



TIM BRASIL

ITU Workshop on QoS and QoE of Multimedia Applications and Services
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Assuring QoS/QoE in Major Events

The FIFA 2014 World Cup Case

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Regulatory, Institutional and Press Relations

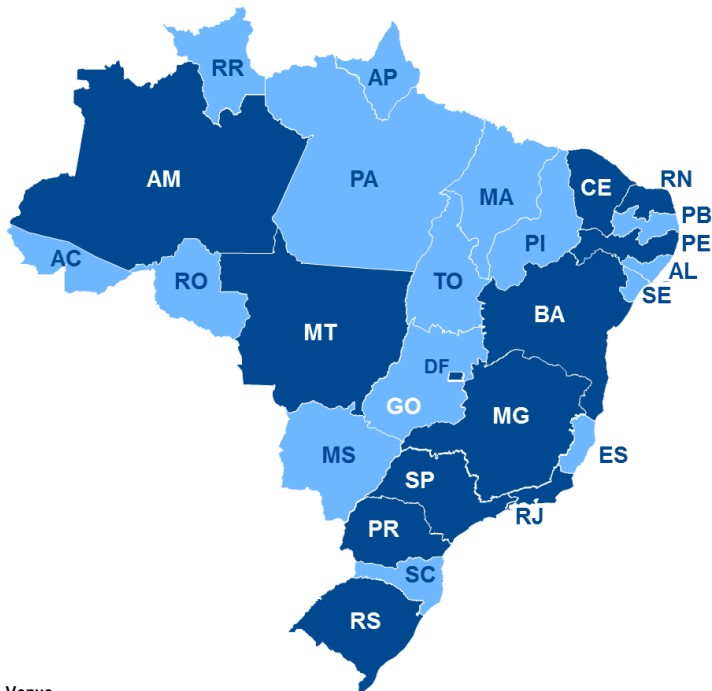


About TIM Brasil

A Brazilian operator: Voice & Data + Fixed & Mobile (core mobile)

Controlled by Telecom Italia

- AC Acre
 - AL Alagoas
 - AM Amazonas
 - AP Amapá
 - BA Bahia
 - CE Ceará
 - DF Distrito Federal
 - ES Espírito Santo
 - GO Goiás
 - MA Maranhão
 - MG Minas Gerais
 - MS Mato Grosso do Sul
 - MT Mato Grosso
 - PA Pará
 - PB Paraíba
 - PE Pernambuco
 - PI Piauí
 - PR Paraná
 - RJ Rio de Janeiro
 - RN Rio Grande do Norte
 - RO Rondônia
 - RR Roraima
 - RS Rio Grande do Sul
 - SC Santa Catarina
 - SE Sergipe
 - SP São Paulo
 - TO Tocantins
- FIFA World Cup 2014 Venue



+ 66 millions Customers



~ 26% Market Share



~ 3,500 Cities / 95% Pop



~ 13 thousand Employees



17 Call Centers + Web





A Long Term Strategy

Learning & Planning on each Major Event

A scale up to improve QoS and QoE ...



The FIFA World Cup Infrastructure's Requirements

12 Stadiums around the country



Venues and relevance points

- 25 Fan Fests
- 25 Training Centers
- 12 Airports
- ~ 305 relevance points

QoS Monitoring



~ 2,549 mobile sites
~ 8,489 cells



Assuring QoS / QoE

TIM Brasil's Assurance Model

- Lessons learned
- Internal benchmark
- External feedbacks

Day
After

- Preventive inspections
- Logistics to spare parts
- Local team dedicated

Field
Maintenance

War
Room

- Real time monitoring
- External inputs
- User experience
- Internal and external hotlines

Performance
Measurement

- Anatel measurements and indicators
- Customer complaints
- Drive and walk tests
- Alarms monitoring



War Room



TIM Team

- Access Network
- Core Network
- Customer Relations
- Institutional Relations
- Marketing
- Network Management Center
- Quality
- Press Relations
- Regional Operations
- Regulatory
- Security

QoE Monitoring

- At Stadiums, Fan Fests and Relevance Points, TIM's Employees reported their experiences
- Stakeholders (as Anatel) reported their experiences

Improvement of QoE



Maracanã Stadium – Rio de Janeiro/RJ

Before World Cup

- Improvement of Capacity Plan (legacy to the Cities)
- Site review (energy, security, infrastructure, ...)
- Microwave review (interference, optimization)
- Mobile Broadband (FTTS)
- Support of Vendor's Specialists

At the Games

- Drive and walk tests
- Cell optimization at beginning and end of each game
- Maintenance team acting in and out the Venues
- Hot list to scalation in case of problems
- Anatel support to solve interference cases

After Game

- Traffic Analysis by cell (voice+data+SMS)
- Quality Indicators (accessibility, drop, connectivity, ...)
- Report results D+1 to Anatel

Some Measurements all over the Games

“The World Cup of Selfies”



+ 48 millions



+ 4,5 millions



+ 26,7 Terabytes

Average TIM results per cell



0,7% Voice Block ✓



1,8% Voice Drop ✓



1,3% Data Block ✓



3,7% Data Drop ✓

Compliance with ANATEL goals

1st Match



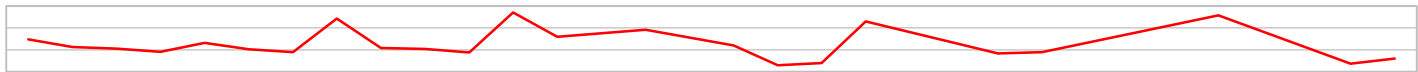
Last Match



Voice



Data





Thank You!

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