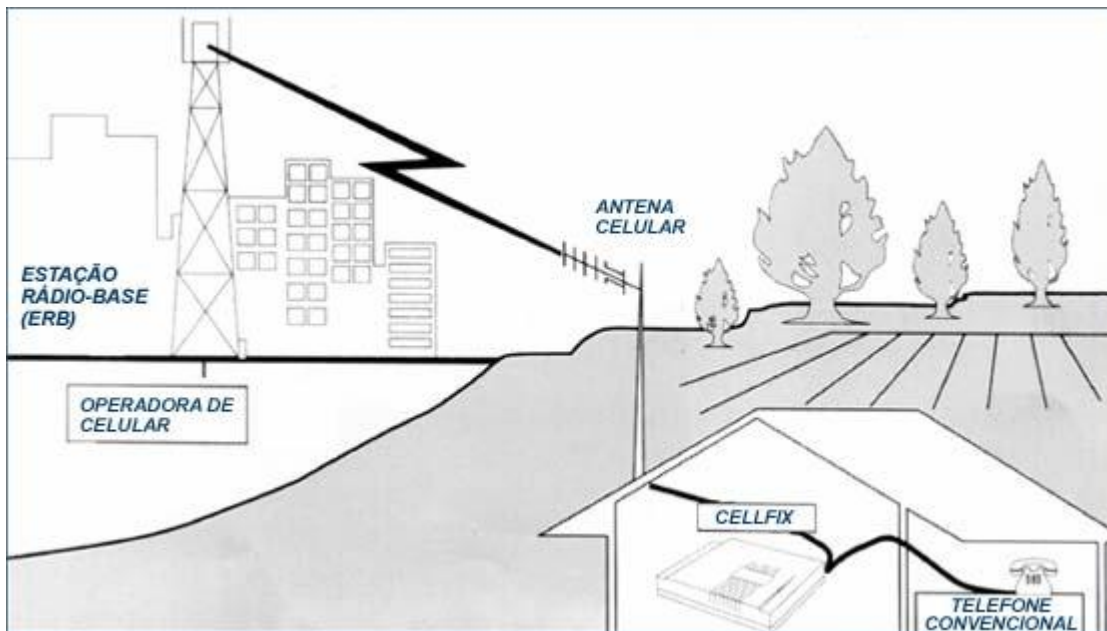


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Scope of Presentation: Fixed Cellular Stations

Ruralcel is a Brazilian Phone service for regions "FATB" (Outside the Field of Basic Services), that is, away from urban centres or areas attended for cable operator's network of fixed telephony. It is basically for rural areas.



Created to serve the state of Sao Paulo in 1993 by Telesp Celular, the program has grown with amazing speed by mid-1997, when using analogue technology AMPS. With the privatization of the telephone operators and the separation of operations of Telesp and Telesp Celular, the service is now officially operated by Telefonica, using the physical plant of Telesp Celular.

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After an interruption in the new activations, the service was resumed, with deployments in technology AMPS by 2003. From there, with the collaboration of ABRATER, was established a new type of project, now in the digital system, implemented at the moment in CDMA technology.



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It is worth emphasizing certain characteristics that differentiate the model adopted in Ruralcel of conventional telephony services:

- The customer contracts directly the company accredited by the operator for equipment and services purchase, installation and design of its fixed cellular station. All costs are on account of the subscriber.
- The design and installation of fixed cellular station sets each terminal is done by accredited firm chosen by the customer. Each installation has a responsible technical at CREA-SP, recorded by ART (Technical note of Responsibility). There is also the project at Telefonica and ANATEL (SITAR), linking the technical responsibility to the engineer responsible for the work.
- The costs of maintenance of the fixed cellular station sets are the responsibility of the customer.
- The fact of the facilities are located in remote areas with a high probability of damage by atmospheric electrical discharges demands a strong specification of the project operator, required to ensure the operational safety of the system and the user. All implementation must have with grounding protection, coaxial cables protection and devices

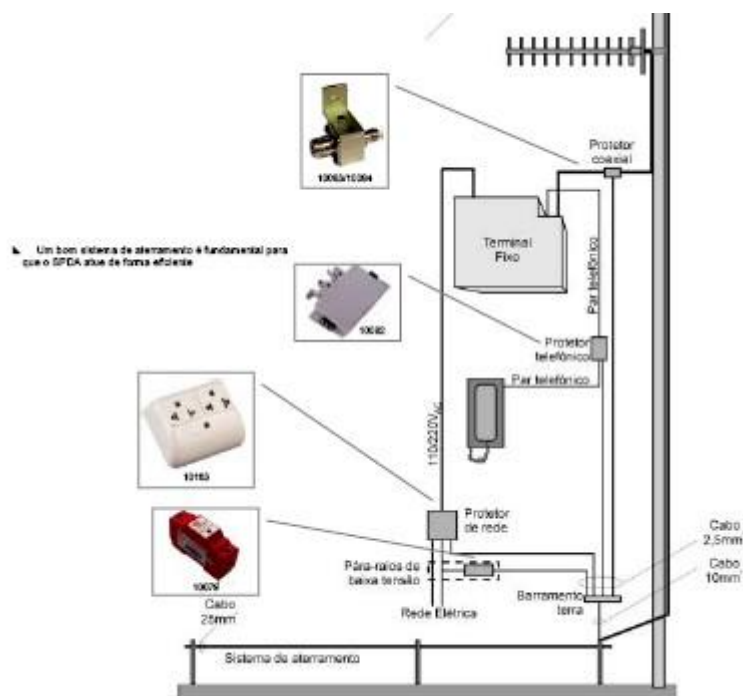
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adequate protection in the power network and telephone.

It is important to stress that each plant has a responsible engineer and a specific project. Any modification requires the elaboration of a new project and the corresponding updates with the ANATEL, CREA-SP and Telefonica. The change of the engineer responsible should also be reflected in new ART. As guidance of CREA-SP, all services must have the technical supervision, individual and concrete qualified professional. He is responsible, within their legal responsibilities for the safety of the fixed phone.



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There are basically three standards for the installation of fixed wireless stations, namely:

- P1 - Outdoor Directional Antenna fixed on the wall of the building (according to estimates of ABRATER, corresponds to 50% of the plant installed): On this standard scheme (see diagram attached), there is an external directive antenna (yagi type) specified in the building. As the antenna is below the level of the top of the building, there is no need for lightning protection. This type of installation requires the mandatory implementation of the coaxial cable protection, with grounding, electric and telephone protection.
- P2 - Tower 6 to 20 meters high with outdoor antenna (according to estimates of ABRATER, corresponds to 40% of the plant installed): On this standard scheme (see diagram attached), there is an external antenna installed on the top of a monotubular tower, with height ranging from 6 to 20 meters. In this case, the implementation of lightning protection is mandatory. This type of installation also requires the mandatory implementation of the coaxial cable protection, with grounding, electric and telephone protection.
- P3 - Small Building away from the terminal telephone (up to 1.5 km) using Tower 6 to 20 meters high with outdoor antenna

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(according to estimates of ABRATER, corresponds to 10% of the plant installed): This standard scheme (see diagram Attached), there is an external antenna installed in tower, with height ranging from 6 to 20 meters.

Another important feature of the system is the implementation of telephone extensions in fixed cellular stations. According to ABRATER, less than 6% of users employ only one point Ruralcel phone next to ETA. The vast majority of users has one or more extensions in the same building or in adjacent buildings.

It is estimated that currently, nearly 40% of users of Ruralcel making use of appliances like fax or dial-up Internet access. There is no broadband service available at this moment with Brazilian Ruralcel operators.

Speakers Profile

Eduardo Neger is the chairman of ABRATER (Rural Telecommunications Brazilian Association).
www.abrater.org.br
abrater@abrater.org.br
Campinas, SP, Brazil

Ronan Franklin is director of ABRATER (Rural Telecommunications Brazilian Association).

Orlando Witzler is director of ABRATER (Rural Telecommunications Brazilian Association).