

First and second generation of the Portuguese School Network

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Agenda

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- ▶ Connecting schools
- ▶ The primary schools
- ▶ Broadband experience

1997

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- ▶ Initiative for the Information Society in Portugal
- ▶ Connect schools to the Internet identified as a priority
 - Students as a important element in deployment of innovation in families
 - Info-inclusion of remote schools

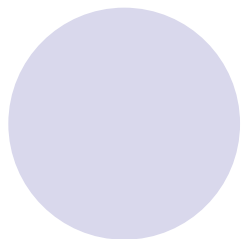


1997

4

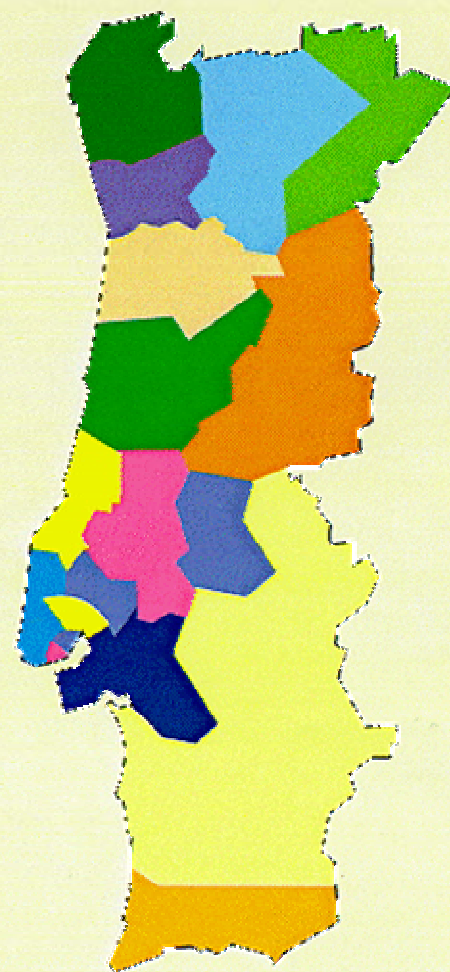
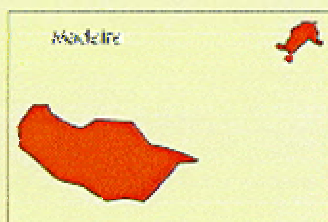
- ▶ All schools from level 5 to 12 (age 10 to 17)
 - 1623 schools
- ▶ Technology
 - Computer as a router
 - ISDN connection
 - Served by a PoP located in University
 - Services operated in each PoP
 - Mail, Web-Site, DNS, ftp, ...
 - PoP connected to Portuguese NREN
 - Traffic control at each PoP





FCCN

RCTS - Rede Ciência, Tecnologia e Sociedade



Áreas de cobertura das instituições de ensino (POF)

1998-1999

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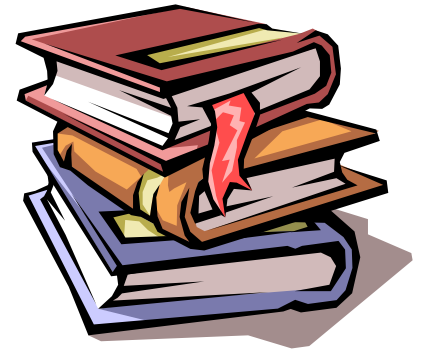
- ▶ New entities connect to RCTS
 - Public Libraries
 - Teacher training centres
 - Some primary schools
- ▶ Homogeneous PoP
- ▶ ISDN router
- ▶ 2 ISDN channels
- ▶ Development of several network monitoring tools
- ▶ Educational contents



2000-2001

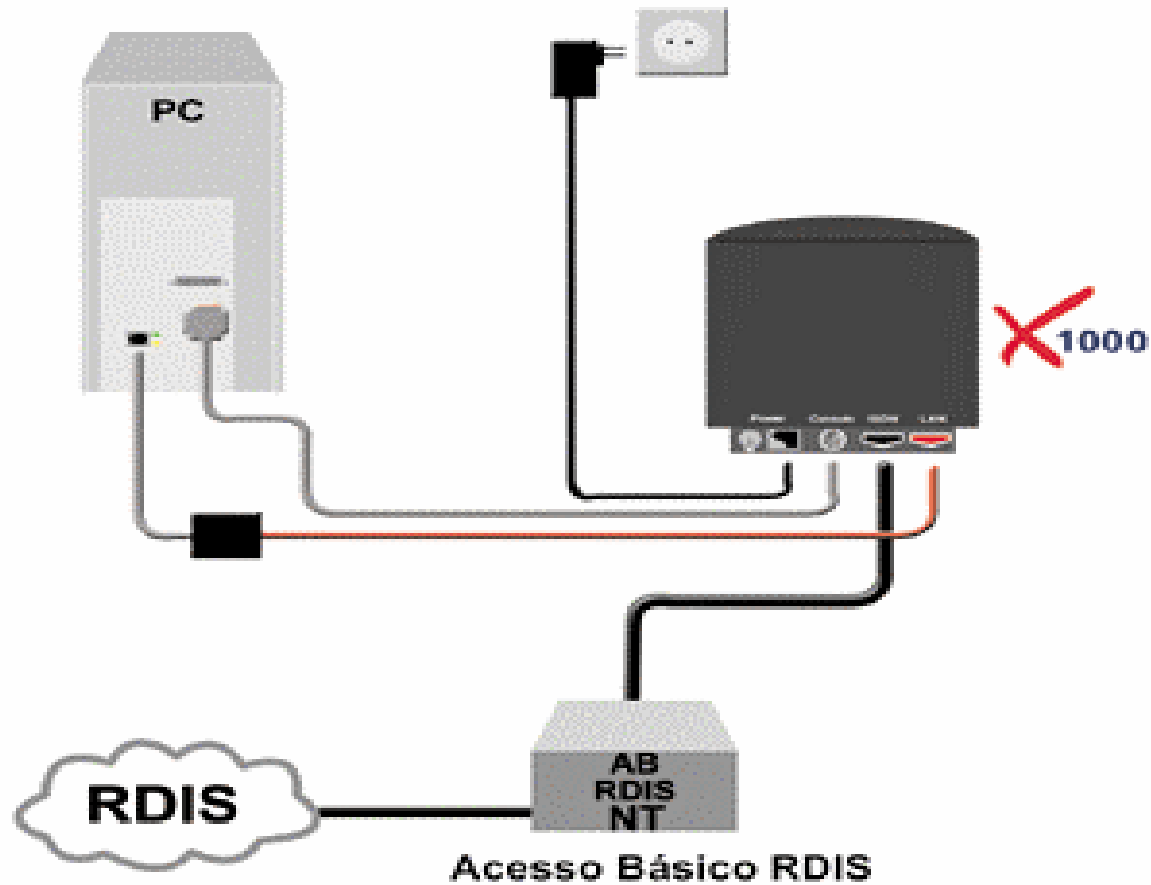
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- ▶ Decision to connect all schools
 - eEurope 2002 Action Plan
- ▶ Major change of the PoP network
 - Access router at each PoP
 - MegaPoP at the RCTS main site
 - Special security and redundancy mechanisms
- ▶ Major upgrade of the core network
- ▶ Professional Call Center
- ▶ Self-Service information system for schools



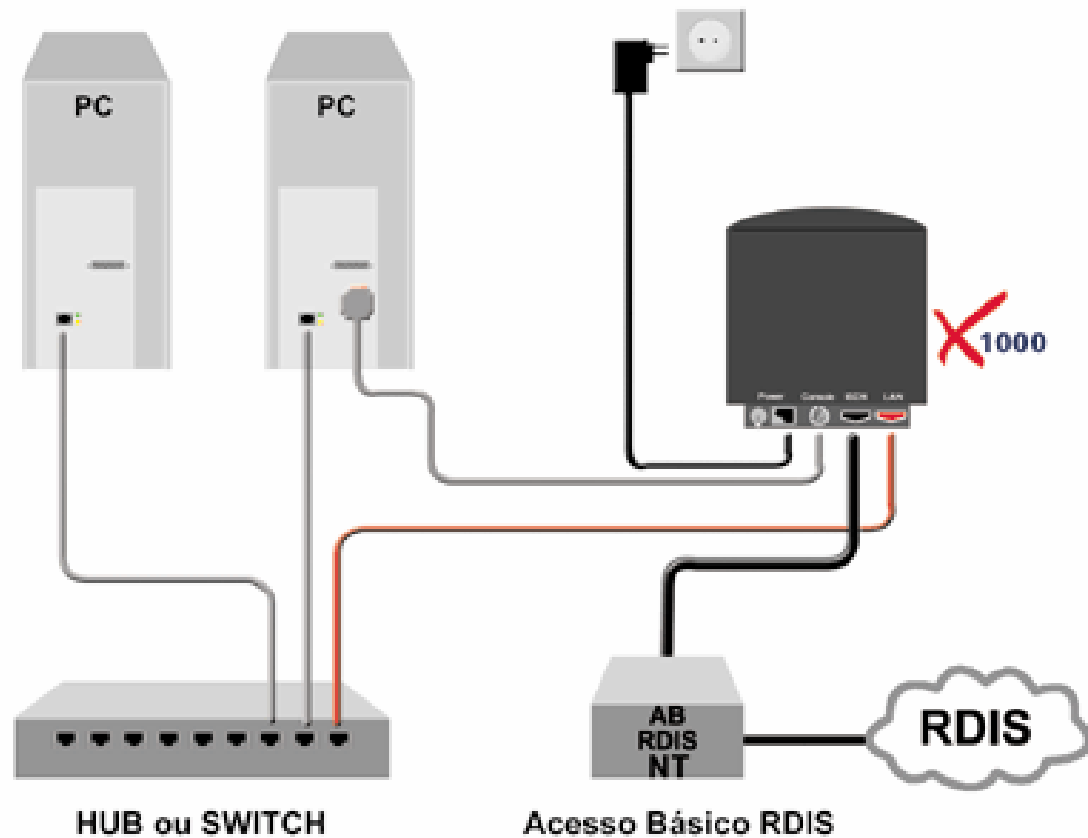
Infrastructure at each school (single station)

9



Infrastructure at each school (multiple stations)

10





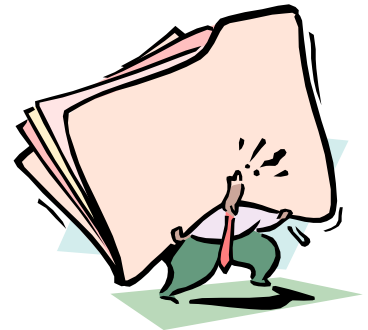
RCTS in numbers (end of 2002)

11

Schools levels 5 to 12	1739
Primary schools (level 1 to 4)	8803
Teacher training centers	257
Municipal Libraries	318
Associations citizens with special needs	127
Other associations	227


▶ The aDSL experience...

- International public tender
- Both data and voice
- Broadband local-loop
- Technology independent (radio excluded)
- VPN-IP with redundant connections to the backbone
- 1Mbps from 5th to 12th grade
- 512Kbps for primary schools



Managing site

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:: Iniciativa Nacional para a Banda Larga
Escolas em Banda Larga

Utilizador: **cm-sta-maria-feira**

[ajuda](#) | [contacto](#)

home **tecnologia** **intervenientes** **documentos**

Sair **Validar Câmara** **Validar escolas** **Submeter escolas** **Declarações** **FAQ**

Escolas

- EB1 Framil (Canedo)
- EB1 Grandal
- EB1 Mirante
- EB1 de Duas Igrejas (Romari)
- EB1 de Cimo de Aldeia
- EB1 Portela
- EB1 de São Bento
- EB1 Igreja (Escapães)**
- EB1 de Prime (Mozelos)
- EB1 Goim (Romariz)
- EB1 nº 1 de Milheirós
- EB1 Caldelas
- EB1 de Fonte Seca
- EB1 Igreja (Guisande)
- EB1 de Proselha
- EB1 nº 4 de Manhouce
- EB1 de Sobral
- EB1 de Outeiro (Arrifana)
- EB1 nº 3 de Stª Mª de Lamas
- EB1 de Póvoa
- EB1 nº 1 de Igreja (S. Paio O)

Validar dados das escolas

Início ?

Estabelecimento

Escola básica do 1.º ciclo Igreja (Escapães)

Igreja
4520 - 027 ESCAPÃES

Telefone: 256302310 Fax 256812975 Email info@eb1-igreja-n1.rcts.pt

Linha(s) de suporte

Tem linha:	Número:	Tipo:	Titular
Sim <input checked="" type="radio"/>	256302310	RDIS básico	Câmara Municipal de Santa Maria da Feira
Não <input type="radio"/>			

Acompanhamento

Nome:	Telefone:	Fax:	Email:
Nuno Pinho	256370888	256370811	nuno.pinho@cm-feira.pt

Horário de funcionamento: Períodos de indisponibilidade: Observações:

09.00 - 12.30	18/12/2004 - 02/01/2005	
14.00 - 17.30	07/02/2005 - 09/02/2005	
	21/03/2005 - 01/04/2005	

The process

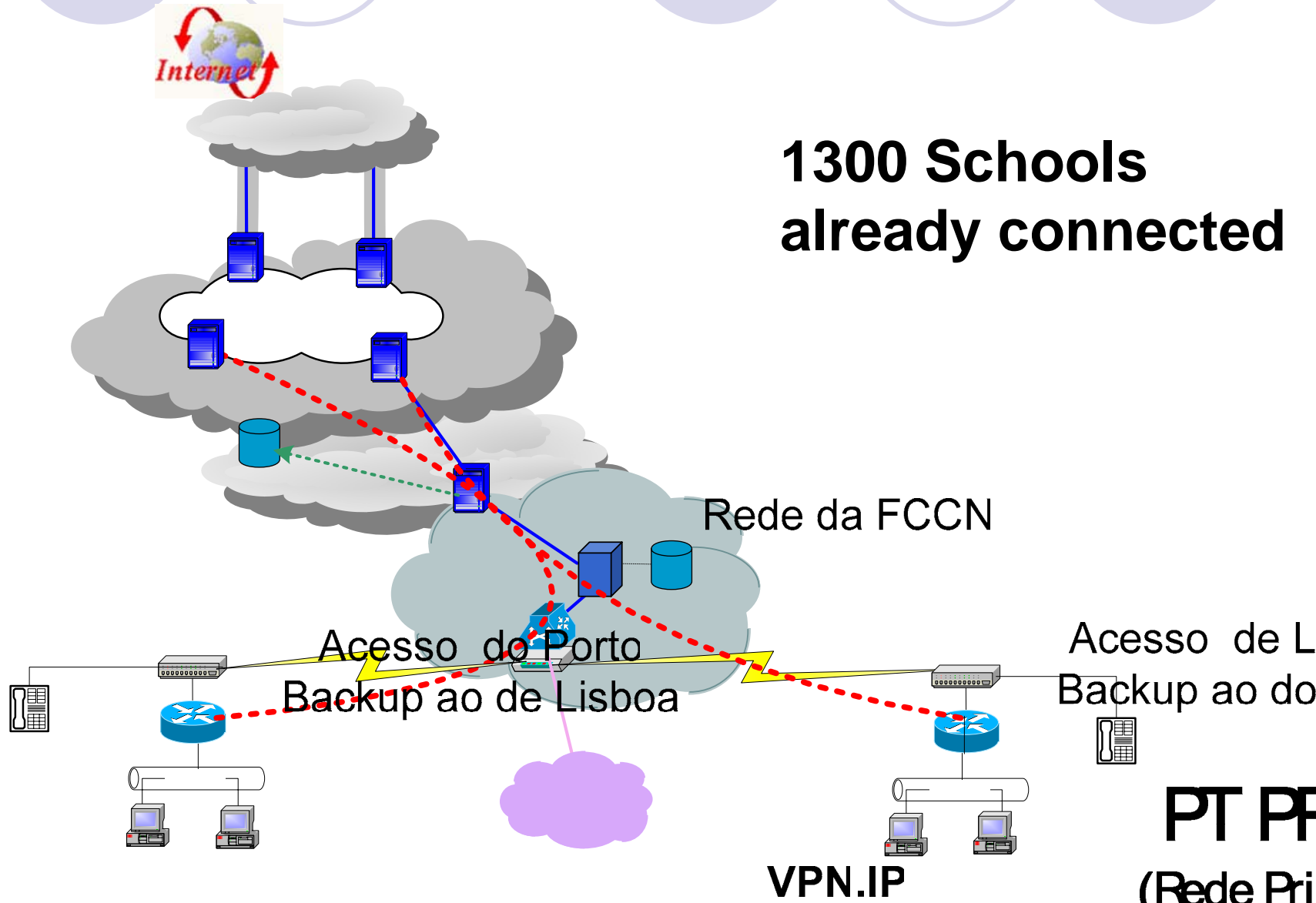
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- ▶ School selects an existing phone line and fill in their site profile (40% have done so)
- ▶ Telecom verifies phone line (50% error)
 - If OK, then installs the CPE
 - If not, school has to go back in the process
- ▶ Municipalities do this for their primary schools
- ▶ One month after, remove ISDN



Network topology

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Instalation process

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- ▶ LAN interface configuration is the same as in the ISDN router
- ▶ Acceptance of instalation is done automaticaly by a remote procedure
- ▶ Some dificulties
 - Schools with PBX (connecting the LAN)
 - Poor local-loops

