

5G TECHNOLOGY IN BRAZIL: THE BIGGEST AUCTION IN THE WORLD AND ITS IMPACTS IN THE COUNTRY

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After a long waiting period, on November 4 and 5, 2021, Brazil finally held the auction of the frequencies for 5G operation throughout the national territory. Anatel (National Telecommunications Agency) initially received 15 proposals for the 5G auction from several operators, which sought to auction off lots of four frequency bands:

- 700 MHz band, which at first will be used to expand 4G coverage. In the future, it will be the band used by smart sensors and connected cars;
- 2.3 GHz band, which has high capacity for densely populated areas, which like the 700 MHz band, will also be used for 4G and will be the standard operating frequency for devices in general;
- 3.5 GHz band, considered the most important frequency of 5G, being the same in use around the globe. This band allows the transmission of data at very high speed, in addition to being used in parallel with other bands;
- 26 GHz band, which is the band where large-scale economic data transmission should take place, such as industrial automation and agribusiness, where it is possible to achieve high speeds.



At the end of the auction, 85% of the available radio frequency bands were awarded with offers totaling R\$ 47.2 billion (8.5 billion dollars), an amount that exceeded by R\$ 5 billion the minimum price stipulated by the Federal Government in the auction public notice.

Given the continental dimensions of Brazil, the lots were initially divided into blocks of national and regional coverage. The regional blocks were additionally divided to avoid the concentration of offers for regions of greater economic interest, such as São Paulo, to the detriment of regions with less population density and that demand greater investment, such as the North Region. From this perspective, the regional block that offered the 5G regional operation in São Paulo also included the North Region of the country. This will democratize the access to this technology.

Regarding the companies that participated in the auction, it is important to note that the presence of these regional blocks allowed several smaller companies to obtain their share of the frequency spectrum, which will make the competitive environment healthier in the country. Companies hitherto unknown to the general public such as Winity II Telecom, Brisanet, Consórcio 5G Sul, Cloud2u, Fly Link and Neko Serviços, together with Algar Telecom, and Sercomtel, bought some of these regional lots and won the right to exploit certain bands to bring internet service to the population, while the national lots were bought by the giant operators Claro, Vivo and TIM, which also obtained slices of some regional lots.

Another aspect that helped the 5G auction in Brazil to be on the news radar was a possible ban on the use of equipment from the Chinese giant Huawei by the winners of the auction lots, as occurred in countries like the United States, Australia, and the United Kingdom. This ban ended up not happening and the auction winners will not be limited in the choice of their suppliers to structure the 5G network in Brazil. This decision was a relief to some companies that already provide mobile network service given that, for example, approximately 50% of the equipment used for 4G network generation was acquired from the Chinese company.

Once the auction is concluded, the movement to prepare the entire network structure necessary for the 5G implementation in Brazil will begin. As a result, state-of-the-art equipment will be in demand in Brazil, and suppliers must be properly prepared and protected to take advantage of this moment. According to Anatel, in September 2021, Brazil had 249.4 million cell phones and a density of 116.71 cellphones per 100 inhabitants. These data show how Brazil is a large consumer market for technologies related to mobile communications.

In addition to the robust network that will be structured to allow full 5G operation in Brazil, as well as the growing demand for cell phones that operate in accordance with the 5G standard, we should also expect an increase in the search for technologies that will benefit from 5G, like autonomous vehicles, IoT, etc. With that in mind, we can expect a great popularization of state-of-the-art technologies in the country, and to monitor this process the INPI (National Institute of Industrial Property) should work actively to ensure the best possible industrial property protection environment.

In this regard, it is extremely important that the INPI train its examiners on this new technology, so that they can maintain the high level of their technical examination without compromising the timeframe for granting a patent, especially at a time when we are experiencing such a technological advance along the drastic reduction of the backlog in the country, which had the telecommunications area as its main contributor.

The INPI may also carry out more direct actions to attract such technologies to Brazil, for instance, by creating a priority examination program for technologies related to 5G, similar to what is currently done with the priority examination program for green patents. It is very important to note that this type of program is different from a Patent Prosecution Highway (PPH). In a PPH, there must be a corresponding patent granted by some national office (USPTO, JPO, EPO, etc.) to request the acceleration of the examination, whereas in the existing priority examination programs there is no need for any corresponding patent or patent application, it is only necessary that the claimed technology in the patent application fits into one of the categories of technologies accepted by the program. This allows both national and international applicants to benefit from this expedite examination. Furthermore, with the implementation of 5G technology already so close, creating a priority examination program specifically for these technologies would avoid many possible future problems such as legal disputes or a flood of priority examination requests through the already available fast-track examination category of "Processes technology available on the market".

Finally, it is also vitally important for the maintenance of a healthy innovation environment the performance of actions by the INPI with the federal government to disseminate information about patent licensing. The industrial property system is still little known to the vast majority of Brazilians, and this is reflected in medium and small-sized companies all over the country. Cases where a Brazilian company acquires imported products and does not have any information about the existence of licenses for the technologies embedded in the product are extremely common, which can lead to unnecessary litigation, in addition to being vulnerable to the so-called *patent trolls*. Furthermore, when talking about 5G, we must always keep in mind the increasingly complex landscape of the essential patents and their patent pools, which can be extremely challenging for companies still seeking the maturity of their industrial property areas.

We can conclude that the long-awaited arrival of 5G in Brazil will provide the necessary resources for the country to enter this new digital era for good. To that end, the INPI should play a central role in the country's modernization process, as industrial property is one of the pillars for sustaining a healthy innovation environment.