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## THE IMPACT OF 5G IMPLEMENTATION IN THE IP AND OTHER SECTORS IN BRAZIL

By **Rodrigo Mourão, Rhuan Quintanilha, Montaury Pimenta, Machado & Vieira de Mello**

Since the beginning of its implementation on July 6 of this year, the 5<sup>th</sup> generation mobile network (5G) is already available to residents of 22 Brazilian state capitals. Due to the low amount of equipment and the global shortage of chips, implementation of the 5G network is happening at a very slow pace. Even in the country's major cities, such as Rio de Janeiro and São Paulo, network coverage is considerably lower than desired and initially proposed by ANATEL (National Telecommunications Agency), being especially concentrated in tourist areas and high-income neighborhoods.

Although this is far from ideal, there are some high expectations about the benefits and advantages that this technology will bring to the country. From a regular users' perspective, improvements such as faster download speeds, low latency, more capacity and connectivity for millions of devices, especially in the areas of virtual reality, IoT, and artificial intelligence, are eagerly expected. While the population will want to have all the benefits of 5G in the palm of their hands on all their devices and gadgets as soon as possible, the greater revolution will really take place in the industry.



**Rodrigo Mourão (L) and Rhuan Quintanilha (R)**

The dissemination of 5G will bring to new heights several areas of the national industrial sector throughout the country, especially agribusiness, one of Brazil's main contributors to the local economy and one where the increase in productivity through the implementation of the 5G network will significantly impact the entire production chain due to, for example, the implementation of autonomous vehicles to perform tasks such as harvesting, forecasting the maintenance of farming equipment based on sensor data, field support and expert advices in remote areas as well as optimization of agriculture logistics chains with sensors, tracking and analytics.

For domestic companies that develop and implement technologies that may use the 5G network, there will be greater challenges to overcome. Firstly, with standard essential patents (SEPs), which cover technologies that must necessarily be implemented in order to adapt any equipment to the 5G standard. For example, there are currently around 47,000 patent families that have been declared as essential to the 5G standard by their developers<sup>1</sup>, many of which have a corresponding patent or patent application in Brazil. Secondly, the lack of Industrial Property knowledge by the national market is another point of concern. Most Brazilian companies do not have a mature IP department, which increases the possibility of infringing other companies' rights when creating or implementing new technologies. In fact, the increasing number of lawsuits involving 5G technologies in the past couple of years is noticeable.

These factors combine to create a scenario where domestic companies can feel they are in a minefield, trying to avoid essential patents infringement whilst seeking licensing agreements within FRAND (Fair, Reasonable and Non-Discriminatory) terms. However, entering into FRAND agreements/deals has proved to be a major challenge faced by legal and Intellectual Property departments of national companies in recent years.

For example, starting with the "reasonable" aspect of FRAND licensing, the vast majority of 5G standard essential patents holders are foreign companies, which generally seek to enter into agreements in US dollars. This fact alone is a major setback for domestic companies since, due to the devaluation of the national currency (Real) in relation to major foreign currencies, the cost of a licensing agreement becomes a much heavier burden for Brazilian companies. Currently, it is very difficult to achieve agreement values in Brazil compatible with the usual values of agreements of the main economies in the world because, proportionally, the impact of these licenses in relation to the final value of the products would be much higher, therefore not being so "reasonable".

Another important aspect that is rapidly growing to be a problem is the self-declaration of essentiality of a given technology. Each and every company that declares to ETSI (European Telecommunications Standard Institute) as having an essential patent, does so without any proof that the subject matter of that patent is, in fact, essential to the standard. As a result, national companies seeking such licenses still need to make a great effort in terms of time and money to determine which patents are essential to the standard and, more importantly, to the technology that the company actually aims to develop or implement. Usually, the SEPs agreements are related to thousands of technologies that are not always correlated. For instance, if a company wants to develop technologies for the receiving end of a 5G chain, for example, a user equipment, the company needs to browse through thousands of patents related to the generation, transmission, signaling and amplification of signals in order to find those related to the signal reception in which they are interested. Otherwise, the company may pay for an agreement on a bundle of thousands of patents from a patent holder, which would imply paying for patents that the company is not interest in.

Therefore, it is a matter of the utmost urgency for the Brazilian Industrial Property ecosystem to achieve a common ground between SEP holders not having their patents being infringed and Brazilian companies being charged a fair and reasonable royalty to implement such technologies and, also, to develop new technologies based thereon. In this regard, the Brazilian National Institute of Industrial Property - INPI (BPTO) could play a key role if it worked as a facilitator, a bridge between licensee and licensors.

In fact, the BPTO currently has a Licensing Offer provided by Article 64<sup>2</sup> of the Brazilian IP Law and launched in 2020 the project “Vitrine de PI” (“IP Showcase”) with the objective of stimulating the offer of licenses and facilitating the transfer of technology and the licensing of industrial property assets, whether a patent or patent application, a trademark, an industrial design or a software. The project, which is in its second phase, has its own platform on the BPTO website to publish announcements related to industrial property assets for commercialization and was resumed in August 2022 after an offline period. It is noteworthy that the BPTO is planning to launch its third phase at the end of 2022, which will involve more specialized announcements, such as financing and R&D in addition to artificial intelligence resources for the coordination of offers, demands and indication of possible partners.

However, even considering the BPTO’s ambitious project, it is still difficult to create this bridge between licensors and licensees and stimulate the offer of licenses in this area, given the massive number of SEPs, especially since the platform only allows the offer of one industrial property asset at a time.

Therefore, although patent pools for standard technologies are known to play an important role in licensing such technologies worldwide, the development of new solutions for SEPs licensing is still necessary. When all the intricate aspects of the Brazilian economy and IP environment are taken into account, a much-needed hand from both the BPTO and licensors would benefit licensees and the national IP ecosystem as a whole. For example, the BPTO could further lower bureaucratic procedures for licensing offers and allow, for instance, the offer of “5G starter packs”, covering several different technical features of this technology, which would give licensors a chance to offer a bundle comprising their main 5G technologies in a single offer. Although such a measure is certainly not easy to accomplish, the BPTO’s recent commitment to becoming a leading IP office and the joint effort of technology companies to develop a healthy SEP environment surely demonstrates that it can be achieved.