RESULTS OF THE WORK DONE ON ACHIEVING UBIQUITOUS, HIGH STANDARD MOBILE COVERAGE FOR EVERY PERSON IN FRANCE

Arcep and Direction Générale des Entreprises document

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Users today have very strong expectations when it comes to mobile coverage. Mobile devices have become vital, everyday tools for connecting to the Web, and are steadily becoming the main channel for accessing communications, government services and digital services. As a result, **improving voice and data coverage has become a major issue.** The work that the Government, Arcep and operators are doing aims to achieve this, by **making regional development targets a priority** in the terms and conditions attached to the 900, 1800 and 2100 MHz band frequency licences that are set to expire between 2021 and 2024, and for which Arcep will be conducting a reassignment procedure in 2018.

Because this spectrum will not be made available to operators until 2021, 2022 or 2024, depending on the frequency band, **operators make commitments** for the interim period, which will be added to the terms of their existing licences **in 2018.**

All of these obligations, whether they require immediate commitments or are included in future licences[1], will be binding, and failure to meet them could result in sanctions from Arcep. They pertain, on the one hand, **to improving mobile voice and data services** and, on the other, to using **4G** to improve **fixed internet access.**

1 Mobile services

The following are required to meet regional digital development targets:

- heavily increase coverage obligations (part 1.1);
- provide solutions for improving indoor coverage (part 1.2);
- introduce additional obligations aimed at improving the quality of network services (part 1.3);
- strengthen network sharing obligations to accelerate the pace of achieving this objective (part 1.4).

1.1 Satisfy mobile coverage needs

This priority revolves around three courses of action:

- increase coverage thanks to a targeted coverage scheme (part 1.1.a);
- improve coverage on transport routes (part 1.1.b);
- accelerate and expand 4G coverage (part 1.1.c).

[1] Arcep will be holding a public consultation on this matter in the coming months.

a) Create a targeted coverage scheme

Operators' licences typically contain obligations that are expressed in terms of the percentage of the population that they must cover. These obligations do not make it possible to satisfy every citizen's requirements. As a result, **a paradigm shift** needs to occur in the obligations imposed on operators, to achieve **more closely targeted deployments**, and to satisfy expectations in the best way possible.

To this end, operators will have an obligation to improve coverage significantly and in a more localised fashion. To do so, **a scheme to have each operator cover 5,000 new locations**[2] will be put into action.

This will mean that, when an area is identified where it does not yet provide coverage, and where public authorities request that it improve its coverage, an operator will have an obligation:

- to deliver voice/SMS services and a superfast mobile service (4G);
    - at the latest 12 months after i) industrial land becomes available and is connected to the electrical grid by the regional authority, identified in concert with operators and ii) land use authorisations have been issued;
    - or within 24 months at the latest. This 24-month period takes into account the rollout simplification measures currently being planned by the Government.
- To **assume all of the costs** (active equipment, installation of a tower if necessary, backhauling, etc.)
- in situations where no operator provides good voice/SMS coverage[3] in the area in question, to engage in RAN sharing with all of operators involved in this scheme[4]; and in other instances to share, at the very least, passive infrastructure elements with the other operators that have been requested to perform rollouts in the area.

The aim of this scheme is to **replace the France Mobile programme**, by increasing the scale of its impact[5], while enabling local authorities to be more heavily involved.

To put the scheme into effect, a rate of deployment has been set, of a maximum 5,000 locations per operator to be covered. The Government will thus provide a list of the locations included in the scheme, of between 600 and 800 a year, per operator.

For every year in the life of the scheme, working in tandem with local authorities, the Government will establish the list of the areas to be covered. Of the 5,000 locations concerned, a portion (2,000) will aim to cover the more densely populated areas where no operator currently provides good coverage. Two thousand new towers, with four operators sharing the RAN, will therefore be installed in the areas identified based on coverage maps, in concert with local authority representatives. The other portion (3,000) could concern any type of location (inhabited areas, tourist areas, mountain regions, etc.), according to local elected officials' knowledge of the terrain, and the priorities the Government identifies each year. These locations could be areas where no operator currently provides coverage, or ones where some already do. In both instances, the objective will be for all operators to provide coverage in that location. The specific mechanics of the interaction between the

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[2] Which may well be covered by a single tower.

[3] I.e. the coverage maps defined by Arcep (cf. Arcep Decision No. 2016-1678 of 6 December 2016) : "able to make a call and send a text message outdoors in most instances and, in some cases, indoors". Definitions and Arcep coverage maps are available at: www.monreseaumobile.fr

[4] To the extent that RAN sharing would significantly diminish an operator's quality of service in certain areas, this operator will have the option of sharing only passive infrastructure elements with fellow operators, provided it assumes the resulting added costs of this decreased sharing for other operators.

[5] Which aimed to bring coverage to 1,300 locations in five years, thanks to substantial public funding.

requirements identified by local authorities and priorities identified at the national level will be defined in the coming weeks.

b) Improve coverage on transport routes

Regarding **priority transport routes**[6], Orange, SFR and Bouygues Telecom have committed to ensuring a base quality tier[7] of **voice/SMS and superfast mobile (4G) coverage by 2020**. This commitment will be written into their existing licences in 2018.

Regarding future 1800 MHz frequency licences that will be awarded once the procedure is complete, operators that have an obligation to provide 2G coverage along these routes, under the terms of the licences they were awarded before 2010[8], will be required to make a higher quality standard of these services – i.e. voice/SMS and superfast mobile (4G) – available[9], within a maximum 10 months of 1800 MHz frequencies becoming available (2021 or 2024 depending on the case, + 10 months). The other operators that are awarded 1800 MHz frequencies following the reassignment procedure will be required to meet this same obligation within 24 months of 1800 MHz band spectrum becoming available.

Regarding **the regional rail network**[10], operators that are allocated 1800 MHz band frequencies following the reassignment procedure[11] will be required to cover 90% of these lines by the end of 2025, to be able to provide Wi-Fi backhaul coverage inside the trains[12].

c) Ubiquitous 4G services on the entire mobile network

Operators will be required to provide a **superfast mobile services from every cell site by the end of 2020,** by making all of the their existing (2G/3G) sites, along with all of their new cell sites, 4G-capable. To ensure the availability of a high quality 4G service, 4G rollouts need to be backed by sufficiently robust backhaul capabilities (at least equal to the theoretical capacity of the radio equipment deployed at the cell site). In any event, operators will need to scale their sites in a way that ensures a service in sparsely populated areas that is reasonably equal in quality to the service they provide in the rest of the country.

By way of exception, the sites covered by the "**town-centre not-spots"** programme must have 75% 4G coverage, under the same conditions listed above, by the end of 2020 and 100% by the end of 2022.

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[6] Priority transport routes represent 55,000 km of roadways. These include motorways (11,000 km), the main roads that connect the administrative centre (prefecture) in each department to district administrative headquarters (sub-prefectures), and the sections of roads where an annual average of at least five thousand vehicles travel daily (44,000 km).

[7] Service must be available outside vehicles. As a result it will often, but not always, also be available inside travelling vehicles.

[8] I.e. Orange, SFR and Bouygues Telecom, if they obtain frequencies from the procedure.

[9] Service available inside travelling vehicles.

[10] The regional rail networks represents 23,000 km of railway lines.

[11] N.B. There are also coverage obligations regarding these routes attached to 700 MHz band frequency licences, whose first deadline is in 2022. These obligations are detailed on the Arcep website: www.arcep.fr/obligations-mobiles

[12] Coverage must be available all along the routes.

1.2 Enable indoor coverage on-demand

Orange, SFR and Bouygues Telecom have committed to having **Wi-Fi calling and SMS services** on their core network in 2018, and activating them as a default option for all customers with a compatible device. Meanwhile, Free Mobile has committed to introducing Wi-Fi calling and SMS services by the end of 2019, or a Femtocell product that delivers an equivalent service.

As an adjunct, all four operators have committed to providing an affordable solution by the end of 2018 that enables businesses and public entities to **request improved coverage** for indoor voice/SMS and data services, to enable customers to have access to **every operators'** coverage. To achieve this, operators can use any suitable technological solution, such as calling/SMS via Wi-Fi, picocells, repeaters, DAS, etc. When a customer subscribes to such a solution with an operator, the other operators will be obligated to make their own service available as well, under reasonable technical and pricing terms and conditions between operators.

1.3 Improve quality of service

a) Increase network density

To ensure a high standard of mobile service quality, operators need to increase the density of their networks over time. To this end, from hereon in, operators will need to satisfy obligations that correspond to more stringent requirements. This new obligation will be verified through a technical test that consists of making calls in the field, while artificially attenuating the signal (using a 10 dB attenuator)[13].

This effort to achieve good coverage will be progressive, and will be set out in a demanding timetable attached to future 900 MHz frequency licences to be awarded at the the procedure's outcome. For operators with 800 MHz[14][15] band licences, a first deadline will be set for three years after 900 MHz (2021 or 2024 depending on the case) band spectrum becomes available, and a second one will be set for seven years after the frequencies become available. For other operators that are allocated frequencies in the 900 MHz band through the reassignment procedure, the deadline will be 2029. Every year, operators will provide Arcep with a progress report, to be able to ensure that their rollout trajectory is compatible with these objectives.

b) Increase transparency

In 2018, operators will be required to publish an up-to-date list of the antennas that are out of service, due to maintenance or breakdown, in an open and easily reusable electronic format.

1.4 Increased sharing to accelerate the pace of meeting targets

To be able to achieve these regional development objectives, it appears that some degree of passive infrastructure sharing between operators will be necessary, in addition to their sharing of active components, as provided for in part 1.1.a. Operators will thus be required to:

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[13] These tests will only be performed for the voice/SMS service. This change in test is equivalent to the transition from "limited coverage" to "good coverage" – as defined by new Arcep voice/SMS services maps. Data service quality will also improve thanks to the increased availability of 4G across the entire mobile network.

[14] Operators with a 800 MHz frequency licence have faster rollout obligations than operators that do not.

[15] i.e. Orange, SFR and Bouygues Telecom, if they obtain frequencies from the procedure.

- share passive installations at cell sites deployed in response to the obligation described in part 1.1.a, in accordance with the terms described therein, when the area is not an area that demands RAN sharing between every operator;
- in addition to this obligation, consult with other operators[16], when installing a new tower[17], to ascertain whether they also want to install their equipment and, if so, to grant all reasonable requests for passive sharing[18], under terms that guarantee efficient access[19]. This obligation will apply to sites where operators are installed within the priority rollout area[20]. This obligation will come into effect upon the award of new frequency licences.
  The need for this type of sharing obligation could be reassessed as market conditions evolve. If one or several operators are offering a solution that provides adequate access to a significant number of its/their sites to other operators wanting to significantly expand their coverage in rural areas, notably at a reasonable price, Arcep would lift this obligation for the operators that were offering such a solution, after having assessed that the solution was adequate. Depending on the impact that these solutions have on the market, Arcep could also lift this obligation for all operators. This solution should be consistent with the analysis that Arcep set forth in its guidelines on mobile network sharing in May 2016.

2 Fixed 4G coverage

Using 4G mobile networks to provide a fixed access service (hereafter: fixed 4G) could be developed in those areas where fixed connection speeds are not fast enough – particularly when they are below 8 Mbit/s – and where no other solution can be deployed in the short term. To this end, mobile network operators will be required to:

- provide a **fixed 4G offer** for consumers on their mobile network in 2018, at the very least in certain areas they have identified and made public. These offers must provide a minimum data allowance at an uncapped speed, except when reasonable traffic management measures that comply with net neutrality regulations are required. In addition, depending on the geographical location of the premises to be connected, the operator could supply an outdoor antenna to be installed in the customer's home, to optimise the quality of the connection.
- Satisfy the Government's request that **this offer be made available in the geographical areas they have identified.** This would cover two specific cases in particular:
  - in an area where they already provide 4G coverage through their mobile network, **ensure that the fixed 4G offer is commercially available** in that area, except when it can be duly justified that sufficient capacity is not available to guarantee maintenance of an adequate quality of service for their mobile users;
  - in addition, Orange and SFR have each committed to deploying, with no obligation to share them[21], 500 new 4G sites that can help remedy the lack of coverage or capacity, to

[16] Except for sites whose planning is already too far along as of 1 January 2018

[17] Directly by the operator, or by a third-party at the operator's request, with a view to hosting them

[18] Including passive infrastructures, power supply and the passive section of the backhaul link

[19] In this case, any negotiation of leases the operator undertakes must also take into account other operators' hosting needs.

[20] As defined by Arcep Decision No. 2012-0039

[21] Whether active or passive

ensure actual 4G availability in the geographical areas identified by the Government, in concert with the operators concerned[22].

[22] Selection criteria are established with the operators involved.