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5G IN BRAZIL – RECENT DEVELOPMENTS

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The fifth generation (5G) network is based on three pillars, which differentiate it from previous generations: higher connection speed, reduced latency time and broader and more efficient coverage. Such features make it possible to improve mobile broadband, lower energy consumption, increase simultaneous connections (connected devices) and greater data transfers, allowing the improvement of pre-existing technologies (such as the quality of video calls, for example) and the development of more efficient systems in the scope of the Internet of Things (IoT), autonomous vehicles, smart homes and smart cities.

In Brazil, the incentives for the implementation of 5G in the national territory emerged, more evidently, as of 2019, as can be seen (i) from ANATEL's initiative to allocate frequency bands of 2.3 GHz and 3.5 GHz (representing an important step for the 5G bidding process), (ii) from the public positioning that 5G technology would significantly transform the Brazilian productive sectors and (iii) from the initial procedures for the preparation of the 5G invitation to bid.

In addition, in November 2019, the spectrum auction for 5G networks was included in the Federal Government's Partnership and Investment Program (PPI), ensuring the publicity of the project in the international scenario. This measure represented (i) a unique opportunity for the entry of new telecommunications providers in Brazil, (ii) an incentive to national and international competition in the bid and (iii) articulation between bodies and economic actors for investments in the implementation of the technology.

In January 2020, ANATEL's 2019-2020 Tactical Management Plan proposed, among the initiatives related to the Agency's Regulatory Agenda, the priority of the invitation to bid for the provision of radio frequency spectrum for the provision of telecommunication services, including through fifth generation (5G) networks, in areas of regional and national scope.

In this regard, although with a certain delay - as the decision on the 5G auction rules was postponed in December 2019 by

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the ANATEL's Board, due to changes related to the separation of frequency blocks by areas of coverage, instead of national blocks and a block to be shared among small operators, as described in the original proposal –, the ANATEL's Board of Directors approved, in February 2020, a proposal for an invitation to bid for radio frequency bands to allow the implementation of 5G technology in Brazil: the largest frequency auction in ANATEL's history.

The aforementioned proposal gave rise to the ANATEL's Public Consultation No. 9, which proposed the bidding for the 700 MHz, 2.3 GHz, 3.5 GHz and 26 GHz bands and brought, as a novelty, the inclusion of over 100 MHz in the 3.5 GHz band - which is considered the main band for the development of 5G. The addition of a band in the 3.5 GHz band will enable a more comprehensive service for the demands presented, especially those related to Small Providers ("PPPs"), who will be able to participate actively in the development of this new technology.

On the other hand, satellite operators currently operate in the so-called "extended C band", which coincides with the aforementioned 100 MHz extension. Although there is a forecast about the possibility of reimbursement of the operators in this case, there are concerns related to the possible interference caused by 5G in the reception of open TV by satellite ("Television Receive-Only" - TVRO).

In 2014, the Center for Research and Development in Telecommunications (CPqD) obtained promising results with regard to the coexistence of the Digital TV system with the mobile radiocommunication service in the 700 MHz band, through the allocation of mitigation techniques. In addition, from 2018, complementary field tests were being prepared to assess the impact of coexistence relationships between terrestrial systems and the reception of TVRO satellites, with this topic being one of the most controversial in the Public Hearing carried out on said Public Consultation. However, such coexistence tests were suspended due to the COVID-19 pandemic and the Public Consultation was concluded without the field stage report.

The invitation to bid also proposes conditions of use to the operators of each band, such as coverage obligations that deal with the expansion of the access and transport network to certain locations, specific deadlines to be met and the exclusive participation of PPPs in regional lots (asymmetric regulation for enabling the entry of these companies in the bidding process), for example. Commitments to increase fixed broadband infrastructure and access to mobile services in areas of less commercial interest also follow the same line of forecasts aligned in the Structural Plan for Telecommunications Networks (PERT) and ANATEL's Strategic Plan for the period 2015-2024.

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Such general investment commitments, extended to all bands (with variations), suppress the merely “fundraising” nature of the bidding process, allowing for an “auction of commitments”, in which the demands for a higher level of services by operators, through obligations, will allow the development of the telecommunications infrastructure and, consequently, will generate more benefits to consumers and national economy.

In addition to the Public Consultation No. 9, ANATEL also launched Public Consultations No. [6/2020](#), [11/2020](#) and [12/2020](#), which involve the certification of equipment from mobile telephony providers and access stations that will be used in 5G networks. The proposals are based on international references and the requirements cover functional general rules and also general rules for security, software, management, and initial configuration, among others, in 5G and other technologies. Furthermore, the proposals address issues of band occupation, interoperability and quality of services, without creating restrictions to any manufacturers.

In this regard, although the 5G auction was included in the PPI, it is necessary to note that this fact does not eliminate the possibility of vetoing suppliers of equipment for the implantation of these networks (having a strong relationship with the issue of cybersecurity, [according to our previously published article](#)). Even if

an eventual “exclusion” of suppliers from the Brazilian economic and technological scenario, delaying the development of 5G in Brazil, is understood as harmful, it will be up to the President of the Republic to decide on possible restrictions on equipment suppliers for the local operators.

With regard to the effective holding of the 5G auction, uncertainties remain. Even though [ANATEL affirms the possibility of holding the auction until the end of 2020](#), due to the COVID-19 pandemic and other pending issues (such as the [possibility of early renewal of frequencies in use](#) and the interference in the extended C band), there are fears on the part of the Brazilian telecommunications sector that the serious future - and, at times, unknown - consequences of this crisis can affect the 5G bidding process, making it empty.

Regardless of dates, the perspectives for the 5G auction in Brazil remain positive. ANATEL's involvement with the topic is growing and the [international dialogues and approaches](#) for the discussion of strategies to overcome the challenges brought by the new coronavirus are essential to continue promoting 5G technology, during and after the effects of this pandemic.

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