



INTERNATIONAL EMF PROJECT ADVISORY COMMITTEE (IAC) MEETING

ANATEL Report on EMF Activities in Brazil

1. Introduction

The main purpose of this document is to present an update of what has been done in Brazil regarding Electromagnetic Fields – EMF since the IAC meeting in June 2021.

2. Activities related to EMF Exposure

Following the Action Plan set in 2019 for the NIR (non-ionizing radiation) program, to assess compliance with Federal Law No. 11,934, which provide limits on human exposure to electric, magnetic, and electromagnetic fields, mobile probes were used in drive test measurements based on Recommendation ITU-T K.113. In sites where measured electric field strengths were greater than 14 V/m, 6-minute time-averaged measurements were taken than compared with the limits of the general public exposure (28 V/m).

In 2021, EMF exposure measurements were planned to be carried out in 1020 broadcasting stations and 267 radiocommunication base stations. However, the pandemic had a crucial impact on its execution, and only 607 broadcasting stations and 180 radio base stations were assessed.

53 stations reported electrical field strength measurements with values above 14 V/m. At the same time, time-averaged field strength measurements were less than 28 V/m at these locations.

Table 1 shows the number of stations measured since 2019. In the following years, due to the COVID-19 pandemic, the number of stations measured were much lower when compared to 2019, as displayed in Figure 1.

Table 1: EMF exposure assessments in numbers

Station	2019	2020	2021
Broadcasting Stations	3860	552	607
Base stations	1477	148	180

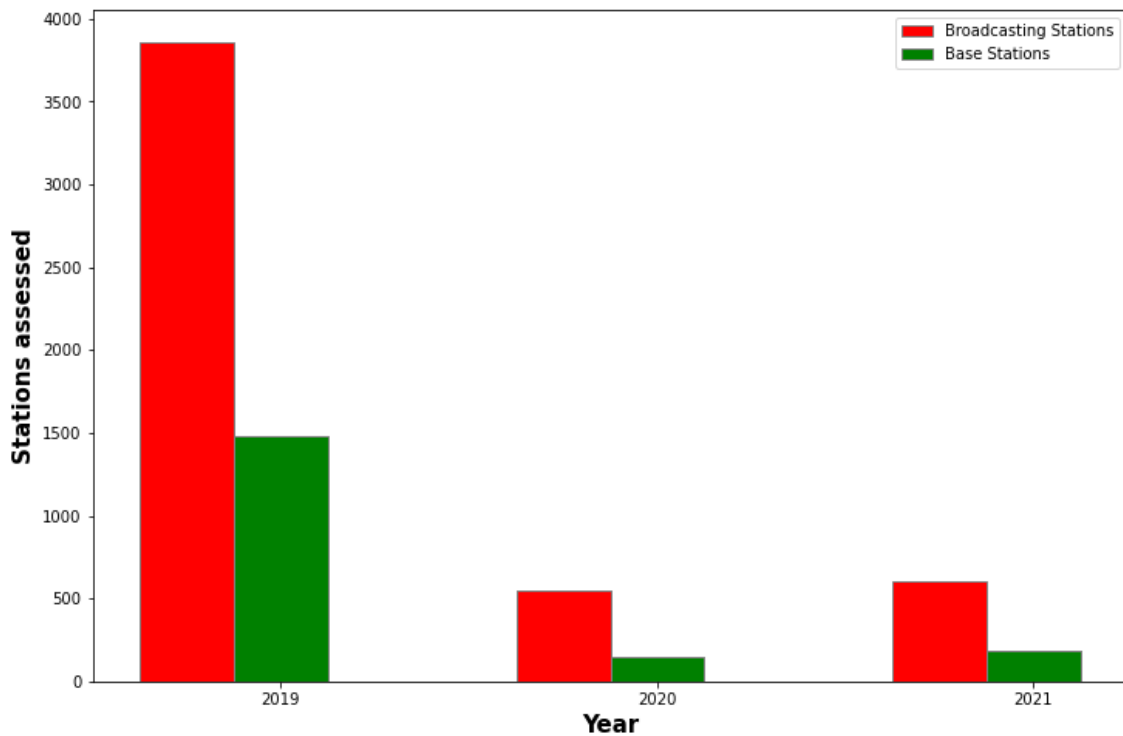


Figure 1: EMF exposure assessments per year.

In 2021, location-oriented measurements were also carried out in 82 municipalities ranked by population. Priority was given to regions with a high concentration of transmitting stations, on routes considered to be main roads. Drive test measurements were configured to have one sample per second. In 7 municipalities, field strengths above 14 V/m were observed, but time-averaged measurements in 4 of these did not show values above 28 V/m. The remaining three are scheduled to take place in 2022.

Measurement raw data by 2021 is available in:

https://sei.anatel.gov.br/sei/controlador.php?acao=arvore_visualizar&acao_origem=procedimento_visualizar&id_procedimento=7098686&id_documento=8881381&infra_sistema=100000100&infra_unidade_atual=110001105&infra_hash=dd47fd5bc46bef6d229baba4103375c920c017a6b7b33bd62366da8aa185ef90

3. New policies and legislations regarding EMF Exposure

In order to ensure Environmental Health and Safety (EHS) throughout Brazilian territory, Federal Law no. 11,934 states the adoption of limits recommended by the World Health Organization (WHO) for occupational and general exposure to electric, magnetic and electromagnetic fields generated by broadcasting and radiocommunication stations. While no new or updated WHO recommendations are issued, limits recommended by the International Commission for the Protection against Non-Ionizing Radiation (ICNIRP) are the norm.

By the time the Law was enacted, ANATEL, Telecommunications National Regulatory Authority (NRA) in Brazil, responsible for the assessment of EMF exposure, had already issued Resolution no. 700/2018 defining general EMF exposure rules, and Act no. 458/2019 detailing procedures for assessing compliance with the recommended limits, in line with the latest versions of ITU-T Recommendations K.100, K.61 and K.72.

In this sense, we are at the final stages of updating Act no. 458/2019 regarding ICNIRP 2020 guidelines while evaluating the need for modifications in compliance assessment procedures.

4. Public information activities

As a result of the aforementioned Action Plan, ANATEL published a radiofrequency electromagnetic field level map for consultation of monitored levels by the general public. The map displays EMF magnitudes measured by ANATEL and the private sector. The action is also part of the Government Open Data program.

The map is available at the following link: <https://informacoes.anatel.gov.br/paineis/espectro-e-orbita/mapa-de-exposicao-a-campos-eletromagneticos>

5. Final comments

Finally, there is a small, but significant portion of the population concerned about potential health impacts from being exposed to 5G radio frequency radiation, such that ANATEL continues to maintain an open dialogue with society, operators, lawmakers, and other governmental authorities to present clear information about what is being done in Brazil and worldwide regarding EMF exposure issues, including EMF emissions from 5G base stations, while monitoring WHO responses to public concern over health effects of EMF exposure.