The Brazilian PTO (BRPTO) released, on July 20, 2023, the report “5G Technology: Patent overview in the World and in Brazil”, with an overview of 5G Standard Essential Patent (SEP) applications. It highlights that the expansion of network infrastructure in the world is an important international agenda, as published by the ITU (International Telecommunications Union). In Brazil, the efforts of infrastructure deployment and improvement were included in the 5G project and increased the importance of the 5G agenda in the country. BRPTO’s report is part of that scenario, and it intends to reinforce the need of moving forward with infrastructure investments in all fronts.

The BRPTO methodology included the data analysis on patent documents available at: (i) ETSI’s telecommunication essential patent database updated in March 2023; (ii) Derwent Innovation’s patent application database; and (iii) BRPTO’s internal patent publication database (BINTEC2).

The report also divides 5G SEP patent applications in two groups: (i) those related specifically to 5G technology (named as “5G ESPECÍFICOS”) and (ii) those used by other technologies but are also necessary for 5G. Since mobile communication system standards are interoperable, many patents related to previous technologies can be identified as essential to the 5G standard (“5G TODOS”).

The analysis of the patents identified as a SEP is relevant for the BRPTO to evaluate its impact on the sector and to identify the patent owners. Most 5G patent applications in Brazil were filed from 2017 onwards. For the group 5G TODOS, it was identified that 7,593 patent applications were filed, while for 5G ESPECÍFICOS there are 3,540 patent applications. Based on these numbers, Brazil has 11% of patent application (non-specific) and 8% (specific) of total 5G patent applications worldwide, according to BRPTO’s analysis.

BRPTO identified similarities in a comparative perspective. It is shown in the report that most of 5G-related applications are filed via PCT. 5G SEP patents are mostly from (i) China (Huawei, ZTE, BBK and Xiaomi); (ii) the United States (Qualcomm); (iii) and South Korea (Samsung and LG). The report also identified that 2,277 patent applications filed via PCT at the international stage, with no equivalents filed in Brazil. These requests are still within 30 months of the earliest priority date for filing the national phase entry.

Regarding 5G patent classifications, H04W 72, H04L 5, H04W 76, H04L 1 and H04B 7 were considered the most recurrent by the BRPTO in its analysis. These classifications are associated with the core group H04W 72, which deal with local resource management. According to the
BRPTO, the classification refers to “the way in which the physical resources of the mobile communication channel are assigned to user devices, covering technologies related to the efficient management and optimization of resources in wireless communication networks, including those used in the context of the 5G”.

In the conclusion, the BRPTO highlighted the possibility of replication of the methodology analysis, to perform future updates on the data gathered by the report.

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