Quick update on

Milan Internet eXchange

RIPE 53

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RIPE 53 - Amsterdam

General Overview

- Members:
  - 58 members (+ 2 from RIPE-52) (Intratec, Cogent Communications)
- Operators:
  - 13 Carriers with their own trasmissive equipment
  - 16 "local" operators providing intra-campus fiber connections
- Traffic:
  - 21 Gbps peak (+ 4Gbps from RIPE-52)

What's new

- ## Administrative
  - New charging scheme active since Jan 2007
  - Access to the New Italian Gov Network (SPC)
- ## Technical
  - Layer 2 remote access through MPLS or Metro carriers New specific contract
  - VOIP Peering Platform
- ## MIX meeting held in Milan on 15th June
  - "MIX: interconnection, interoperability, neutrality: the new peering scenarios"
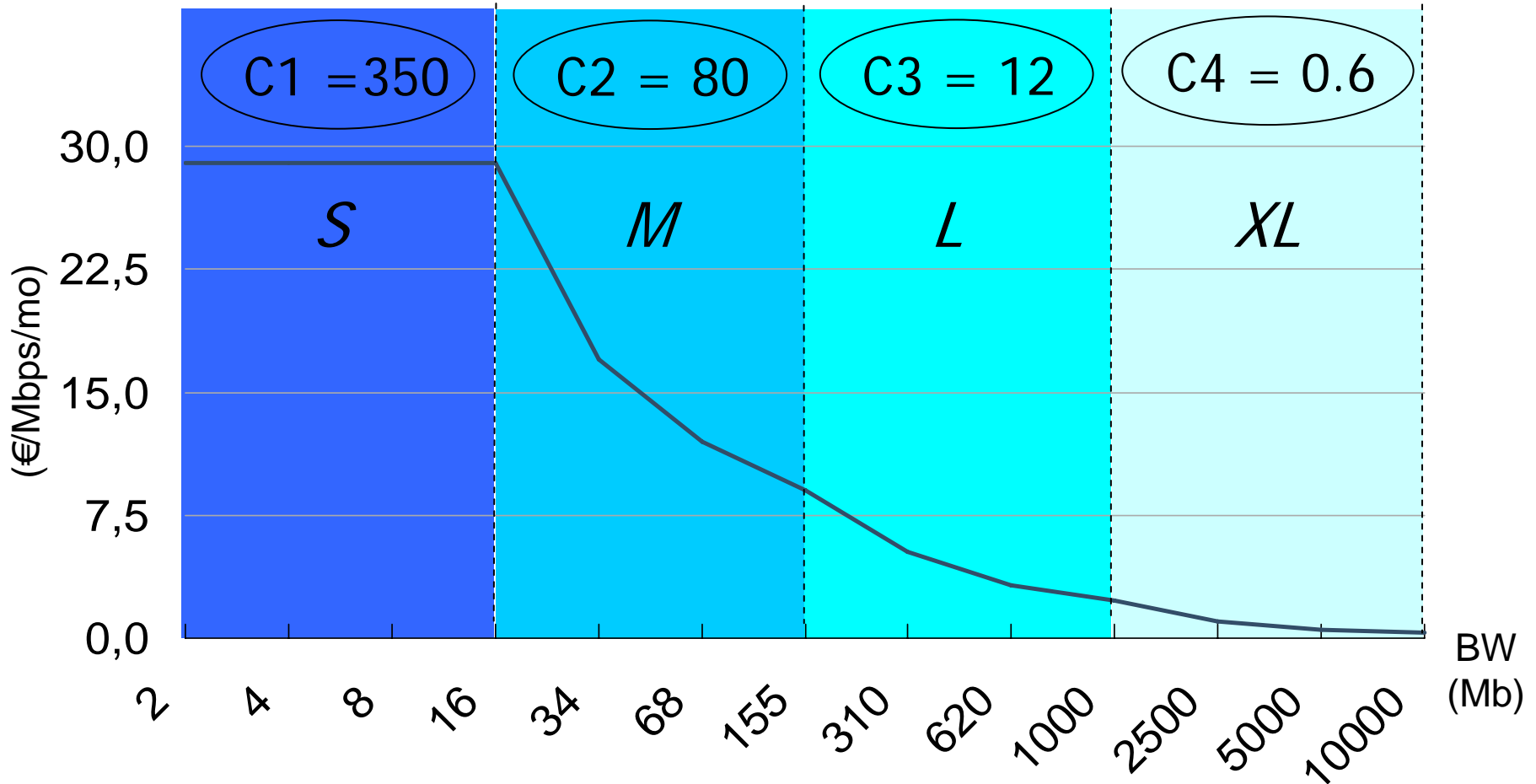   http://www.mix-it.net/eventi/1eventohome_en.htm

Charging Scheme Rationale

- From an "all-inclusive" to a "*per–need*" formula
  - Basic kit reduced (1/3 rack, 1 port) vs (1 rack, 2 ports)
- Fixed price per bandwidth, stepwise decreasing
  - backward computation of "Basic-Points Table"
- Incentives for customers which increase public peering bandwidth
- Separate quoting for extra resources
  - ports, space, private vlan...

Price vs Bandwidth

C1 = 350   C2 = 80   C3 = 12   C4 = 0.6

S   M   L   XL

30,0

22,5

(€/Mbps/mo)

15,0

7,5

0,0

2   4   8   16   34   68   155   310   620   1000   2500   5000   10000

BW (Mb)

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Access to SPC

- MIX hosts one of the core PoP of the new Italian Government Ip Network (SPC stands for Public Interconnection System)

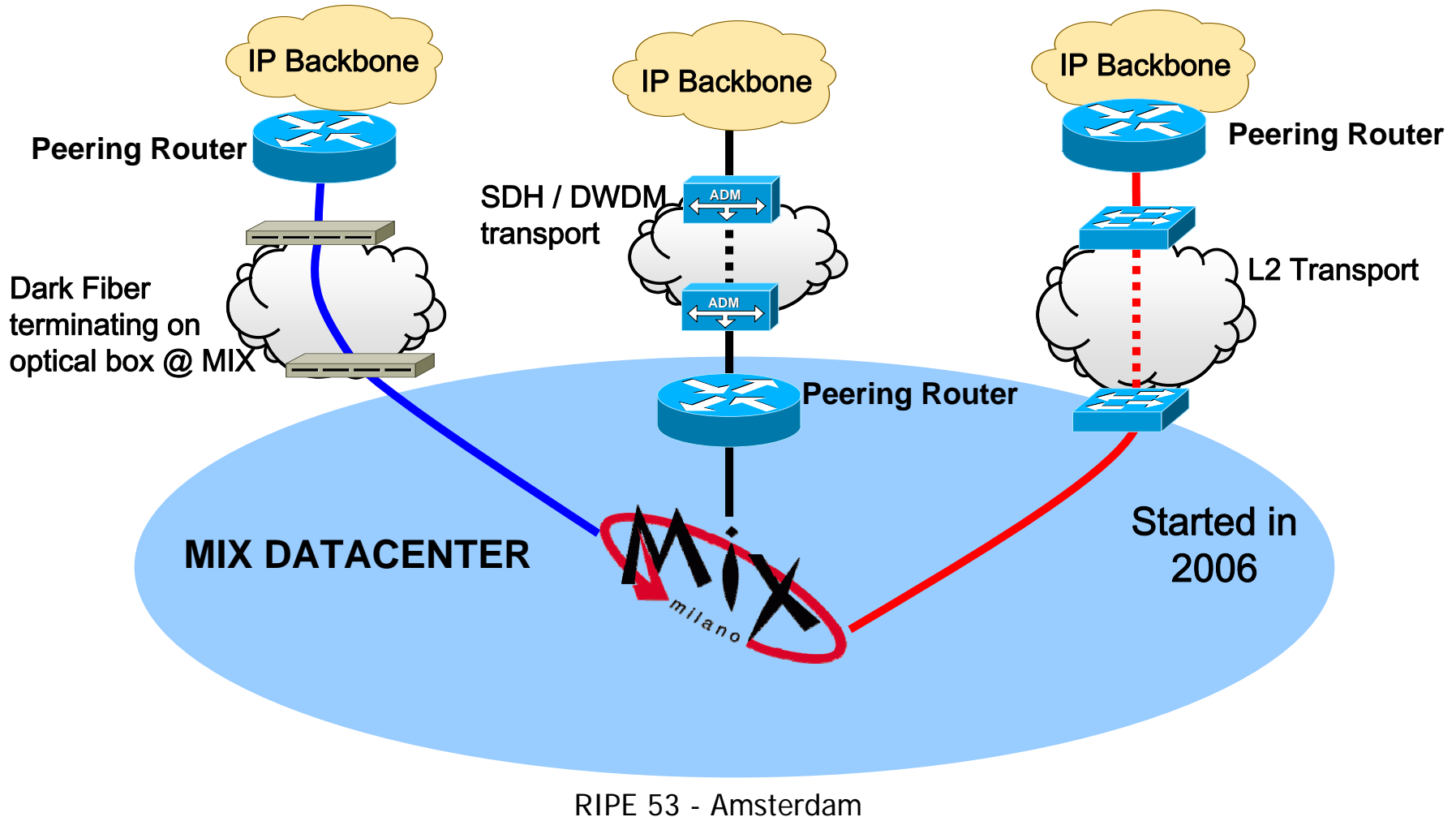- MIX Peering ISP can interconnect to the SPC gateways without additional investments

Access to MIX @ L1 or L2

- To maximise the chances to reach MIX we allow:
  - Deployment of dark fiber from datacenters located in Caldera Campus or elsewhere (remote routers)
  - Hosting of L1 (SDH, DWDM) equipment to deliver interconnection services to hosted routers;

- Starting from 2006 also:
  - Hosting of L2 equipment to reach MIX through LAN extension services (remote routers)

Access to MIX @ L1 or L2

IP Backbone

IP Backbone

IP Backbone

Peering Router

Peering Router

SDH / DWDM transport

ADM

ADM

Dark Fiber terminating on optical box @ MIX

L2 Transport

Peering Router

MIX DATACENTER

Started in 2006

L2 connections to MIX

- Carriers able to provide MPLS-L2 or *more generally* LAN extensions (*metro carrier)* transportations services can provide MIX remote access

- L2 operators must sign a separate contract with MIX with specific bilateral SLAs (*technical and administrative*)
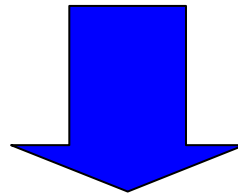
L2 Tech Policies

- Paradigm:
  1 MIX port = 1 customer = 1 MAC address
  - Mac Addresses filtering: port security
  - MIX IEEE OUI - based

- No Spanning Tree

MIX VOIP Reasons

- "Converging" Networks ➡ Converged XP
- "N-play" services key for all our customers
- Voip Peering aside Internet peering maximises efficiency

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VOIP Italian XP

MIX VOIP Objectives

- Help growth of a VOIP neutral marketplace
- Help newcomers and ISPs to get into the field (lowering initial investments by sharing border infrastructures)

- VOIP Quality Measurements Focus

MIX Voip Numbers (Sep '06)

- 10 Connected Voip Providers

Eutelia	Infracom
Netscalibur	KPNQwest Italy
Intercom	I.Net/NGI
Utility Line Italia	Fastweb
Tiscali	Mc-Link

- Carrier Enum services available

MIX VOIP Ongoing Work

- Standardization support for presence, instant messaging and video calls;

- Neutral Accounting on CDR;

- Facilitate access to Emergency Numbers from pure Voip networks

- Build up a web marketplace for Long distance market

- Explore other services for SIP based peering (inter-domain access control, CDR "coupling" and encryption)

Thanks!

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