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Part

CHAPTER 3

Regional development

A. State of national coverage

Regional digital development is a major economic and societal issue for France. Digital networks, and the Internet in particular, are not only significant in terms of their ability to stimulate economic momentum and competitiveness (more accessible/better disseminated information, eradicating distance issues, minimizing turnaround time, increased reactivity, etc.), they are also central components of social organisation and welfare – enabling everyone to communicate anywhere, anytime.

Aware of the growing interdependence of networks and individuals, government agencies and local authorities are combining their efforts to ensure that the greatest number of French citizens can benefit from the dividends of the digital revolution. As stated by the legislator¹ and reiterated on several occasions by the European Commission, the best way to achieve this goal is by improving mobile telephony and fixed and/or mobile high-speed Internet coverage.

¹ - CPCE Article L-32-3.

To this end, the Authority ensures that mobile operators are meeting their commitments in terms of providing coverage for 2G (essentially voice) and 3G (high-speed mobile) services, and has made decisions that have enabled operators to optimise network rollout, particularly for third generation networks (GSM frequency reuse for 3G, sharing 3G infrastructure).

On the matter of providing every citizen with high-speed fixed access, ARCEP is working in concert with operators and local authorities to find technical and financial solutions that will allow the most isolated residents to connect to the global network at a minimal guaranteed speed.

1. Mobile telephony

◆ 2G (GSM and Edge systems)

At the end of 2008, all three of the country's mobile operators were covering close to 99% of the population. They are making ongoing investments to ensure nationwide coverage – notably as part of the “dead zone” programme, and to comply with their obligation to cover major transportation arteries, which must be achieved by the end of 2009.

ARCEP has implemented a survey mechanism that makes it possible to verify the accuracy of the coverage maps that operators publish on their websites. Moreover, in accordance with the provisions contained in the Law on modernising the economy², on 4 August 2009 ARCEP will publish a *“global assessment of national mobile telephony coverage levels, and particularly the outlook for reducing those areas not covered by all second generation mobile radiocommunication operators”*.

² - Cf. Article 109-V of Law no. 2008-776 (Law on modernising the economy) of 4 August 2008, JO dated 5 August 2008.

◆ 3G (UMTS systems)

By the end of 2008, Orange and SFR were each covering 70% of the population and Bouygues Telecom more than 20%³. To improve this coverage, ARCEP has authorised the operators to deploy UMTS in the 900 MHz frequency band in Metropolitan France, starting in February 2008. The reuse of these frequencies for 3G is central to increasing national coverage levels. Operators must now meet the coverage objectives stipulated in their licences, namely 98% of the population by the end of August 2009 for Orange and SFR, and 75% by December 2010 for Bouygues Telecom. In addition, ARCEP devoted efforts to the issue of 3G infrastructure sharing in 2008 to determine under what conditions this technical solution might enable increased 3G coverage.

³ - Bouygues Telecom announced in early 2009 that it had achieved 70% coverage of the population.

1.1 Completing nationwide 2G (GSM) coverage

Providing the population with 2G service coverage

The GSM (2G) licences that ARCEP issues to operators contain coverage obligations. The coverage levels announced by the operators are illustrated on maps that they publish on their websites and whose accuracy is verified by the Authority.

The terms of renewal for Orange and SFR's 2G licences in 2006 included the obligation to cover at least 99% of the population.

Bouygues Telecom will be subject to the same obligation when the time comes to renew its 2G licence, which should be in late 2009.

As it stands, all three 2G operators are reporting a coverage level of around 99% of the population. Overall, 96.5% of the population is covered by all three mobile operators, 2.6% by one or two operators (grey areas) and 0.9% still have no coverage at all (dead zones).

1.1.1 The “dead zone” programme

The dead zone programme (*programme zones blanches*), launched by the government in 2003, aims to provide (2G) mobile telephony coverage in the 3 000 towns of France where none of the three operators were present when the national agreement was signed on 13 July 2003. As the initial 2007 deadline for this programme was not met, it was pushed to the end of 2011.

The dead zone programme is broken down into two phases:

- ◆ Phase I, to which public funding of €44 million has been allocated for passive infrastructure, and whose target is to cover some 1 800 towns with 1 250 sites;
- ◆ Phase II, which is funded entirely by the operators, has the target of covering 1 200 towns with around 930 sites.

As a signatory of the national agreement in 2003, the Authority is an active member of the programme's technical steering committee, which meets on a regular basis under the chairmanship of the Minister responsible for regional development to monitor the progress being made by the programme and to define concrete actions to be undertaken to help the programme run smoothly.

At the end of 2008, 2,801 towns had been covered thanks to the plan, or more than 95% of the towns identified in 2003 (95% of the Phase I towns and 95% of the Phase II towns). Service still needs to be brought to around 100 sites for the programme to be complete. Deployments in a great many of these sites are encountering operational problems, notably in terms of acquiring sites or site licences.

Following a survey performed in 2008 by the inter-ministerial delegation for regional development and competitiveness, DIACT⁴ (*Délégation interministérielle à l'aménagement et à la compétitivité des territoires*), under the aegis of the prefects, it emerged that 364 municipalities were overlooked in the initial survey performed in 2003. Operators committed to covering these remaining municipalities by the end of 2011 (of which 80% by the end of 2010), and will finance the extension of the programme themselves.

In 2009, ARCEP will continue to participate in the dead zone steering committee to monitor the progress being made in mobile coverage.

1.1.2 Informing consumers

When renewing their GSM⁵ licences, the Authority imposed an obligation on operators to provide greater transparency on their network coverage, notably through the publication of detailed information on national coverage and the performance of annual coverage surveys, in accordance with methods specified by the regulator⁶.

The objective here is two-fold:

- ◆ to inform consumers;
- ◆ to encourage operators to increase their national coverage.

Since 1 October 2007, operators have been publishing coverage maps on their respective websites in accordance with the ARCEP decision. These maps are available online at the following addresses:

- ◆ Bouygues Telecom: www.couverture.bouyguestelecom.fr;
- ◆ Orange France: <http://couverture-reseau.orange.fr>;
- ◆ SFR: www.sfr.fr/assistance/reseau-sfr-france.

4 - Inter-ministerial delegation for regional development and competitiveness, DIACT (*"Délégation interministérielle à l'aménagement et à la compétitivité des territoires"*).

5 - The SFR GSM licence was renewed on 31 January 2006 (ARCEP Decision no. 06-0140); Orange's licence on 14 February 2006 (ARCEP Decision no. 06-0239) and Bouygues Telecom is due to have its licence renewed in 2009.

6 - ARCEP Decision no. 07-0178 of 20 February 2007, specifying the terms for publishing the information concerning coverage and setting the protocol for the mobile network coverage surveys.

7 - Available on the ARCEP

website:

<http://www.arcep.fr/>

[fileadmin/reprise/dossiers/
mobile/couv-2007-2008/
result-mesures-couv-
mobile-op-2007.pdf.](#)

8 - Detailed results are available on the ARCEP

website:

<http://www.arcep.fr/>

[fileadmin/reprise/dossiers/
mobile/couv-2007-2008/
protocole-eval-couv-
annx2-07-0178.pdf.](#)

9 - ARCEP Decision no. 08-0288 of 11 March 2008.

The operators are responsible for the accuracy of these maps. The information is validated in the field according to a public-survey protocol. Every year, operators must perform a coverage survey of 250 districts chosen by ARCEP. As the survey protocol is public⁷, any person or local authority can perform a complementary survey.

In March 2009, the Authority published the results of the surveys performed in 2008 by Orange France and SFR. Carried out in 11 regions, these surveys revealed that the published maps were quite accurate⁸.

New field surveys of 250 new districts in the 11 other regions were performed in 2008⁹. This year, in preparation for the renewal of its GSM licence in late 2009, Bouygues Telecom joined Orange and SFR in conducting these surveys – the results of which were also published by ARCEP in late March 2009.

1.2 Enabling 3G (high-speed mobile) rollouts**Providing the population with 3G service coverage**

The UMTS (3G) licences that ARCEP issues to operators contain coverage obligations. ARCEP ensures that operators are working to meet these obligations.

Orange and SFR, which have held a UMTS licence since 2001, launched their 3G services commercially in late 2004 and had achieved 58% and 60% of the population, respectively, by the start of 2006, in accordance with their revised obligations. In March 2004, ARCEP postponed the initial coverage deadlines imposed on the operators by several months as they were deemed too ambitious in light of the technical-economic situation. Bouygues Telecom, which was awarded a 3G licence in 2002, was to launch its services and reach at least 20% coverage of the population by April 2007. Noting that it had failed to do so, ARCEP issued the operator an official order to comply with this objective by the end of 2007, which it did.

Upcoming deadlines contained in the operators' coverage obligations include:

- ◆ 98% of the population by 21 August 2009 for Orange;
- ◆ 99.3% of the population by 21 August 2009 for SFR;
- ◆ 75% of the population in December 2010 for Bouygues Telecom.

Orange and SFR currently cover more than 70% of the population with 3G services. In spring 2009, Bouygues Telecom announced that it had achieved 72% coverage of the population.

1.2.1 Reuse of the 900 MHz frequency band for 3G**Why favour the low frequencies for regional development?**

Not all radio waves are created equal when it comes to propagation. Very simply put, the higher the frequency, the quicker the signal loss as it travels, and the lesser its ability to penetrate inside buildings.

Therefore, as the frequency increases, so does the amount of equipment (towers and masts) that needs to be installed to cover a given area (including inside user premises) with an optimal quality of service (maximum signal quality, fluid communication). This means not only an added cost but also certain measures to ensure public safety.

Frequencies in the bands below 1 GHz have more efficient propagation properties. This is why the ability to use low frequencies (900 MHz band from GSM systems, 800 MHz band from the digital dividend) is central to achieving digital regional development.

The reuse of the 900 MHz frequency band, which was initially assigned to GSM (2G) systems, is a major asset for speeding up the deployment of 3G to the entire population. The propagation properties of the 900 MHz frequency band in fact make it possible to cover the whole country, and particularly rural zones, more efficiently than with the 2.1 GHz frequency band allocated to UMTS (3G standard) – thereby helping to reduce the number of towers that need to be installed.

The calls for candidates in 2000, 2001 and 2007 for the introduction of the 3G in France thus provided for the possibility of reusing the 900 and 1800 MHz frequencies for 3G to facilitate its deployment across the country. They specify that the use of these frequencies for 3G systems was correlated with the principle of equal access to spectrum for all 2G and 3G operators, including a new entrant. The principles governing the reuse of these frequencies were included in the three mobile operators' GSM licences in 2002, and the terms of their implementation were defined when the licences came up for renewal.

On 5 July 2007, ARCEP published guidelines for the reuse of the 900 and 1800 MHz frequency bands for 3G. These guidelines state that operators wanting to reuse the 900 MHz frequency band for delivering 3G services could do so starting in 2008. They also state that a possible new 3G operator with a licence to the 2.1 GHz band would have access to a UMTS carrier in the 900 MHz band.

In February 2008, ARCEP specified the terms for implementing these guidelines. It also made changes to the SFR¹⁰ and Orange¹¹ licences, at the operators' request, to allow them to deploy UMTS technology in the 900 MHz frequency band in Metropolitan France. When queried by ARCEP on this matter, Bouygues Telecom indicated that it would also be deploying UMTS in the 900 MHz band before the end of 2009, and that it would request an amendment to its decision in due course.

1.2.2 Sharing 3G infrastructure

As UMTS is making real strides, with more than 7.5 million active customers, it is imperative that operators achieve the rollout obligations contained in their 3G licence. They have all the means to do so at their disposal: in addition to the ability to reuse 900 MHz frequencies that are currently being employed for GSM, they also have the option of sharing 3G network infrastructure.

There are several different schemes infrastructure sharing schemes which involve:

- ◆ either sharing passive infrastructure (i.e. civil engineering structures, central offices, air conditioning, electrical power...);
- ◆ or active infrastructure, including the passive elements and "active" electronic equipment that contains the network's intelligence.

Sharing passive infrastructure, generally radio sites, is already a common practice amongst mobile operators.

10 - ARCEP Decision
no. 08-0228 dated
26 February 2008
amending Decision
no. 06-0140 authorising
SFR to use spectrum in
the 900 MHz and
1800 MHz frequency
bands to establish and
operate a radio network
open to the public.

11 - ARCEP Decision
no. 08-0229 dated
26 February 2008
amending Decision
no. 06-0239 authorising
Orange France to use
spectrum in the 900 MHz
and 1800 MHz frequency
bands to establish and
operate a radio network
open to the public.

12 - Cf. article 119 of Law no. 2008-776 (Law on modernising the economy) of 4 August 2008, JO dated 5 August 2008.

On the matter of sharing active infrastructure, the Law on modernising the economy¹² stipulates that to “*facilitate increased nationwide coverage for third generation mobile radiocommunications, following a public consultation [...]*,” ARCEP “*will determine the terms and extent of a system for sharing third generation mobile electronic communications networks, and notably the population coverage threshold beyond which this system will be implemented*”. Because infrastructure sharing is already authorised in France, this provision implies a re-examination of the infrastructure sharing question to facilitate 3G rollouts.

In accordance with the Law, on 9 December 2008 ARCEP opened a public consultation on 3G infrastructure sharing in Metropolitan France. The consultation ended on 23 January 2009 and, in April 2009, the Authority published a summary of the responses received. Based on these responses to the consultation, ARCEP made a decision setting the terms under which 3G infrastructure sharing would be implemented in Metropolitan France.

2. High-speed access: the regional digital development challenge

State of broadband development across the country

ADSL

As of 31 December 2008:

- ◆ there were 17.725 million broadband Internet subscriptions in France (+ 14% in a year), of which 16.825 million via DSL¹³ and 900 000 using other available technologies (cable, satellite, fibre...);
- ◆ all France Telecom exchanges (MDF or subscriber connection points) are equipped with ADSL, providing more than 98% of the population with access to ADSL;
- ◆ 3 877 exchanges were connected to an alternative operator's network, allowing more than 75% of the population to have access to unbundling.

Cable

At the end of 2008, cable passed 9 million homes in 1 300 municipalities. We can therefore infer that, as of that date, cable accounted for 5% of high-speed Internet subscriptions in France.

Other available technologies

Other technologies have also been deployed, particularly as part of public-initiative networks created by local authorities, whose purpose is to provide broadband coverage in areas where none exists. Wi-Fi, WiMAX and satellite are the main technologies. No measurement of the coverage provided by these technologies is available as yet, given the number of parties and projects involved and the fact that the situation is evolving constantly.

13 - Source: ARCEP broadband observatory, figures as of 31 December 2008, available (in French) at: [//www.arcep.fr/fileadmin/reprise/observatoire/haut-debit/trim03b-2008/obs-htdebit-t32008.pdf](http://www.arcep.fr/fileadmin/reprise/observatoire/haut-debit/trim03b-2008/obs-htdebit-t32008.pdf).

1.7% of the population (550 000 households) remain ineligible for broadband due to the length of their phone line, or the presence of a multiplexer. This means that, in a département of 500 000 inhabitants, some 5 000 households will continue to be deprived of access if no action is taken. Depending on the département, these dead zones can represent more than 10% of the population.

The goal of achieving 100% coverage by 2012 was announced by the government in late 2008 when it unveiled the “France numérique 2012” (Digital France 2012) plan.

The solution of extending the universal service mechanism to broadband was not included at this stage as it could well discourage initiatives by local authorities, which are highly involved in covering broadband dead zones, and have the capacity to eliminate a very sizeable portion of these dead zones..

The government plan does, however, plan for the creation of a “universal broadband” seal which is to be awarded to operators that meet the specifications, namely marketing an offer at less than 35 euros a month, including VAT (equipment included), throughout Metropolitan France. In early 2009, several operators announced just such an offer, based on satellite technology.

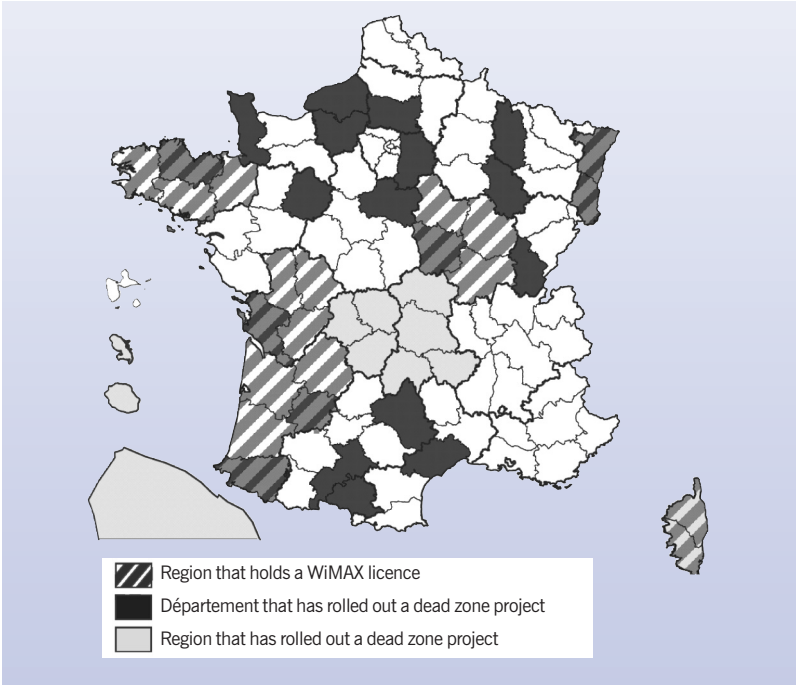
Local authorities are also involved in a number of projects, generally on a departmental scale, whose goal is to bring coverage to broadband dead zones by employing several technologies. The rollout of these projects is underway.

2.1 Public-initiative networks (RIP) devoted to covering dead zones

In response to the powers afforded them in 2004, a great many local authorities have been involved in eradicating their broadband dead zones. On a national scale, half of the people living in areas deprived of coverage are potentially concerned by a public-initiative network. Public-initiative networks that contain a “dead zone” component have managed to bring service to around 80% of households that had not previously been covered.

Local authority projects tend to rely chiefly on terrestrial solutions for bringing coverage to dead zones, whether wireless (Wi-Fi, WiMAX) or wired (reconfiguration of the telephone network). A project typically costs between 5 and 10 million euros per département to fully eradicate all of the dead zones within three years (of which less than 5% using satellite solutions). Most projects were able to obtain financial support from the FEDER development fund, which covered between 20% and 30% of the cost. As a complementary solution, and to bring service to the remotest areas, public-initiative networks can make use of satellite solutions.

Local authority “dead zone” projects



2.2 Available technologies

Several technologies are available to help provide coverage to the 550,000 lines that still do not have access to a fixed broadband solution. Among these technologies, a distinction can be made between:

- ◆ wired solutions, notably the reconfiguration of the France Telecom local loop which makes it possible to render most lines eligible;
- ◆ wireless solutions such as Wi-Fi, WiMAX and satellite systems.

There is no one solution, however, that is capable of singlehandedly covering all of the broadband dead zones under entirely satisfactory economic and/or technical conditions. Moreover, aside from satellite, traffic collection and the costs associated with it, is a central economic component in the eradication of dead zones and needs to be taken into account when planning a project.

2.2.1 Wired technologies

The telephone network was not designed initially to deliver broadband Internet access. The excessive length of certain lines, and the presence of multiplexers, are the main causes of ineligibility for the 550,000 households that still do not have access to broadband via ADSL.

The main wired solution therefore lies in reconfiguring the France Telecom local loop. This involves shortening the lines by bringing DSL signal transmission equipment to the sub-distribution cabinet level. Since June 2007, France Telecom has been offering a solution called “NRA ZO” for creating a connection point for subscribers located in dead zones. Alternative operators can also market this solution using a France Telecom wholesale offer.

The NRA ZO solution consists of shortening the phone lines by installing the DSLAM at the sub-distribution cabinet level. Operators can offer this solution to local authorities, which will finance all, or a portion of the work, and become the owners of the newly installed infrastructure. This solution can only be employed, however, if the affected cabinet has a minimum number of ineligible lines. In its current version, this offer cannot be used to re-qualify all of the copper pairs.

Based on the results of pioneer projects, the investment involved is substantial: around 50,000 euros per cabinet, plus around 150 000 euros for an optical fibre collection network.

Another solution for reconfiguring the local copper loop in order to cover dead zones involves accessing the local sub-loop. Following the adoption of the Law on modernising the economy¹⁴, a number of local authorities wanted to have access to this option, chiefly to enable an increase in service speeds in their region. Work is underway on putting several different solutions in place for accessing the local sub loop

14 - Law no. 2008-776
(Law on modernising
the economy)
of 4 August 2008,
JO dated 5 August 2008.

2.2.2 Wi-Fi

In France, Wi-Fi (wireless network based on the IEEE. 802.11x standard) uses the 2.4 or 5 GHz frequency band and enables theoretical bitrates of up to 54 Mbps over a short distance.

Wi-Fi offers several advantages:

- ◆ it operates over frequency bands that do not require a licence, which makes it easier for newcomers to enter the market;
- ◆ low equipment costs. Wi-Fi-based coverage projects are relatively economical, aside from collection. The total cost per customer is between 900 and 1 700 euros depending on the number of customers per deployed station (more or less densely populated areas).

On the other hand, the speeds that Wi-Fi solutions can deliver are limited and, in practice, require users to share the bandwidth. In rural settings, the speed of the service that can be provided will be undermined by severe restrictions such as the distance that needs to be travelled, any particular geographical features and vegetation, all of which will reduce the bitrates. The inability to deliver high speeds over long distances therefore means that use of Wi-Fi will be confined to covering a concentration of households, such as a hamlet or a village.

Lastly, traffic collection requires all of the installed base stations to be connected, which considerably increases the total cost of deploying a Wi-Fi solution.

2.2.3 Le Wimax

WiMAX makes it possible to cover a zone spanning more than ten or so kilometres, with a service running at over 2 Mbps. It performs best over distances of less than 15 km, however, with outdoor equipment that has a clear line of sight.

WiMAX solutions also require a sizeable investment. Operators involved in this type of project report an investment budget of around 6 million euros per département for covering dead zones. The elements gathered from the different public projects implemented by local authorities contain considerable disparities, and depend a great deal on the number of households to cover and whether or not the infrastructure component includes an optical fibre collection network.

2.2.4 Satellite

Several satellite-based offers have been available or announced since Q1 2008. Operators now market offers built on two-way solutions that do not require a phone line for the uplink. The speeds and prices are similar to those found in the ADSL access market (aside from the reception equipment and its installation).

Satellite can offer an appealing solution for covering dead zones, from both a technical and economic standpoint:

- ◆ downlink speeds are equal to or above 512 kbps and uplink speeds are equal to or above 96 kbps;
- ◆ the service is available everywhere in the country;
- ◆ operators cover the infrastructure investment costs.

Nevertheless, satellite solutions also have inherent limitations that prevent them from being the sole and definitive solution:

- ◆ in the short term, these solutions do not have the capacity to service all ineligible households;
- ◆ the cost of the hardware for subscribers (modem and satellite dish) and their installation is still high: between 400 and 600 euros – although operators have announced an upcoming decrease in the price of terminals to around 250 euros;
- ◆ bandwidth costs are still high, which limits the speeds available to users;
- ◆ and, finally, these solutions need to contend with physical limitations tied to the satellites' geostationary orbital position: 36,000 km. At this distance, communication has a latency of close to 600 ms, which makes certain services less functional, and even impossible to deliver.

Satellite can offer an appealing solution for covering dead zones and completing regional coverage, particularly in those areas where terrestrial solutions would be too costly to deploy. Some local authorities have already chosen these solutions to satisfy the needs of the most isolated households, and have introduced measures for helping to subsidise the cost of the reception equipment for some of their residents.

2.3 Importance of collection networks

If eradicating dead zones consists of installing service provision networks that make it possible to route the service to the user's home, then collection networks – located upstream from the local loop, and operating on a departmental or regional scale – are decisive in determining operators' capacity to roll out service delivery solutions.

In the case of public-initiative networks, it appears that most projects led by local authorities include an optical fibre collection network that allows them:

- ◆ to combine local broadband coverage objectives and objectives concerned with creating a broader competitive offer for residential and business users;
- ◆ to include a response to the needs of local public services in the scope of the project: providing the region's public establishments, the local authority's different departments, etc. with a direct optical fibre connection;
- ◆ to target business parks which are often located on the outskirts of the most densely populated areas but do not necessarily benefit systematically from the electronic communications infrastructure and services adapted to the needs of their enterprises;
- ◆ more specifically, to address the matter of dead zone coverage more effectively: providing coverage in dead zones supposes the deployment of new access solutions, or alterations to the incumbent carrier's local loop. Here, the existence of a collection network will make it less costly to address this problem, and even to make it economically sustainable for the local authority;
- ◆ to anticipate the region's future regional digital development needs, notably higher speed services.

2.4 Increased service speeds in the regions

The question of increasing service speeds in the regions is now becoming inextricably bound up with the question of providing coverage in broadband dead zones. Users want to have access to broadband, but also to enough bandwidth to satisfy growing needs for exchanging data over the Internet. They also want to be able to take advantage of bundled offers (Internet, telephone, TV, VOD, etc.), which require higher speed solutions. This is why, in autumn 2008, a number of local authorities requested that the Authority turn its attention to this issue, and asked that it implement access to France Telecom's local sub-loop (the sub-distribution cabinet, located between the exchange and the user).

As it shares local authorities' concerns of helping increase service speeds, in February 2009 ARCEP requested that France Telecom inform it of the different technical solutions identified for implementing access to the local sub-loop by summer 2009. A tracking system, which involves all of the stakeholders (operators, contractors, local authorities), was created. A process for performing technical trials on the different solutions has been put into place, and an analysis of their economic implications is being performed.

B. Local authority actions

With the adoption of the Law of 21 June 2004¹⁵ on confidence in the digital economy, local authorities have been endowed with wider powers in the area of electronic communications. Since the law was enacted, these powers have allowed them to establish active networks, engage in the business of operator and provide services to end users under certain conditions, when private initiatives prove inadequate over the long term¹⁶.

In 2008, as a corollary to the actions being taken by local authorities in the area of regional digital development, ARCEP has:

¹⁵ - Law No 2004-575 of 21 June 2004 concerning confidence in the digital economy (LEN), JO of 22 June 2004.

¹⁶ - Cf. Article L.1425-1 of the local and regional collectivity code, CGCT (Code Général des Collectivités Territoriales), introduced by the Law on the digital economy of 21 June 2004.

17 - Cf. Article 118
of Law no. 2008-776
(Law on modernising the
economy) of
4 August 2008,
JO of 5 August 2008.

- ◆ published an assessment of the actions taken by local authorities in the electronic communications sector, addressed to Parliament and the Government, in accordance with the provisions contained in the Law on modernising the economy of 4 August 2008¹⁷;
- ◆ continued its efforts in tandem with public and private sector players within the public-initiative networks committee, CRIP (*Comité de réseaux d'initiative publique*), in particular those devoted to:
 - broadband dead zone coverage;
 - ultra high-speed access;
 - the role that local authorities will play in developing new optical fibre access networks.

1. ARCEP performed an assessment of local authorities' actions for Parliament and the government

18 - Cf. Article 118
of Law no. 2008-776
(Law on modernising the
economy) of
4 August 2008,
JO of 5 August 2008.

The Law on modernising the economy¹⁸ stipulates that *"the Electronic communications and postal regulatory authority shall submit a report to Parliament and to the Government by 31 December 2008 which provides an initial assessment of local authority involvement, pursuant to Article L. 1425-1 of the local and regional collectivity code, CGCT. This assessment will specify the impact of this involvement in terms of national coverage levels, the development of competition, prices, the services on offer, and the various legal formats this involvement has taken. It will also include an analysis of the different means that are capable of ensuring broadband Internet access for all, and the possible ways of financing this access."*

As part of this assignment, ARCEP commissioned a study from the Sorbonne Economic Centre, CNRS (*Centre d'économie de la Sorbonne*) and the firm AVISEM, for quantifying the impact of local authority involvement and, on 3 December 2008, the public-initiative networks committee (CRIP) held a seminar devoted to this issue to gather feedback from local authorities.

This report revealed that:

- ◆ the impact of public-initiative networks has translated into both an expansion of unbundling and better service in business parks;
- ◆ developing competition helps to improve coverage;
- ◆ public initiatives can have a gearing effect on private investment;
- ◆ local authority involvement is grounded in a flexible and adapted legal framework;
- ◆ local authorities have benefited from the expansion of their powers in the area of electronic communications.

This report also underscored local authorities' focus on increasing service speeds in their areas in the coming years.

1.1 Impact of public-initiative networks

Based on an in-depth study of ten public-initiative projects, and of two regions which did not engage specifically in any such projects, the assessment revealed two central conclusions:

- ◆ close to 40% of central offices unbundled to date, representing 4.6 million lines, thanks to a public-initiative network. Of this total, 2 million lines would never have been unbundled without local government involvement. As to the remaining 2.6 million lines, this involvement allowed the central office to be unbundled faster than private initiative alone would have. Local authorities thus helped to compensate for a geographical handicap in France and to push France up to the top of the ranks amongst European countries, with a rate of LLU coverage of close to 75%;
- ◆ more than 2 000 business parks are covered with optical fibre via public-initiative networks. In these zones, businesses are charged prices that are 20% to 50% lower than the average regular price, and penetration levels for alternative operators' ultra high-speed services have increased tenfold.

Local authority networks geared to bringing broadband coverage to dead zones cover more than 80% of the affected population in these regions. At the national level, local authorities involved in this type of programme represent close to half of the population located in a broadband dead zone.

1.2 Competition and coverage go hand in hand

Even if it is often more lively in more densely populated areas, competition is an economic and technological touchstone that benefits the entire country. It also provides an incentive for the existing operator to differentiate itself by rolling out new services or expanding its coverage.

By increasing competition, local authorities are helping spur market momentum and broaden coverage, both locally and nationally. From a practical standpoint, the goals of coverage and competition overlap to a great extent: for instance, an optical fibre collection network can not only connect central offices to enable unbundling but also provide government offices and business parks with ultra high-speed access, and collect traffic from broadband dead zone coverage networks, which helps bring down the cost of these projects.

1.3 Public initiatives have a gearing effect on private investment

Local authority involvement – which has been occurring since 2004, chiefly in the form of public service delegations – has acted as a significant catalyst to private investment. On average, every euro of public subsidy has led to over a euro being invested by a private partner. In total, 1.4 billion euros have been invested in the 56 main projects. The other effects include the emergence of local operators thanks to coverage of business parks and several ultra high-speed network rollouts by operators that were made possible by the rental of ducts from local authorities.

1.4 A flexible and balanced legal framework

Local authority involvement has taken a variety of forms, and has occurred within an ever-changing technological and competitive landscape. The positive outcome of this involvement derives in large part from a legal framework and structures that are both efficient and adapted to the situation.

Article L. 1425-1 of the Local and regional collectivity code, CGCT (*Code général des collectivités territoriales*) provides local authorities with the flexibility needed to adapt their involvement to the local situation and to technological changes as they occur. The system has not created any notable redundancies in public investments, while upholding the principle of allowing local authorities a freedom of choice.

The European Commission has issued opinions on this topic on several occasions, either approving or forbidding local public projects across Europe – depending on their compatibility with the State subsidy system.

1.5 Increased capability of local authorities

A public project is a major and lengthy undertaking, spanning from a local feasibility report, through the selection of a partner and overseeing that partner's work and, finally, to supervision of the project's operation and possibly its expansion. It supposes a command of the technical, legal and regulatory environment as well as the local authority's firm commitment to mounting the project and to maintaining a constant dialogue with the private partner.

Local authorities have been equipping themselves with the skills needed to perform these tasks since 2004. In many cases, dedicated teams have been created. Thanks to the involvement of elected officials, the projects have been integrated into local authorities' different regional development projects.

The players' involvement in CRIP has made it possible to achieve a confluence of three conditions which are crucial to efficient local government involvement in a competitive and innovative sector: dialogue between public and private players, the establishment of best practices as implemented by local authorities and the definition of technical-economic guidelines for local authority involvement, aimed at limiting disparities in local practices.

1.6 Local authority involvement helping to increase service speeds

The capacities of the networks used to supply broadband are structurally limited. To satisfy customers' demands for higher speed services, ultra fast broadband networks have begun to be deployed in the most densely populated areas. These deployments are very costly and their expansion across the country will necessarily be gradual. Outside of urban zones, the medium-term challenge is to extend fibre optic collection networks to bring them closer to customer premises. The goal is to enable higher bitrates while paving the way for fixed or mobile ultra high-speed solutions.

These rollouts will be able to be performed to an extent by combining public initiative and private investment, notably by extending existing initiatives. The creation of a fund for helping to cover local authorities' infrastructure and network study and investment costs would help speed up the transition to higher speed services.

2. Work performed in concert with local authorities within the public-initiative networks committee, CRIP

The CRIP

The public-initiative networks committee, CRIP (*Comité des réseaux d'initiative publique*), is a forum that allows players involved in regional digital development to meet and discuss the issues at hand. Created by ARCEP in 2004, CRIP members include local authorities, telecom operators, State institutions and, more generally, relevant public actors. The work performed by CRIP results in publications such as minutes, guidelines and handbooks for all audiences.

2.1 Covering broadband dead zones

Most of the efforts devoted to broadband dead zones in 2008 were focused on the issue of reconfiguring the France Telecom local loop, and particularly on the workings of the incumbent carrier's NRA ZO, "dead zone" subscriber connection point offer.

The NRA ZO solution is one of the technical solutions being rolled out in response to the need to cover those parts of the country that are still deprived of broadband access. Although the solution may be technically relevant – DSL is a proven technology, the impact of the solution is not confined only to ineligible lines, etc – the work performed by the CRIP nevertheless served to underscore the fact that implementing this solution does not eliminate the requirements that apply to the projects being carried out by local authorities: transparency, non-discrimination, compliance with the rules of competition and public contracts. With this in mind, the following recommendations were drafted for the implementation of the NRA ZO solution:

- ◆ consider this solution as a possible technical response, following a technology-neutral call for submissions;
- ◆ increase local authority awareness of the fact that this solution can be employed by alternative operators, and notably by public service contract assignees, which often operate at the inter-municipal level.

Discussions within the CRIP also revealed that the implementation of the NRA ZO solution could create several problems, for both local authorities and operators.

First, local authorities, which often deal directly with France Telecom, can commit to projects with no connection to other local public projects. A project that is confined to establishing dead-zone subscriber connection points nevertheless incurs recurrent high costs, which will necessarily postpone the project's ability to earn a return on investment, and can weigh financially in a lasting fashion on the expansion momentum through which the revenue earned in the first stage of the project finances the next stage.

In response to this conclusion, the work performed by the CRIP served as a reminder that this economic risk could be reduced by taking a more global approach – by also bringing service to business parks, for instance, and by relying on a collection network. In other words, a project that targets only dead zones will have trouble breaking even, and will therefore require substantial subsidies over the long term from partner operators.

Second, alternative operators – and notably public-initiative network service providers – also supplied an assessment of a wholesale offer which, from their perspective, was not effective. They reported several difficulties: a lack of transparency in turnaround time and costs, technical feasibility and order volume criteria viewed as discriminatory and, finally, restrictions in the hosting provided to third-party operators (including France Telecom) that were deemed excessive.

As concerns these issues, a reminder was issued indicating that the principle of an NRA ZO offer allowing alternative operators to respond to local authorities' call for submissions was incorporated into the France Telecom unbundling reference offer back on 11 June 2007. This "wholesale" offer was intended to allow public service contract assignees to offer this solution to local authorities under conditions comparable to those offered by France Telecom. Initial feedback from operators which have begun testing the solution pinpointed changes that needed to be made.

If the new version of the NRA ZO wholesale offer, which was published in September 2008, incorporated some of the necessary changes that were identified, it nevertheless emerged from the work performed by the CRIP that discussions needed to continue on the restrictions being imposed on alternative operators.

In addition to this work on the operation of the NRA ZO offer, the "dead zone" working group also devoted efforts to the new broadband satellite offers, and contributed to the production of a report on towers provided by local authorities. Completed in December, the purpose of this report was to provide local authorities with a set of technical and legal recommendations for the construction, supply and sharing of towers as part of the bid to eliminate broadband dead zones. The work performed by the CRIP helped identify local authorities' expectations in this area, and so to contribute to defining the specifications for this report.

2.2 Ultra high-speed networks (FTTH)

On the matter of ultra high-speed networks, the FTTH working group met on three occasions in 2008. It continued its efforts to define the issues inherent in local authority involvement in fibre-to-the-home (FTTH) network deployments. Its work led to the publication of FTTH rollout guidelines: *Points de repère sur le déploiement du très haut débit* in May 2008¹⁹.

¹⁹ - Available on the ARCEP website: www.arcep.fr.

This document indicates that local authorities already have the right to intervene and that their involvement can have a gearing effect on operators' investments in several ways:

- ◆ by acting in their capacity as managers of public property and public land;
- ◆ by installing and making available basic infrastructure (civil engineering structures, buildings) with the goal of enabling network deployments;
- ◆ or by being involved in network rollouts, but only in accordance with Community rules on State subsidies.

On the whole, on the matter of FTTH network rollouts, 2008 was marked by the adoption of the Law on modernising the economy which contains a provision for sharing terminating sections of the network which are economically impossible to duplicate. These include, but are not necessarily limited to, fibre inside buildings.

In 2009, the FTTH working group will apply its analyses to the methods used to implement sharing of the last drop, based on feedback from local authorities and their expectations in terms of providing homogeneous coverage to the different housing areas.

And, finally, in 2008 several local authorities confirmed their interest in developing residential ultra high-speed access solutions through endorsements of existing contracts or the establishment of new delegated public service contracts, in order to include fibre-to-the-home rollouts in their regional digital development project. The FTTH group will therefore continue to work on all of these issues in 2009.

2.3 Sharing civil engineering infrastructure for cable networks

Background

A cable company has a number of contracts with local authorities for establishing and operating cable networks in their area. The work performed by ARCEP with the players allowed it to inventory more than 500 contracts²⁰ signed between municipalities and cable operators. Some of these agreements can be qualified as delegated public service contracts.

Over the course of 2007, public authorities worked on bringing these agreements into compliance. The Law of 5 March 2007 concerning the future modernisation of audiovisual broadcasting and television²¹, completed existing provisions in support of this compliance.

Among other things, it mandates ARCEP to draft a report for making proposals that would help bring these agreements into compliance. Published in July 2007²², this report draws on elements supplied by the affected cable operators and local authorities within the CRIP.

20 - Corresponding to coverage of 1,300 municipalities in France.

21 - Law no. 2007-309 of 5 March 2007 concerning the future modernisation of audiovisual broadcasting and television, JO of 7 March 2007.

22 - Available on the ARCEP website: www.arcep.fr.

The work performed by ARCEP helped reveal a contractual practice that is being subject to different interpretations among the players. Such is notably the case with the qualification of delegated public service, in terms of the consequences it has on network ownership. It emerged in the ARCEP report that most of the contracts can be qualified as public service delegations. The elements that make up a cable network, and particularly the civil engineering infrastructure (ducts, cable drawpits), are the property of the delegating local authority and are part of the public property it controls. This civil engineering infrastructure, that may be owned by local authorities, constitutes an asset that is essential to the digital development of their region. The Authority recommends that local authorities maintain ownership of this asset, and not privatise this infrastructure.

The Law also confers on ARCEP the power of mediation to encourage compliance. Several municipalities solicited the Authority in this capacity in 2008, in particular to obtain information on the network that exists in their region. The cable operator did not want to respond, citing as its reason that it did not believe the request fell within the powers of mediation assigned to ARCEP.

And, finally, the Law stipulates that the process of bringing cable agreements into compliance was to guarantee the shared use of the public civil engineering infrastructure used for cable networks. This sharing of the infrastructure will affect the development of ultra-fast broadband. This is a major issue for local authorities as it allows them to increase their region's competitiveness by encouraging operators to

roll out services. This provision applies especially to cable networks that are established and/or operated as part of a public service delegation. In June 2008, ARCEP requested that Emmanuel Glaser, a member of the *Conseil d'Etat*, produce a report on the options available to local authorities for implementing this measure²³. It reveals that local authorities have considerable powers to apply this principle of shared use.

23 - "Mise en œuvre
du principe d'utilisation
partagée des
infrastructures publiques
de génie civil",
Available in the
appendices.

With the adoption of the Law on modernising the economy in 2008²⁴, Parliament provided for an operational system instigated by local authorities and their economic interest groups to apply the principle of shared use of public civil engineering infrastructure for cable. After the municipality decides to make its ducts available, the operator must satisfy all reasonable demands from third-party operators to provide access to the ducts it operates. Should the cable operator refuse, the municipality has the right to take full control of the ducts, in exchange for compensation, while leaving the cable operator the right of occupancy at a reasonable price. ARCEP can be called upon to resolve any disputes concerning the technical and financial terms of this shared use.

24 - Law no. 2008-776
(Law on modernising the
economy) of
4 August 2008,
JO of 5 August 2008.