001 concerning ART's opinion on the government's draft report to the Parliament on mobile telephone network coverage, published in the O.J. of 12 August 2001, p. 13099.

Licences issued before 31 December 2000

	Licence holder	Geographic area	Date of the licence or frequency allocation
	Saint-Martin Mobiles (AMPS)	Saint-Martin et Saint-Barthélemy (Guadeloupe)	4 july 1991
GSM DOM 1	Société Réunionnaise du radiotéléphone	La Réunion	23 february 1995
GSM DOM 2	Orange Caraïbe	Guadeloupe, Martinique, Guyane	14 june 1996
	Dauphin Télécom (DECT)	Saint-Martin et Saint-Barthélemy (Guadeloupe)	19 october 1998
	Bouygues Télécom	Guadeloupe, Martinique et Guyane	Allocation frequencies on 8 november 2000
GSM DOM 3	Outre-mer Télécom	Guadeloupe, Martinique, Guyane et Réunion	30 november 2000
	FTM SA	La Réunion	Allocation frequencies on 1 december 2000

Licences issued in 2001

GSM DOM 4	Orange Réunion	La Réunion	24 april 2001
GSM DOM 5	Bouygues Télécom Caraïbe	Guadeloupe, Martinique et Guyane	19 july 2001
GSM DOM 6	Saint-Martin & Saint-Barthélemy Tel Cell	Saint-Martin et Saint-Barthélemy (Guadeloupe)	23 july 2001
	Saint-Martin Mobiles (AMPS)*	Saint-Martin et Saint-Barthélemy (Guadeloupe)	30 september 2001 (renewal)

(*) The licence of Saint-Martin Mobiles was renewed for a period of five years for AMPS analogue technology, with the CSA's agreement to use the corresponding frequencies.

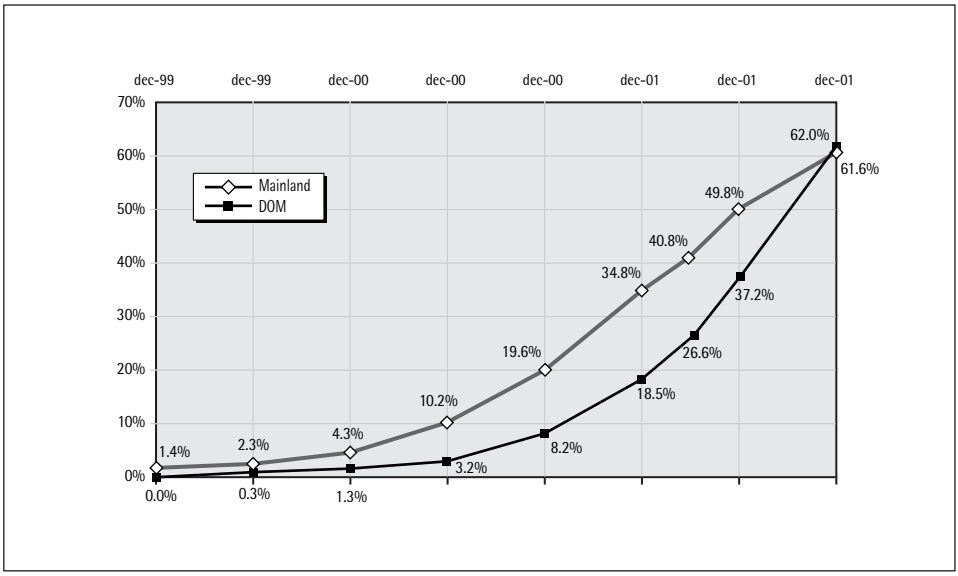
Licence issued in 2002 (examined in 2001)

GSM DOM 7	Oceanic Digital	Guadeloupe, Martinique	february 2002

b. The effects of opening the market to competition

The percentages of the population in metropolitan France and the DOM that own a mobile phone (respectively 61.6% and 62.0% at year-end 2001) reflect this new situation and show how dynamic the DOM market actually is.

Comparison of mobile phone penetration rate between the DOM and the mainland



B. UMTS

1. The first call for applications

Preparations for the contest to award third-generation mobile telecommunications licences in metropolitan France were made over a long period beginning in 1998.

The procedure called for basing the selection on a comparison of the candidates' responses to 14 criteria, which were divided into three categories: technical, commercial and financial. The candidates would be rated on each criterion and receive a total score out of a possible 500 points.

Selection criteria Score	Note
Planned commercial launch date and coverage at this date	Score out of 15
Offer of services	Score out of 50
Relations with the service providers	Score out of 30
Relations with subscribers and users of the service	Score out of 15
Tariff offer	Score out of 15
Scale of the network	Score out of 15
Scope and speed of network deployment (scope expressed as a percentage of the population and described in detail according to the types of services and transmission speeds)	Score out of 100
Service quality	Score out of 15
Capacity of the project to optimise resource and frequency utilisation	Score out of 15
Capacity to supply users international roaming service	Score out of 15
Actions to protect the environment	Score out of 15
Employment: quantitative (projected new jobs) and qualitative (structure, qualifications, job training) aspects	Score out of 25
Coherence and credibility of the business plan	Score out of 75
Coherence and credibility of the project	Score out of 100
TOTAL	**Score out of 500**

The maximum scores reflect the special importance attributed to the following criteria:

- The scope and speed of network deployment
- The coherence and credibility of the project
- The coherence and credibility of the business plan
- The offer of services.

Two candidates, Orange and SFR, registered on 31 January 2001. ART reviewed their applications, giving their proposals a thorough examination. Judging both proposals to be excellent, ART recommended to the Minister on 31 May 2001 that UMTS licences be awarded to these two operators. The Minister followed this recommendation and approved the licences on 18 July 2001. ART published its application-review report on 31 May 2001. This report is posted on its website.

One reason for ART's satisfaction with the proposals was that Orange and SFR made a commitment to provide broad coverage that went well beyond the minimum specified in the call for applications:

Service	Coverage by Orange (% of the population)		
	P1 + 2 years	P1 + 5 years	P1 + 8 years
Voice service	58 %	94 %	> 98 %
Packet-switched service at a two-way speed of 144 kbits/sec	58 %	94 %	> 98 %
Packet-switched service at a two-way speed of 384 kbits/sec	7 %	13 %	17 %

Service	Coverage by SFR (% of the population)		
	P1 + 2 years	P1 + 5 years	P1 + 8 years
Voice service	75 %	98.9 %	99.3%
Packet-switched service at speeds of 144 kbits/sec downloading and 32 kbits/sec uploading	75 %	98.9 %	99.3 %
Packet-switched service at speeds of 384 kbits/sec downloading and 144 kbits/sec uploading	71 %	97.5 %	98.2 %

P1 is the publication date of the licence approval for these two operators, i.e. 21 August 2001.

2. The economic situation and changes to the conditions for introducing UMTS in France

a. The economic situation

While preparations for awarding UMTS licences in France were being completed, the auction in Germany marked the peak of a period of euphoria, which was followed by a spectacular reversal in the succeeding months.

It became apparent that the operators were going to have to confront difficulties, owing to their number, their obligations and their financial commitments, that they would not be able to totally overcome. The effects of the pan-European system for financing UMTS were already becoming clear, too, as major incumbent operators in many countries struggled to cope with the financial burden, direct or indirect, immediate or long-term, that they had taken on with their huge bids in the British and German auctions.

In late 2000, there was, indeed, a complete turnaround in the situation. This not only made the procedure for granting licences unproductive, problematic or disappointing in all the other countries that had used it; it also undermined the position of many licence holders. It became clear that the "success" attributed to these auctions was largely artificial.

The signs that the tide had turned are clear to everyone today:

- The stock prices of most of Europe's telecommunications operators were falling.
- Investment analysts downgraded the credit ratings of these operators, meaning their financing costs went up.
- Two of the four companies that had intended to bid for a licence in France pulled out at the last minute.

The causes of this turn of events, which seriously disrupted the introduction of UMTS, are to be found partly in the overall economic situation and partly in the way the process was initiated in Europe.

On 31 January 2001, the date when it was known that only two licence applications would be submitted, ART presented its reasons for going ahead and examining these two applications, according to the procedures set by ART itself and published by the Minister on 18 August 2000. It had concluded from its legal analyses that having only two candidates for four licences did not in itself have any impact on conducting the procedure.

At the same time, however, ART emphasised the need to hold a second call for applications to achieve the planned objective of issuing four licences. A sustainable market could not in fact be constructed with only two operators because it would not meet the objective of developing competition, which is a vital aspect of all European and French legislation in the telecommunications field.

Everything supports the belief that a full-scale market of third-generation services will not come into existence until late 2003 or early 2004.

Between now and then, it is important to give every chance to the development of a French market that the operators consulted still find attractive given its size and situation. But this market will not really exist unless it is truly competitive, meaning that it cannot have only two operators. First, European authorities could not allow UMTS to be introduced in France on that basis because of their well-established competition rules. Moreover, having a larger number of operators is in the consumer's interest, since it will stimulate the creation of new services, where much remains to be done, and lead to lower prices.

For these reasons, ART stated once again in its opinions on UMTS published on 31 May 2001 that another call for applications should be issued no later than the first half of 2002 so that a second group of companies could join the first group when the UMTS market actually begins functioning as of late 2003.

b. Changes to the financial terms and conditions

Under the original terms and conditions, the third-generation (3G) operators were to pay a total fee of FF32.5 billion, or ¤4.95 billion. The settlement schedule called for paying one-quarter of this amount in 2001, one-quarter in 2002, and the remainder in instalments over the following 14 years.

ART reiterated in the previously cited document of 31 May that it was important to unite all the conditions that would ensure the success of the second licensing procedure. It therefore recommended to the government that it make certain changes in the methods France had chosen for awarding the licences. In particular, it pointed to the financial burden on licence holders and the duration of the licence, which needed to be extended, as two conditions it was essential to ease.

ART was therefore pleased with the government's decision in October 2001 to modify the financial conditions for UMTS licences and to extend the duration of the licence from 15 to 20 years.

In the new arrangement, the 3G operators would pay an entry fee of ¤619 million on 30 September of the year the licence was issued, or at the time of issuance, if this was after 30 September, and then make annual variable payments equal to 1% of revenues.

This system gears the fee payments to the revenues generated by the licensed activity.

c. Sharing infrastructures

• General framework

In December 2001 ART published a document specifying the methods for sharing infrastructures that are compatible with the conditions for issuing the 3G licences.

This document presents the results of an in-depth technical and economic study that ART initiated in the Radiocommunications Advisory Committee (CCR) in early summer 2001 and the results of an analysis of the regulatory aspects in a parallel ART study.

These initiatives were undertaken in the broader framework of European work in this area. In its communication of 20 March 2001, the European Commission pointed to infrastructure sharing as one of the "concrete means to facilitate the deployment of 3G networks and services". It also indicated that it considered such sharing as "positive in principle because of the potential economic gains, on condition

that competition rules and the provisions of other related community legislation are respected". Furthermore, at the request of operators, regulators in some European countries have taken a position in the debate on infrastructure sharing by specifying what types of agreements would be acceptable.

ART believed it was necessary to clarify the possibilities for sharing existing infrastructures in France to provide sufficient visibility, not only for the already-licensed 3G operator, but also, in anticipation of the second round of bidding, for companies that might be interested in obtaining a third-generation licence.

The regulatory interpretation presented below is based on an analysis that refers both to the Posts and Telecommunications Code and to the call for applications documents.

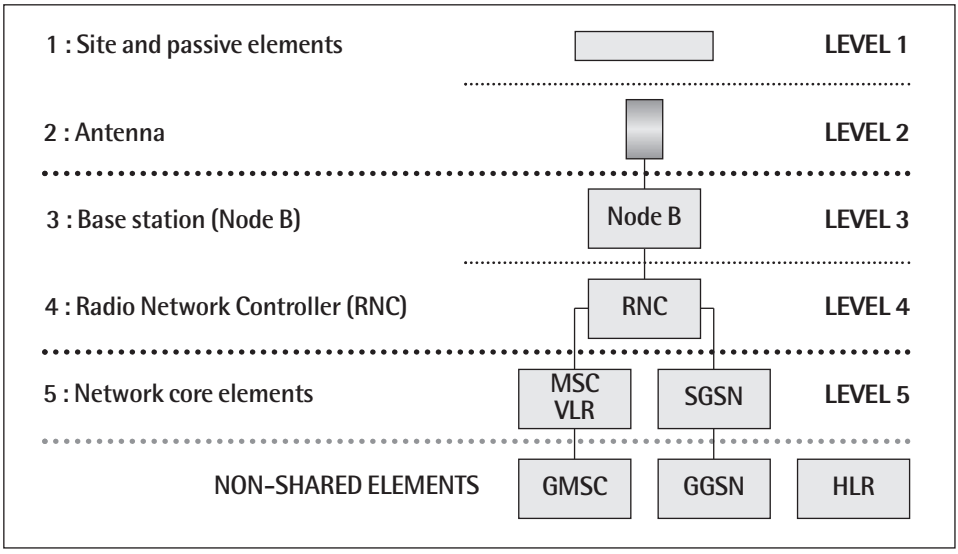
The general principles underlying this analysis are based, first, on an explicit notion of operating a network, which should be regarded as the operator's exercise of control, by right and in actual fact, over its network; and second, on the fact that frequencies allocated to this operator are intended for its exclusive use.

The competitive aspects of implementing these agreements, their impact on the third-generation market and the ways of cancelling them must also be taken into consideration in the analysis. A sharing agreement should not hinder the development of genuine competition in the third-generation market and should ultimately deliver benefits to consumers.

ART thus believed any agreement between operators concerning infrastructure sharing should be communicated to it so that it could ascertain their conformity with the rules presented below and their compatibility with the development of effective competition in the third-generation market.

• Levels of sharing and their regulatory compatibility with telecommunications law

Five levels of sharing can be envisaged:



These levels are not necessarily cumulative.

• *Sharing sites and passive elements*

This form of sharing consists in several operators' using some or all of the passive infrastructure elements: sites, civil engineering, technical facilities and easements, pylons, power supply, air conditioning, etc.

This type of sharing is not only permitted, but also encouraged in the calls for 3G applications.

Besides the savings that it represents for operators, this type of sharing helps to protect the environment.

This Level 1 sharing also includes transmission components not related to the UMTS architecture such as the links between the radio network controllers (RNC) and the network core elements (MSC and SGSN), or the links between the base stations (node B) and the RNC. These elements can be shared because they are not directly related to the UMTS network.

• *Sharing antennas*

This level is defined as sharing the antenna and all related connections (coupler, feeder cable) in addition to the passive components of the radio site.

Since the antenna can be considered a passive component, sharing antennas falls in the more general category of sharing passive infrastructures described above. It is, therefore, compatible with the telecommunications code.

• *Sharing the base station (Node B)*

The base station may be shared on condition that each operator:

- retains control of the logic Node B so that it can operate its allocated frequencies independently from the partner operator;
- remains in command of the active equipment at the base station such as the TRX, which are the systems that manage radio transmission and reception.

• *Sharing the radio network controller (RNC)*

The RNC may be shared as long as each operator retains independent logic control over the RNC.

By retaining logic control over its traffic, each operator is guaranteed independent control of this equipment. The operator thus stays in command of the crucial management and operational functions of the RNC, including:

- allocation and optimisation of the radio resources (admission control, timing code allocation, power control, cell load control, service quality management, etc.)
- mobility management and control of hand-over parameters

• *Sharing network core elements*

This consists in sharing the Mobile Switching Centre (MSC) and the Serving GPRS Support Node (SGSN) of the fixed operator's network.

It should be recalled that frequency licences issued by ART are granted on an exclusive basis and may not be transferred. As a consequence, ART is obliged to exclude any infrastructure sharing solution that would lead to a sharing of frequencies.

Sharing network core elements is incompatible with French regulations if it results in such frequency sharing. This is the case in particular when the network core elements are shared along with the radio elements.

• *Geographic sharing*

Geographic sharing consists in the operators'

agreeing on complementary deployments in certain geographic areas and then using roaming agreements within these areas to provide their customers with complete coverage.

Geographic sharing is possible from the regulatory standpoint, but the coverage that an operator achieves with roaming service on its partner's network cannot be taken into account to satisfy its coverage obligations.

3. Preparation and launch of a second call for applications

With the modifications to the financial conditions and the lengthening of the 3G licence period from 15 to 20 years, which the government announced in October 2001, ART believed that the favourable conditions had been provided for launching a second call for applications.

It accordingly set out in a decision of 14 December 2001[1] the methods and conditions for awarding the two 3G licences that had not been awarded in the first call for applications launched on 18 August 2000.

This second procedure was officially initiated on 29 December 2001 by the publication in the Official Journal by the telecommunications minister of the notification of the call for applications prepared by ART. The calendar for this procedure requires that candidates file their application no later than 16 May 2002 and that ART publish the results with the reasons for its decisions before 30 September 2002.

The text of this second call for applications is in line with the first one and contains virtually no changes. It seeks in particular to ensure that the principle of equality among operators is respected.

Notably, it reaffirms the right of any new entrant to benefit from national roaming coverage for a period of 6 years after its licence is issued, once it has fulfilled the minimal deployment requirements. It also stipulates that a GSM operator holding a 3G licence has the obligation to enter into negotiations with a new entrant once the latter has been issued its licence, if it so requests, for the purpose of concluding such a roaming agreement. This agreement would then come into effect once the deployment requirements had been fulfilled.

ART also announced at this time that a call for comments concerning the introduction of 3G in the overseas départements (DOM) would be issued in the first half of 2002 to gather the opinions of the interested parties in preparation for this introduction.

4. European comparisons

The situation with respect to the awarding of UMTS licences in Europe at year-end 2001 is as follows:

1 ART decision no. 01-1202 of 14 December 2001 proposing to the telecommunications minister the methods and conditions for awarding licences for the introduction of third-generation mobile systems in metropolitan France, published in the O.J. of 30 January 2002, p. 2028.

UMTS licences awarded

	Awarded	Number of licences
Austria	November 2000	6
Belgium		
Denmark		
Finland	March 1999	4
France	May 2001: 1st round September 2002: 2nd round	2
1		
Germany	August 2000	6
Greece		
Ireland		
Italy	October 2000	5
Luxembourg		
Netherlands	July 2000	5
Portugal	December 2000	4
Spain	March 2000	4
Sweden	January 2001	4
UK	April 2000	5

Source : European Commission

Chapter 4

Internet

I. The market

A. Switched access

1. Key figures

The following tables show the growth of the switched Internet access market in terms of a few key indicators: revenues of licensed operators, connection volume and numbers of subscribers.

Revenues of licensed operators

In millions of euros	1998	1999	2000	2001	Growth in 2001 (%)
Internet access calls	162	299	598	841	+40.6%
Paid subscriptions, flat rates, revenues related to Internet access	N/A	14	75	135	+80%

N/A = Not available

Volumes

En millions de minutes	1998	1999	2000	2001	Growth in 2001 (%)
Total	4,976	12,617	34,957	72,730	+108.1%

Users

En unités	31/12/98	31/12/99	31/12/00	31/12/01	Growth in 2001 (%)
Number of low-speed subscribers*	1,280,000	3,030,000	5,263,000	6,515,000	+23.7%
Dont opérateurs autorisés	N/A	N/A	1,447,631	2,109,827	+45.7%

*N/A = Not available - * Source : AFA*

The low-speed Internet market on the switched network continued to grow at a strong pace in 2001. Volumes more than doubled, compared with 2000, and the number of subscribers (i.e. the number of individual subscriptions, both residential and business, that were paid for or active for the previous 40 days) went up by about 24%.

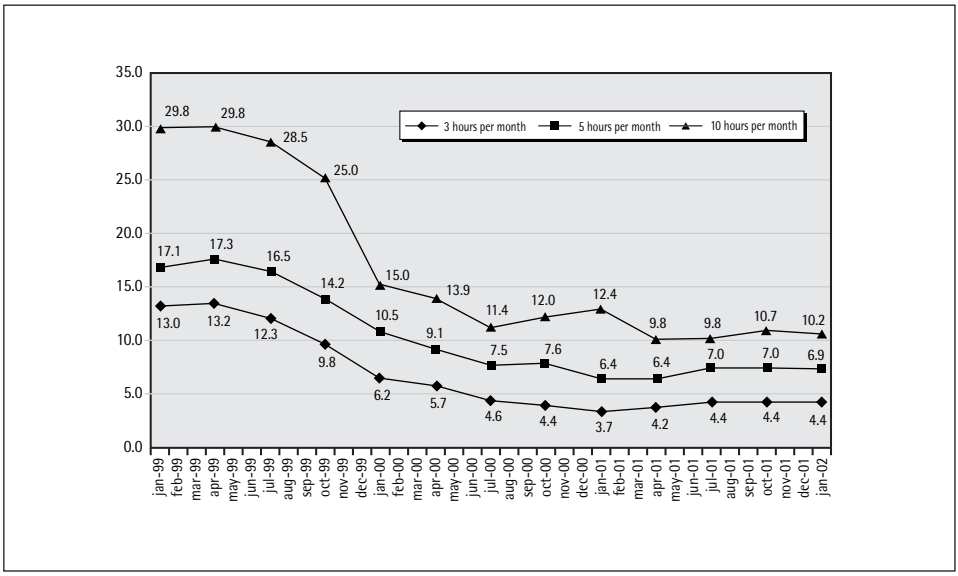
The licensed operators experienced the same trends. Their revenues from Internet-access calls rose by 40%. They also reported strong, 80% growth in the value of other Internet-related services such as advertising, e-commerce and website hosting as well as paid and flat-rate subscriptions.

2. Trend in Internet-connection prices from the beginning of 1999 to the end of 2001

Internet-connection prices fell sharply in the French market between 1 January 1999 and the end of 2001, irrespective of the connection time. The durations considered ranged from 3 hours per month, for small consumers, to 100 hours per month (three hours and 20 minutes per day) for large consumers.

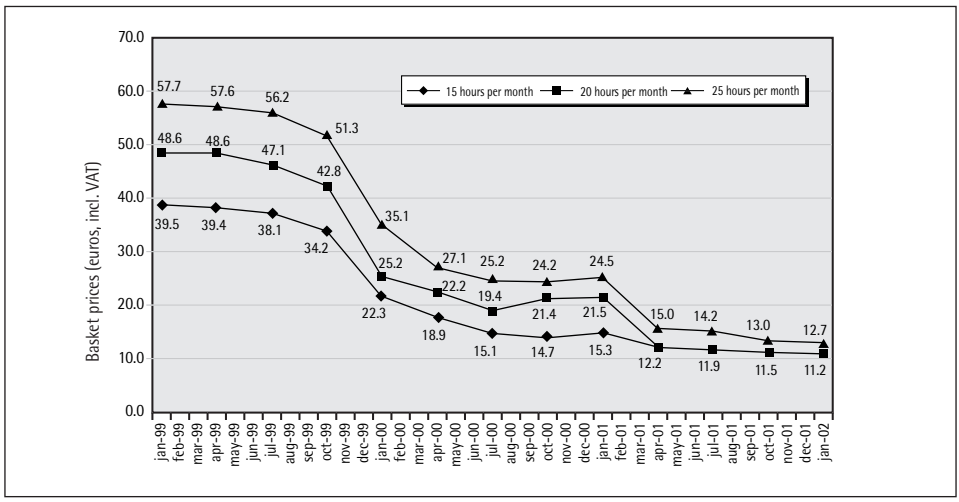
The three graphs below show the trends in average prices between 1 January 1999 and 1 January 2002 for a time breakdown consistent with the ART interconnection basket for Internet traffic (65% in off-peak hours and 35% in peak hours).

Variation in Internet prices (short duration)



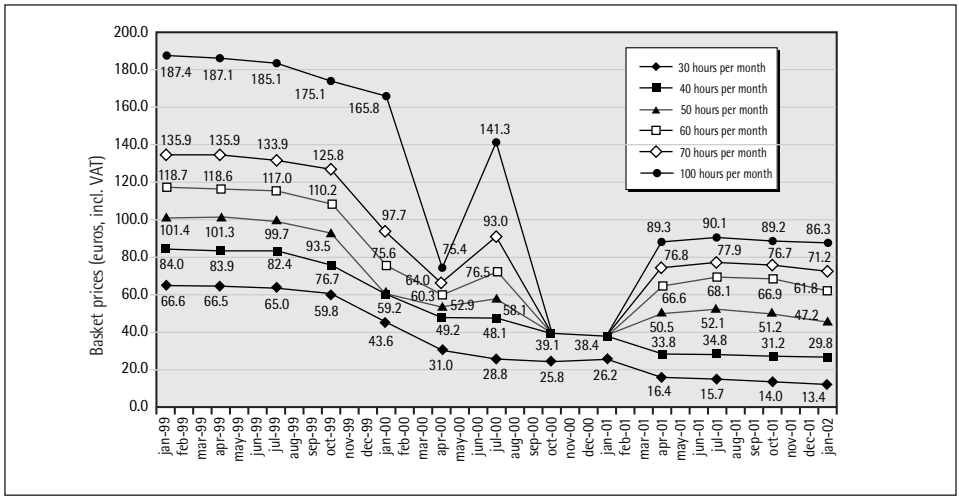
During 2001, the prices for the short-duration baskets increased slightly.

Variation in Internet prices (medium duration)



During 2001, the prices for the medium-duration baskets continued to decline.

Variation in Internet prices (long duration)



During 2000, the prices for the very-long-duration baskets (over 60 hours) dropped substantially with the arrival of flat-rate offers for unlimited connection time. These flat rates were no longer included in the offers of Internet service providers (ISP) at the end of 2000, resulting in a sharp jump in prices for the very-long-duration baskets. During 2001, the prices for the long-duration baskets levelled off during the first three-quarters and then began falling again at the end of 2001[1].

1 See Volume 1 for an analysis of the percentage variation in prices.

Methodology of the Internet baskets

Step 1: The baskets (standard profiles) are defined on the basis of monthly connection volumes. Here they range from three hours per month (six minutes per day) to 100 hours per month (three hours and 20 minutes per day).
Step 2: The total number of residential subscribers of the main Internet service providers (ISPs) is calculated (sources: AFA and the ISPs);
Step 3: Each ISP's residential clients are broken down into the defined baskets. This gives a number of subscribers for each consumption time for each ISP.
Step 4: The ISP's best offer financially for subscribers in each basket for each period considered (from January 1999 to December 2001) is selected.
NB: The ISP's best offer may be a flat rate for a duration that does not correspond to the selected basket (a flat rate for 17 hours per month might be an ISPs best offer for the 10-hour, 15-hour and 20-hour baskets).
Step 5: An average market "price" is determined for each basket by weighting the best offers of the ISPs (Step 4) by the share of each ISP's subscribers who have chosen this duration (the result of Step 3).

3. Inquiry on the low-speed Internet traffic collection market

The purpose of this inquiry was to assess competition in the Internet traffic collection market by looking at the key parameters that measure the degree and conditions of competition. These include the number and type of competitors, market shares, entry barriers and the possibility to choose among several competing offers. The analysis covered the late-2001 period and gave indications of the outlook for this market in 2002.

Internet traffic collection is an intermediate market in which the ISPs are the customers and the telecommunications operators are the vendors. In this market, the "supply" offered by operators with an IP network interconnected with the France Télécom network and capable of collecting the traffic of Internet users meets the "demand" of ISPs that want to give Internet users access to their services.

In 2001, the volume of traffic in this market was almost 73 billion minutes, up 108% from 2000. The value of this market increased 40% from the previous year, to 841 million euros. Growth could slow in 2002 as the biggest Internet users switch to high-speed services.

Analysing the competition in this market called for an examination of the demand (i.e. the Internet service providers) and the supply (i.e. the telecommunications operators). Several major trends emerged from this examination.

a. Demand: the market of Internet service providers

This market is in a phase of rapid consolidation. Five ISPs – Wanadoo, AOL, Club Internet, Tiscali and Free – together control about 80% of this market today.

As for their purchasing policies toward the telecommunications operators, the ISPs fall into one of three categories:

- those that belong to a group having its own network and that rely on that group's internal services for traffic collection;

- those that have an independent policy and that play on competition among the operators by regularly changing their suppliers;

- those that belong to a group having its own network but that do not use the group's network for all their traffic.

In view of these intra-group agreements, a portion of the market can be regarded as "captive". Based on the survey, the captive market is estimated to be 52% of the total market in terms of volume.

When there is not a "group" policy, the decisive factor among the "objective" choice criteria is price. The ISPs take new bids on a regular basis (as a rule, twice a year: once when the standard interconnection offer is published and once at mid-year). Besides tariffs, operational conditions and in particular how quickly the capacity can be made available affect the ISPs' decision. Geographic coverage has become a less significant choice factor because most of the operators have nation-wide coverage. However, the operators' degree of network spread strongly influences the price that they can offer ISPs.

The liveliness of competition is can also be measured by the ISPs' capacity to change suppliers. Until recently, ISPs have taken full advantage of the competition among collecting operators. The contracts proposed to the ISPs seem rarely to contain a time commitment. Also, the prices depend on the volumes collected, but operators are rarely able to impose volume commitments.

Furthermore, certain technical factors have tended to make this market more fluid and to drive down prices. The ease with which an ISP can move its traffic from one operator to another depends greatly on its connection system, or dialler. When the dialler can be remotely programmed, an ISP can migrate its traffic with total transparency for its subscribers.

Until recently, ISPs generally seem to have had ample freedom to choose their operator. This situation could change, however, as the offer becomes more consolidated.

b. Supply: the market of call-collecting operators

The Internet collection market began to develop at the end of 1999, when ART-defined interconnection mechanisms were put in place to allow third-party operators to compete with France Télécom. The explosion in Internet traffic during 2000 led several operators to invest in this market.

Since the first half of 2001, this traffic growth seems to have slackened because of the migration of the largest Internet users to high speed services, as well as the economic downturn that ended the price war of 2000.

By the end of 2001, some operators had withdrawn or were in the process of withdrawing from this market, which some had entered "opportunistically" because it complemented their core business. Only a few operators have a really significant position in the collection market today, thanks to their network spread and large capacities. France Télécom also seems to have won back some of the market share that it had previously lost.

The trend in the operators' prices was also given close examination in the inquiry, with a substantial amount of data collected. These data indicated that prices have tended to stabilise, after plunging sharply in 2001.

The introduction and initial impact of flat-rate interconnection were also analysed. Flat-rate interconnection appears to have been a very effective means for the ISPs to reduce their collection costs. Although this situation was not reflected in unlimited connection offers for Internet users, it did improve the financial return on their offers. From the operators' viewpoint, flat-rate interconnection demands a larger commitment. Some operators, who were not sure they could achieve the volumes necessary to charge competitive unit prices, cut back their market presence.

c. Conclusions from the regulatory viewpoint

The purpose of this type of inquiry, apart from examining the state of competition, is to help determine major regulatory policy guidelines. Several recommendations come out of the inquiry on Internet collection:

- As regards universal service, the inquiry reinforced the belief that the method of calculation needs to be changed because it places a drag on growth in this Internet market.

- The conditions of flat-rate interconnection and particularly the question of overflow should be thoroughly debated as much in advance as possible of the next standard interconnection offer.

- As regards France Télécom's collection tariffs and in particular its flat rates, the competitive conditions in the market do not seem to call for bringing these now-unregulated tariffs into the approved-tariffs system. Nevertheless, the regulator does need to be vigilant, which the existing prior notification system allows.

- Apparently there is also a need to improve the operational command processes for interconnection. Many of the operators interviewed stressed this point.

B. High-speed access

Revenues of licensed operators

In millions of euros	1998	1999	2000	2001	Growth in 2001 (%)
High-speed connections	N/A	N/A	59	185	+214.3%

N/A = Not available

Subscribers

Units	31/12/98	31/12/99	31/12/00	31/12/01	Growth n 2001 (%)
Number of high-speed subscribers	N/A	N/A	197,911	601,500	+203.9%
Of which cable*	13 694	50 417	121,911	188,522	+54.6%
Of which ADSL**	N/A	N/A	76,000	412,978	+443.4%
Of which licensed operators	N/A	N/A	87,881	122,147	+39.0%

N/A = Not available

** Source : AFORM*

*** Source : AFA*

The high-speed Internet market is expanding extremely quickly. The number of ADSL subscribers increased five-fold over the course of 2001, with growth accelerating at the end of the year. ADSL contributed more than 80% of the net increase in high-speed subscribers. The cable-access market continued to grow in 2001. Subscribers totalled 188,522. The effects of these growth rates have not yet been felt in the low-speed market, however, despite a migration of the largest consumers to high-speed connections. The revenues of the licensed operators also tripled over the period.

II. ART's action

A. Switched access

1. Internet flat-rate interconnection (IFI)

"Per-minute" interconnection, the conventional form of billing, is divided into fixed charges for providing a number of interconnection circuits[1], charges for setting up the connection and per-minute utilisation charges. IFI consists in charging a flat rate for interconnection: i.e. a fixed amount for a certain number of interconnection circuits, which does not change regardless of how much the operators use the circuits.

Between September 2000 and February 2001, ART set up and led a working group to examine Internet flat-rate interconnection. The group concluded its inquiry by drawing up an IFI policy document. France Télécom then published a Internet flat-rate interconnection offer for its local exchanges, in February 2001, and then at regional level (single trunk exchange), in April 2001. This first version of the offer did not follow the procedure for inclusion in France Télécom's standard interconnection offer in order to make sure that IFI became operational as soon as possible and no later than September 2001. A second version of IFI was included in France Télécom's 2002 standard interconnection offer, published in November 2001.

a. IFI in 2001

In 2001, France Télécom proposed tariffs for its local exchanges (LE) and for trunk exchanges.

Interconnection level	Tariffs
Local exchanges	€ 22,100 per year and per PDB
Single trunk exchange only (FIP)	€42,700 per year and per PDB

1 By groups of 30 circuits: 1 PDB (primary digital block): 2 Mbits/s, or thirty 64 Kbits/s circuits.

For the trunk exchange level, France Télécom designated flat-rate interconnection points (FIP) and dedicated some of its trunk exchanges to IFI traffic. For by-duration interconnection, France Télécom uses a so-called triple-alliance architecture: one third-party-operator exchange interconnected at the trunk level interfaces with three France Télécom transit exchanges, and the traffic is divided among these three exchanges on three interconnection links. For the IFI, France Télécom has chosen not to use the triple-alliance. Instead, one third-party-operator exchange interconnected in IFI mode interfaces with only one France Télécom trunk exchange, and the traffic is sent through a single interconnection link.

The major feature of IFI in 2001 was "overflow". The overflow option is used by an operator who has both IFI and by-duration capacity at a connection point. When the operator's flat-rate interconnection capacity is being fully used, additional traffic of the operator arriving at the connection point is routed through the by-duration link. Overflow is discussed in greater detail below.

IFI was operational as of 1 September 2001, and four operators have begun shifting part of their interconnection capacity to the flat-rate mode.

b. IFI included in the 2002 standard interconnection offer of France Télécom

IFI was included in France Télécom's 2002 standard interconnection offer.

The negotiations on the 2002 standard offer covered flat-rate interconnection tariffs and the continuation of overflow. ART ultimately obtained France Télécom's agreement to publish two versions of the offer, one with overflow and the other without, with the latter option having much lower tariffs. At the trunk level, the offer with overflow is to be withdrawn no later than 1 June 2002. On the other hand, at local exchange level the version with overflow is maintained in 2002, and "the conditions for implementing Internet flat-rate interconnection will be assessed in the autumn of 2002, with a view to determining the impact of totally eliminating overflow as of 2003[1]".

IFI Tariffs	Local exchange		Single trunk exchange (FIP)	
Offer with or without overflow	Without overflow	With overflow	Without overflow	With overflow
Annual tariffs / PDB (2 Mbits/s)	€ 15,600	€ 21,000	€ 30,000	€ 38,000
Change / 2001	- 30 %	- 5 %	- 30 %	- 11 %

The changes indicated in the above table between IFI in 2001 and the version without overflow in 2002 give an idea of the decrease in tariffs achieved, but they do not reflect an equivalent decrease in costs for the operators, since using overflow has a significant impact on interconnection costs[2].

1 Page 38 of the 2002 interconnection offer, part L.33-1, of France Télécom.

2 See below.

c. European comparisons

France, the UK and the Netherlands were the three EU Member States where IFI was in use in 2001.

Country	Internet flat-rate interconnection available	Annual LE[1] tariffs for 2 Mbits/s	Annual single trunk exchange tariffs for 2 Mbits/s	Comments
France	Yes, since 1 September 2001.	France covered by 600 local exchanges • In 2001: 22,100 euros • In 2002: * 21,000 euros with overflow * 15,600 euros without overflow.	18 interconnection points required to cover France • In 2001: 42,700 euros with overflow • In 2002: 30,000 euros without overflow.	Several operators were already using IFI at the end of 2001. Others have placed orders for 2002.
United Kingdom	Yes, since Q3 of 2000 for the LE and the beginning of 2001 for transit only.	UK covered by 750 local exchanges • In 2001: 19,275 euros (intelligent-network charges included). • In 2002: probable decline of about 5%[2], or 18,300 euros (intelligent-network charges included).	About 40 connection points required to cover the UK • In 2001: 27,192 euros (intelligent-network charges included). • In 2002: probable decline of about 6%[3], or 25,561 euros (intelligent-network charges included).	• Overflow is not offered to operators • French tariffs are 20% lower for LE, and 10% higher for trunk only • Unlimited flat rates are marketed at 22.5 euros per month.
Germany	No interconnection offer, but a wholesale access offer has been available since early 2001.	Interconnection at 1,622 local exchanges to cover Germany • In 2001: 29,450 euros.	Not available.	The RegTP plans to get the opinion of experts on an IFI solution in Germany. Only T-Online would use the offer of Deutsche Telekom.
Spain	The CMT has asked Telefonica to present it an IFI offer before 17 September 2001. We do not know if this offer is in effect today.	Tariff requested by the CMT: 15,913 euros.	Tariff requested by the CMT: 19,528 euros.	

1 Local exchange.

2 Estimate based on the Guidelines on the Operation of the Network Charge Controls from October 2001 - 5 December 2001, Oftel.

3 Estimate based on the Guidelines on the Operation of the Network Charge Controls from October 2001 - 5 December 2001, Oftel.

Country	Internet flat-rate interconnection available	Annual LE tariffs for 2 Mbits/s	Annual single trunk exchange tariffs for 2 Mbits/s	
Nether-lands	OPTA has set the IFI tariffs of KPN from 1 July 2001 to 1 July 2002. We do not know if the IFI offer is in effect today.	Not planned.	Tariff set by the OPTA: 29,138 euros.	

d. Impact of IFI

• Impact of IFI on operators

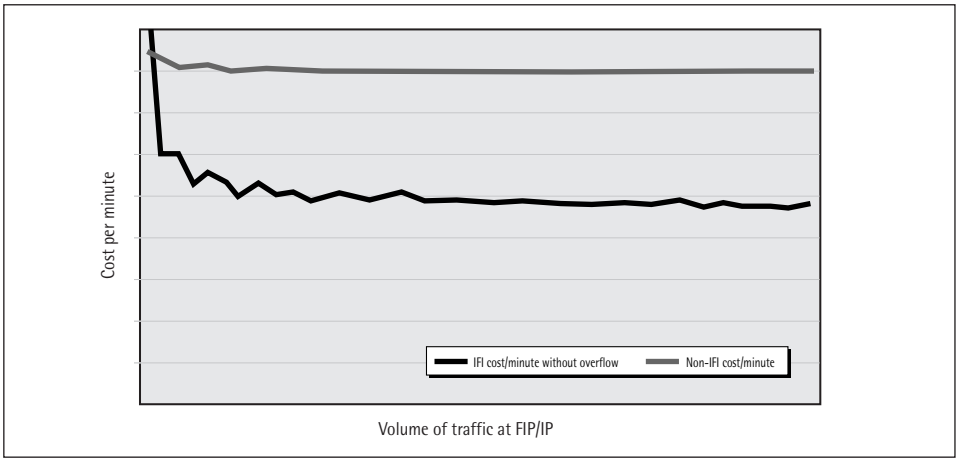
IFI consists in paying a flat charge for a given interconnection capacity. IFI generates extra cost when the interconnection circuits are not amply utilised and savings when they are. The level of utilisation at which a flat rate becomes more advantageous than a by-duration rate depends on the tariffs for these two rates. In 2001, the threshold was about 4.6 million minutes. In 2002, it is about 3 million to 3.5 million minutes in the version without overflow and 4.5 million to 5 million minutes in the version with overflow.

For operators who carry different types of traffic, the need to separate traffic on different interconnection links can reduce the potential savings with IFI. In fact, opting for IFI means dedicating an interconnection link to Internet traffic, whereas with by-duration interconnection, all types of traffic can flow over the same links.

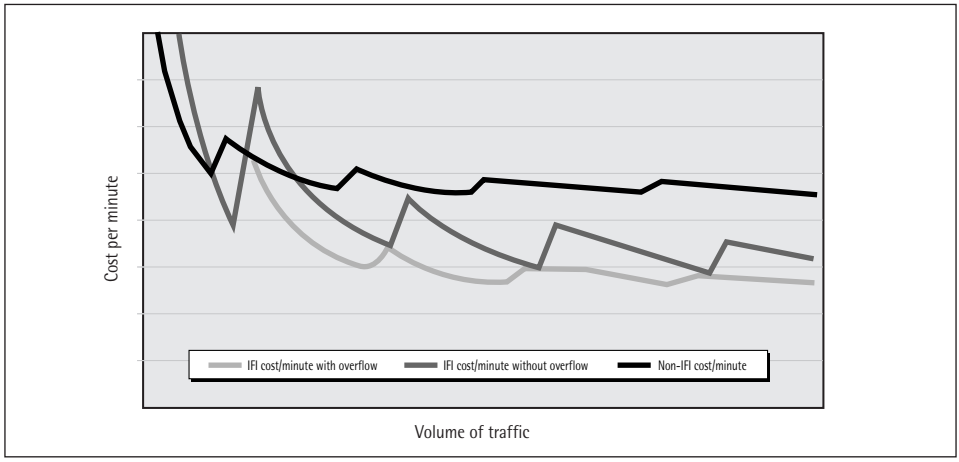
The impact of IFI on operators' financial performance is very apparent when interconnection charges per minute are shown in relation to traffic volume.

The graphs below highlight the volume effect with IFI. Per-minute costs initially drop shar-

IFI at the trunk exchange level



IFI at the local exchange level



N.B.: The two graphs above give indications as to the curves of interconnection costs in relation to traffic volume. However, no scales of values are shown because the graphs reflect only theoretical calculations that do not take into account all parameters of actual situations and all operators (traffic mixes, connection links, colocation, etc.).

ply as the traffic volume increases. The rate of decrease then slows and the cost curve becomes an asymptote. Therefore, the IFI should especially benefit "big" operators, who carry large volumes of traffic, and widen their competitive edge over "small" operators. As a result, IFI could well accelerate the trend toward consolidation in the Internet traffic collection market[1].

The graph also shows the benefits of overflow for interconnected operators. Overflow allows better capacity utilisation on IFI circuits and thus generates sizeable cost savings. Above all, with overflow, operators can migrate to IFI more gradually, thereby incurring less financial risk. This gives an "IFI with overflow" curve that is smooth and free of the repeated jumps in the "IFI without overflow" curve.

In fact, overflow appears to be especially advantageous for local exchanges (LE) on which traffic volumes are small. On the other hand, at the FIP[2], the overflow option has less impact because the traffic volumes concentrated at the trunk exchange level allow an operator to reach an asymptotic cost curve more easily.

• Impact of IFI on Internet service providers

IFI significantly reduces interconnection costs, at least for the large collectors of Internet traffic. Owing to the relatively lively competition among collectors in 2001, at least part of the cost savings was passed along in the traffic collection offers proposed to ISPs.

1 See Part II, Chapter 4, of this volume, devoted to intermediate markets, which deals in sub-section A3 with the survey of competition in the Internet traffic collection market.

2 FIP: flat-rate interconnection point

Because of the volume effect[1], ISPs that generate large volumes of traffic should especially benefit from IFI, and this could encourage consolidation in the sector.

ISPs can adopt different strategies with respect to IFI. They can choose flat-rate collection (a flat charge for a given number of gates) – leaving it up to the ISP to make optimum use of these gates – or by-duration collection, with a charge per minute that may be offered at a lower rate.

• Impact of IFI on the retail market

In 2001, the main argument put forward publicly in support of IFI concerned unlimited flat rates: that is, flat rates for Internet access that included an unlimited connection time. Spearheading the publicity campaign was AOL, which asked for IFI in order to have Internet traffic collection costs that were predictable and sufficiently low to market unlimited flat rates.

At the beginning of 2002, the only "low-speed" flat-rate unlimited offer on the market was AOL's, at 50 euros per month. It should be noted, moreover, that not all ISPs share AOL's view on flat-rate unlimited offers.

On the other hand, several ISPs (Free, Tiscali and AOL) have been offering flat rates of 50 hours for ¤15 per month since the middle of 2001. Though these flat rates of course yield small margins, they can generate a significant volume of traffic for ISPs that have opted for IFI.

IFI could have a positive impact on the bottom line of operators and ISPs by lowering Internet traffic collection costs and possibly encouraging the ISPs to position their marketing on flat rates for large blocks of connection time, if not on unlimited offers. Also, IFI may well reinforce the trend toward consolidation already under way among the ISPs and the operators who collect Internet traffic.

2. Per-minute access pricing

On 19 July 2001, ART was asked to hear a dispute between Free Télécom and France Télécom concerning the per-minute Internet access price for callers, with third-party billing.

a. The subject of the dispute

Per-minute Internet access offers, also known as "free Internet", provide access through the

IFI and universal service

IFI substantially lowers the cost of collecting Internet traffic. The reduction can be as much as 30%, depending on the operator's situation. As a result, universal service represents an increasingly heavy burden for operators who collect Internet traffic and for Internet service providers: 0.13 euro cents per minute in a market where the price of an Internet minute starts at 1.05 euro cents, or a surcharge of 15% on the traffic collection cost.

In these circumstances, it seems necessary to rapidly consider legislating a change in the basis for determining financial contributions to universal service, with the criterion being revenue instead of traffic volume, as is the case now.

1 See graphs above.

switched telephone network. Users pay no subscription fee and are charged only for their connection time, which appears on their France Télécom telephone bill.

This type of offer, along with flat rates, is still a very common way to access the Internet in France, and most ISPs offer it. It is intended mainly for occasional or new Internet users. Free Télécom claims to have about 1 million active subscribers[1] to its "per-minute" offer.

Until now, Internet calls have been billed at France Télécom's local Internet rate (14 euro cents per minute[2]), with users having the possibility to subscribe to France Télécom's tariff options[3], regardless of which ISP they use. The ISPs thus have no control over the price of access to their services.

Free Télécom wanted to apply a different tariff for its per-minute access offers. More broadly, Free Télécom was seeking recognition of the principle that operators or ISPs offering per-minute Internet service set the tariff the user pays to call its numbers and that they can choose between France Télécom's local Internet tariff and at least one other tariff.

During the commercial negotiations with France Télécom on interconnection contracts, Free Télécom proposed a tariff that it wanted applied to the calls to access its services. When France Télécom rejected this proposal, Free Télécom brought the dispute to ART for settlement.

b. ART's decision[4]

ART ruled, first, that on principle Free Télécom should be able to set the tariff for calls to access its services and have a choice between France Télécom's local Internet tariff and at least one other tariff. ART also considered that the tariff proposed by Free Télécom was reasonable.

ART's decision introduces tariff diversity to the per-minute Internet access market.

ART ruled in its decision that by unilaterally setting the price for Internet calls, France Télécom was not only imposing the tariff structure for the ISPs' offers, but also determining the ISPs' revenues. On the other hand, applying a different tariff would in no way affect France Télécom's interconnection revenues because the tariff for these services, which is set in the standard interconnection offer, remains the same.

Free Télécom's tariff proposal is a step toward greater clarity and transparency for the final user.

First, the tariff structure proposed by Free is identical to France Télécom's Internet tariff structure, so no major change is introduced. Second, since this new tariff does not qualify for France Télécom's tariff options, the stated tariff is the one the caller actually pays. Last, the tariff proposed by Free Télécom is lower than France Télécom's local Internet tariff.

1 An active subscriber is one who has connected to the ISP at least once in the last 30 days.

2 FF0.14 (€0.021) per minute after a 60-second time credit charged at FF0.60 (€0.091).

3 For example, Primaliste Internet, a local flat rate and others.

4 ART decision no. 01-1055 of 7 November 2001 in the dispute between Free Télécom and France Télécom concerning the caller access tariff to 0860 PQMCDU numbers, published in the OJ of 29 January 2002, p. 1944.

ART believes that these elements have the potential to increase competition in the per-minute market and foster growth in the number of Internet users in France.

Last, this decision simplifies the payment system between France Télécom and Free Télécom in their arrangement of indirect interconnection with third-party billing by basing it on objective price and traffic data.

In fact, application of France Télécom's tariff options makes it difficult at the present time to objectively assess whether the average revenue that France Télécom pays to the interconnected operators is being fairly calculated. The method for calculating this revenue was laid down by ART in the settlement of several disputes in 2000, but operators often contest the data that France Télécom provides for the calculation. Free Télécom's tariff proposal simplifies the calculation and ensures that only objective data are used in making it.

Moreover, this decision reaffirms the existence of a billed-by-the-minute Internet access market intended for occasional or new Internet users, which is distinct from the market of flat-rate offers.

France Télécom has appealed against ART's decision.

B. High-speed access

1. ADSL

a. France Télécom's offers for ISPs and operators

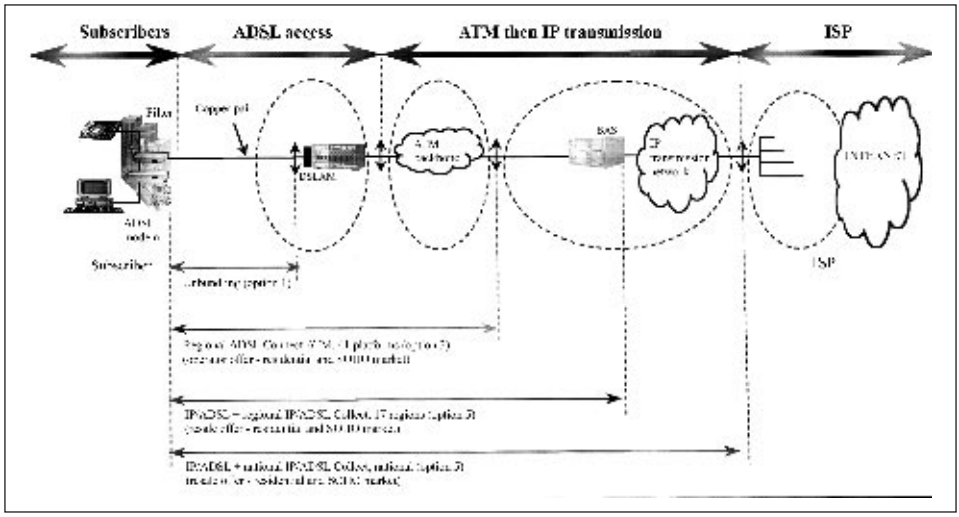
ART's objective is to promote the growth of the ADSL market by ensuring that there is genuine competition. To achieve this objective, all parties with the potential to participate must be present and active. Several categories of companies are concerned:

- Internet service providers, who are the first link in the Internet access chain and the ones who enable users to actually access content on the Internet;

- France Télécom, the only operator having the subscriber lines needed to supply ADSL access service;

- other operators, who must also be able to propose ADSL offers to their customers in economically viable conditions. Their role is to handle data transmission (collection) between the local telephone network and the ISP. They will also be able to hook up subscribers as part of the LLU process.

The high-speed-Internet value chain is thus made up of several segments in which genuine competition must be possible.



In spring 2001, France Télécom proposed a decrease in the tariffs for its ADSL offers[1], which consist of the following:

- For its final clients, both residential and professional, France Télécom markets high-speed Internet access services called Netissimo 1 and Netissimo 2;

- For Internet service providers (ISPs), France Télécom provides an ADSL traffic collection service called IP/ADSL Collect, which enables ISPs to offer ADSL services to subscribers; it also offers a Netissimo-based service called IP/ADSL, which allows ISPs to offer Netissimo to their customers under their own name, in pack form.

The proposed tariff reduction was made at a time when France Télécom was marketing its ADSL offers at a brisk rate (the number of ADSL lines leaped from 64,000 at year-end 2000 to about 450,000 at year-end 2001) and when retail prices had begun falling significantly as of January 2001 with the introduction of pack offers. Marketing initiatives of France Télécom and its subsidiary Wanadoo had also been driving faster growth in the ADSL market since the beginning of 2001. Other players, most of them ISPs such as Club-Internet, Mangoosta, Liberty Surf and Infonie, had entered this market, too, but in shaky economic conditions.

From the operators' viewpoint, a key development was unbundling, which was begun pursuant to ART decisions in the first half of 2001 concerning France Télécom's standard offer. Unbundling was, however, limited to specific geographic areas and corporate clients. Also, ADSL Connect ATM – an offer that complements unbundling and that would allow operators to receive ADSL traffic in ATM mode at the higher hierarchical level the France Télécom network – was revised by an ART decision that set the tariff at FF210 monthly per access and FF1,330 monthly per Mbits/s. (ADSL

1 ART's opinion no. 01-548 of 19 June 2001, mentioned in the OJ of 4 August 2001, p. 12705.

Connect ATM was proposed following the competition authority's decision of 18 February 2000.)

In March 2001, ART ruled[1] in a dispute over the tariffs of France Télécom's ADSL Connect ATM offer brought by Liberty Surf Télécom on 17 November 2000.

This data transmission offer enables an operator to provide high-speed Internet access on France Télécom's wire-line telephone network using ADSL technology. It corresponds to the option 3 specified by ART following the public consultation on unbundling conducted in 1999.

With this decision, ART defined tariff conditions for the ADSL Connect ATM offer that it believed would be equitable and would allow third-party operators to offer ADSL service to ISPs on economic terms equivalent to those of France Télécom's own service.

ART's decision concerns:

- minimum access reserved by the third-party operator: France Télécom's initial offer obliged third-party operators to order at least 50 accesses per distribution frame. ART substantially reduced this number to make it easier to start up these services;

- the tariff for the ADSL Connect ATM offer: the price in France Télécom's initial offer was for both access and transmission volumes. ART decided that these two elements should be separate. It set the corresponding tariffs for 2001 at FF210 (¤32) a month per access and FF1,330 (¤202.7) a month per Mbits/s. These new tariffs are significantly lower than those in the initial offer, especially considering that the number of accesses requested is small (for example, the reduction is 86% for 10 accesses and 36% for 600).

At the time ART was to issue an opinion on France Telecom's ADSL offers (June 2001), implementation of unbundling and the option 3 offer was not yet sufficiently advanced to allow operators to actually enter the market and offer services comparable to France Télécom's. As a result, a wide gap was opened in the market.

ART's analysis showed that while the reduced tariff France Télécom was proposing on its IP/ADSL offers would improve the economic conditions in which the ISPs could market their ADSL services, it was incompatible with the possibility for third-party operators to market a competing service based on the ADSL Connect ATM offer. This was particularly true in the residential market, on which ART had focused its analysis because of this market's specific characteristics and importance.

In these circumstances, ART sought to find a balanced solution that would avoid the pitfalls of two opposing options; that is:

- the option requiring France Télécom to significantly increase the tariffs it was proposing to ISPs, since the analysis tended to show that the proposed tariffs would not allow a third-party operator to successfully pursue a growth strategy based on the ADSL Connect ATM offer in the residential market for ADSL services. However, this solution would have prevented the ISPs, whose profitability is uncertain today, from entering or continuing to operate in the ADSL market;

1 Decision no. 01-253 of 2 March 2001 in a dispute between Liberty Surf Telecom and France Télécom concerning tariff conditions for the ADSL Connect ATM offer, published in the OJ of 24 April 2001 p. 6398.

- the option authorising the proposed prices, with a view to supporting access providers that would offer rival services to Wanadoo's. In fact, France Télécom's offers were likely to spur competition in the ADSL residential market by allowing retail offers other than Wanadoo's to be marketed rapidly and thereby increasing the size of the ADSL residential market. Such growth would in itself have a positive effect for the companies involved, since larger volumes would generate lower costs. However, this solution, which ART chose, assumed that operators would be able to mount competitive services and cover their costs using the ADSL Connect ATM offer. To achieve this objective, the price of this offer had to be reduced.

ART therefore issued a favourable opinion on France Télécom's proposed decreases, on condition that the ADSL Connect ATM offer were revised. In response to the ART opinion, France Télécom agreed to comply with this requirement by proposing to lower the access tariff by 20%, to FF168 (¤25.6), a month per access. This decrease was applied concurrently with the approval of the new IP/ADSL tariffs, on 1 August 2001.

b. ADSL offers marketed by France Télécom

On 27 February 2002, the competition authority issued its decision [1] on a complaint filed by T-Online concerning the way France Télécom was marketing its ADSL offers. Two practices were challenged:

- the preferential conditions Wanadoo enjoyed in marketing its ADSL offers (the "x-tense" packs) because of its presence in France Télécom showrooms;
- France Télécom's plan to form partnerships with ISPs to market ADSL offers through the major retail distribution chains.

At the request of the competition authority, ART issued an opinion [2] in January 2002.

As regards the marketing of Wanadoo packs in France Télécom's showrooms, the authority concurred with ART's view that this situation affords Wanadoo a significant advantage and is discriminatory vis-à-vis its competitors. In particular, Wanadoo benefits from preferential marketing conditions by being able, first, to determine whether a potential client's line is ADSL-compatible and, second, to order the activation of the line for ADSL service far more quickly than its competitors can, since they lack the technical capacity that France Télécom provides its subsidiary Wanadoo. The competition authority considered that by doing this, France Télécom was creating "structural discrimination" among ISPs that benefited its subsidiary Wanadoo.

France Télécom's proposed partnerships with ISPs consisted in marketing through major retail distributors ADSL packs combining its Netissimo offer (under the name "La Ligne ADSL de France Télécom") and a subscription to the ISP of the client's choice, with France Télécom determining the subscription fee. The partner ISPs would also pay the point of sale the same amount as France Télécom did. The authority noted, as did ART in its opinion, that in this arrangement France Télécom was imposing a minimum price on the ISPs for their own service and the amount due the retail chain, in violation of competition rules.

Finally, the competition authority concluded, as had ART in its opinion, that these practices

1 Competition authority decision no. 02-MC-03 of 27 February 2002 on the complaint filed by T-Online concerning France Télécom's methods of marketing ADSL offers.

2 Opinion no. 02-35 issued by ART to the competition authority on 7 January 2002.

caused grave and immediate prejudice to the sector and posed the risk of permanently distorting competition in the ADSL market.

As a consequence, the authority ordered France Télécom:

- to make available an extranet server that would allow ISPs to access the same information and request ADSL activation from France Télécom in the same way as Wanadoo, having the technical capacity for online mass processing;

- to suspend the marketing of the Wanadoo packs in France Télécom showrooms until these changes were made. This suspension could be lifted as soon as two contracts were concluded between France Télécom and ISPs other than Wanadoo for the use of this system, following a one month trial period. Additionally, the parties were to report on the implementation of the extranet four months from the date of the authority's decision;

- to suspend any ISP partnership offer for marketing through major retailers that would have the same features as the offers in the proposal presented by France Télécom.

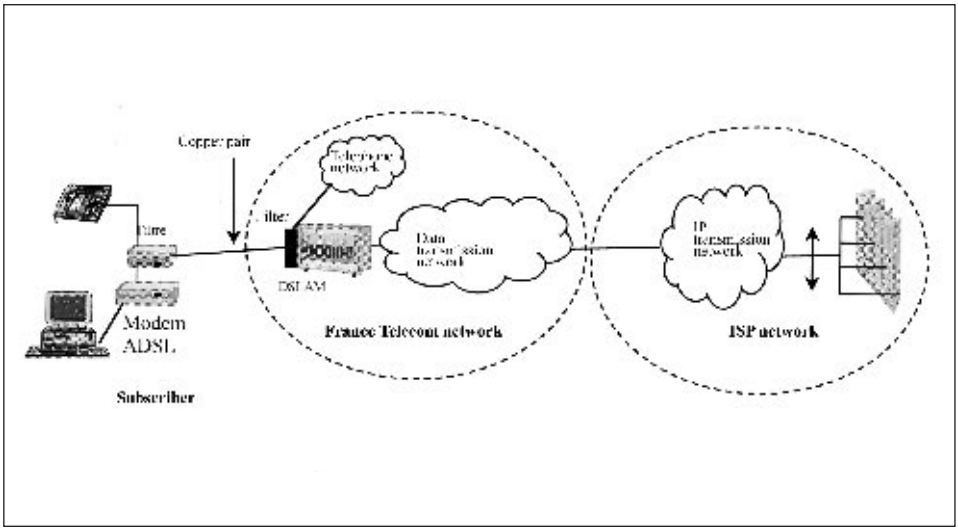
This decision was upheld by the Paris Court of Appeals on 9 April 2002.

c. ADSL modems

An important component of the development of ADSL access is the ADSL modem that subscribers must acquire.

In 2001, ADSL technology had not yet reached the same stage as that used for access via the switched telephone network, where there is no longer any problem of modem-network interoperability. Standardisation is still not adequate to guarantee that any ADSL modem will work with any DSLAM, which is the network-side equipment installed by the operator.

At the end of 2001, France Télécom cited this situation to justify restricting the models of ADSL modems that could be used in its IP/ADSL contracts with ISPs (IP/ADSL is the France Télécom ADSL traffic collection offer that allows ISPs to market ADSL services under their own brand). At present, virtually all residential ADSL traffic is collected via IP/ADSL.



Under the IP/ADSL contract in effect at the end of 2001, the ADSL modem that the ISPs supply their subscribers must be one of two brands specified by France Télécom, which are also the two brands of DSLAM used by France Télécom.

Considering that this situation was hampering competition in the ADSL modem market, Liberty Surf referred the matter to ART on 20 July 2001. It asked for the freedom to choose the modems it supplied to clients, with the primary aim of distinguishing its offer from France Télécom's.

In its decision[1], ART expressed the view that while ADSL technology might not be sufficiently standardised to guarantee that all brands of modems would indeed operate with all brands of DSLAM, the market was evolving rapidly and several manufacturers proposed modems that were purportedly compatible with the equipment now in the French network. The manufacturers also claimed that since their modems could be remotely upgraded, they could be made compatible to a certain extent with future modifications to that network equipment.

ART therefore decided to authorise Liberty Surf to choose the modems that it would supply its clients. This decision also applies to other ISPs offering ADSL services, by virtue of the principle of non-discrimination. ART asked that access providers be given two options:

- either the ISP chooses the modems it will distribute and performs the technical qualification, in which case it assumes full responsibility vis-à-vis its clients for the interoperability of these modems with the ADSL network;

- or the ISP submits the modem it wants to distribute to France Télécom, which tests its compatibility with the two types of DSLAM in its network. If it is found to be compatible, France Télécom then fully guarantees that the modem will function properly.

In both cases, if the modem does indeed operate properly with the network DSLAMs, France Télécom is obliged to provide ADSL service of the same quality as it offers its own subscribers, notably in terms of transmission speed and time required to re-establish service in the event of a network malfunction.

The aim of this decision is to promote competition among ADSL modem manufacturers. Opening the modem market will foster diversification of the distribution channels of ADSL modem and subscription packs, which ISPs are beginning to market through the large retail chains. ART also expects that competition among modem manufacturers will lead to lower prices for these devices.

Ultimately, sales of computers with an ADSL modem pre-installed, as is often the case with conventional modems today, should help to make high-speed Internet access commonplace in France.

d. European comparisons

At the end of 2001, the situation with ATM traffic collection offers for ADSL varied greatly across Europe, as the following table shows.

1 Decision no.01-1112 of 16 November 2001 settling the dispute between Liberty Surf and France Télécom concerning the conditions for choosing the client modems in IP/ADSL access contracts, published in the OJ of 31 January 2002, p.2109.

ATM traffic collection for ADSL

	Available	Service access fee	Monthly contract
Germany	No		
Austria	27/06/2000		€27.62
Belgium	01/01/2001		
Denmark	01/07/1998	Not available	Not available
Spain	15/09/2000 Offer 256 Kbits/s UBR Offer 256 Kbits/s SBR Offer 512 Kbits/s SBR Offer 2 Mbits/s SBR	 €90.15 €90.15 €150.2 €306.52	 €24.04 €30.05 €153.26 €306.52
Finland	Yes		€5.05-25.03 (depending on the location)
France	End 2001		
Greece			
Ireland	No		
Italy	01/2000	€151.84	€13.58
Luxembourg	No		
Netherlands	07/2000		€10-15 (depending on location)
Portugal	No		
United Kingdom	06/2000	€426.06	€114.7 (500 Kbits/s) €141.8 (1 Mbits/s) €168.87 (2 Mbits/s)
Sweden	Yes		

Source: ART

2. High-speed access by satellite

At present, 13 public telephone networks are licensed to offer fixed services by satellite. This market is reaching maturity, with five more operators licensed during 2001 alone.

Operators of satellite-based public networks	
Licensed before 2001	**Licensed in 2001**
Afripa Telecom France	e-Qual
Belgacom France	Eutelsat SA
BT France	HOT Telecommunications (Deutschland)
Gensat France	Tachyon Netherlands BV
Kertel	Télévision Française 1 (TF1)
Multicoms	
Outre-mer Telecom	
Skybridge Communications	

a. Satellite projects in 2001

Eighty per cent of the operators that entered the access-by-satellite market in 2001 were directly financed with European capital, and in half those cases, the capital was French. Sixty per cent of the projects are indirectly financed with capital from outside Europe, two-thirds of which is American. The projects in France of four of these new operators are part of international satellite networks. The offers consist of bi-directional interactive multimedia services including bi-directional high-speed Internet access along with digital services such as pay-per-view video and pay television (push mode).

The offers, which are often marketed on a European-wide scale, are designed for ISPs, multinational companies, local communities and broadcasting service suppliers. Some projects that include bi-directional Internet access are intended for SMEs and large enterprises. Most of the Internet access offers are not being aimed at the consumer market yet because for this customer segment, their price is still not really competitive with offers based on competing technologies.

The proposed transmission speeds are a key factor in the competition with other means of high-speed access such as ADSL and cable. Downlink speeds are in the range of 128 Kbits/s to 2 Mbits/s. Uplink speeds go from 32 to 128 Kbits/s at the minimum, to 2 Mbits/s in push mode and 4 Mbits/s in unidirectional data transmission mode. Most of the frequencies used for these projects are in the 14-14.5 GHz bandwidth for uplinks and 10.7-12.75 GHz for downlinks[1].

The principal investment for operators licensed to set up satellite-based networks is in earth stations. They rarely finance the construction of satellites, which can cost up to several hundred million euros. The combined investments planned over the next five years for all the satellite projects licensed in 2001 (some of which cover several countries) total 3.8 billion euros. Projections indicate that the operators of the satellite-based public networks licensed in 2001 will show a profit within the first two full years of receiving their licence.

b. Satellite projects before 2001

A variety of projects to provide Internet access by satellite were launched over the preceding two years.

Several satellite projects have been undertaken by companies that belong to satellite network operators. Among the offers still in existence are @-sky, created in January 2000 in France, which claims to be "the first European TV-Web multimedia satellite broadcaster". Another is Infocast, with push-mode Web access. Xantic is a Dutch company that provides unidirectional Internet access to private and business customers in the form of packages of megabytes. Skybridge Communications offers unidirectional Internet access by satellite to operators, ISPs and enterprises at a maximum speed of 45 Mbits/s in transmission mode and 30 Mbits/s in reception mode. This type of offer, which indicates that the satellite-based access market was not mature as of 2001, will probably be challenged in the future by more complex offerings with higher and more dependable transmission speeds as well as a return satellite link.

Several satellite offers have been discontinued and in particular the ones that did not include a return satellite link. This is the case for Multicoms (the EADS group) and Matra Grolier Network, which stopped offering Internet access by satellite during the first half of 2001. Some European service providers have

1 The 10 –18 GHz bands have been reserved for fixed telecommunications and broadcasting by satellite.

had to fall back to their original market. Two examples are Luxembourg-based Europe Online (EOL) and Starspeeder, which halted their satellite Internet access service in France in October 2000 and July 2001, respectively. Another is NetSystem, which offered free access at 300 Kbits/s in France until October 2001, before limiting its henceforth pay-for-service offer to residents of Italy.

The satellite Internet access offers that seem to have the best long-term prospects are based on the deployment of public networks. In fact, only two licensed operators have discontinued their satellite offer. One of them did so for reasons unrelated to the satellite market. Kertel, which was absorbed by LD Com, is dropping its plan to use satellites to carry international traffic to foreign third-party operators. Easynet terminated its unidirectional Internet access offer in August 2001, after a two-year attempt to attract private customers and independent professionals.

Besides the operators who entered the market in 2001, three operators licensed to set up a public telecommunications network are active in the satellite market. Afripa Telecom France has set up a satellite-based network to develop its group's pan-African offer of public telephone service and a transit service. Outremer Telecom has a public network in the four overseas départements and the Paris metropolitan area (Île-de-France), and it offers phone-card services for travellers. Last, BT France offers leased link services and access to the space segment in metropolitan France and the overseas départements to local and international television channels as well as ISPs.

Chapter 5

The local loop

I. The market

A. Fixed telephone lines

The number of lines remained stable in relation to 2000 at 34 million. The number of analogue lines is diminishing, while digital and XDSL lines increased by 13.2% in 2001.

Units	31/12/98	31/12/99	31/12/00	31/12/01	Growth in 2001 (%)
Number of fixed lines	33,856,991	33,887,995	34,080,828	34,073,545	-
o/w analogue lines	31,049,736	30,253,256	29,596,781	28,985,178	-2.1%
o/w digital and XDSL line	2,807,255	3,634,739	4,440,832	5,026,229	+13.2%
o/w WLL lines	N/A	N/A	2	518	N/M
o/w cable connections	N/A	N/A	43,213	61,620	+42.6%

N/A = Not available N/M = Not meaningful

B. Access charges, subscriptions and additional services

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Total access, subsciptions and additional services	4,299	4,869	5,144	5,616	+9.2%

The access segment is the market in direct connection of subscribers (residential and corporate) by operators. Revenues from total access costs, subscriptions and additional services rose by 9.2% in 2001 on the previous year.

C. Progress on unbundling in 2001

The unbundling process began in 2001: feasibility studies and cost estimates were completed in the first half of the year, and the first co-location facilities were delivered in July. The operators installed their equipment in the facilities and some unbundled their first lines in November 2001.

1. Operators

Nine operators ordered co-location facilities in 2001. Eight of these signed unbundling agreements with France Télécom, so they could begin marketing unbundling offers.

2. Co-location facilities

The ordering process started up fairly quickly in the first half of 2001, but orders slowed significantly in the latter part of the year. The first co-location facilities were ordered in the Paris region. Later, operators ordered facilities in some of the larger provincial cities. Orders remained concentrated on Paris, Lyons and Marseilles.

3. Line unbundling

The time required to build the facilities and for the operators to install their equipment meant that lines were not actually unbundled until the end of 2001. At end-December 2001, there were 400 unbundled lines, mainly intended for business customers.

D. The wireless local loop

The wireless local loop is a new market, which is gradually being opened to competition. Some problems were encountered in this start-up period, in a difficult context for the telecommunications sector as a whole.

At the end of the year 2001, there were nine WLL operators present in the market, seven of which had started to deploy a network. Nearly 200 ground stations were installed at 31 December 2001, which represents significant deployment, higher than in other European countries.

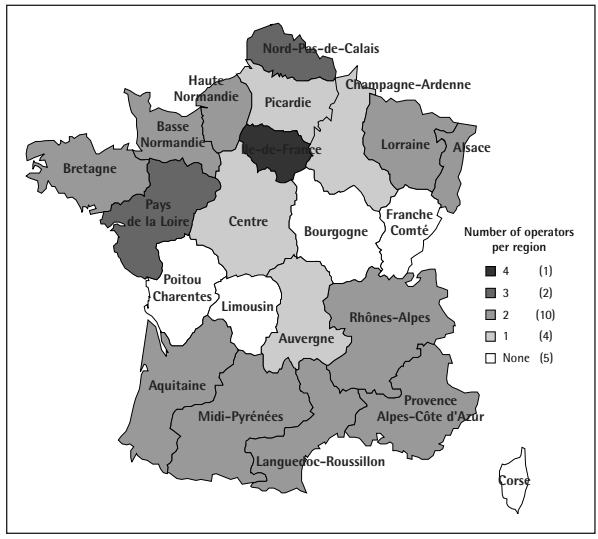
1. Deployment of WLL operators at 31 December 2001

At 31 December 2001, the seven active WLL operators were deployed in 17 regions of metropolitan France and in the overseas département of Réunion.

a. Deployment in metropolitan France

In 13 regions of metropolitan France, at least two operators are present. The national operators FirstMark and Squadran were

Deployment of WLL operators at 31 December 2001



present in 13 and 10 regions respectively. The regional operators Altitude Telecom and Belgacom France were deployed across almost the entire coverage area stipulated in their licences, i.e. northern and north-western France. The regional operators Landtel France and Broadnet France were deployed in Paris and some neighbouring towns.

The WLL operators are present in around 30 urban units in metropolitan France with a population of at least 50,000:

Town/city with population of at least 50,000	1999 pop. (millions of people)	FirstMark	Squadran	Altitude	Belgacom	Broadnet	Landtel
Paris	9.48	1	1			1	1
Lyon	1.31	1	1				
Marseille-Aix	1.26	1	1				
Lille	0.98	1	1		1		
Toulouse	0.74	1	1				
Bordeaux	0.74	1	1				
Nantes	0.55	1	1		1		
Nice	0.53	1					
Grenoble	0.42	1					
Strasbourg	0.41	1	1				
Rouen	0.39			1	1		
Nancy	0.33	1	1				
Tours	0.30	1					
Saint-Etienne	0.29	1					
Montpellier	0.27	1	1				
Rennes	0.27	1			1		
Clermont-Ferrand	0.26	1					
Le Havre	0.25			1	1		
Mulhouse	0.23	1					
Reims	0.21				1		
Metz	0.20	1					
Caen	0.20			1	1		
Dunkerque	0.19				1		
Amiens	0.16				1		
Saint-Nazaire	0.14	1					
Calais	0.10				1		
Colmar	0.09	1					
Evreux	0.06			1			
Elbeuf	0.05			1			
Total	**20.40**	**20**	**10**	**5**	**10**	**1**	**1**

Source : ART

b. Deployment in the overseas départements

Cegetel La Réunion began to deploy its network in the overseas départements, including Reunion, in the 3.5 GHz frequency band. The other two WLL subsidiaries of the

Vivendi/Cegetel group – Media Overseas and Cegetel Caraïbes – applied to have their licences revoked and their frequencies removed at the end of 2001. The two WLL subsidiaries of the XTS Network group postponed their deployment in all the overseas départements to the beginning of 2002. The market potential of the overseas départements now seems lower than the estimates indicated by the operators in their responses to ART's call for applications.

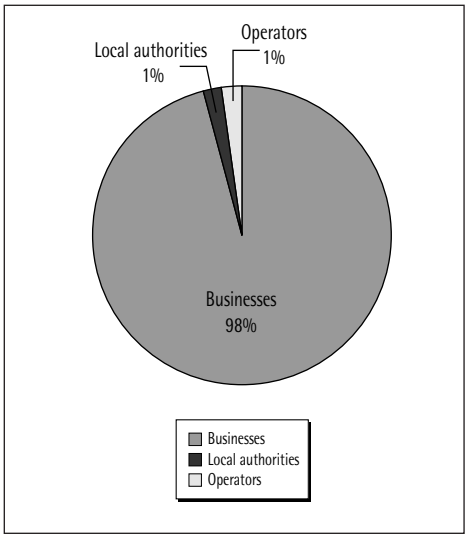
2. Services offered and target customers

The services offered by the WLL operators are mainly: high-speed Internet access, leased lines, and bulk selling of access capacity to around 870 customers, 98% of which were SMEs at end-2001. Other services such as voice and hosting should appear in the course of 2002. The WLL operators are targeting SMEs because of the high cost of reception equipment and the offer of high-speed, symmetric access (up to 8 Mbits/s). The WLL is competitive for interconnection links and medium speeds higher than ADSL, which is attractive for both residential and business customers.

WLL operators	No. of paying business customers at 31/12/01
FirstMark Communications France	500
Squadran	10 *
Altitude Telecom	200
Belgacom France	100
Landtel France	~10
Broadnet France	~50
Total WLL	**~ 870**

**Number of operator customers. Source: WLL operators and ART*

Analysis of customer base at 31/12/01



E. Fibre-optic high-speed service infrastructure

Fibre optic service (or access) infrastructure can be used to connect customers to high-speed services. This is the part of the operator's network between the point of concentration nearest to the network (where the main network starts) and the customer's site. This infrastructure is integrated into the broader market of high-speed services, analysed below. High-speed services break down into three markets:

- the end market of companies and local authorities and other public entities;
- the market of Internet service providers;
- the market of licensed operators.

The table below sums up the competitive situation on these markets in 2001. The market in fibre-optic high-speed service infrastructure was estimated to be worth €2.6 billion in 2001.

Costomers	total estimate (€M)	Markets	Estimate (€ M)	Competitive situation		
				Geographical area with a high level of competition	Geographical area with a medium level of competition	Geographical area with no competition
Companies and public entities	1 537.5	Local services (access)	237.5	• Business districts of Paris – La Défense, Issy-les-Moulineaux and Boulogne – Lyons, Marseilles and Lille (France's four biggest cities). • France Télécom has a medium market share • 4 or 5 competitors	• Business districts of Nice, Grenoble, Nantes, Toulouse, Bordeaux, Strasbourg (next six largest cities). • France Télécom has a large market share • One or two competitors (usually Complétel)	• Rest of France • No competitor to France Télécom
		Regional or national services (data transmission)	1,300	• Whole country • France Télécom's market share is stable and dominant • Around 10 competitors		
Costomers	**total estimate (€M)**	**Markets**	**Estimate (€ M)**	**Competitive situation**		
Internet service providers	160	Connection capacity to collection operators	N/A but in sharp decline	Geographical area with a high level of competition	Geographical area with a medium level of competition	
				• Paris and Hauts de Seine • Customers: national ISP market • Strong competition	• City centres • Customers: market in high-speed services for regional ISPs in decline	
		IP transit	160	• Paris and Hauts de Seine • Customers: national ISP market • France Télécom has a medium market share • 5-6 major competitors		

Costomers	total estimate (€M)	Markets	Estimate (€ M)	Competitive situation	
				Geographical area with a high level of competition	Geographical area with no competition
Operators	900	Own needs: externalisation of the backbone	800*	• The 25-30 largest towns in France • Customers: fixed telephone and data operators Appearance of competition in 2001 with LD Com and Télécom Développement	• Rest of France • Customers: Mobile operators (on a case-by-case basis) • Cable operators (France Télécom is the only provider) Some regional WLL operators (France Télécom is the only provider)
		Between operators: interconnection links	100	Fixed telephone and data operators: LD Com and Télécom Développement were the first competitors in 2001	Not in the high-speed services market

** the €800 million also includes end-customer connections for third parties*

II. ART's action

A. Licences

1. New licences

In 2001, nine decrees granting licences to establish a public telecommunications network and/or to provide a public telephone service in the local loop market were published in the Official Journal.

The nine companies that entered the local loop market in France in 2001 are:

ADP Télécom	Mangoosta
Belgacom France	Media Overseas
BLR Service	Objectif B.L.
Broadband Optical Access France	Priority Telecom France
Broadnet France SAS	

Operators' projects for the local loop market are based on network deployment. No operator has entered this market only to provide a public telephone service. Wireless local loops are the main type of local market projects. On the local loop market, four of the eight licences issued pursuant to Articles L. 33-1 and L. 34-1 of the Code were delivered after a call for applications for the wireless local loop.

	L. 33-1 & L. 34-1 licences	L. 33-1 licences	L. 34-1 licences
Total	**8**	**1**	**0**
o/w WLL	4		
o/w DSL cable	1		
o/w DSL	1		
o/w local loop	1	1	
o/w other projects	1		

Of all the licences issued in 2001, projects for the local loop market, excluding the wireless local loop, are forecast to account for 40% of jobs and 19% of revenues in five years' time, and 9% of aggregate investment over the next five years.

2. Revoked licences

Over 2001, on the local loop market, ten licence decrees were revoked or expired. Three of these were issued for local loop unbundling trials intended to prepare the launch of local loop unbundling projects that will be licensed for a period of 15 years.

	L. 33-1 & L. 34-1 licences revoked	L. 33-1 licences revoked	L. 33-1 licences revoked	L. 33-1 & L. 34-1 licences revoked
			expérimentales	expérimentales
Total	**6**	**1**	**2**	**1**
o/w WLL	3			
o/w DSL	1		2	1
o/w local loop	2	1		

The nine companies whose licences were revoked are:

BLR Services	Media Overseas
Cegetel Caraïbes	Objectif B.L.
IS Production (expérimentation)	RSL Com France
Mangoosta (expérimentation et autorisation pour 15 ans)	Skyline (expérimentation)

a. Expired trial licences

Skyline and IS Production's licences for local loop unbundling trials expired on 31 December 2001. Mangoosta's trial licence expired on 15 June. Skyline went into liquidation in October 2001, Mangoosta was granted a 15-year licence and IS Production applied for a new trial licence at the end of 2001 to continue its trial with a view to applying subsequently for a 15-year licence.

b. Licences revoked in the same year as their publication in the Official Journal

Two of the operators in the local loop market that applied to have their licences revoked did so in the same year that they entered the market: Objectif BL and Mangoosta. These operators participated in the local loop unbundling trials and then obtained 15-year licences to establish public networks and provide a public telephone service. In addition, two of the three operators of wireless local loop networks whose licences were revoked in 2001 had been selected through the call for applications conducted in the same year.

c. Effects of restructuring, liquidations and takeovers

In response to the downturn in the telecommunications sector, several companies revised their plans to enter the local loop market.

Two wireless local loop operators cancelled their projects: because of slow market development in Guadeloupe and Martinique, Cegetel Caraïbes ceased its operations and then withdrew from its partnership with Media Overseas, which terminated its operations in Guyana.

Three active local loop operators went into liquidation in 2001, after either failing to find a rescuer or after selling some of their assets to a rescuer: RSL Com France, Objectif BL and Winstar Communications. RSL Com France and Objectif BL were licensed under Articles L. 33-1 and L. 34-1 of the Posts and Telecommunications Code. Winstar Communications was licensed under L. 33-1 only.

Two operators in this market were taken over by other companies in 2001: BLR Services was taken over by LDCom and Mangoosta by Nerim.

3. Amended licences

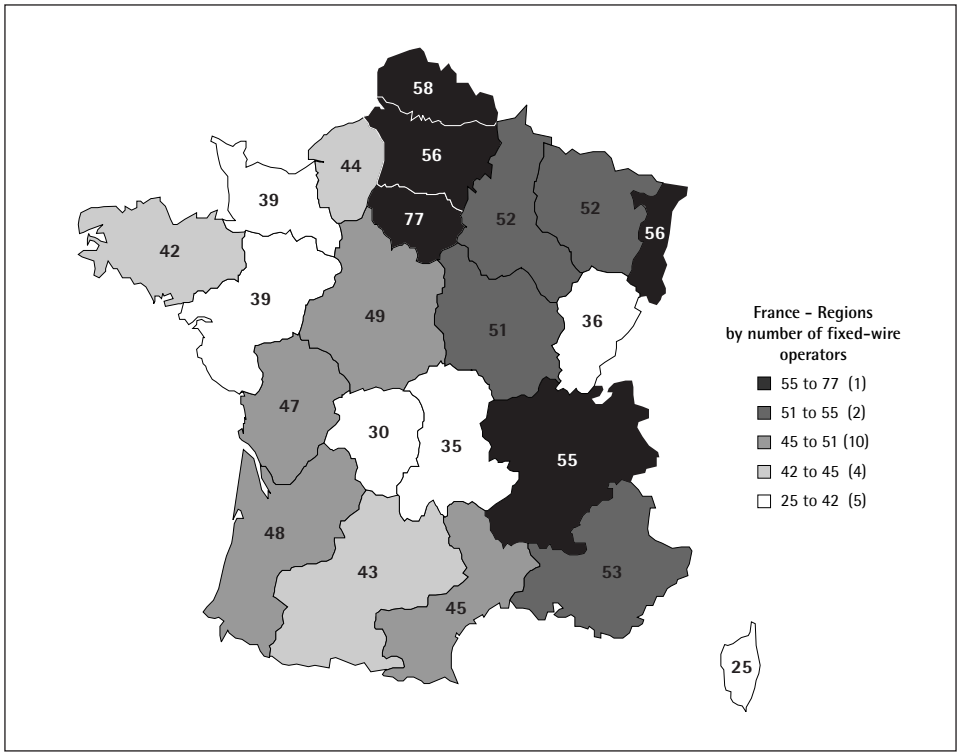
Four licences for operators in the local loop market were amended in 2001: two operators asked for an extension of the coverage area stipulated in their licence decree and two others changed their company name.

Extension of coverage area	Change of company name	
	New name	Former name
France Cité Vision	Cegetel Entreprises	Cegetel
Suez Lyonnaise Telecom	Fortel	Squadran

Cegetel Entreprises changed its name after an internal reorganisation of its activities. Fortel's change of name followed a change in its shareholder structure, after LDCom increased its stake to 50%.

4. Geographical deployment of networks

Number of fixed-wire network operators in French regions
February 2002



The map summarises the number of licensed operators in France at the beginning of 2002.

The tables below indicate the geographical distribution of the operators licensed in 2001.

Metropolitan region	Number of operators	Metropolitan region	Number of operators
Alsace	56	Ile-de-France	77
Aquitaine	48	Languedoc-Roussillon	45
Auvergne	35	Limousin	30
Basse-Normandie	39	Lorraine	52
Bourgogne	51	Midi-Pyrénées	43
Bretagne	42	Nord-Pas-de-Calais	58
Centre	49	Provence-Alpes-Côte d'Azur	53
Champagne-Ardenne	52	Pays de la Loire	39
Corse	25	Picardie	56
Franche-Comté	36	Poitou-Charentes	47
Haute-Normandie	44	Rhône-Alpes	55

Overseas département	Number of operators	Overseas département	Number of operators
Guadeloupe	7	Martinique	6
Guyane	5	Réunion	6

B. Local loop unbundling

The unbundling of the local loop means giving new operators access to the existing telephone network so that they can provide their services to customers directly. In the case of a totally unbundled line, the end customer does not pay a France Télécom subscription. In the case of a partly unbundled line, the end customer continues to use France Télécom's telephone services under the same conditions as for a non-unbundled line, but can use the high-speed services of an alternative operator on the same telephone line.

The year 2000 saw the implementation of a working framework for the unbundling of the local loop. The legal framework for unbundling was established by the French decree of September 2000 and the European regulation of December 2000. ART set up a working group of unbundling actors to prepare trials and then full implementation.

ART's tasks in 2001 consisted in establishing the price and technical conditions for the commercial implementation of unbundling and in resolving operational problems that arose as operators entered the commercial phase, mainly through specialised working groups within the committee chaired by Alain Bravo.

1. Main stages in the introduction of unbundling

ART's work on unbundling consists in setting the conditions under which third-party operators may access France Télécom's local network. The conditions for access to the raw copper pair were cited as particularly important by the actors at the public consultation organised by ART in 1999. The first legal provisions on raw copper access appeared in a decree in September 2000[1] and a European regulation in December 2000[2], which set forth the incumbent operator's obligation to make its access network available through two distinct procedures: totally unbundled access and shared access. These provisions are designed to give concrete form to this type of market entry, after the necessary implementation process.

Unbundling the incumbent operator's local loop is a complex process that requires technical, legal and economic negotiations between the operators. The year 2000 was a key year in this regard. The results of the negotiations undertaken on ART's initiative enabled operators to start unbundling trials on 1 July. The discussions on technical, economic and operational aspects coordinated by ART contributed significantly to creating the conditions for the unbundling process to start on 1 January 2001.

1 Decree No.00-881 of 12 September 2000 amending the Posts and Telecommunications Code and concerning access to the local loop, published in the O.J. on 13 September 2000 p.14343.

2 Regulation No. 2887/2000 of 18 December 2000 of the European Parliament and Council relative to unbundling of access to the local loop, published in the O.J.E.C. on 30 December 2000 p.4.

ART subsequently took several decisions, mainly involving changes to the reference offer published by France Télécom, and initiated several penalty procedures under Article L. 36-11 of the Posts and Telecommunications Code.

Main stages of unbundling in France

- 2 April 1999 – 1 June 1999: ART holds a public consultation on opening the local loop to competition.
- February 2000: ART sets up working groups on raw copper access to examine the technical and operational conditions for unbundling.
- July 2000: first unbundling trials begin with some 30 operators.
- November 2000: France Télécom publishes its first reference offer containing the practical and financial conditions for unbundling.
- February 2001: ART asks France Télécom to make changes to the general conditions for unbundling and prices in its reference offer.
- December 2001 – April 2001: ART serves notice four times on France Télécom[1] to comply with its decisions. France Télécom makes several changes to its reference offer.
- 16 July 2001: France Télécom publishes its new reference offer.
- July 2001: the first co-location facilities are delivered to operators.
- November 2001: the first lines are unbundled commercially by alternative operators.

2. ART's work in 2001

a. Work on unbundling prices

• Decision of 8 February 2001

On 8 February 2001, ART asked France Télécom[2] to make some changes to prices in its reference offer.

• Totally unbundled access: the price was lowered from FF112 (€17.07) to FF95 (€14.48) per line per month, after a re-evaluation of the costs calculated according to the long-run average incremental cost method, presented by France Télécom in its reference offer.

• Partly unbundled access (shared access): the price was lowered from FF60 (€9.15) to FF40 (€6.10) per line per month.

• Access charges: the price was lowered from FF1,067 (€162.66) to FF708 (€107.93) per line.

These changes aligned prices for the unbundled loop more closely with costs, in accordance with the European regulation and the decree on unbundling.

1 Decision No. 2001-354 of 4 April 2001 serving notice on France Télécom pursuant to Article L. 36-11 of the Posts and Telecommunications Code to comply with certain provisions of Decision No. 2001-135 of ART dated 8 February 2001 calling on France Télécom to make changes to its reference offer for access to the local loop, published in the O.J. on 11 May 2001, p.7496.

2 Decision No. 2001-135 of 8 February 2001 asking France Télécom to make changes to its reference offer for access to the local loop, published in the O.J. on 12 April 2001, p.5659.

• Preparing future changes to prices

ART continued to work on unbundling prices throughout the year. A model for local loop unbundling was developed and presented to a multilateral group including France Télécom and new market entrants. The model can be used to check the consistency of the incumbent operator's prices against criteria of efficiency. The results of the comparison with France Télécom's model must be taken into account.

In 2001, ART also worked on a system for updating unbundling prices in the light of objective criteria measuring the costs actually incurred by France Télécom and the general economic structure in the sector. In particular, ART examined:

- the return on assets included in the price for unbundling the local loop for 2002, which was lowered from 12.1% to 10.4%;
- measures to lower the economic barriers to market entry;
- the economic effects of gradual deployment throughout France.

Following these pricing changes, prompted by ART's observations of unbundling in 2001, the regulator prepared a new change to the reference offer for April 2002.

b. Work on the technical and operational aspects of unbundling

• Implementation of a reference offer

In the first quarter of 2001, ART worked to improve France Télécom's reference offer.

In December 2000, ART served notice on France Télécom[1] to provide operators with the necessary information for unbundling (in particular, distribution frame maps and addresses). ART then asked France Télécom[2] to change several operational aspects of the reference offer, which it was entitled to do under the European regulation on unbundling:

- a service for creation of copper pairs for totally unbundled access to the local loop;
- the physical co-location process (timeframes, authorised equipment, work performed by France Télécom);
- after-sales service;
- technologies that can be used for unbundling.

ART twice served notice on France Télécom to comply with the provisions of this decision. ART also served notice on France Télécom to make changes to its co-location offer, so that it complied with the regulatory provisions.

France Télécom's reference offer published on 16 July 2001 was the basis for operational unbundling until the end of first quarter 2002[3]. The offer was framed by these ART decisions and

1 Decision No. 00-1326 of 14 December 2000 serving notice on France Télécom to comply with the obligations in the second-last paragraph of Article D.99-23 of the Posts and Telecommunications Code, published in the O.J. on 17 January 2001, p.899.

2 Decision No. 2001-135 of 8 February 2001 asking France Télécom to make changes to its reference offer for access to the local loop, published in the O.J. of 12 April 2001, p.5659.

3 ART adopted a decision to amend this offer on 16 April 2002 (Decision No. 02-323, which is available on ART's website).

notices, which were partly integrated into it. It sets the conditions for unbundling, particularly:

- An offer of totally unbundled or shared access in France Télécom's distribution frames.

- An offer of physical or remote co-location for operators. Physical co-location consists of a main offer, the co-location facility, and a subsidiary offer, which can be either the installation of a shelter on France Télécom's premises or virtual co-location (whereby France Télécom manages the operator's equipment).

- Contents of an information system (France Télécom is developing an extranet for this purpose).

- Related services (e.g. cables and shared access filters).

• Support for operators' deployment

Since the publication of the reference offer on 16 July 2001, ART has closely monitored France Télécom's compliance with its undertakings. ART has chosen a pragmatic approach, based on feedback from unbundling operators. This has led to viable solutions in often complex processes involving multiple interactions between third-party operators and France Télécom.

In particular, operators have been able to voice their operational and technical difficulties regularly in multilateral working groups involving France Télécom, operators and manufacturers. The work of these groups has largely guided ART's action, enabling it to identify problems, assess their importance and devise reasonable solutions.

The working group on the operational monitoring of unbundling met throughout 2001. The meetings highlighted questions and problems and were an opportunity to seek solutions through multilateral discussions. The main issues discussed were:

- Asking France Télécom to provide operators with up-to-date information on co-location facility orders and on the opening of "closed" sites.

- Asking France Télécom to send more precise information on some services, in particular electricity, air-conditioning, shelters, intra-building links, access to zero chambers.

- The information system, in particular the planned installation of an extranet on the lines.

- Different technical and operational solutions for shared access filters.

- Invoices for co-location facilities: staggering payments, calculating the portions paid by the operators.

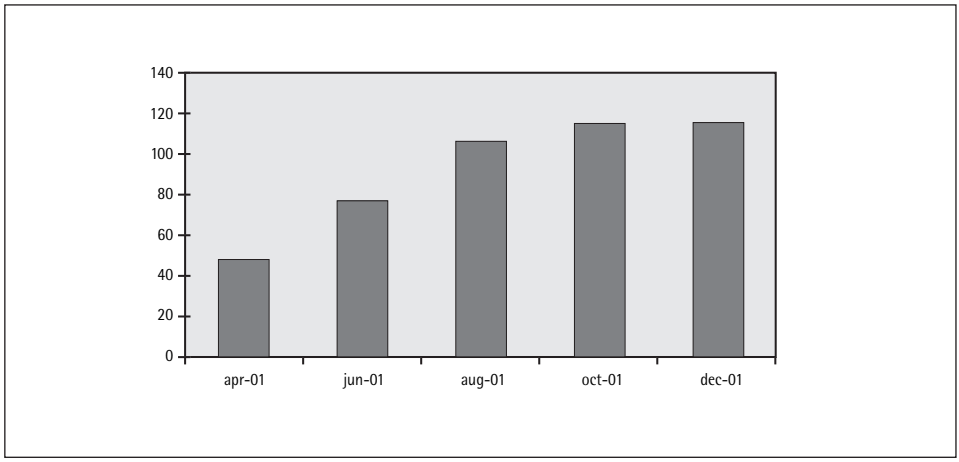
The working group on technical specifications continued the work it began in 2000. The operators frequently reported technical problems encountered in the field, particularly regarding energy and intra-building links. The tests conducted by the operators to detect the faults on a copper pair were discussed and France Télécom amended its after-sales service procedures. The group also contributed to the work on shared access filters.

This work enabled ART to identify two key issues for closer examination in 2002:

- The conditions for co-location as set out in the reference offer of 16 July 2001 are not satisfactory for the operators. In particular, the prices for the co-location facilities and related services appear to be an obstacle to the development of unbundling.

• The processes of interaction between the operators and France Télécom are by nature complex. The first orders of lines showed that the ordering and delivery phase for unbundled lines was a crucial step in the process, and that many mistakes could be made.

Number of orders



3. European comparisons

The following tables show progress on implementing unbundling in Europe, the structure and costs for unbundled access and the methods chosen to calculate unbundling costs.

Implementation of local loop unbundling

	Date	Prices for totally unbundled access			Price for shared access		
		Access prices	Monthly rate	Total *	Access prices	Monthly rate	Total *
Germany	01/01/98	92,6	12,5	15,1	No reference offer		
Austria	02/07/99	54,5	11,6	13,1	No reference offer		
Belgium	01/01/01	79,9	14,0	16,18	79,9	9,8	12,0
Denmark	01/01/98	16,4	8,3	10,4	16,4	6,2	7,9
Spain	01/01/01	103,9	13,0	15,9	103,9	13,0	15,9
Finland	01/01/01	220	12,0	18,1	220	7,5	13,6
France	01/01/01	107,9	14,5	17,5	107,9	6,1	9,1
Greece	Non	No reference offer					
Ireland	01/01/01	120	13,5	16,9	178,9	6,8	11,7
Italy	01/01/01	100	12,6	15,3	No reference offer		
Luxembourg	01/01/01	0	19,7	19,7	No reference offer		
Netherlands	01/06/00	133,9	12,5	16,2	No reference offer		
Portugal	01/01/01	No reference offer					
United Kingdom	08/08/00	146	16,8	20,9	186	7	15,7
Suède	03/00	91,6	9,3	11,8	91,6	4,8	7,4

(*) ART weighting. Source: European Commission

	Method used to calculate costs
Austria	LRIC
Belgium	
Denmark	Accounting costs and benchmark
Finland	Negotiation between operators
France	LRIC
Germany	LRIC
Greece	
Ireland	
Italy	Accounting costs
Luxembourg	
Netherlands	Accounting costs
Portugal	
Spain	
Sweden	Accounting costs
United Kingdom	LRIC

C. The wireless local loop

ART's action regarding the wireless local loop was of two main kinds in 2001. First, ART ruled on the change in shareholder structure of the two national wireless local loop (WLL) operators: FirstMark Communications France and Squadran. It also ruled on the first requests to revoke licences. ART also issued a favourable opinion on extending broadcasting rights to

the WLL market and prepared to monitor compliance with the first deployment deadline of 31 December 2001.

1. Approval of changes to the shareholder structure of the two national WLL operators

As part of its work monitoring the obligations attached to operators' licences, ART issued a favourable opinion on two changes to the shareholder structure of the two national WLL operators, FirstMark Communications France and Squadran.

The companies holding shares in FirstMark Communications France redistributed some of those shares to other companies controlled by them, and shares were transferred between the shareholders. After this operation, FirstMark Communications Europe now directly owns 17.7% of FirstMark Communications France and holds another 15.2% of the shares through a company it controls, i.e. 32.9%. A 32.5% stake was transferred to a company owned by shareholders other than Suez Lyonnaise des Eaux. These shareholders also own 15.5% directly. Suez Lyonnaise des Eaux owns 19% of FirstMark Communications France directly and will buy back the shares owned by the other shareholders in order to control FirstMark Communications France.

Once ART was assured that this change to the shareholder structure would not affect the financial guarantees offered by the operator and its compliance with the obligations in the specifications, it decided that the changes did not affect the licence awarded to FirstMark Communications France.

Fortel's capital was increased by ¤10 million, with Louis Dreyfus Communications holding 50% in place of UPC. By an ART decision[1] in August 2001, which gave rise to a decree[2], Fortel changed its name to Squadran. ART was assured that the change to shareholder structure would not affect Squadran's compliance with the obligations in its licence.

2. Revocation of licences and removal of the corresponding frequencies

a. In metropolitan France

Following the court-based rehabilitation of its US shareholder, Teligent Inc, which filed for Chapter 11 protection on 21 May 2001, the regional operator BLR Services applied to have its licence revoked and its frequencies removed. This revocation took effect after an ART decision[3] in November 2001, which gave rise to a decree[4]. Since the sale of the interests of Teligent and Artemis-Net, the entire capital of BLR Services belongs to Louis Dreyfus Communications. As a result, ART issued a proposal to the minister to revoke the licence of BLR Services and repealed the decision[5] allocating frequencies to that company.

1 Decision No. 01-831 of 29 August 2001 on the name change from Fortel to Squadran.

2 Order of 20 September 2001 authorising the Fortel company to set up and operate a public telecommunications network and to provide a public telephone service, published in the O.J. on 2 October 2001 p.15498.

3 Decision No. 01-1142 of 30 November 2001 on the application to revoke the decree of 4 August 2000 authorising the company BLR Services to establish and operator a public telecommunications network and provide a public telephone service.

4 Decree of 20 December 2001, revoking the amended decree of 4 August 2000 authorising BLR Services to set up and operate a public telecommunications network and to provide a public telephone service, published in the O.J. on 23 December 2001 p.20474.

5 Decision No. 01-1143 of 30 November 2001 revoking Decision No. 00-826 of 28 July 2000 amended by Decision No. 00-1374 of 22 December 2000 allocating frequencies to the BLR Services company in the regions of Alsace, Auvergne, Bourgogne, Centre, Corsica, Languedoc-Roussillon, Limousin, Lorraine, Midi-Pyrénées, Provence-Alpes-Côte d'Azur and Rhône-Alpes, published in the O.J. of 8 February 2002, p. 2608.

b. In the overseas départements

Cegetel Caraïbes and Media Overseas, subsidiaries of the Vivendi-Cegetel group, cancelled their WLL activities in the overseas départements and applied to have their licences revoked and their frequencies removed. Those two companies were licensed for the départements of Guadeloupe, Martinique and Guyana. This withdrawal can be attributed to downward revisions of market forecasts in the overseas départements and the immaturity of the WLL technology in the 3.5 GHz frequency band.

3. Broadcasting rights

In its opinion[1] on the Information Society bill, ART stressed that the "bill does not contain any provisions to promote deployment and user access to the wireless local loop networks". ART wanted the bill to include an amendment to the Act[2] of 2 July 1966 on the installation of radio frequency receiving antennas that would extend to wireless local loop antennas the broadcasting rights already granted to television and cable networks.

This proposal was approved and voted in Article 20 of the Act of 17 July 2001[3]. It will enable local loop operators to enter the market more easily, because a lessee can now install a receiving and transmitting telecommunications antenna without the lessor's approval. This article extends to telecommunications antennas a right that already existed for radio frequency antennas. This provision should be decisive in the development of the wireless local loop market.

4. Monitoring deployment of WLL operators at 31 December 2001

The specifications attached to the licence decrees of the wireless local loop operators contain obligations for the operators, notably an obligation of deployment in the 26 GHz and/or 3.5 GHz frequency bands. These deployment obligations are the same as the commitments indicated in the wireless local loop licence applications. These are minimum percentages of radio coverage of the population by point-to-multipoint systems installed in the 26 GHz and/or 3.5 GHz bands by 31 December 2001.

Pursuant to L. 36-7 (3) of the Posts and Telecommunications Code, ART monitors operators' compliance with the obligations attached to their licences. If required, ART may apply penalties for failure, as stipulated in Article L.36-11 of the Posts and Telecommunications Code.

To monitor compliance with these deployment obligations, ART asked the wireless local loop operators to provide by 31 December 2001 the information required to calculate the percentage of radio coverage (list and geographical coordinates of the base stations, azimuth and 3dB angular width of transmission sectors, etc.) and information about their service offers, as set out in their specifications. The operators were previously consulted as to the format of the required technical information and indicated that they had no difficulty with the format.

1 ART opinion No. 01-423, dated 2 May 2001, on the Information Society Bill.

2 The amended Act 66-457 of 2 July 1966 relating to the installation of radio frequency receiving antennas, published in the O.J. of 3 July 1966, p.5654.

3 Act No. 01-624 of 17 July 2001 that includes various provisions of a social, economic and cultural nature, adopted by the National Assembly on a final reading on 28 June 2001 and published in the O.J. on 18 July 2001, p.11496.

ART used the data provided by each operator to calculate the percentages of radio coverage as defined in Paragraph 1.3.1. of the specifications and in accordance with the calls for applications. For this purpose, it developed an IT application based on a geographical information system that calculates the percentages on the basis of the geographical coordinates of the base station sites.

This calculation showed that five of the nine licensed operators at 31 December 2001, while not complying fully with their obligations, had nevertheless achieved substantial deployment of their networks in their coverage areas. In December 2001, almost 200 base stations deployed in 17 regions and 30 towns with a population of more than 50,000 serve 1,000 business customers. In contrast, Broadnet France SAS, Landtel France SAS, XTS Network Cara_bes and XTS Network Océan Indien had very low deployment rates, far short of the obligations in the specifications.

ART served notice[1] on these four operators on 26 March 2002. The operators were requested to provide proof within a month that they had implemented measures to comply with their obligations set forth in their specifications to deploy wireless local loop networks.

ART will then have to decide whether to apply penalties or not, depending on the operators' responses, with a view to ensuring compliance with their deployment obligations and their implementation.

5. European comparisons

The table below shows progress on the allocation of wireless local loop licences in Europe at the end of 2001.

Allocation of wireless local loop licences

	Date allocated	National licences		Regional licences	
		3,5GHz	26GHz	3,5GHz	26GHz
Germany	2000	None	None	1671	
Austria	February 2001	None	1	None	3
Belgium	February 2001	4 (no distinstion b/w bands)		1 (no distinstion b/w bands)	
Denmark	December 2000	3	4	None	None
Spain	April 2000	3	3	None	None
Finland	August 2000	None	None	20 (no distinstion b/w bands)	
France	August 2000	2 (no distinstion b/w bands)		None	44 (2 / region)
Greece	December 2000	3	5	None	None
Ireland	2000	3	4	None	None
Italy	Pas encore	None	None	None	None
Luxembourg	May 2001	5 (no distinstion b/w bands)		None	None
Netherlands		Pas de licence de BLR attribuée			
Portugal	December 1999	3	8	None	None
United Kingdom	November 2000	4	None	5	16
Sweden	No WLL licence allocated				

Source: European Commission

1 Decisions Nos. 02-272, 02-273, 02-274 and 02-275 of 26 March 2002.

D. Dispute between France Télécom and UPC

ART ruled[1] on a dispute referred to it on 27 July 2001 by UPC France against France Télécom.

This decision was issued after ART took protective measures on 31 August 2001 ordering France Télécom to open interconnection to its network for calls originating from UPC France subscribers to Internet services accessible by numbers of type 08 60 PQ MC DU.

There were three aspects to the dispute:

- Remuneration of UPC France for the termination service that it provides to France Télécom for routing incoming telephone calls to its network, i.e. telephone calls to subscribers connected to its network.

- Remuneration of UPC France for the collection service that it provides France Télécom for routing outgoing calls from its network, i.e. calls from subscribers connected to its network, to special services and Internet services accessible by numbers of type 08 AB PQ MC DU allocated to France Télécom or to other operators.

- The technical and operational conditions for the implementation of portability for geographic numbers between UPC France and France Télécom.

1. Prices for termination of calls on UPC France's network

ART defined an equitable method, based on the "reciprocity" method. This sets a single annual rate, with no fixed portion or peak/off-peak rates, of 1.25 euro cents per minute for 2001 and 1.05 euro cents per minute for 2002, if the interconnection architecture between these companies remains the same over 2001.

This is the same method that was applied voluntarily between these companies in 1999 and 2000, and which had been introduced by ART in 1999 to settle a comparable dispute between Cegetel Entreprises and France Télécom.

In the light of the circumstances that led UPC France to refer the matter to ART, ART's decision confirmed that UPC France was entitled to set the price for its own service, since there was no reference price.

ART also reminded France Télécom that it was to refer disputes over prices to the regulator and that it was not entitled to refuse to pay amounts requested of it for services provided by third parties.

2. Prices for collection of telephone calls and Internet access on UPC France's network

Regarding the rates for collection services provided by UPC France to France Télécom for calls to the Internet and special services, ART decided that a fair remuneration for UPC France would be the same rate that it charges to terminate calls to its network plus the surcharge that France Télécom applies in its interconnection catalogue for collecting calls to the services provided by other operators.

In particular, ART rejected France Télécom's proposals to remunerate UPC France on the basis of the rates that France Télécom charges special service providers and Internet service providers.

1 Decision No.01-1235 of 21 December 2001 on a dispute between the companies UPC France and France Télécom, published in the O.J. on 14 March 2002, p.4666.

3. Conditions for implementing portability for geographic numbers

Regarding portability for geographic numbers, ART issued a decision that, within six months, will improve the technical conditions for the implementation of this service between France Télécom and UPC France, thus enabling UPC France to enhance the service that it offers its own customers.

The decided measures, aimed at implementing an automated "one-stop shop" at France Télécom and reducing the timeframes offered by the incumbent operator, will nevertheless need to be specified jointly by the two companies.

ART set 1 February 2002 as the deadline for the two companies to bring their interconnection agreement in line with this decision.

These decisions are favourable to the development of competition in the local loop market: they provide the conditions for fair remuneration for interconnection services, which are essential to a local loop operator's activity. They will also improve the conditions for geographic number portability in France and thus make it easier for consumers to choose their local loop operator.

E. Public consultation on WLANs

In December 2001, ART launched a public consultation on the provision of public telecommunications services using unassigned frequencies (2.4 GHz and 5 GHz).

1. Background: current conditions for using WLANs

In France, some frequencies, "not specifically assigned to their users", i.e. with no guarantee of protection and provided they do not create interference, are currently reserved for independent wireless local area networks (WLANs) – private networks of companies, associations or universities, closed residential networks, etc. – under certain conditions of use and range. The detailed conditions of use appear in the following ART decisions:

- non-specific short-range radio equipment: ART decisions[1] of 02 May 2001;
- local radio networks in the 2.4 GHz band: ART decisions[2] of 23 May 2001;
- High-Performance Radio Local Area Networks (HiperLANs) in the 5 GHz band[3]: ART decision of 2 May 2001.

The table below summarises this framework.

1 Decision No.01-442 of 2 May 2001 setting the conditions for use of non-specific low-range radio equipment in the 2.4 GHz band, published in the O.J. on 16 June 2001, p.9579 and Decision No.01-443 on 2 May 2001 allocating frequencies for non-specific low-range radio equipment in the 2.4 GHz band, published in the O.J. on 21 June 2001, p.9859.

2 Decision No.01-479 of 23 May 2001 setting the conditions for use of non-specific low-range radio equipment in the 2.4 GHz band, published in the O.J. of 21 August 2001, p.13446 and Decision No. 01-480 of 23 May 2001 setting the conditions for use of non-specific low-range radio equipment in the 2.4 GHz band, published in the O.J. on 18 July 2001, p.11567.

3 Decision No. 01-440 of 2 May 2001 allocating frequencies to High-Performance Radio Local Area Networks in the 5 GHz band, published in the O.J. on 21 June 01, p. 9859, and Decision No. 01-441 of 02 May 2001 setting the conditions for use of High-Performance Radio Local Area Networks in the 5 GHz band, published in the O.J. on 16 June 2001, p.9578.

Framework for the use of these frequencies

Frequency band allocated	Conditions for indoor use	Conditions for outdoor use
2400 - 2483,5 MHz	EIRP < 10 mW	EIRP < 2,5 mW
2446,5 - 2483,5 MHz	EIRP < 100 mW	On private properties, subject to o prior authorisation EIRP< 100mW
5150-5250 MHz	EIRP < 200 mW	Impossible
5250-5350 MHz	EIRP < 200 mW Frequency selection depending on availability of channel Attenuation of average power emitted > 3dB	Impossible
5470 - 5725 MHz	Being examined	Being examined

EIRP: Equivalent isotropic radiated power

The agreement between the ministry of defence – the previous and current user of the 2400-2483.5 MHz frequencies – and ART, provides for the opening of these frequencies to equipment with an EIRP of 100 mW inside buildings and 10 mW outside buildings from 1 January 2004.

Technically, these WLANs[1] allow high-speed wireless communications. The possibility of using these frequencies to provide public telecommunications services has already been considered in other European countries and tested on MANs[2] for high-speed Internet services.

In recent months ART has received several requests for information on this subject from manufacturers, consultants and operators.

2. Public consultation

To respond to actors' interest in this subject, ART intends to analyse the longer-term implications for the telecommunications sector and the many questions raised by the development of WLANs. The regulator therefore began work on a framework for the use of 2.4 GHz and 5 GHz frequency bands and the possible regulatory consequences. It launched a public consultation on 12 December 2001, scheduled to end on 15 February 2002.

The public consultation contributed to ART's thinking on several major issues:

- trend in demand and scope of this development;
- technical problems;
- measures that could be taken by the public authorities on this issue.

The many responses (73 in all) to the consultation came equally from representatives of the sector involved in WLAN technology (telecommunications, IT and multimedia) and other actors (individual users, associations, local authorities and companies concerned).

1 Wireless Local Area Network, using the 802.11a, HiperLAN2 and 802.11b - Wi Fi standards.

2 Metropolitan Area Network.

These contributions highlight a common interest in offering high-speed Internet access in "hot spots" i.e. busy areas such as railway stations, airports and hotels. Most opinions are in favour of relaxing conditions for use of these technologies outdoors and increasing the authorised ranges. Some actors (local authorities, WLL operators) want to be able to use WLAN technology to build infrastructure in isolated areas.

It also seems necessary to protect many of the independent networks authorised to operate WLAN networks in these frequencies and to ensure that networks co-exist without interference. In this respect, the contributions draw attention to the risk of distorting competition with existing networks or future UMTS networks.

On the basis of this information, a summary of which was published on 4 April 2002, ART has until the end of 2002 to examine whether to change the existing legal framework. It will take any necessary decisions that fall within its competence, and will otherwise submit its proposals to the competent authorities.

Chapter 6

Intermediate markets

I. The market

A. The interconnection market

1. Interconnection services: revenues and volume

a. Interconnection of fixed operators

The tables below show the trend in revenues and volume for all the interconnection services for fixed operators.

Revenues

€ million	1998	1999	2000	2001	Growth in 2001 (%)
All interconnection services - fixed operators	N/A	N/A	2,679	3,452	28.9%
o/w incoming international traffic	N/A	N/A	707	825	16.7%

Volume

Millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
All interconnection services - fixed operators	N/A	N/A	44,255	56,648	28.0%
o/w incoming international traffic	N/A	N/A	5,225	6,303	20.6%

N/A = Not available

b. Interconnection of mobile operators

The tables below show the trend in revenues and volume for all the interconnection services for mobile operators.

Revenues

€ million	1998	1999	2000	2001	Growth in 2001 (%)
All interconnection services - fixed operators	N/A	N/A	3,148	3,308	5.1%
o/w incoming international traffic	N/A	N/A	179	345	92.2%

Volume

Millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
All interconnection services - fixed operators	N/A	N/A	16,836	21,381	27.0%
o/w incoming international traffic	N/A	N/A	1,062	1,776	67.3%

N/A = Not available

c. Interconnection of Internet access traffic

The tables below show the trend in revenues and volume for all the interconnection services for Internet access traffic.

Revenues

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Interconnection	N/A	9	114	238	109.5%

N/A = Not available

Volume

Millions of minutes	1998	1999	2000	2001	Growth in 2001 (%)
Interconnection	N/A	209	7,864	16,221	106.3%

N/A = Not available

d. All interconnection services

The tables below show the trend in revenues and volume for all interconnection services.

Revenues

€ million	1998	1999	2000	2001	Growth (%)
All interconnection services	2,138	4,436	5,941	6,998	17.8%
Incoming international traffic	614	655	886	1,170	32.0%

Volume

Millions of minutes	1998	1999	2000	2001	Growth (%)
All interconnection services	19,923	48,646	68,955	94,250	36.7%
Incoming international traffic	4,536	5,266	6,287	8,079	28.5%

The intermediate telecommunications market (i.e. interconnection) has been growing since 1998. This trend is a direct consequence of the opening of the telecommunications market to competition. With the arrival of many new operators, the number of interconnection agreements has multiplied, thus boosting this market. The recent expansion of new services (Internet and mobile) is also fuelling this trend.

In 2001, mobile operators took 47% of the market by value, but only 23% by volume. The difference between these two figures is mainly due to the differences in price for termination on the fixed network and on the mobile network. Internet interconnection between licensed operators has more than doubled over the period.

A significant share of this market is international. Incoming international traffic accounts for 17% of revenues and 9% of volumes.

2. Analysis of the interconnection market

a. ART survey of the interconnection market

Between December 2001 and February 2002, ART surveyed 16 operators to assess the operation of the interconnection market, defined as the services between operators for end-to-end routing of switched traffic (telephone, Internet and special numbers).

In this market, the offering consists of two basic services:

- traffic routing in the strict sense, traffic collection and termination, i.e. transit of traffic over the supplier's network;

- access to the network of the supplier operator, whereby the requestor can connect one of its POPs to a point of interconnection on the supplier's network.

The survey found that this offering targeted three types of operators:

- **Local loop operators,** fixed and mobile, which are inevitably involved in the departure and arrival of traffic. These natural suppliers of interconnection services are of very different sizes, with France Télécom and the three mobile operators dominant.

- **Operators of operators,** which have a substantial long-distance network and which offer transit of switched traffic to the network of the local loop operator, often as part of a broad range of services (IP transit, bandwidth, raw fibre). Télécom Développement and more recently LD Com are emerging as two major players in this market.

- **Other operators:** although not specialised in on-selling to operators, some actors are nevertheless positioning themselves in the interconnection market, where they can generate significant additional revenue. After entering the market in on-selling of international termination, these actors gradually expanded, mainly into the national voice termination market.

The survey divided the interconnection market into several segments to facilitate analysis. The analysis of the main two markets is included in this report.

b. The market in interconnection with France Télécom (telephone and Internet traffic)

This market is large in terms of the volumes of traffic transiting via France Télécom's local loop, and also the market where the most alternative offers are now developing.

Since 1998, demand has changed in line with the deployment of alternative operators' networks: initially connected to France Télécom's network at regional or national level (between

1 and 18 points of interconnection or POIs), alternative operators have since developed more or less advanced interconnections at local level (connection to a variable number of the 600 local exchanges).

This local deployment also allows an alternative offer to develop, with the best deployed operators able to compete with France Télécom in on-selling national or regional collection or termination, handling the buying operator's traffic between a regional or local delivery point and France Télécom's network, from which they buy the local or regional termination or collection (intra-local exchange and single trunk exchange).

However, at the end of 2001, few operators had significant deployment in intra-local exchanges. Major migration will probably come in 2002: at end-2002, four fixed operators will be interconnected to more than 35% of the intra-local exchanges open to interconnection (compared with one at end-2001). This therefore limits the potential competition to France Télécom's single trunk exchange offer.

• Voice termination (26 billion minutes in 2000, more than 50% of which from mobile operators)

France Télécom offers three levels of termination (local, regional and national). The alternative offer is positioned in the non-local termination market, representing estimated traffic of 25 billion minutes in 2000, worth a total of around ¤400 million. The offer has developed mainly in the dual trunk exchange market, and remains limited in terms of regional termination.

Buying operators tend to choose an alternative offer on the basis of price, the only important criterion for operators with a large volume of traffic to terminate (mobile operators and residential carrier selection operators), but sometimes also on the basis of flexibility, an essential criterion for operators that have a low traffic volume or that are just starting up.

• Voice collection (traffic of around 8 billion minutes in 2000 related to carrier selection)

Third-party collection was not introduced until 2002, and the alternative offer has not had time to develop. In 2000, the market addressable by alternative operators (regional/national collection) consisted of traffic of around 7 billion minutes and revenues of around ¤100 million. This should grow with the extension of carrier selection to local calls in 2002 and the migration of operators to local trunk exchanges.

• Internet collection (9 billion Internet minutes handled by at least two operators in 2000)

The Internet collection market attracted a large number of operators in 1999-2000. To respond to the rapid increase in this traffic (28.8 billion minutes in 2000), some operators accelerated their deployment and went through the regional or national offer of alternative operators that already had large networks, until they could be connected to France Télécom. Alternative operators of operators were thus able to take a significant share of the interconnection volume delivered at regional or national level in 2000. This amounted to 9 billion minutes and revenues of around ¤150 million.

However, the market is changing fast with the concentration of actors, which is limiting the diversity of the offer.

• Access to France Télécom's sites

An operator wishing to connect to one of France Télécom's sites (local or regional/national) has several choices: co-location on the

incumbent operator's premises; a remote connection via an interconnection link provided by France Télécom or by a co-located alternative operator; or an intermediate solution known as "in span". In 2000, the access market was estimated at around ¤80 million, more than 80% of which were generated by the sale of interconnection links[1].

The choice between interconnection links and co-location/in span amounts to a choice between major recurring costs (interconnection links) and major non-recurring costs (co-location/in span). The latter solution is attractive for traffic exceeding a certain volume.

At the POI, where the operators process traffic at a regional or national level, it is not unusual for this threshold to be reached and, consequently, many operators are co-located or interconnected in span. Some operators are still using interconnection links on some POIs, however, and often benefit from an alternative offer to France Télécom's, because of the large number of co-located alternative operators.

At the local exchange, the amount of traffic does not justify a co-location/in span connection in many points. Interconnection links are still the main type of connection for many operators. Although an alternative offer of interconnection links is developing, it remains limited by the fact that the supplier must already be co-located at the local exchange.

An alternative offer allows the operator to benefit from lower prices, but it can also be more complicated to use: for example, the requestor must indicate the conditions of delivery to its POP and, in some cases, ensure that the delivery of the links coincides with the delivery of primary digital blocks (PDBs) by France Télécom.

c. The mobile interconnection market

This market, as yet fairly uncompetitive, has huge potential for interconnection buyers. In 2000, the mobile operators generated revenues of ¤3.2 billion on the interconnection market, around ¤2.4 billion of which came from termination of fixed-to-mobile calls (7.6 billion minutes in 2000).

This market has seen two key trends:

- A steady decline in the call termination charge, which by 2004 will be almost 60% lower than at the beginning of 1999.

- The opening of carrier selection for fixed-to-mobile calls, introduced at the end of 2000, was reflected in a number of new interconnection agreements between mobile and fixed operators , with fixed operators[2] no longer wanting to use the traditional solution of transiting over the network of an intermediary fixed operator. However, the survey suggests that interconnection with the mobile operators can involve higher access costs than transit over an intermediary fixed network if the traffic volumes are below a certain threshold.

d. Conclusion

ART will use the conclusions of the survey to:

- gain a better understanding of interconnection to better measure the effect of its decisions on the sector;

- identify the market segments where competition is developing, to encourage the development of competition where possible and adjust the price control system as required. For example, the possibility of introducing a price cap for some of France Télécom's interconnection services is being considered.

1 This estimate covers basic services, equivalent to those in France Télécom's catalogue.

2 Around 20 agreements have been signed to date between the three mobile operators and fixed operators.

B. Leased lines and data transport

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Leased lines	1,449	1,469	2,011	2,345	+16.6%

Units	1998	1999	2000	2001	Growth in 2001 (%)
Leased lines	302,187	321,837	357,916	370,141	+3.4%

€ million	1998	1999	2000	2001	Growth in 2001 (%)
Data transport	378	404	530	667	+25.9%

As the above tables indicate, revenues from leased lines rose 16.6% in 2001, while the number of leased lines increased by 3.4%.

Revenues from data transport expanded by 25.9% in 2001 because SMS was included in this category.

II. ART's action

A. Operators with significant market power ("SMP operators")

Paragraph 7 of Article L.36-7 amended by the ruling of 25 July 2001[1] sets forth that every year, after an opinion issued by the competition authority, ART will establish the lists of operators considered to have significant market power:

a) on a relevant market of the public telephone service between fixed points;
b) on a relevant market in leased lines;
c) on a relevant market of the public mobile telephone service;
d) on the national interconnection market.

The article defines significant market power as a share greater than 25% of a relevant telecommunications market. However, ART may consider other criteria for measuring and determining the influence of an operator. In particular, the regulator takes into account the operator's "effective capacity [...] to influence conditions on the market, its revenues in relation to the size of the market, its control via access to the end user, its access to financial resources and its experience in the provision of products and services in the market".

Paragraphs II, III, IV, V and VI of Article L.34-8 specify the obligations of the operators designated in the lists.

In 2001, ART sent a questionnaire to all network and service operators licensed under

1 Ruling No.01-670 of 25 July 2001 to "adapt French intellectual property law and the Posts and Telecommunications Code to EU law", published in the O.J. on 28 July 2001 p. 12132.

Articles L.33-1 and L.34-1 to assess their respective market shares for 2000 and 2001. The questionnaire did not break down the markets geographically.

For 2002, it designated the operators with a significant market power in a telecommunications market in two decisions, described below.

1. Decision of 25 July 2001

Since some operators did not respond to the survey by the requested deadline of 22 June 2001, ART used public data for 2000 to determine that, in that year on average, France Télécom held:

- more than 90% of the market by value (revenues) and almost 90% of the market by volume (minutes of outgoing traffic) for the fixed telephone service;
- more than 90% of the market by value (revenues) for leased lines.

As a result, it has identified[1] France Télécom as having significant influence in these two markets for 2002.

2. Decision of 14 December 2001

The operators' responses to ART's questionnaire corroborated the fact that, based on the estimates for 2001, France Télécom was identified as the only operator with significant market power in the markets of fixed telephony and leased lines.

In the retail mobile telephony market, ART found[2] that Orange France and SFR each had more than 35% of the market. As a result, these two operators were identified as exerting a significant influence on this market.

On the national interconnection market, defined as the call termination activity alone, ART found that, in 2000 and 2001, the market shares by value of Orange France and SFR were each close to 30% and that no other operator had a market share by value of more than 25%. As a result, these two operators were identified as exerting a significant influence on this market.

B. Approval of France Télécom's standard interconnection offer for 2002

ART approved France Télécom's technical and tariff offer for 2002 on 30 November 2001.

The preparation of the offer involved extensive consultation with France Télécom and the other operators, who were given the opportunity to express their needs for 2002 at the interconnection committee meetings held on 16 March and 29 June 2001.

The main additions were the inclusion of a flat-rate interconnection offer for Internet access, and significant reductions to basic prices.

1. Flat-rate interconnection offer for Internet access

The flat-rate interconnection offer for Internet access allows the operator to pay for interconnection on the basis of the number of PDBs used, regardless of the number of minutes[3].

1 Decision No.00-750 dated 25 July 2001 identifying for 2002 the operators that exert significant influence on the fixed telephony retail market, published in the O.J. on 09 September 2001 p. 14469.

2 ART Decision No.01-1206 dated 14 December 2001 supplementing Decision No.01-750 of 25 July 2001 drawing up the list of operators exerting a significant influence on a telecommunications market, published in the O.J. on 30 January 2002, p.2030.

1 This offer is described in detail in Chapter 4 of the second part of this volume, which deals with the Internet.

This type of offer had already been implemented on a contractual basis for numbers that are free for the caller after consultations initiated in 2000. The rates were ¤22,105 per year and per PDB for collection at the local exchanges and ¤42,685.70 per year and per PDB for collection at the flat-rate interconnection points.

Before this service was included in France Télécom's offer for 2002, the technical and price conditions of the offer were discussed to take account of operators' needs.

Regarding the technical conditions, the flat-rate interconnection offer was extended to traffic to 0860 and 0868 numbers that are charged to the caller. The abolition of overflow onto interconnection links charged by the minute, introduced by France Télécom and proposed in the draft standard offer was given particular attention. After this work, it was decided that overflow would no longer be possible at regional level after a transitional phase where offers with and without overflow would coexist. Overflow will continue to be offered at local level where there will be an offer with overflow and an offer without overflow. ART also announced that it would assess in autumn 2002 the merits of ending overflow at local level in 2003.

Overflow onto interconnection links charged by the minute has a significant impact on the cost price of Internet minutes, and the prices for offers with and without overflow are different.

The prices in the 2002 standard offer for flat-rate interconnection to the local exchange per year and per PDB are ¤21,000 with overflow and ¤15,600 without overflow (5% and 30% lower than in 2001). For flat-rate interconnection at regional level, the prices are ¤38,000 with overflow and ¤30,000 without overflow (11% and 30% lower than in 2000).

2. Significant reductions in basic rates

The 2002 standard interconnection offer took into account the work taken with the sector on using long-run average incremental costs (LRIC) as the reference costs for interconnection. Already used for unbundling, LRIC are the costs of an efficient operator, evaluated on the basis of two models, a "bottom-up" model, constructed with the sector, and a "top-down" model based on the incumbent operator's accounting system.

After the sector consultation, ART began work on LRIC in June 2001 by organising a public consultation and by hiring a consultancy to create a bottom-up model, the results of which were made available to the sector on 11 September 2001.

ART integrated the bottom-up model into its analysis of France Télécom's costs and found that the 2002 prices were consistent with cost evaluation by LRIC.

Basic prices have come down significantly in comparison with 2001:

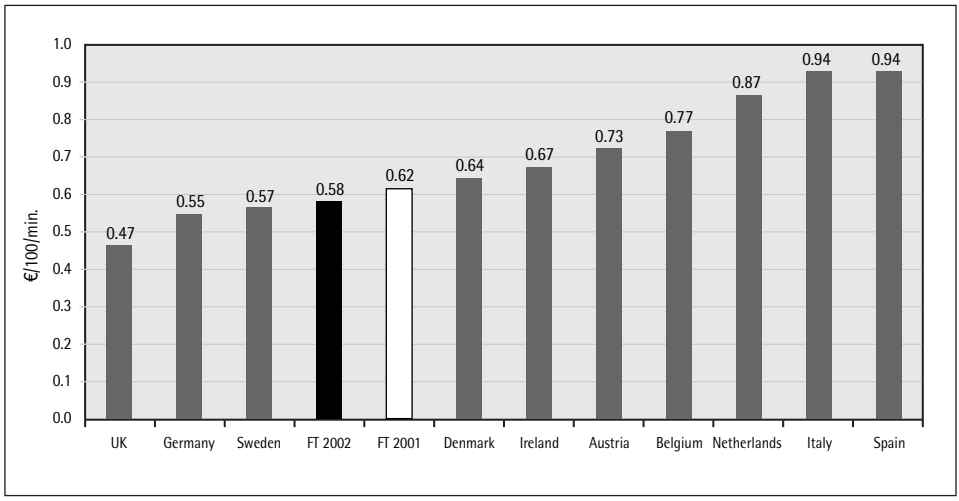
- 6% for the local rate (intra-local exchange). This traffic accounts for 30% of interconnection revenues.

- 16% for the regional rate (single trunk exchange). This traffic accounts for 65% of interconnection revenues.

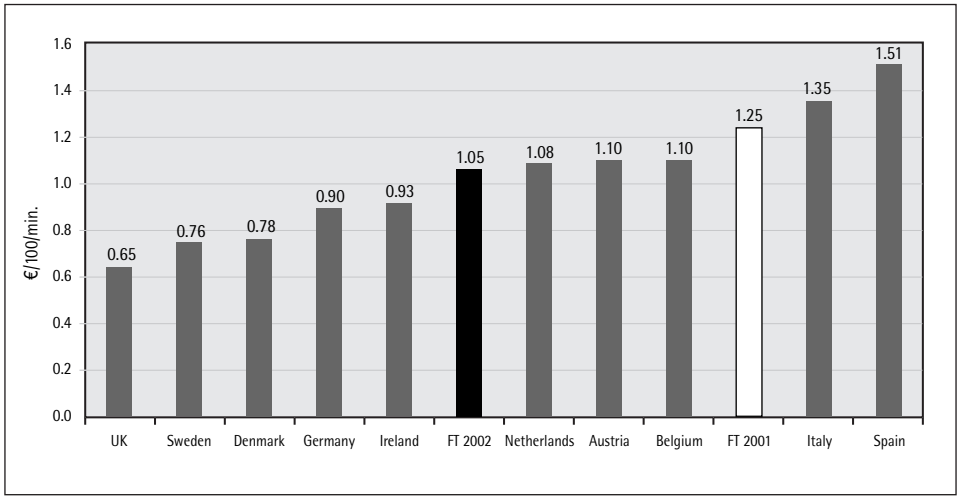
• 23.5% for the national rate (dual trunk exchange). This traffic accounts for 5% of interconnection revenues.

These rates put France in a favourable position in Europe.

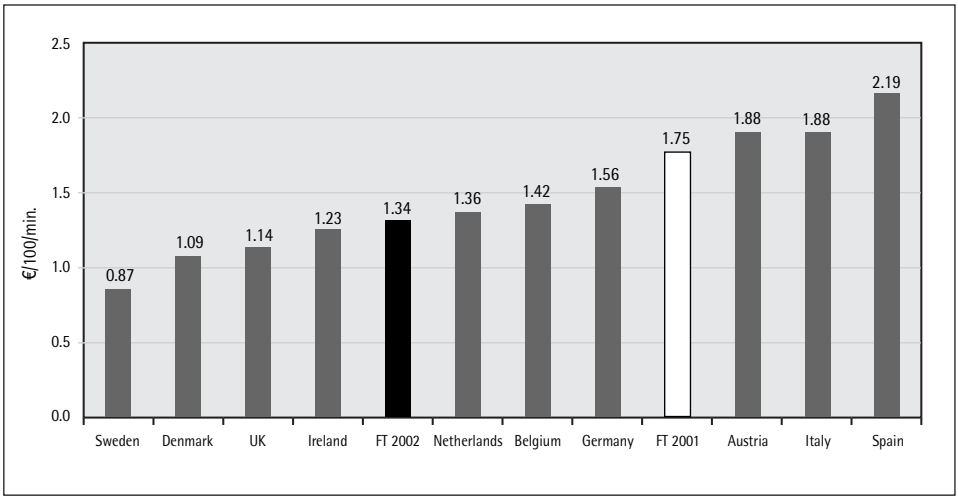
European comparison of local exchange interconnection prices



European comparison of single trunk interconnection prices



European comparison of double trunk interconnection prices



3. Opening local calls to competition

In a decision[1] in 2001 approved by the telecommunications minister, ART eliminated sorting for local calls. It thus completely opened local calls, i.e. calls made within the same département, to competition. The conditions for competition on this market, explained in the interconnection offer, are described in detail in the second part of this volume. The elimination of sorting for local calls introduced competition onto a market that represented traffic of around 72 billion minutes and revenues of around ¤2.5 billion in 2001.

4. Leased access lines included in the standard interconnection offer

The 2002 standard interconnection offer also includes leased lines for speeds up to 2 Mbits/s. This offer, available throughout France, should facilitate operators' access to their business customers.

Previously, operators used France Télécom's Transfix retail offer. The implementation of an interconnection offer, with service quality comparable to the retail offer and prices aligned on costs, should generate estimated savings of 10%-20% from 2002 for operators migrating to the interconnection offer.

ART received the leased line interconnection offer on 14 October 2001. In order to assess the offer proposed by France Télécom fully, the regulator extended the examination period beyond 30 November. The offer was approved on 12 February 2002.

5. Other improvements

In addition to the reductions in the basic prices for voice and Internet traffic, the 2002 standard interconnection offer includes significant improvements for various services:

- A 30% reduction in the surcharge collected by France Télécom on calls from public

1 Decision No.01-691 of 18 July 2001 setting forth the conditions and deadlines for the implementation of carrier selection for local calls within the local sorting zones, published in the O.J. on 30 September 2001, p.15477.

payphones. This surcharge accounts for 75% of prepaid card operators' payments to the incumbent operator and the reduction should have a direct impact on the services that these operators offer to consumers.

• A 50% reduction on "one-off" services: These are services invoiced by France Télécom to other operators for changes to interconnection architecture, e.g. work by technicians. This should benefit operators at a time when many are changing their architecture to integrate Internet flat-rate interconnection or routing of local calls from the beginning of 2002.

• A 30% reduction in the price for implementing preselection on a subscriber line, at a time when the local calls market is being opened to competition.

• The third-party billing offer for shared-revenue services will be extended to all price brackets – including those above ¤0.337 incl. VAT per minute – as soon as the decree amending the ethical framework is published.

6. European comparisons

The table below compares cost assessment methods used in different European countries and indicates whether these have given rise to audits.

Costing methods used for interconnection in Europe

	Method	Audit (last year audited)
Austria	Accounting costs	No audit
Belgium	Accounting costs	1998 and 2000
Denmark	LRIC	1999
Finland	Accounting costs	No audit
France	Accounting costs	1999
Germany	LRIC	2000
Greece	Benchmark	No audit
Ireland	LRIC	2000
Italy	Accounting costs	1998
Luxembourg	Accounting costs	No audit
Netherlands	Accounting costs	
LRIC for termination	2000	
Portugal	Accounting costs	1999
Spain	Accounting costs	2000
Sweden	Accounting costs	2000
United Kingdom	LRIC	2000

Source: European Commission

C. Lines leased by France Télécom to other operators

In 2001, ART undertook a major reform of France Télécom's leased line offer for other operators.

This work followed the observation in 2000 of the uncompetitive nature of the high-speed services market. ART conducted a study that showed that in most cases, operators other than France Télécom could only connect their networks to the sites of potential customers by using France Télécom's high-speed services, except within the city of Paris and the business district of La Défense.

No operator used France Télécom's leased line interconnection offer, because the prices for the low- and medium-speed offers were too high and there was no high-speed offer. These offers were:

- 2 Mbits/s tie lines (connecting an operator's network to France Télécom's point of interconnection) in France Télécom's interconnection offer.

- 64-1920 Kbits/s partial leased lines (connecting France Télécom's point of interconnection to the sites of other operators' customers) in the interconnection agreements proposed by France Télécom.

Instead, the operators all used France Télécom's retail offer called Transfix, i.e. on the same terms as the end customers, therefore at technical and price conditions that do not comply with France Télécom's interconnection obligations as the SMP operator in the leased line market.

Consequently, ART deemed it necessary to encourage the emergence of competition on this market segment, by improving the technical and price conditions for third-party operators to access France Télécom's short-distance lines in order to connect their customers' sites to their own networks.

1. ART recommendation on leased lines

To this end, ART, drawing largely on a 1999 recommendation from the European Commission, published a recommendation "on a leased line offer by France Télécom to operators to complete their customer service" in July 2001.

This recommendation covers:

- The categories of leased lines to be provided by France Télécom. These range from 64 Kbits/s to 155 Mbits/s for distances up to 50 kms.

- Prices for these lines. In accordance with the provisions on interconnection, the price must be aligned on the relevant interconnection costs, which implies that some costs, particularly commercial costs, must not be taken into account.

- Service quality. For all these lines, the service quality conditions, including delivery times and guaranteed line restoration times, must be at least the same as those offered in end customers' contracts (Transfix and Transfix 2.0 contracts).

- The conditions for migrating from existing contracts to the new offers (no penalties for terminating the existing contract, no cost to access the service for interconnection when these lines already exist technically).

2. Follow-up to the recommendation

After the publication of this recommendation, ART was asked by MFS Communication at the beginning of August 2001 to settle a dispute on the interconnection conditions of lines

leased to access the operator's end customers. The category of lines covered by the dispute was 64 Kbits/s to 155 Mbits/s for distances not exceeding 50 kms.

During the settlement procedure, France Télécom added a new leased line interconnection offer, covering 2 and 34 Mbits/s tie lines and partial leased lines from 64 Kbits/s to 2 Mbits/s, to its standard interconnection offer for 2002. Since this offer partly covered MFS Communication's request, the settlement decision issued by ART in February 2002 only covered aspects not included in France Télécom's standard offer for 2002.

a. Leased lines included in France Télécom's standard interconnection offer

France Télécom made this proposal after ART was already well advanced in examining the other components of its standard interconnection offer. ART therefore decided to postpone approval of the offer in order to analyse it in detail, mainly through a consultation of the sector and an assessment of the cost information provided by France Télécom.

Once this assessment was complete and France Télécom made the changes to its initial proposal requested by ART, the offer was approved[1]. It fits into the interconnection architecture that already exists for switched traffic and offers conditions of service quality at least equivalent to the retail service (Transfix). The offer also provides for penalties for France Télécom if it fails to comply with the service quality proposed.

• General architecture of the offer

The leased line interconnection offer is organised into two segments:

• An offer of partial leased lines at speeds of 64 to 2048 Kbits/s linking an end customer to a centre on France Télécom's network called a mixer and corresponding to a node on its leased line network ("multiservice digital transmission network"). France is divided into 123 zones served by 229 mixers. The number of zones must make it possible to provide partial leased lines for distances up to 50 kms.

• A linkage service to mixer sites, which enables operators to carry their leased line traffic back to their network, either by co-location on France Télécom's mixer sites, or by in span interconnection on these sites, or by purchasing a tie line from an operator. The offer provides for the possibility for a co-located operator to provide tie lines to third-party operators, which would seem to be an important factor for developing competition on the tie line market, since many of the mixer sites are also exchange sites where operators are already co-located.

• Guaranteed service quality

Standard delivery times are specified in the standard interconnection offer. Users can benefit from shorter times by subscribing to a service quality option. Failure to deliver on time is subject to penalties, under the same conditions as for the Transfix offer.

The offer indicates a standard service quality (guaranteed line restoration times and maximum service disruption times), included in the basic retail offer. It also includes two advanced service quality options.

1 ART Decision No.02-146 of 12 February 2002 approving Chapter 8 on the leased line interconnection offer in France Télécom's interconnection offer for operators of public L.33-1 networks for 2002, published in the O.J. on 28 March 2002, p. 5515.

• Reduction in the price of medium and low-speed leased lines

ART examined France Télécom's costs for 2002 based on the technology currently used by the incumbent operator. It also took international references into account in its analysis, but pointed out the limitations of such comparisons, in particular because the technical conditions of an offer — such as service quality, delivery times and architecture and access conditions to points of interconnection — are as important as the price conditions.

The partial leased line offer was also compared with the prices for France Télécom's Transfix retail offer, with and without discounts. This comparison made it possible to determine the financial advantages of the interconnection offer over the discounted Transfix offer, which is what most operators use now by default. These advantages in fact depend on many factors, in particular the number and geographical distribution of the leased lines in a given zone, the type of access to France Télécom's mixers, the discounts that the operator benefits from under Transfix.

For a reference number of lines, the partial leased line offer is priced at around 40% less than the undiscounted Transfix offer, regardless of the number of lines. However, the calculation must also take into account the cost of access to France Télécom's mixers, which can depend on the number of lines and the type of access chosen (co-location, in span interconnection or tie lines).

If the operator is already co-located on the mixer site for routing its switched interconnection traffic, the cost of access is low and the operator will benefit fully from the approximately 40% reduction calculated above. If the operator uses a tie line, the total price of the interconnection service, including both the partial leased line and the tie line, the reduction in relation to the undiscounted Transfix offer may be 25%-30% on a given mixer zone, for a significant number of leased lines (more than 50) and 2-kms long tie lines.

In both cases, the leased line interconnection offer is a significant advance for all operators.

b. Settlement of the dispute between France Télécom and MFS Communication

Because the leased line interconnection offer in France Télécom's standard interconnection offer was approved, the decision[1] to settle the dispute mainly covered questions unresolved by the offer.

The decision required France Télécom to make a provisional offer to MFS Communication before implementing a final offer.

• Regarding the final offer:

• For lines of between 64 Kbits/s and 2 Mbits/s, MFS Communication and France Télécom must reach an agreement by 30 September 2002 on the basis of the new provisions in the standard interconnection offer.

• For high-speed interconnection lines (34 and 155 Mbits/s) that do not appear in the interconnection offer, France Télécom must make a proposal to MFS Communication with a view to signing an interconnection contract by the end of 2002. The architecture of this offer is to be based on the offer for interconnection lines of 64 Kbits/s to 2 Mbits/s. Alternatively, instead of proposing

1 Decision No.02-147 of 12 February 2002 on the dispute between MFS Communication and France Télécom on the provision by France Télécom of leased lines to third-party operators, published in the O.J. on 28 March 2002, p. 5518.

an interconnection offer, France Télécom can share its available ducts with MFS at reasonable prices and within a reasonable time, so that MFS can install its own fibres.

• Provisional offer

Given the time required to negotiate the new interconnection agreements and for the physical migration from a retail leased line architecture to an interconnection architecture, ART considered it necessary, for its decision to have immediate effect, for France Télécom to make a transitional offer to MFS Communication.

This offer consists in setting a provisional price, valid from the date of the decision until the migration, for all the lines leased by MFS Communication. The price is the basic price for retail leased line services (Transfix) minus a 27% discount.

During the procedure, France Télécom proposed applying the pricing of the final offer as soon as MFS indicates which lines will be migrated from the retail line architecture to the interconnection architecture (virtual migration), i.e. before the physical migration. ART integrated this proposal into its decision.

• Migration conditions

The migration from the current architecture of lines leased by MFS Communication to the new interconnection offer will involve costs for both France Télécom and for MFS. ART therefore decided that each operator would have to cover its own costs, i.e. the operators would not charge each other reciprocal costs for the migration. However, if the migration occurs with no discontinuation of the service for the end customer, which would require the construction of a new line, France Télécom could bill MFS the costs of access to the service.

• Service quality conditions

France Télécom must propose optional service quality conditions more advanced than those in the standard interconnection offer. These conditions cannot be lower than those offered by France Télécom to its end customers, in accordance with the principle of non-dis-

Chapter 7

Independent networks

I. Network licences awarded under Article L. 33-2

A. Key figures

In 2001, ART adopted 400 decisions on independent networks, which was 20% more than in the previous year. Most of these decisions (255) related to network licence allocations or renewals and 21 revoked licences. The 90 2RP decisions represent 1,677 new licences and 632 changes to licences.

Decisions relating to independent networks

	number of decisions*		mixted						
		Fixed wire	RR+FW or RR+PMR	RR	SNG	VSAT	2RP	3bis	PMR
1997	159	14		93	16	11		11	14
1998	215	21		79	27	8		37	43
1999	278	27	14	138	12	9		21	57
2000	334	26	9	95	18	8	82	17	79
2001	400	57	3	91	11	12	90	26	110

(*) All decisions, including frequency allocations.
RR = Radio relay PMR = Professional mobile radio networks

Independent Networks at end-2001

Fixed-wire		480
RR		312
Satellites	SNG	79
	VSAT	49
	Mobile by satellite	1
PMR	2RP*	34 772
	2RC	29
	3R2P	53
	RPNP	5
	RPX	39
	GU	15
	3RPC	3
	Loc	1
	RPN*	1
	Other*	11

2RP: networks managed by ANFR for ART*
RPN: professional L.33-1 network*
Other: trial networks, temporary networks or networks on particular frequencies*

B. Abolition of administrative fee

The administrative fee for independent networks has been abolished. After the fixed-service (RR) and mobile-service (PMR) radio networks in 2000, the fee was also abolished for fixed-wire networks and satellite networks in 2001.

C. Activity on professional networks

1. Radio relay links

The radio relay (RR) networks represent 1,000 links, almost a quarter of which (240) were assigned in 2001. The table below shows the distribution of the links by frequency band in the past two years and all the links assigned since 1995.

	Assigned in 2000	Assigned in 2001	Total assigned
1.5 GHz band	75	135	267
13 GHz band	7	12	76
23 GHz band	29	29	303
23.5 GHz band	5	6	64
26 Ghz band	37	40	89
38 GHz band	21	16	195
Other bands		3	3
Total	174	241	997

2. RPX networks

The concept of the RPX network (frequency assigned to an installer for a region) is described in a decision[1] approved by the minister. The 39 licensed networks use almost 100 VHF and UHF channels. In 11 different regions at least one network of this type has been licensed.

3. RPNP networks

After the first Tetra-standard digital network for own use in 2000, the first Tetrapol-standard network was licensed in 2001. At end-2001, there were five licensed digital networks.

1 Decision No. 98-909 of 17 November 1998 specifying the rules governing the conditions for establishing and operating independent radio networks of the terrestrial mobile service, published in the O.J. on 12 February 1999 p.2275.

A call for comments on the frequency needs for professional digital networks for private or shared used (RPNP) in the UHF band in the Paris metropolitan area was launched in April 2001. ART received 23 responses, from professional groups, manufacturers, administrations, operators and potential users.

The responses indicate the widespread interest in digital networks, but they also confirm the current lack of Tetra-standard products outside the low UHF band (only one manufacturer is planning high-band products). In the high UHF band, the first Tetrapol-standard digital network was licensed in the Paris metropolitan area.

ART is investigating ways to meet the needs of the contributors.

4. Fixed-wire networks

There was a sharp increase in decisions relating to fixed-wire networks in 2001 (twice as many decisions as in the previous year). Almost 40% of applications (22 out of 57) come from local authorities and almost 20% (10 applications) from universities.

II. Network licences awarded under Article L. 33-3

A. Decisions adopted in 2001

1. PMR 446

PMR 446 professional radiocommunications equipment consists of hand-held transmitter receivers for short-range communications with power of 500 mW. ART adopted the decision to open the whole 446-446.1 MHz band, i.e. 8 channels, after the French railways (SNCF) gave up two channels. It supersedes the 1999 decision that opened six channels.

2. WLANs – Bluetooth – 2.4 GHz

The decisions relating to the new regulations for the 2.4 GHz band were published in 2001. WLANs may be freely established inside buildings at 100 mW at the top end of the band (2446.5-2483.5 MHz) and at 10 mW across the whole band (2400-2483.5 MHz). Outside buildings, RLANs may be set up at 100 mW on private property after a prior request to use the frequency and only in the top end of the band. They are not authorised on public property. Low-power short-range devices (Bluetooth) are authorised across the whole band at 10 mW inside buildings and 2.5 mW outside.

3. HiperLANs

The 5.150-5.350 GHz band is open to HiperLANs at 200 mW, inside buildings only.

4. Unilateral short-range systems on site

These systems allow voice transmission between radio relays and individual receivers in the form of earphones specifically designed and adjusted for that purpose in the 26-26.1 MHz band. They concern applications designed for the public, that for example allow a referee in a sports event to inform the spectators of his decisions through their earphones, for educational purposes.

B. Work in progress scheduled for completion in 2002

Several drafts amending or setting the conditions governing use and frequency assignment to achieve compliance with the European Recommendation[1] of the CEPT on the use of

1 European Recommendation ERC/REC/70-03 of the CEPT on the use of short-range devices.

short-range devices should lead to ART authorisation. The decisions will be submitted for approval by the telecommunications minister in 2002. These concern the 27 MHz band and the 5.8 GHz band for non-specific applications, the 402-405 MHz band for medical implants and the 868-870 MHz band for alarms and non-specific applications. Three decisions should also be adopted that will prohibit the use of frequencies at 31 December 2005 (remote alarm systems for the elderly in the 41.225 MHz band and three frequencies in each of the 152 MHz and 446 MHz bands), in accordance with the national frequency distribution table and/or the recommendation of the CEPT.

Chapter 8

Terminal equipment

The directive on radio equipment and telecommunications terminal equipment (R&TTE directive) took effect on 8 April 2000[1]. Its primary aims are to facilitate the market launch of telecoms terminal equipment and to create a single market for all radio equipment.

The directive substantially changes the applicable regulatory framework. The main provisions are summarised briefly below:

- it reduces the number of essential requirements for terminal equipment;
- it streamlines the conformity assessment procedures by introducing a quasi-generalised declaration procedure using harmonized standards;
- notified bodies involved in the conformity assessment procedures are only consulted for their opinions on radio equipment if, in exceptional cases, the harmonised standards do not describe the radio tests;
- the manufacturer is responsible for declaring conformity and bringing the product to market;
- the operators of public networks are free to choose their network interfaces; however, they are obliged to publish the complete specifications for these interfaces so that terminals can be designed to function on their networks;
- the product packaging or instructions must include information on the final authorised use covered by the declaration of conformity with the essential requirements;
- the market must be suitably monitored for non-conformity.

ART has been involved for several years in the drafting of this directive, which it feels is a step in the right direction. To prepare its transposition into French law, ART also adopted several decisions and a related communication:

1 Directive 99/5/EC of the European Parliament and of the Council of 9 March 1999 on "radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity", published in the O.J.E.C. L.91 on 7 April 1999 p.10.

• The decision[1] of 15 March 2000 adopting a procedure for the designation of the notified bodies involved in assessing the conformity of radio equipment and telecommunications terminal equipment. Five notified bodies were designated in precisely defined radio areas.

• The ART decision[2] of 5 April 2000 on the technical specifications describing public network access interfaces. In particular, it sets the requisite minimum times between publication by the public operators of the interfaces offered and their effective availability.

• The decision[3] of 17 May 2000 on the marking of radio equipment and telecommunications terminal equipment.

• The decision[4] of 22 December 2000, on warranty requirements in relation to protection against harmful interference of radio networks that are subject to individual licensing, in accordance with article L.33-2 of the Posts and Telecommunications Code.

• A communication relating to the regulated radio interfaces of 22 December 2000. It allows manufacturers to design and/or adjust services used in accordance with the regulations in France and to inform users, as set forth in the directive.

The ruling of 25 July 2001[5] transposed the provisions of the R&TTE directive. A Conseil d'Etat decree is being drafted to clarify certain points.

More concretely, ART issued the last conformity assessments at the beginning of September 2001. The same applied to admissions of telecommunications and radiocommunications installers.

The activities that continue to come under ART's responsibility are:

• the designation, monitoring and supervision of the notified bodies;

• the monitoring, assessment and forward studies on the technical specifications for interfaces published by the operators;

• monitoring the terminal market.

Because of the scope of the system of declarations (all the fixed-wire terminals, and a large proportion of the radio terminals that meet harmonised European standards), most of the equipment does not come under the competence of the designated notified bodies: Consequently, ART still provides technical and regulatory assistance to importers, manufacturers and various representatives, answering their questions transmitted by various means (fax,

1 ART Decision No. 00-239 of 15 March 2000 adopting a procedure for the designation of the notified bodies involved in assessing the conformity of radio equipment and telecommunications terminal equipment, published in the O.J. on 18 April 2000, p.5917.

2 ART Decision No. 00-329 of 5 April 2000 on the technical specifications describing public network access interfaces, published in the O.J. on 17 August 2000, p.12642.

3 ART Decision No. 00-451 dated 17 May 2000 on the marking of radio equipment and telecommunications terminal equipment, published in the O.J. on 2 July 2000, p. 10059.

4 Decision No. 00-1367 of 22 December 2000, on warranty requirements in relation to protection against harmful interference of radio networks that are subject to individual licensing, in accordance with article L.33-2 of the Posts and Telecommunications Code, published in the O.J. on 8 March 2001, p.3744.

5 Ruling No. 01-670 of 25 July 2001 to "adapt French intellectual property law and the Posts and Telecommunications Code to EU law", published in the O.J. on 28 July 2001 p.12132.

telephone, e-mail, letter, etc.), so that they can bring their products to market responsibly and legally. ART therefore needs to constantly update its knowledge of standards for fixed-wire and radio terminals.

In addition, as soon as the application decree for the transposition of the R&TTE directive is published, French customs will be responsible for checking telecommunications terminals from third countries and it is highly likely that, as in the past, they will call on ART's technical assistance.

Part 3

ART's method and resources

Chapter 1

ART's method

I. Communication

Throughout the year, ART made a point of regularly informing industry participants of its decisions by maintaining frequent contact with the press and publishing numerous press releases.

Board members, and in particular the chairman of ART, attended numerous conferences and meetings in France and other countries in 2001. Noteworthy among these events were the Multimédiaville conference in September, the Semaine des Télécoms in October and the IDATE international conference in November.

ART also continued to develop its main communication interfaces: its website, newsletter and conference cycle.

A. ART's website

ART's website went online in 1998. The aims of the site are to make a large amount of telecoms-related information available to the public, and to report transparently on its activities. The content-rich site is both a working tool and an information channel and is updated regularly. There has been a constant increase in the number of visitors to the site, particularly the English version – an encouraging sign of growing interest.

At end-April 2002, 1,165,346 unique visitors[1] had logged onto ART's website since its launch in March 1998[2]. In 2001, with 315,762 unique visitors over the year, the number of visitors increased again, with more than 26,000 unique visitors logging on every month on average, compared with 24,000 the previous year. These figures can be compared with sites of similar size, such as www.telecom.gouv.fr which recorded 167,095 visitors in 2001 (13,924 visitors on average per month) and the government's portal www.internet.gouv.fr intended to reach a broader audience, which recorded

1 Unique visitor: each distinct IP address is counted irrespective of the number of visits. This is different from multiple visits, where several connections may correspond to the same visitor, who is subsequently counted more than once.

2 Cumulative figures.

328,216 visitors in 2001 (27,351 visitors per month on average).

The number of ART's online subscribers seems to have reached its target, since it remained stable at over 10,600 at end-April 2002. Subscribers received 145 information messages and ART news alerts by e-mail in 2001. Through the forum, the number of messages processed by the webmaster and ART staff increased to 1,454 messages received per month on average, compared with just over 1,000 the previous year.

Of the almost 7,000 pages on the site, the search engine, which went online at end-September 2001, is one of the top five most visited, with more than 4,000 page hits on average per month since its launch. The English version of the site, which went online in 2001, is also attracting considerable interest, with more than 1,500 visitors on average per month and more than 250 subscribers to the English mailing list at end-April 2002. The statistics show that ART's website achieves its objectives of information and transparency and fulfils its purpose as a channel for disseminating essential information free of charge to all Internet users.

Year 2001

Month	Total Uniques visitors	Monthly total	Total page hits	Monthly total	Total hits	Monthly total
jan-01	**756,094**	**29,468**	**20,756,239**	**1,368,954**	**43,556,226**	**2,813,633**
feb-01	784,312	28,218	21,914,462	1,158,223	46,117,872	2,561,646
mar-01	**811,723**	**27,411**	**23,267,071**	**1,352,609**	**48,817,616**	**2,699,744**
apr-01	837,027	25,304	24,638,240	1,371,169	51,445,239	2,627,623
may-01	**861,390**	**24,363**	**26,009,409**	**1,190,339**	**53,930,380**	**2,485,141**
jun-01	886,109	24,719	26,975,726	966,317	56,143,441	2,213,061
jul-01	914,420	28,311	28,062,595	1,086,869	58,611,039	2,467,598
aug-01	936,188	21,768	28,978,659	916,064	60,696,642	2,085,603
sep-01	959,443	23,255	29,850,941	872,282	62,893,102	2,196,460
oct-01	987,217	27,774	30,473,388	622,247	65,188,051	2,294,949
nov-01	1,016,486	29,269	31,090,488	617,100	67,425,495	2,237,444
dec-01	1,042,388	25,902	31,676,054	585,566	69,352,568	1,927,000

B. ART's newsletter

ART publishes a bimonthly newsletter, La Lettre de l'Autorité, which informs readers about its activities, future initiatives and economic studies. Each issue briefs readers on current events and major issues under review and features interviews with people from the telecommunications sector or ART staff members. Seven issues were published in 2001.

C. ART's conference cycle

In 2001, ART organised a conference on a study on large corporations' consumption of telecommunications services as part of its confe-

rence cycle, "Entretiens de l'Autorité", which was started in 1999.

D. ART's documentation centre

Resources that may be consulted at ART's documentation centre include regulatory texts, reference works on telecommunications and files of articles on various themes.

The documentation centre handled 2,016 requests this year, 1,287 of which came from outside the organisation and 729 from inside.

The documentation centre is open to the public by appointment.

II. Dialogue

A. Consultative committee on telecommunications networks and services

The consultative committee on telecommunications networks and services (CCRST) held two meetings in 2001, chaired by Alain Bravo.

The committee was consulted on the following draft regulations:

- Draft amendment to the amended decree[1] of 3 February 1993 pertaining to fees for the allocation and management of radio frequencies due from holders of licences issued pursuant to articles L. 33-1 and L. 33.2-2 of the Posts and Telecommunications Code.
- Draft ART decision on the extension to local calls of call-by-call carrier selection and preselection.
- Draft ART decision approving the rules for managing and allocating IMSI numbers to identify users of mobile phones.
- Draft ART decision[2] amending the decision[3] of 23 December 1998 on changes to the numbering plan for certain non-geographic numbers.
- Draft enabling decree for the ruling of 25 July 2001[4] amending the Posts and Telecommunications Code.
- Draft decree on the universal directory amending the Posts and Telecommunications Code.
- Draft order defining the content of the advanced voice telephony services offer and the quality indicators for the telephone service as set forth in Article L. 34-1-1 of the Posts and Telecommunications Code.
- Draft decree, amending the Posts and Telecommunications Code, on conformity assessment and installation conditions for radio equipment and telecommunications terminal equipment.

The committee was consulted, by means of presentations by experts, on the following projects:

1 Decree of 3 February 1993 pertaining to fees for the allocation and management of radio frequencies due from holders of licences issued pursuant to articles L. 33-1 and L. 33.2 of the Posts and Telecommunications Code, published in the O.J. on 5 February 1993, p.1977.

2 This draft gave rise to Decision No. 01-1050 of 9 November 2001, amending Decision No. 98-1046 of 23 December 1998 on changes to the numbering plan for non-geographic numbers in the 08 AB PQ MC DU format, published in the O.J. on 13 December 2001, p.19815.

3 Decision No. 98-1046 of 23 December 1998 on changes to the numbering plan for non-geographic numbers in the 08 AB PQ MC DU format, published in the O.J. on 4 February 1999, p.1821.

4 Ruling No. 01-670 of 25 July 2001 to adapt French intellectual property law and the Posts and Telecommunications Code to EU law, published in the O.J. on 28 July 2001 p.12132.

- ENUM Project: Summary of results of the public consultation on the principles and conditions of implementation of the ENUM protocol in France and presentation of the work of the working group.

- Results of the operator survey.

- Operational implementation of portability for fixed non-geographic numbers.

- Progress review on unbundling the local loop.

- Presentation of the ART decision[1] on surveys of the competitive situation on the telecommunications market.

B. Radiocommunications Consultative Committee

The Posts and Telecommunications Code established the Radiocommunications Consultative Committee (CCR).

The committee consists of 21 members, appointed by order of the telecommunications minister after an opinion issued by ART. It brings together:

- 7 representatives of the network operators and radio service providers;
- 7 representatives of the users of these networks and services, both professional and residential;
- 7 other qualified persons.

The current membership of the CCR was set by order of 30 October 2000.

The CCR is in charge of examining proposals for regulations on telecommunications. It may also be consulted on any subject coming under its jurisdiction. ART operates the committee secretariat.

In 2001, the CCR held four meetings, chaired by Marc Houéry. ART referred applications to the CCR concerning the terms and conditions for the award of UMTS licences, UMTS infrastructure sharing, WLANs, use of the 450-470 MHz, 23 GHz and 38 GHz frequency bands, mobile-phone jamming devices, and rules governing the management and allocation of IMSI numbers to identify mobile phone users.

In the summer of 2001, on ART's proposal, the CCR set up a working group on UMTS infrastructure sharing and Mobile Virtual Network Operators (MVNOs), chaired by Laurent Benzoni. The reports submitted by the working group provided the regulator with valuable information for drafting its own position on these issues.

C. The interconnection committee

Article D. 99-6 of the Posts and Telecommunications Code, as set forth in the decree[2] of 3 March 1997, stipulates that "an interconnection committee will be established reporting to ART and include the operators licensed pursuant to Articles L. 33-1 and L. 34-1. The committee will be chaired by ART, which will decide on its membership and operation."

The interconnection committee is the main consultation body run by the regulator for all issues related to interconnection. The committee met three times in 2001.

1 Decision No. 01-898 of 5 October 2001 on surveys of the competitive situation on the telecommunications market, published in the O.J. on 28 February 2002, p.3886.

2 Decree No. 97-188 of 3 March 1997 on interconnection, as set forth in Article L. 34-8 of the Posts and Telecommunications Code (extract from a cancellation decision from the Conseil d'Etat), published in the O.J. on 18 May 1999, p. 7873.

1. Membership

The interconnection committee has 25 members, including the Chairman of ART and the CEOs of the telecommunications operators. The amended ART decision[1] of 4 June 1997 on the terms and conditions of the membership and operation of the interconnection committee, sets forth the following principles:

- The individual members of the committee are appointed by ART. Each appointment is non-transferable, so as to ensure the committee's stability. In practice, the committee consists of 25 members, including the Chairman of ART and the CEOs of the telecommunications operators.

- Three sub-committees (on economic issues; networks and services; and technical specifications) have been created and reported to the interconnection committee.

- The interconnection committee is chaired by the Chairman of ART or his representative.

- The interconnection committee meets at least twice a year. The meetings are called by the chairman and address the items on an agenda.

- The chairman of the interconnection committee can invite outside qualified persons to the meetings, depending on the topics on the agenda.

2. Mandate

a. Documents prepared by the committee

The interconnection committee defines the interconnection interfaces, their functionalities, and the conditions under which they may be adjusted or altered (Article D. 99-8).

b. Mandatory consultation of the committee

The committee must be consulted in two precise cases:
- When the annual list of ancillary and advanced services is drawn up (Article D. 99-16).
- When ART sends a request to review an interconnection catalogue (Article D. 99-16).

c. Discussion within the committee

The main occasions for discussion within the committee are:
- defining a method to improve long-term cost efficiency (Article D. 99-20).
- establishing a new method to determine interconnection prices (Article D. 99-20).

d. Validation by the committee

The committee validates the working programmes of the sub-committees (Article 2 of ART Decision No. 97-155).

e. Informal consultation and information

The committee may be consulted or asked to exchange information on any issue related to interconnection.

1 Decision No. 97-155 of 4 June 1997 on the terms and conditions of the membership and operation of the interconnection committee, published in the O.J. on 10 July 1997, p.10483.

III. External surveys and studies

The Telecommunications Act authorised ART to carry out studies and to collate information relating to the telecommunications sector. Since 1998, ART has initiated a large number of studies.

Owing to the highly technical nature and importance of the problems related to regulation, ART is obliged to rely on in-depth technical, economic, statistical and legal assessments. Since its foundation, ART has tendered studies to consultancies in order to benefit from specialist expertise and neutral external opinions.

Board members and staff recommend subjects for examination. They are validated by the division heads before presentation for approval during a Board meeting.

The studies are rigorously monitored by a cross-agency steering committee. The framework of each study, the time allotted for its execution and the documents to be submitted are determined at a launch session. Meetings are held at each stage of the study to hear progress reports and, if necessary, to refocus the issues. For each study, a final report and a summary are produced and electronic copies are submitted. The report is sent to the chairman, to the members of the Board, and to the director general. Sometimes a presentation is made to the Board or staff of ART. The studies may be published. The costs of the programme and of each study are monitored in relation to the allocated budget.

In 2001, the budget for studies totalled €1,510,000[1]. Some 30 studies were initiated. On average, each study cost €50,300[2] and took four months to complete.

The studies deal with subjects drawn from all areas of the telecommunications sector. In 2001, the subjects covered were divided into seven broad categories:

- interconnection (the reference models for unbundling and interconnection, the cost of capital);
- universal service (audit of volumes declared);
- economics and markets (the European mobile market, residential consumption of telecommunications services, portability of non-geographic numbers, international traffic, trends in use, price monitoring and employment);
- forward-looking studies (next-generation networks, overview of IP backbone networks in Europe, migration to IPV6);
- quality and coverage (survey of coverage of mobile telephone networks, service quality of mobile networks, enforcing WLL operators' compliance with their deployment obligations);
- Internet (the ISP economy, high-speed access and local authorities);
- benchmarks (high-speed access: European benchmark, strategies and models, convergence and interregulation, summary of the situation in the telecommunications sector in each country).

The list of studies performed on behalf of ART is provided below.

1 / FF 27 9 900 000.
2 / FF 28 330 000.

The Economics and Competition Division, which is responsible for external studies, organises appointments throughout the year with consultants who wish to present their expertise.

External studies and surveys 2001

Subjects
Interconnection
Cost of capital
Interconnection reference model
Unbundling reference model
Universal service
Audit of reported traffic volumes
Economics and markets
Residential consumption of telecommunications services
Trends in use of telecommunications services
The European mobile market
Employment in the telecommunications sector
Portability of non-geographic numbers
Price monitoring
International traffic: changes in routing techniques
Forward-looking studies
Next-generation networks
Migration to IPV6
Overview of IP backbone networks in Europe
Quality and coverage
Enforcing WLL operators' compliance with their deployment obligations
Survey of mobile telephone network coverage
Service quality of mobile telephone network
Internet
The ISP economy
High-speed access and local authorities (Haute-Normandie and Basse-Normandie)
Benchmarks
Convergence and interregulation
High-speed access: European benchmark, strategies and models
Summary of the situation in the telecommunications sector in each country

Chapter 2

ART's resources

Although ART's budget has increased slightly in past years, it is still inadequate to meet the needs of its growing regulatory activities. In view of the workload, staffing remains relatively modest: the number of budgeted job positions increased from 142 in 1999 to 149 in 2001. No new jobs are expected to be created in 2002. In comparison, the UK regulator has seen an 80% increase in resources in the space of five years, with a budget of ¤29.44 million and a workforce of 218.

The following table compares the resources of regulators in the European Union. It shows budgeted staff sizes, operating budgets and sources of funding.

The table shows that, based on comparable powers, other authorities are often better endowed than ART and that their resources have grown more strongly. The ratio between the budget and the population of a country is very explicit and reveals considerable differences between Member States. It shows that the per-caput cost of the national regulatory authority is much lower in France (¤0.25) than in other Member States. The French authority costs taxpayers nearly two times less than its counterparts in the UK, Spain and Italy.

Country Population	Regulator	Workforce	Operating budget Cost per inhabitant	Sources of funding
Austria 7,812,100 inhabitants	Rundfunck und Telekom Regulierungsbehörde (RTR) RTR is a joint stock company	60	€7.2 million in 2000 or €0.91 per inhabitant	Taxes and fees levied directly, essentially on the basis of operator turnover

Country Population	Regulator	Workforce	Operating budget Cost per inhabitant	Sources of funding
Belgium 9,978,681 inhabitants	Institut Belge des Services Postaux et des Télécommunications / Belgisch Instituut voor Postdiensten en Telecommunicatie (IBPT/BIPT)	199	€28.51 million or €2.74 per inhabitant	Taxes and fees levied directly
Denmark 5,146,469 inhabitants	Telestyrelsen	191	€19.50 million (DKK145 million) or €3.79 per inhabitant	Taxes and fees levied indirectly fund 95% of the operating budget, with the balance made up out of the government budget
Finland 4,998,478 inhabitants	Telehallintokeskus	217	€25.56 million or €5.09 per inhabitant	Taxes and fees
France 60,185,231 inhabitants	Autorité de Régulation des Télécommunications (ART)	149	€15.40 million or €0.25 per inhabitant	Government budget
Germany 80,975,000 inhabitants	Regulierungsbehör de für Telekommunikation und Post (Reg-TP)	2,620	€46.02 million or €1.83 per inhabitant	Government budget
Spain 38,999,181 inhabitants	Comision del Mercado de las Telecomunicaciones (CMT)	111	€13.46 million or €0.34 per inhabitant	Taxes and fees levied directly on the basis of operator turnover
UK 55,600,000 inhabitants	Office of Telecommunications (OFTEL)	218	€29.44 million (£18 million) or €0.54 per inhabitant	Taxes and fees levied indirectly to the tune of around GBP15 million with the balance being made up out of the government budget (GBP3 million)
Greece 10,964,156 inhabitants	National Telecommunications and Post Commission (EETT)	30	€8.81 million or €0.81 per inhabitant	Taxes and fees
Ireland 5,200,000 inhabitants	Office of the Director of Telecommunications Regulation (ODTR)	95	€20 million or €3.87 per inhabitant	Taxes and fees levied directly on the basis of operator turnover + government budget
Italy 57,576,429 inhabitants	Autorità per le Garanzie nelle Comunicazioni (AGC)	260 (320 eventually)	€25.83 million or €0.45 per inhabitant	Government budget
Luxembourg 232,813 inhabitants	Institut Luxembourgeois des Télécommunications (ILT)	23	€7.44 million or €32.06 per inhabitant	Taxes and fees levied directly on the basis of operator turnover

Country Population	Regulator	Workforce	Operating budget Cost per inhabitant	Sources of funding
Netherlands 15,129,150 inhabitants	Onafhankelijke Post en Telecommunicatie Autoriteit (OPTA)	115	€12.98 million or €0.86 per inhabitant	Taxes and fees
Portugal 9,858,000 inhabitants	Instituto das Comunicações de Portugal (ICP)	375	€9.98 million or €1.01 per inhabitant	Taxes and fees levied directly
Sweden 8,644,119 inhabitants	Post och Telestyrelsen (PTS)	184	€20.17 million or €2.54 per inhabitant	Taxes and fees levied directly on the basis of operator turnover + government budget (the SEK10 million earmarked for the handicapped)

I. The budget

A. Budget resources

ART's annual budget is currently decided by the minister for economy, finance and industry, following discussion between ART departments and the national budget office. It may be questioned whether such a mechanism is consistent with the principle of a regulator's independence. Because ART exists by virtue of law, direct dialogue with parliament during the budget planning process would make it possible to reconcile the principles of independence and responsibility.

In addition, existing legislative provisions providing for taxes and fees as part of ART's resources are still not being applied.

The initial budget act for 2001 allocated ART a budget of €15.40 million[1], of which €8.50 million[2] was for payroll expenses and €6.90 million[3] for routine operating expenses.

In the 2002 initial budget act, ART funding is recorded – as in previous years – in a single chapter of the "Economy, Finance and Industry" budget. Funding amounted to €16.08 million, with €9.10 million for payroll expenses and €6.98 million for routine operating expenses.

B. Budgeted job positions

For 2002, the number of job positions budgeted for ART in the initial budget act is 149, the same as in 2001. In 2000, the figure was 144.

C. ART revenues

Thanks to the regulatory mechanism introduced in 1997 and 1998 that allows it to char-

1 FF101 million
2 FF55.77 million
3 FF45.23 million

ge for certain services, ART sold the following in 2001:

- 139 copies of the 2000 Annual Report;
- 70 copies of the 1997, 1998 and 1999 Annual Reports;
- 35 CD-ROMs comprising the versions from 1997 to 2000.

In 2000, ART sold 467 copies of the Annual Report (versions 1997 to 1999).

The French version of the Annual Report sells at €22.87 and the English version sells at €38.11. These prices do not include shipping expenses.

ART also sold:

- the newsletter Lettre de l'Autorité (at €3.05 per copy or by annual subscription at €15.24); 102 subscriptions were taken out in 2001;

- subscriptions to ART's G'Num database: 17 subscriptions in 2001. The overall subscription is €1,500.

These revenues totalled €33,428.85 at 31 December 2001.

As regards internal affairs, the computer application used to keep track of revenues and expenses was modified. The revenue module was upgraded to comply with public accounting requirements and a new electronic interface was introduced to transfer payroll data and payment authorisations for ART's expenditure to the Treasury's paymaster general.

II. Revenues collected on behalf of the State

Article L. 36-4 of the Posts and Telecommunications Code provides that: "The resources of the telecommunications regulatory authority shall include payment for services provided, and the taxes and fees payable under the conditions set out by the Finance Act or by Conseil d'Etat decree. During the drafting of the annual Finance Act, the regulatory authority shall submit to the telecommunications minister its proposals for the funds needed to carry out its functions, over and above the resources referred to in the first paragraph".

These provisions have still not come into force. Contrary to the letter of the law, the total income from taxes and fees is allocated to the general budget. The only extra-budgetary resources that have been provided for by enabling legislation consist of the partial allocation of payment for services rendered.

Collection of taxes and fees for the general budget of the State

ART issues collection orders for taxes and fees for the State's general budget. In 2001, it was thus able to issue, on behalf of the general budget, nearly 1,000 collection orders for a total amount of ¤14 million in taxes and €144 million in fees. The detailed breakdown is as follows:

Fees:

- €17 million for fees provided for under Article L. 34-10 of the Posts and Telecommunications Code pertaining to the cost of managing and monitoring the national numbering plan.
- €127 million concerning fees for the allocation and management of radio frequencies.

Taxes:

- €4 million in taxes for the management and control of licences,
- €10 million in administrative taxes.

Collection orders for fees and taxes amounting to ¤158 million were issued. Actual taxes and fees received amounted to €125.7 million.

III. Human resources

In 2001, ART pursued a recruitment policy aimed at finding the best possible match between its skill requirements and the profiles of tenured and non-tenured staff. ART recruited 30 people in 2001, renewing 20% of its workforce.

In compliance with the policy applicable to the entire civil service, ART analysed the worktime organisation and expectations of its employees with regard to the introduction of a 35-hr legal working week in France. This analysis, produced with the assistance of an outside consultant, lasted from May to November 2001. The objective was two-fold: to achieve an effective reduction in working hours while maintaining the efficiency of ART's services, and to ensure its capacity to adapt to fast-breaking changes in the context of its remit.

After consulting the joint technical committee, ART implemented the legislation on 1 January 2002. The new system is based on a workweek of 38 hours 28 minutes, with a "time budget" system for department managers, unit heads and employees who so request and who satisfy the terms of Article 10 of the Decree of 25 August 2000. In both cases, the number of vacation days is fixed at 45, which includes 15 days resulting from the shorter workweek. In the course of 2002, a monitoring committee composed of departmental and personnel representatives from the joint technical committee is scheduled to examine how the system is working and to propose any changes that may be needed.

A. Increased staffing levels

ART's workforce increased from 136 at 31 December 2000 to 145 at 31 December 2001. The breakdown between tenured staff and non-tenured staff varied considerably from the previous year. There were 94 tenured employees and 42 non-tenured employees at 31 December 2000, compared with 84 and 61,

respectively, at 31 December 2001. The job category breakdown also changed. At 31 December 2001, there were 104 employees in Category A , 36 in Category B and 5 in Category C. The average age of tenured staff is 45.6 years and 36 years for non-tenured staff.

B. Professional training and symposiums

ART pursued its vocational training programme and its involvement in symposiums in 2001, spending ¤146,400 on the former and ¤18,800 on the latter.

C. Labour relations

Two meetings of ART's joint technical committee were held in 2001. The main areas of focus were job mobility (both internally and to other entities) and the implementation of the shorter workweek.

IV. ART's organisation

In February 2000, after three years of existence, ART was reorganised. The aim was to take account of developments in the telecommunications sector and their impact on its missions.

Three additional modifications to this organisation were made in 2001:

- a "Territorial Authorities" mission was created within the "Operators and Resources" department to handle ART's relations with territorial authorities;
- the International Department's "International Telecommunications" unit was brought inside the "International Affairs" unit in order to strengthen the coherence, efficiency and external profile of the department's units;
- an "Economic and Competition Regulation" mission was created within the "Economics and Competition" department, made necessary by the development of the European regulatory framework.

Glossary of technical terms, acronyms and abbreviations

Second generation (GSM in Europe)

2G, 2.5G: Mobile systems prior to 3G (q.v.). They include GSM for 2G and GPRS for 2.5G.

3G: Third-generation mobile systems. The 3G networks will provide users with access to a wide range of new services. The most significant of these will be high-speed Internet access, made possible by the gradual introduction of packet-switching technology into mobile networks.

3GPP (Third Generation Partnership Project): Global body bringing together worldwide standards organisations, including ETSI (q.v.) and US (Committee T1), Japanese (ARIB and TTC) and Korean (TTA) members. Its mandate is to reach an agreement on a common radio interface in order to determine a standard for third-generation mobile telecommunications systems (UMTS). ETSI transferred the work carried out within the SMG committee on UMTS to the 3GPP. Some of the 3GPP's partners are the GSM Association, UMTS Forum and Ipv6 Forum.

Access network: Network to which customer premises equipment is directly connected, giving access to services. (cf. "core network")

Accounting rates: System which sets out the pricing principles to be used in interconnection agreements between international operators, to enable the revenue for international calls to be shared between the operator in the country that originates the traffic and the operator in the country that delivers the traffic. For calls to a given international destination, the operator in the country originating the traffic sets the retail price, which is called the collection rate. This operator and the operator in the destination country negotiate a settlement rate. The settlement rate is used to determine the sum paid by the operator that generates the traffic to the operator that delivers the traffic. The settlement rate is often half the accounting rate.

ADSL (Asymmetric Digital Subscriber Line): An xDSL technology designed to enhance the performance of access networks, particularly the subscriber line of the conventional telephone copper access network. Two modems are used, one on the customer's premises, and the other on the subscriber line before the

main distribution frame, to increase data rates 70-fold. ADSL uses a line splitter to enable it to carry voice, upstream data (user to network) and a greater proportion of downstream data (network to user). Filtering at both ends of the line ensures acceptable voice quality, by removing interference. ADSL technology is particularly well suited to the local loop, as throughput diminishes over distance. It is relatively inexpensive, and therefore constitutes an attractive alternative to cable networks for high speed Internet access.

AFA (Association des Fournisseurs d'Accès à Internet): French association of Internet access providers.

ANFr (Agence Nationale des Fréquences): National Frequencies Agency. Body responsible for managing the RF spectrum, sharing frequencies between the different bodies and administrations with allocations in France (ART, CSA, defence ministry, etc.), dealing with interference and participating in international negotiations on frequencies.

Asymmetric regulation: Regulation which imposes specific obligations on the incumbent because of its dominant position on the market, e.g. special interconnection obligations, retail tariff control, and universal service duties.

ATM (Asynchronous Transfer Mode): A packet-switching technique using the cell relay transmission method, i.e. fixed-size cells, to provide high-speed transport of digital data. ATM permits ultra-fast transmission and enhances line capacity, making it particularly well suited to high-speed multiservice networks. By improving core network performance and optimising network resources, it supports high traffic flow, while maintaining high service quality.

Audiotel: Shared revenue services provided by France Télécom, which can generally be accessed by dialling a number beginning with "08 36". They enable users to access information, games, etc., via an audiotex-type voice server, which guides the caller with pre-recorded messages.

Backbone (a.k.a. core network): A telecommunications network comprises two parts:

- - the local loop or access network which is composed of subscriber lines, i.e. in a fixed-wire network the part of the network where each subscriber line, generally built from copper pairs, is physically individualised
- - the backbone consisting of all the transmission and switching media starting with the local exchange.

Bandwidth: Expressed in hertz, bandwidth is the range of frequencies that allow a data channel to be transported. It is defined as the difference between the lowest and highest frequencies transmitted. In IT, it is often confused with the transfer rate or capacity expressed in bits per second.

BAS (Broadband Access Server): Server used to manage data transport in ATM mode for ADSL-based Internet access offerings. Each BAS on the France Télécom network is connected to approximately 10 DSLAMs (q.v.) and groups the traffic handled by those devices. Consequently, the area covered by a BAS is referred to by France Télécom as a "platform". Two ATM circuits, one "incoming" and one "outgoing", are put in place between the client and the BAS to which he or she is connected.

Beauty contest: Method for the selection of candidates for the use of a limited resource (e.g. wireless local loop or UMTS licences and frequencies). It differs from an auction in that candidates are selected on a range of criteria, not simply price.

Call back: The user dials a number in the country which operates "call back". There is no call

set-up so no charge. An automatic device calls the number back and sets up the call on an international line. The user then dials the number of his correspondent. The call is billed at the tariff charged by the chosen foreign operator. This system thus enables users to enjoy the tariffs charged in the country called.

Carrier (or long distance operator): Telecommunications company which carries national long distance and/or international calls.

Carrier selection: Possibility for customers to choose between several carriers. Carrier selection only concerns long distance and international calls.

CCR (Commission Consultative des Radiocommunications) and CCRST (Commission Consultative des Réseaux et Services de Télécommunications): The radiocommunications consultative committee and the telecommunications networks and services consultative committee are advisory committees created by the Telecommunications Act of 26 July 1996. They report to the telecommunications minister and to the ART chairman.

CEI (Commission électronique internationale): International Electrotechnical Commission

CEN (Comité Européen de Normalisation): European Committee for Standardisation

CENELEC (Comité Européen de Normalisation Electrotechnique): European Committee for Electrotechnical Standardisation

CEPT (European Conference of Postal and Telecommunications Administrations): Regional regulatory telecommunications organisation of which most European countries are members. It partakes in regulatory and technical co-operation (particularly on frequencies).

Co-location: In France Télécom's standard interconnection offer, physical interconnection is possible using three different techniques:

- co-location: the operator installs its equipment on France Télécom's premises
- interconnection link: France Télécom installs its equipment on the operator's premises.
- in-span interconnection: a solution halfway between these two systems, where the point of interconnection is located on the public domain, for example.

For local loop unbundling, co-location consists in supplying the premises and technical resources needed to host and connect the equipment of alternative operators.

Conseil Constitutionnel: (lit. Constitutional Council), France's supreme court.

Consumer basket: Statistical market information tool, enabling, the average change in users' bills to be measured, at a constant level of consumption. ART has established two consumer baskets to observe the average yearly change in telephone tariffs.

Convergence: Refers to two different trends:

- convergence between the broadcasting and telecommunications sectors. Advances in technology make it possible to use different media (cable networks, terrestrial and satellite radio relay systems, computer terminals and television sets) to carry and process all kinds of information and services, including sound, images and data. This type of convergence is due to a revolution in technology (digitisation). It has economic and regulatory implications.

- fixed/mobile convergence. Increasingly similar technologies are used and services provided by fixed telephone and mobile telephone systems. This type of convergence

opens up prospects for operators to propose the same services to all users, regardless of the technology or networks they use.

CPT (Code des postes et télécommunications): The Posts and Telecommunications Code

CST (Conseil Supérieur de la Télématique): French authority for telematics services.

CT (Commutateur de transit): See trunk exchange

CTA (Conseil de la Télématique Anonyme): French advisory committee on telematics services.

CTR (Common Technical Regulations): Joint regulations governing network access for terminal equipment. CTRs are drafted in accordance with EU directive 98/13/EC by the TRAC committee of ETSI at the request of the ACTE committee, chaired by the European Commission. CTRs apply to all member states.

CUG (Closed user group): The posts and telecommunications code defines an independent network as a network that is shared or used for a private purpose. It "is for private use, if use is reserved for the physical or legal person that set it up, and it is for shared use if use is reserved for several physical or legal persons which have set up one or several closed user groups, in order to exchange communications within that same group". ART clarified this definition by adding that a CUG must be "based on a community of interest that is stable enough to be identifiable and that predates the creation of the network". The term 'closed user group' is also used to define a virtual private network on a public network.

DECT (Digital Enhanced Cordless Telecommunication): European digital radio transmission standard for mobile or fixed telephony (wireless local loop).

Digital block: A number of calls batched on the same physical transmitting medium using a technique known as multiplexing. With PDH (Plesiochronous Digital Hierarchy), the transmission standard generally used for telecommunications networks, calls can be batched firstly into primary digital blocks (PDBs) comprising 30 calls, then into secondary digital blocks (SDBs) of 120 calls, then into tertiary digital blocks (TDBs, 480 calls), and then into quaternary digital blocks (QDBs, 1,920 calls). Each digital block corresponds to a transfer rate or capacity expressed in bits per second, where the bit is the basic digital binary unit (which has two values: 1 or 0). The transfer rate of a PDB is 2Mbit/s. For interconnection purposes, pricing can be based on the transmission capacity, expressed in PDBs.

Digital link: Link over which information is carried in a digital format. Digital means that all the information (sound, text, image) has been encoded and transformed into a series of binary digits, as opposed to analogue, which is the direct representation of a waveform.

Direct interconnection: Call termination service, in which an operator routes a call to one of France Télécom's subscribers. The call is routed by the operator to the interconnection point; it is then carried by France Télécom over its network from the point of interconnection to the subscriber's customer premises equipment.

Distributor (a.k.a. mobile communications service provider): Company selling and managing mobile telephony subscriptions, on behalf of an operator.

Domain name: Name that designates an entity to which an Internet site belongs (e.g. ".fr" or ".com").

DSLAM (Digital Subscriber Line Multiplexer): One of the devices used to convert conventional telephone lines into ADSL lines for high-

speed data transmission, particularly for Internet access. The DSLAM is installed on the main distribution frame of the local operator's network. It amalgamates several ADSL lines on a single medium, which routes data to and from these lines.

Dual trunk exchange interconnection: Service listed in France Télécom's standard interconnection offer, enabling an operator that is interconnected to a trunk exchange to reach subscribers in another trunk exchange area, anywhere in France. It thus gives access to all the lines in France.

ECC (Electronic Communications Committee): New umbrella committee for the activities formerly handled by ECTRA and ERC in CEPT.

Economic regulation: The regulatory authority has to ensure that competition is effective, fair and sustainable. It does this by using precise knowledge of market developments, and the legal instruments at its disposal (e.g. dispute settlement, approval of technical and financial interconnection conditions, penalties and in-depth evaluation of operators' costs).

ECTRA (European Committee of Telecommunications Regulatory Affairs): CEPT (q.v.) committee responsible for regulatory affairs. Its permanent office is the European Telecommunications Office (ETO).

ENUM: Protocol defined by the Internet Engineering Task Force (IETF) to create Internet domain names Internet from telephone numbers and link them to communication services (telephone, email, fax, unified messaging etc.). ENUM is the first truly convergent Internet /telecoms project combining numbering aspects with Internet naming and addressing features.

ERC (European Radiocommunications Committee): Organisation formerly answerable to the European Conference of Postal and Telecommunications Administrations (CEPT), responsible for regulatory cooperation on radiocommunications issues. Its permanent office was the European Radiocommunications Office (ERO).

ERMES (European Radio Messaging System): European radio paging standard.

ETNO (European Public Telecommunications Network Operators' Association): Association set up to foster cooperation among operators.

ETSI (European Telecommunications Standards Institute): Body set up by the European Commission to handle telecommunications standardisation for the CEPT (q.v.).

Extranet: A private network that uses Internet protocols (IP). It enables businesses or organisations to exchange digital data with their main correspondents (subsidiaries, customers, suppliers, etc.). Hypertext Markup Language (HTML) makes the presentation of data user-friendly, using hyperlinks to permit user to browse through screen pages (as on a web site).

FIP: flat-rate interconnection point

Flat-rate interconnection: Under a flat-rate interconnection system, no variable charges per minute or per call would be invoiced. Only a fixed interconnection charge, determined in advance, would be payable. Flat rate interconnection should enable operators to provide Internet access providers with flat rate Internet traffic collection offers (independent of the volume collected).

Freephone number: Generally called a "numéro vert" (green number) by France Télécom. These numbers are free for the caller. Freephone services are paid for by the people, companies and organisations that requested that they be established so that they could be contacted

free of charge. Freephone numbers begin with 0800.

FRIACO (Flat Rate Internet Access Call Origination): British Telecom's flat rate Internet interconnection offer in the UK.

GCT (Groupe Consultatif Terminaux): Voluntary working group comprising the various parties interested in telecommunications terminal equipment, such as operators, manufacturing unions, test laboratories and users. The group is responsible for drafting national technical regulations, which are used for terminal equipment conformity assessment. ART is the group facilitator.

GPRS (General Packet Radio Services): Packet switching system enabling enhanced data rate over GSM networks (cf. "Switching").

GSM (Global System for Mobile Communications): Radio transmission standard for mobile telephony.

GTR (Groupe de Travail sur les Radiocommunications Professionnelles): Working group on business radiocommunications, set up within the radiocommunications consultative committee.

HSCSD (High Speed Circuit Switched Data): Circuit switching system enabling enhanced data rate over GSM networks (cf. "Switching").

IAB: Internet Architecture Board

ICANN: Internet Corporation for Assignment of Names and Numbers

IETF: Internet Engineering Task Force

IMT 2000: Third-generation mobile systems which enable mobility services to be improved, thanks to new features. The ITU selected five terrestrial radio interfaces for third-generation mobile systems and these therefore bear the IMT 2000 label. UMTS was one of the five selected.

Independent network (a.k.a. private network): See "Closed User Group."

Indirect interconnection: Call collection service, in which an operator collects a call from one of France Télécom's subscribers. The subscriber dials a prefix to select the operator. The call is carried by France Télécom from the subscriber's customer premises equipment to the point of interconnection, and from this point by the new selected operator.

In-span interconnection: See "Co-location."

Interconnection: The linking of telecommunications networks in order to allow one operator's subscribers to communicate with other operators' subscribers.

Interconnection agreement: Private contract negotiated and signed by two operators, on a case-by-case basis, to determine their terms of conditions for interconnection. Generally, when an agreement is concluded with an operator with significant market power, it is based on this operator's standard interconnection offer. If the service is not listed in that offer, new interconnection conditions are laid down.

Interconnection interface: All of the technical specifications necessary for interconnection and which enable a dialogue between networks to be established. It defines the physical interconnection arrangements, services and advanced functions accessible between the networks concerned, the control mechanism for these services and their billing and operating arrangements.

Interconnection link: See "Co-location"

International Settlement Rate: Amount paid

by one operator to another as part of the international accounting rates system.

Internet: A network of networks interconnected by the Internet Protocol, over which a wide range of services can be provided.

Internet Protocol (IP): Telecommunications protocol used on networks which support Internet, enabling the transmission of data packets, from one end system to another based on address information carried in the message. The Transmission Control Protocol, is used with IP to guarantee reliable stream transport, by providing acknowledgements between the source and destination, hence reference is often made to the two protocols together (TCP / IP).

Interoperability: Service interoperability is the possibility for different services to operate on different networks. The technical specifications at the interconnection interface determine, in part, service interoperability between different operators.

Intranet: A corporate network using Internet Protocol, reserved for internal data exchange. Hypertext Markup Language (HTML) makes the presentation of data user-friendly, using hyperlinks to permit user to browse through screen pages (as on a web site).

IP Address: Address identifying a terminal connected to the Internet network.

IP Telephony: The use of IP technology to transfer voice and data.

IRG (Independent Regulators' Group): Informal body comprising the regulatory authorities of the European Union and European Economic Area.

ISDN (Integrated Services Digital Network): Digital telecommunications network, capable of carrying image, sound and text data simultaneously.

ISO: International Organisation for Standardisation

ISP: Internet Service Provider

ITU (International Telecommunication Union): United Nations specialised intergovernmental agency responsible for the regulation, standardisation and development of telecommunications of all kinds.

Leased line: From a technical viewpoint, this is a permanent link (as opposed to a switched link, which is temporary) comprising one or several parts of a public network, which is reserved exclusively for a user. From a legal viewpoint, a leased line, which is also called a dedicated line, is defined in the posts and telecommunications code as: "a contract between the public operator and a user for the provision of transmission capacity between given termination points of the public network. The user has no control over switching". This type of service is used by businesses for their corporate network, and also by telecommunications service providers that do not have their own infrastructure or wish to increase their capacity.

Least cost routing: Optimal routing using a system enabling the least expensive links to be chosen systematically, depending on the destination and time of the call.

LEO: Low Earth Orbit satellite

Licences: The Telecommunications Act of 26 July 1996 states that there are no restrictions on telecommunications activities. However, it stipulates that some of these activities require a licence – also known as an "authorisation". For example, a licence must be obtained from the telecommunications minister, after

applying to ART, to set up and operate a public network, to provide a public telephone service and to provide the public with telecommunications services using microwave frequencies. ART issues authorisations to set up and operate independent networks.

Line interface module: A module of the local exchange that converts analogue signals into digital format.

LMDS (Local Multipoint Distribution Service): Technology supporting high-speed transmission, which uses microwave signals to transmit voice, video and data, thus giving access to the telephone service, Internet and television programmes. This type of transmission is particularly well suited to scarcely populated areas which do not have cable coverage. However, its development is hindered at present by technical barriers such as signal attenuation, caused on the one hand by the weather (rain), and on the other hand by shadow areas (buildings, leafy trees, hills) which interfere with radio wave propagation.

Local exchange: Exchange to which subscribers are connected, by a line interface module. In France Télécom's tier system, this is the lowest ranking exchange on the network. There are two kinds of switch:
Local exchanges – the lowest in the hierarchy. Subscribers are connected by a line interface module.
The higher level exchanges are called trunk exchanges.

Local exchange area: On France Télécom's network, the exchange area is the area in which subscribers are served by an (or several) exchange(s) at a given level. For local exchanges (lowest level) the area is called the local exchange area. For trunk exchanges, it is called the trunk exchange area.

Local exchange interconnection service: Service listed in France Télécom's standard interconnection offer, enabling an operator that is interconnected to a trunk exchange to reach subscribers in another trunk exchange area, anywhere in France. In France this provides access to some 30,000 lines.

Local loop: The wire or radio connections between the customers premises and the local exchange. The local loop is the part of a network which gives the operator direct access to the customer.

Local loop operator (or local operator): Telecommunications company that has installed subscriber lines.

Local loop unbundling: Local loop unbundling, also known as unbundled access to the local network, consists in allowing new operators to use the incumbent operator's local network, made up of copper pairs, in order to serve their subscribers directly. New entrants will naturally compensate the incumbent for the use of its network. Consequently, the customers of a new entrant will no longer be required to take out a subscription with France Télécom to access their operator's services. This broad definition encompasses several options. The preparations for the public consultation exercise conducted by ART in 1999 identified five such options:

Three of these five emerged during deliberations concerning the possibility of accessing the incumbent's local loop on an unbundled basis: This unbundled access may entail:

- physical unbundling of the local loop, where the new operator gets direct access to the copper pair. This is known as raw copper access (option 1),
- access to transmission capacities, comprising bitstream access (option 2) and access to a permanent virtual circuit (option 3).

The two remaining options are equivalent to

a resale business, namely local traffic resale (option 4) and subscription resale (option 5).
Local operator: See local loop operator.

Local sorting zone: Geographical area (usually a départements) within which operators did not handle calls by means of the carrier selection process. Local sorting zones were abolished on 31 December 2001.

Long-run average incremental costing: The 1996 Telecommunications Act stipulates that the interconnection tariffs of SMP operators must be set according to the actual costs incurred by the operator that provides the interconnection service. Two methods can be used to determine these costs: the first consists in using the operator's historic network costs; the second consists in evaluating the cost of building a new network at current and future prices, which are generally lower than historic costs because of progress in technology.

Long-run average incremental costing aims to reconcile these two methods by comparing two evaluations:

- one based on the operator's accounts,
- another based on a technical and economic model of network rollout and operations.

Combining these two assessments enables a better understanding of the various types of network costs and how they relate to the various interconnection services.

Main distribution frame: Apparatus in the local exchange where the copper cables terminate. It enables several subscriber lines to be grouped into a single cable.

Mobile radio network: Network using radio frequencies to connect mobiles to the fixed or mobile network.

MRC (Milestone Review Committee): Advisory group set up jointly by ECTRA (q.v.) and the ERC (q.v.) within the CEPT (q.v.), in order to ensure that the various regulatory systems fulfil their requirements.

NAS (Network Access Server): Device used by operators to provide Internet access services through the switched telephone network (STN). An NAS converts telephone calls into IP-based data streams, interfacing between the STN and the IP data transport network.

Network: Combination of telecommunications resources, e.g. exchanges, wire links (copper cable, optical fibre) and terrestrial or satellite radio transmission links.

Non-geographic number: Number beginning with 08, among which the services can be distinguished by type e.g. general mobile services, virtual private network services, and by pricing, e.g. freephone services, shared-cost services and shared revenue services.

Number portability: Possibility for subscribers to retain their telephone number when changing local loop operator (service accessible since 1st January 1998 if the subscriber does not change address) or when changing geographic location or local loop operator, or both.

ONP (Open Network Provision): Rules enabling the incumbent's network to be used by new operators, as network ownership is separated from its commercial operation. The European "ONP" directives aim to harmonise the sector so that ONP conditions can be applied to all telecommunications services. The harmonised conditions guarantee open and efficient access to telecommunications networks.

Operator with significant market power (a.k.a. SMP operator): The Telecommunications Act requires ART to draw up annually a list of operators with significant market power (meaning those operators which have significant power on a relevant telecommunications

market). Each year, they have to publish a standard interconnection offer. Any operator that has a market share greater than 25% of a relevant telecommunications market is deemed to have significant market power. When drawing up this list, ART also takes into account the operator's turnover in relation to the size of the market, and its control of access to the end user.

PDH (Plesiochronous Digital Hierarchy): A digital transmission method based on dividing information up into identical time intervals.

Peering: The exchange of traffic and the reciprocal use of networks without financial compensation. Peering takes place between Internet service providers of similar size.

PMR (Private Mobile Radio networks): Mobile radio networks for business users. In France the distinction is drawn between:

RPN: Digital trunked private mobile radio networks, using Tetra or Tetrapol technology.

RPX: Local trunked networks (new category of networks).

2RC: Trunked private mobile radio networks for commercial purposes.

3R2P: Trunked private mobile radio networks for private purposes.

3RP: Trunked private mobile radio network.

3RPC: Trunked public access commercial mobile radio networks.

POI (Point of Interconnection): Interconnection point located on the incumbent's premises.

PoP (Point of Presence): Interconnection point located on the new entrant's premises.

Public network: Telecommunications network established or used for the provision of public telecommunications services.

Public telephone service: Service defined by law as "commercial provision to the public of a service consisting in the conveyance of direct, real-time voice telephony between public switched telephone networks for mobile and fixed users."

Radio interface: System enabling a mobile terminal to communicate with the network. Numerous discussions were held within ETSI in 1997 on the standardisation of a radio interface for UMTS. On 29 January 1998 the SMG committee adopted the UMTS Terrestrial Radio Access standard (UTRA). (Terrestrial as opposed to satellite). The standard is a compromise between two originally competitive components: WCDMA and TD/CDMA. UTRA was adopted by the ITU in March 1999 as a radio interface standard for IMT 2000.

Radio paging: Mobile communications system enabling users equipped with pagers to receive call alert signals (beeps) and messages composed of numbers (numeric) or combinations of numbers and letters (alphanumeric). The top three brands in France are Tam-Tam, Tatoo and Kobby.

Radio relay link: Terrestrial radio link between fixed points.

Regulation: In the telecommunications sector, regulation may be defined as the enforcement, by the competent authority, of all the legal, economic and technical provisions enabling telecommunications activities to be carried out freely, as stipulated by law. Telecommunications regulation is essentially economic regulation, which is not the case in the broadcasting sector, where content is also regulated in accordance with cultural objectives.

RLR (réseaux locaux radioélectriques): Wireless Local Area Network (see WLAN).

RPS (Radiocommunications Professionnelles Simplifiées): Short-range business radio.

RRI (réseau radioélectrique indépendant): See PMR – Private Mobile Radio networks.

Satellite network: Network using radio frequencies relayed by satellite.

SFCA (Services et Fonctionnalités Complémentaires et Avancés): Ancillary and Advanced services included in France Telecom's standard interconnection offer.

Shared access to the local loop: Allowing a beneficiary to access France Télécom's local loop with use of non-voice frequencies available on the twisted metallic pair. France Télécom continues to use the local loop to provide a public telephone service. In practice, this access method is used when an operator wishes to offer a client ADSL access only (high-speed), without a telephone service.

Shared-cost service: Service in which the cost is divided between the calling and called parties.

Shared revenue service: Service in which the called party receives a payment from the telecommunications service provider.

Shelter: Facility designed to house an operator's equipment, in connection with co-location for local loop unbundling

Signalling: On a telecommunications network, signalling supports the exchange of the internal network data needed for call routing. It can be compared with the road signs on a road network. It includes the information required to identify the user for billing or calling line identification. When carried out by the network that carries the calls to subscribers, it is integrated in the exchange. It can also be performed by a separate network, called the semaphore network.

Single trunk exchange interconnection: Service listed in France Télécom's interconnection offer. It enables an operator interconnected at a trunk exchange to reach the subscribers served in that trunk's exchange area, which usually means approximately two million lines.

SMG (Special Mobile Group): ETSI (q.v.) committee responsible for mobile communications work.

SMS (Short Message service): Service that enables text messages to be received on a mobile telephone.

SNG: Satellite News Gathering.

S-PCS: Satellite Personal Communication Services.

Speed: The amount of data passing through a network during a given period.

SPIROU (Signalisation Pour l'Interconnexion des Réseaux Ouverts): New signalling interface developed by the French interconnection committee at ART's initiative, in order to adapt the French network to the ETSI European standard, ISUP. This interface comprises the specifications governing the signalling of basic telephone call commands, advanced services and functions, interworking functions with user access signalling and intelligent network protocols.

Standard interconnection offer: Technical interconnection offer and prices that operators designated by ART as having significant market power, pursuant to Article L. 36-7 of the posts and telecommunications code, are required to publish annually so as to enable

other operators to establish their own commercial offers and prices. The standard interconnection offer also sets out the conditions governing physical interconnection between the incumbent and other operators.

Switch: An assembly of switching devices used to route calls to their destination by establishing temporary connections between two telecommunications network circuits, or by routing data packets. France Télécom's network comprises a hierarchical system of exchanges. The higher the exchange in this system, the greater the number of subscribers it serves.

Switching: On a telecommunications network, switching means routing traffic by setting up temporary connections between two or more network points. This is done by devices located at different locations on the network, called switches (or exchanges). The basic structure of a telecommunications network therefore comprises transmission media, interconnected by exchanges. "Packet" and "circuit" switching are two techniques used by telecommunications networks. The first is used by IP networks, and the second by traditional networks (PSTN).

TBR (Technical Basis for Regulation): Harmonised standard established by ETSI (q.v.). TBRs are used as the basis of technical regulations, which lay down the essential requirements with which terminal equipment must comply.

Telecommunications: Transmission or reception of signs, signals, text, image, sound or other information, by wire, optical fibre, radio or other electromagnetic means.

Télétel: Database consultation service offered by France Télécom using Minitel teletex terminals.

Terminal equipment: Equipment intended to be connected directly or indirectly to the termination point of a network in order to send, process or receive information. e.g. telephone, fax, modem, etc.

Third-party billing: Service enabling new operators to entrust the incumbent with billing for the services offered to their customers via interconnection. In the case of special services, third-party billing cannot be used for services that are free for the caller, but only for those that are charged. As the market develops, this service is essential for effective competition.

Third-party collection: Interconnection service, which enables a network operator to collect traffic from the incumbent's network on behalf of another operator that does not have infrastructure in the geographic area concerned. This service is particularly used by L.34-1 licensed telephone service providers wanting to provide their service over an extensive area without having to roll out a network.

Totally unbundled access to the local loop: Allowing a beneficiary to access France Télécom's local loop with full use of the frequency spectrum available on the twisted metallic pair.

Transmission: On a telecommunications network, transmission is the carriage of information from one network point to another. The medium used may be copper cables, optical fibres or radio relays.

Trunk exchange: See Local Exchange.

UMTS (Universal Mobile Telecommunications System): European-standard third-generation mobile telecommunications system, designed to support a wide range of services. At ITU level these systems are called IMT 2000.

Unbundled access to the local loop: See Local Loop Unbundling

Universal service: Principle component of the public telecommunications service, defined by

law. Its includes the provision of a telephone service to all at an affordable price, the carriage of emergency calls free of charge, the provision of an information service and a directory in printed and electronic form, and the supply of public phone booths on the public domain. It also sets out special technical conditions and prices for disabled and low-income users.

Virtual co-location: For unbundling, a type of co-location in which the unbundling operator's equipment is managed by France Télécom and installed alongside France Télécom's equipment.

Virtual Private Network: Network facility provided over one or several public networks for a closed user group. It responds to a need for both internal communication (within the user group), and external communication (to public network users). For businesses whose sites are spread over a wide area, the virtual private network can function like a private network, with its own private numbering plan. In this case it is an attractive alternative, as it saves the business from investing in a costly private automatic branch exchange (PABX).

Voice telephony: The ONP "voice telephony" directive of 26 February 1998 defines voice telephony as "a service available to the public for the commercial provision of direct transport of real-time speech via the public switched network or networks, such that any user can use equipment connected to a network termination point at a fixed location to communicate with another user of equipment connected to another termination point." The term "voice telephony" is used in Community directives to designate the traditional Plain Old Telephone Service.

VSAT (Very Small Aperture Terminal): Satellite telecommunications services using a narrow part satellite capacity and a very small transmitter-receiver for low or medium speed data transmission.

WAP (Wireless Application Protocol): Standard for using the Internet via mobile telephones. It deals in particular, with the use of a suitable content format. This new communications protocol is part of the process of incorporating Internet applications into GSM mobile networks.

Wireless local loop: Local loop network where the traditional copper wires are replaced with wireless network technology, giving greater flexibility in infrastructure deployment.

Wireline network: Network using metal cables or optical fibres as a transmission medium.

WLAN: Wireless Local Area Network.

WRC: World Radiocommunication Conference. International coordination in the field of Radiocommunication. This coordination is essential because frequencies have no national boundaries and it is simpler to have the same type of service in the same frequencies. Organised in connection with the ITU, this conference is held every three years. The results, once incorporated into radiocommunications regulations, constitute international treaty. Prior to the conference, the Radiocommunication Assembly is held. After the conference, a preparatory meeting is held to prepare for the next conference. In 2000, 2,363 delegates from 150 member states and 95 organisations such as manufacturers, operators and international and telecommunications organisations attended.

Zero Chamber: In the case of remote co-location, facility giving operators access to distribution frame cables and France Télécom premises.

Table of contents

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