

# RMDCN Implementation

Tony Bakker

Network and Security Section

ECMWF

# Countries in Initial Deployment

Country	Ready for Service Acceptance date	Country	Ready for Service Acceptance date
AUSTRIA	9 July	LITHUANIA	21 July
BELGIUM	15 July	FYR MACEDONIA	8 July
BULGARI	7 July	NETHERLAND	24 June
CZECH REPUBLIC	22 July	NORWAY	16 June
DENMARK	24 June	POLAND	21 July
FINLAND	11 June	PORTUGAL	Installed
FRANCE	Installed	ROMANIA	23 July
GERMANY	1 July	SLOVAKIA	29 July
GREECE	1 Sept	SLOVENIA	7 July
HUNGARY	15 July	SPAIN	25 June
ICELAND	10 June	SWEDEN	23 June
IRELAND	18 August	SWITZERLAND	1 July
ITALY	18 June	SYRIAN ARAB REP	TBA
JORDAN	22 June	TURKEY	22 July
LATVIA	9 July	UNITED KINGDOM	2 July
LEBANON	6 August	ECMWF	Installed

# Overview

## □ PVC

- ◆ Asymmetric PVC

## □ Backup issues

## □ ECMWF Member States PVC's

- ◆ Over-subscription Access Line

- ◆ Load Balancing (MHSRP)

## □ SNMP access to CPE

# PVC

- Permanent Virtual Circuits between CPE's
  - ◆ Committed Information Rate (speed)
  
- During ITT restricted to symmetric CIR
  
- Asymmetric CIR's possible
  - ◆ e.g. 64 kbps inbound; 8 kbps outbound
  - ◆ non-trivial cost calculation

# Costs of Asymmetric PVC

CIR Ratio (lesser/greater)	Discount Percentage on symmetric CIR Price
99% - 76%	0%
75% - 51%	10%
50% - 26%	15%
25% - 13%	20%
12.5% - 0%	25%

# BACKUP - ISDN

## □ ISDN costs

- EQUANT Service
- User Site connection

## □ EQUANT ISDN dialback service price includes:

- ISDN DBU at User Site
- ISDN DBU at POP
- ISDN call charges

## □ User Site needs to arrange their own ISDN connection

- and pay for installation and rental

# Diverse Route BACKUP

□ Ideal situation:

- ◆ Access Line goes one direction to POP
- ◆ Backup uses a diverse route to POP
- ◆ within SLA this is controlled by TNPA figures  
(between CPE and CPE)

# Lower Speed BACKUP

□ ISDN only available at lower Speed  
(e.g. France, Czech Republic)

□ Solutions:

◆ use the lower speed ISDN

→ implications for TNPA in SLA

◆ use a second Access Line



# ECMWF

- Mission Critical: Dual CPE, Dual Access Lines
  - ◆ one active, one standby
  - ◆ CISCO HSRP (CPE's share one virtual IP address)
  - ◆ PVC to Member States with symmetric CIR (96 kbps)
  
- Member States increased CIR's which caused over-subscription of Access Line
  - ◆ Solution: Load Balancing (i.e. use both Access Lines)

# Mission Critical Load Balancing

## □ Use both Access Lines

- ◆ configure half of PVC on one router, other half on second router
- ◆ Uses MHSRP (each router has got its own virtual IP address)
- ◆ Restrictions: CISCO LAN interface hardware must support this
  - only Fastethernet port for CISCO 45xx/47xx

## □ During failure of one CPE/Access Line SLA affected (Performance parameters)

# SNMP Access to CPE

- iVision does not allow direct SNMP access to CPE's
  - ◆ Only accesses database information (update 15 minute interval)
- ECMWF requested EQUANT to provide SNMP access to local CPE
  - ◆ EQUANT now offers SNMP access to local CPE by User Site (still negotiating details)