Anatel Activities

• One of the Anatel’s activities is certification and homologation of products and equipments to be used in the Brazilian’s telecommunication network

• Today Anatel has 58 technical Resolutions, and use also further international standardization
Products Subject to Homologation (examples)

- Battery for Cell Phone
- Charges for Cell Phone
- Inductive Card for Phone Public
- Central Private Switching
- Coaxial Cables
- Cables and optical wire
- Cables for Data Transmission
- Telephone Cable for STFC
- Optical Liabilities Equipments
- Terminals Equipments (modem, CPCTs, etc)

- Stations For Access Terminals
- Telephone Wire
- Modens
- Fixed Phone
- Cell Phone
- IP Terminal Equipment (with wired and Wireless)
- Transceiver
- RF Power Amplifiers
- Antennas
- Equipment (not Broadcasting)
- Lead acid Stationary Batteries
Laboratories for Testing - CPqD

Research and Development
Telecommunications Center
Company History and Evolution

- **1972**: Creation of TELEBRÁS
- **1976**: TELEBRÁS creates CPqD
- **1990**: Business Openings
- **1998**: Privatization TELEBRÁS and CPqD

**International Competitive Integration**

- **Business Participations**
- **Internationalization**
- **New markets**

**Substitution of Imported Products**

**CPqD as an independent organization**
## Our Team

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduates (MSc. and PhD)</td>
<td>469</td>
</tr>
<tr>
<td>Undergraduates</td>
<td>542</td>
</tr>
<tr>
<td>Technical Graduates</td>
<td>204</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1,215</td>
</tr>
</tbody>
</table>
CPqD Laboratories

Wireless Networks
Terminal Equipments
Optical Network
Energy – Batteries and Power Supply
Outside Plant
Materials
Metrology
RFID Lab
Radio Systems LAb (RADIOLAB)
Absorption and Dosimetry Lab (LAD)
Antennas Lab
Switching and Terminals LAB (LCT)
Electrical Tests Lab
Acoustic Tests Lab
Electrical Safety and Protection Lab
Electromagnetic Compatibility Lab
Power Line Communication Lab
Characterization of Optical Fiber and Cables

Accessories for Optical Plant
Electrical Characterization
Telecom Copper Pair Cables
Coaxial Cables
Cabinets, Blocks and Connectors
Evaluation of xDSL Pair Cables
Physicochemical Characterization
Mechanical Characterizations
Thermoanalysis and Spectroscopy (FTIR)
Climatic Tests
Salt Spray
Microscopy:
  • Optical
  • Scanning electron
Electrical Measurements
Optical Equipments
Time and Frequency
Telecommunications Protocols
Optical Radiation Measurements (displayers, monitors, etc.)
Electromedical Instruments
CPqD Accreditations

• ANATEL: 69 categories of telecom products
  ANATEL – National Agency of Telecommunications
  (www.anatel.gov.br)

• INMETRO: 700 tests
  INMETRO – National Institute of Metrology, Standardization and Industrial Quality
  (www.inmetro.gov.br)
Julio Cesar Fonseca
juliof@cpqd.com.br
+55 19 3705-6267