

Brazil

Country Profile	
Regulator	National Telecommunications Agency
Acronym	(ANATEL)
Website	http://www.anatel.gov.br/
Twitter	https://twitter.com/anatel_oficial
Ministry	Ministry of Science, Technology, Innovation and Communications
Acronym	(MCTIC)
Website	http://www.mctic.gov.br/
Twitter	https://twitter.com/mctic

National Policy

Source: <https://www.redesac.org.mx/regulacion>

In 2012, Anatel, Brazil's telecommunications regulator, opened a 450 MHz frequency tender with the obligation to serve rural areas within a radius of up to 30 km of municipal headquarters. This was a specific action of radio frequency licensing aimed at serving rural areas.

In 2013, the agency creates a regulation that NGOs could provide internet access. The resolution 617/2013, in article 18, allows for the first time, the operation of telecom services without profit, but the procedures remain bureaucratic for the communities.

In 2017, Anatel approved new rules to facilitate the performance of small regional suppliers that use cable or restricted radiation means. Examples are the 2.4 GHz and 5.8 GHz bands used by Wi-Fi systems. This is Resolution No. 680 of June 27, 2017, which allows the provision of service without authorization or license, just a registration on the page of the regulator.

Currently, it is developing two regulatory actions aimed at the expansion of broadband and the inclusion of small operators. The objective of the Structural Plan of Telecommunications Networks (PERT) is to make a complete diagnosis of the current telecommunications situation in the country, with a view to mapping service gaps and proposing projects for the coverage of these areas and the attention of the unattended population.

Similarly, the Committee of Small Providers (CPP), aims to create a permanent forum for discussions on the needs of small providers and assist them in the expansion of services, mainly broadband Internet access. In order to be considered a small provider, the new General Plan of Competition Goals (PGMC), in its fourth article establishes that any group that has a participation of less than five percent in the market in which it operates is considered to be a small provider.

On the other hand, the evolution of the national fixed telephony market has stagnated over the years as mobile and VoIP services have become increasingly popular; the latter remain unregulated at the national level, which could be another entry for community networks.

There are currently three pilot community cellular telephony projects in the Amazon operated by the Federal University of Pará. Finally, the Universalization Fund (FUST), in the current model, allows its use for the attention of rural and remote areas, but only through the fixed telephony service.

In the context of community networks, there are no explicit legal and regulatory frameworks, but, as already pointed out, there are regulations that symmetrically allow the operation of such non-profit networks. Regulatory symmetry also generates a scenario of inequality, facilitating only service operators through business models. In this context, it is necessary to advance the legal and regulatory framework in several aspects, such as spectrum access, equipment homologation, right to backhaul, decriminalization of unauthorized / non-profit licensed use and public resources for universalization of telecom services, as we shall see below.

Operator Licensing

Resolution for SCM license (commercial operators):

<https://www.anatel.gov.br/legislacao/resolucoes/38-2013/465-resolucao-614>

Resolution for SLP license (NGOs could operate internet providers)

<https://www.anatel.gov.br/legislacao/resolucoes/2013/480-resolucao-617>

Resolution for license exempt (commercial or non profit operators):

<https://www.anatel.gov.br/legislacao/resolucoes/2017/936-resolucao-680>

Technical and Administrative Requirements

Procedures for SCM license (commercial operators with or without license):

https://www.anatel.gov.br/Portal/documentos/midias_teia/1897.pdf

Procedures for SLP license (Non profit operators could provide internet with or without license)

<https://www.anatel.gov.br/setorregulado/servico-limitado-privado>

Manual for MOSAICO platform:

<https://www.anatel.gov.br/Portal/verificaDocumentos/documento.asp?numeroPublicacao=346385&assuntoPublicacao=null&caminhoRel=null&filtro=1&documentoPath=346385.pdf>

Licensing Fees

Resolution for PPDESS: <https://www.anatel.gov.br/legislacao/resolucoes/2018/1183-resolucao-702> (for SCM: R\$ 400,00; for SLP: R\$ 20,00)

Access to Spectrum

Technical and Administrative Requirements

Procedures for self registration in the STEL system:

<https://www.anatel.gov.br/setorregulado/index.php/component/content/article?id=183>

Licensed

Only authorized telecom operators could ask for licensed radio frequencies.

Access Networks

Operator	800MHz	900MHz	1800MHz	2100MHz	2600MHz	3500MHz
XYZcom	None	2×10	2×15	2×10	None	None

PtP Networks

License-Exempt (Non Licensed Spectrum)

As noticed the resolution 680/2017 already allow the usage of non licensed spectrum, just making a registration, but, it's important to expand the radio frequencies as a non licensed spectrum to allow more options of bandwidth and channels with the equipment of wi-fi.

Access Networks

Frequency	Power Limit	Transmit Power
2.4GHz		
2400 - 2483.5 MHz	2.4EIRP	
5GHz		
5150-5250 MHz	5.1EIRP	
5250-5350 MHz	5.2EIRP	
5470-5725 MHz	5.4EIRP	
5725-5800 MHz	5.8EIRP	

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Secondary Use

The costs are more low now, but, we need to advance more in the primary use and the questions about regulatory asymmetries making differences between profit and non profit operators. For example fixing the costs of radio frequencies usage for non profit operators and creating rules for sanction the inefficient spectrum use, allowing that non profit operators could use those radio frequencies in secondary and primary usages.

Access Networks

PtP Networks

Spectrum Fees / Costs

Resolution of PPDUR: <https://www.anatel.gov.br/legislacao/resolucoes/2018/1152-resolucao-695>

Simulation of PPDUR costs:

https://sistemas.anatel.gov.br/apoio_sitarweb/SPPDUR/telaz.asp?SISQsmodulo=21730

Application

Annual

Auction

Backhaul

The right to interconnection for non profit operators doesn't exist yet in the regulatory framework. The resolution 590/2012 (EILD) only allows commercial operators to make interconnections with asymmetry rules between them. It's important to create new rules for non profit operators with asymmetry too.

Resolution 590/2012 (EILD): <https://www.anatel.gov.br/legislacao/resolucoes/2012/332-resolucao-590>

Gender

Universal Funds

In the history of the telecom funds (mainly the FUST) in Brazil, always it benefits the great operators or the federal government. In 2019, the modification of the laws to make a more profitable scenario of the great telcos happened again and about 108 billions of reais in infrastructure was donated for the 3 big telcos in the country (OI, Telefonica, Claro/Net/Embratel group). In parallel the TACs (conduct adjustment term) is discussed in Anatel for years about the debits of the telcos with the Brazilian State. Those two resources (FUST and TACs) sum more than 25 billions. The PERT like said above, is a plan to make agreements of Exchange with those big telcos to apply these resources to universalization of the internet, but, the discussion about the rules are open yet and the disputes are in the table too. In the PERT, for civil society, it is important the application of part of the resources in the essential public networks, even after the loss of the public infrastructure with the law changes. In this issue the civil society is guiding the debate about the investments in access public policies like community networks and public infrastructure of broadband, mainly in backhaul and backbone. About

the TACs, the civil society are debating that part of those resources could be applied in Community networks and other kind of public and community policies to expand the internet access, mainly in rural and undeserved areas.

Cooperatives

Homologation

In 2019, the agency make modification in the resolution for equipment homologation, but, it is soon to make an affirmative if this modification will facilitate the Community networks yet, cause the new framework needs more specifications about ARM and what kind of equipment could use the new rules.

Resolution 715/2019: <https://www.anatel.gov.br/legislacao/resolucoes/2019/1350-resolucao-715>

Information from the telecommunications regulatory agency (ANATEL): Certifications and Numbering Management: orcn@anatel.gov.br certifying agency:

<https://www.anatel.gov.br/setorregulado/organismos-de-certificacao-designados-ocds> In the list above, we chose "UL do Brasil", which has the cheapest price.

In the list above, we have chosen UL do Brasil, which has the price Prerequisites:

```
Manufacturer identification (company name, address, contact)
Samples with configuration instruction
Installation Manual
Identification of the legal representative (company)
External and internal photos
Technical specification
Electrical diagram
Letter of representation (letter signed by Dragino - manufacturer - for Kill9Networks to be the representative of libre router in Brazil)
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Administrative procedure:

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We started the process with UL do Brasil. The bills have been paid and we are waiting for the project engineer to contact us
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Carrying out tests:

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The OCD is responsible for choosing the laboratory, which costs are included.
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Completion, scope and duration of approval:

1. The homologation certificate is issued by ANATEL, which takes around 7 days.
2. The renewal of the homologation must be done every 2 years. If there are no changes in the hardware, it is not necessary to redo the laboratory tests.

Value paid for the certification: BRL R\$ 9.800,00 (2019)

Fiscalization

In the Resolution 589/2012 it is important to change the sanction of unauthorized/non licensed services of serious penalty to soft penalty when the service did not harm other authorized operators and/or the operator was a non profit one.

Resolution 589/2012: <https://www.anatel.gov.br/legislacao/resolucoes/2012/191-resolucao-589>

Resources / References

Coding examples

This could be used to frame specific questions that should be asked

<callout type="tip" icon="true">This could be for hints / tips / tricks on finding information, what to look for etc.</callout> <callout type="question" icon="true">A question</callout> <callout type="success" icon="true">A good practice example might look like this</callout> <callout type="danger" icon="true">A bad practice to be aware of might look like this</callout>

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