



Fundação para a Computação Científica Nacional  
*Foundation for National Scientific Computing*

## FCCN – Portuguese NREN

### Cooperation with Africa

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Network Services Director

# RCTS – Optical Network

- 1.000Km optical cable with 48 fibers
  - 24xG-652, 24xG-655
- Connection to Spain in 2 locations
  - Building Iberian ring of dark fiber.
- Coverage of ~85% of users (in Higher Education and R&D) @ 10Gbps
  - Leased circuits for the others.
- Full IPv4 and IPv6 network
  - Since 2003.



- Videoconference
  - HD systems in all institutions
  - 2 Telepresence studios (FCCN and Univ. Porto)



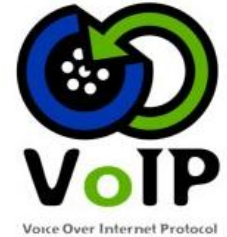
- Video Services
  - Zappiens.pt
  - Broadcast and recording of Scientific events



- Wireless networks
  - 100% coverage of Higher education institutions with Eduroam
  - Aprox. 400.000 potential users



- VoIP
  - 100% coverage of Higher education institutions
  - One tender for all public services suppliers
- AAI – Authentication and Authorization
  - Quick uptake by users
  - Growing number of service providers enabled
- CERT.PT
  - Security
- Digital Libraries and Open Access
  - B-On.pt
  - RCAAP.pt



- GigaPIX
  - Main Portuguese Internet eXchange.
- Administration of .PT
  - Registry.
  - Primary (Lisbon) and secondary (Porto) nameservers
  - DNSSEC
- Technical Operation of
  - .AO (since 1996)
  - .CV (from 1996 until May/2010)



# Past models of cooperation

- Trainee places at FCCN
- Local IPv6 “hands-on” Seminars in Portuguese speaking countries in Africa (Angola, Mozambique and Cape Verde)
  - IPv6
  - DNSSEC
  - Information Society
- On-line Technical Support





- Network Design and Optical Networking
- IPv6
- DNS (ccTLD and DNSSEC)
- VoIP and ENUM
- Mobility (Wi-fi, Eduroam and Shibollet)
- Videoconferencing (H.323, HD)
- Digital Libraries and Open Access
- Web Archive and Indexing
- Datacenter and Exchange Point Management
- Computer Security Incident Response Teams