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An H.323 Videoconferencing Service for the German Research and Education Community

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DFN: Targets & Objectives

- Community: Higher **Education and Research** (universities, research institutions, industry**,** government agencies, schools)
- Provision of **national and international connectivity** by means of a leading edge infrastructure (G-WiN)
- Bundling **community requirements**
- **Testbeds** for next generation network technologies and promotion of **new applications**
- Organisation of **international collaboration**

DFN: Finance & Technics

- **non-profit** organisation but
- **Operational costs** must be fully covered by customers: **charges** for services
- approx. **600** connected sites,
  ~ **1.100 TB/month** network throughput
- **95%** of all traffic is **IP**
- Global Upstream capacity 5 Gigabit/s
- connected to North American Research Networks @ 2,5 Gigabit/s via GEANT

DFN: Services Provided

- **DFNInternet**: IP-service (national, international, NREN-to-NREN as well as Global Upstream)
- **DFN*VideoConference* (DFNVC) Managed Video Conference Service**

DFNVC:
Managed Video Conference Service

- Increasing **need for audio and video transfer** with acceptable quality
- Usage **scenarios**: directors as well as scientists, teleteaching, telemedicine
- Deployment of a videoconferencing service under ITU standard **H.323**
- **Pilot service** since Q1 2002
- Charged **DFN service** since April 2003

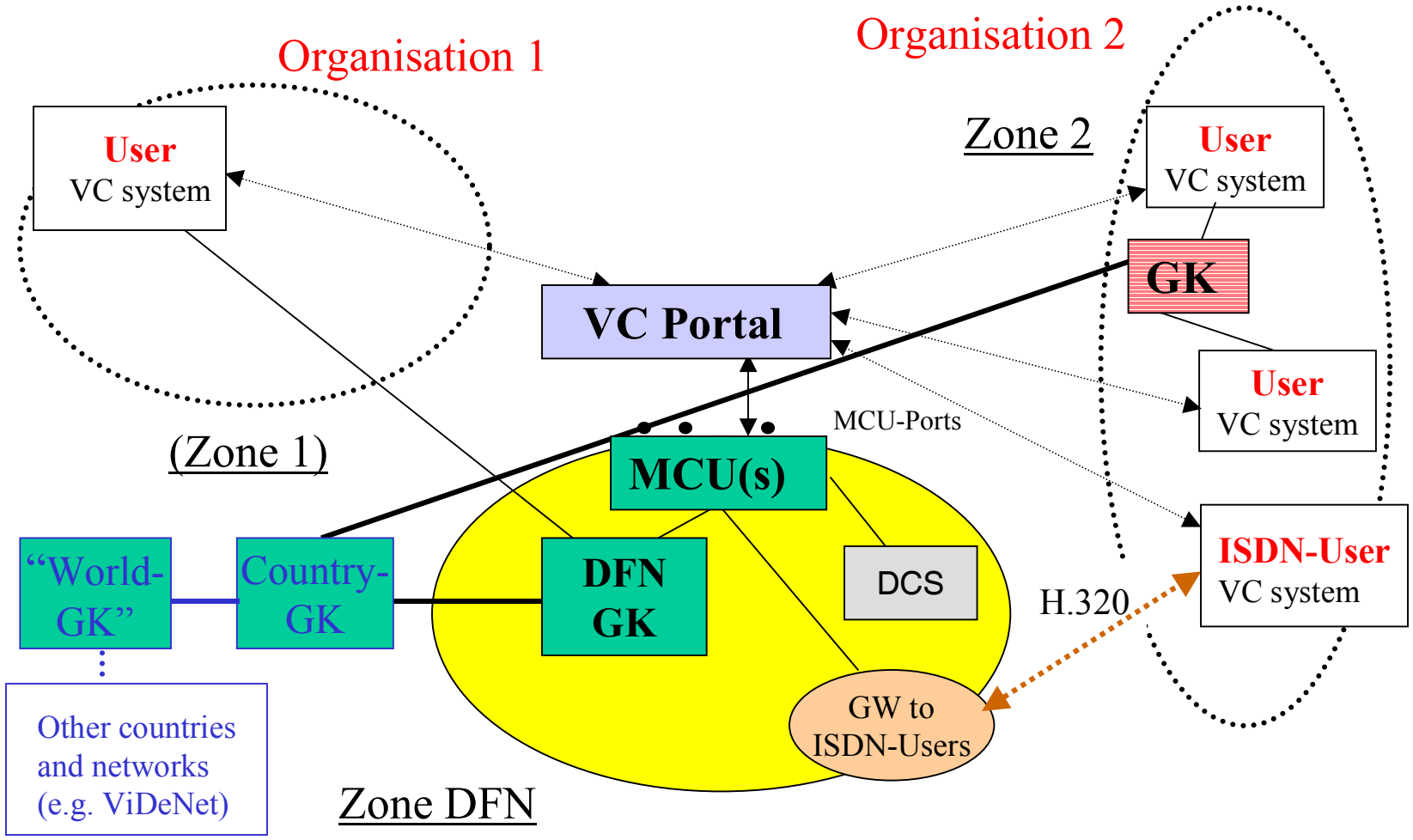
Demands (I)

- from a user's point of view
  - reliable **management** of the MCU(s)
  - **reservation tool** for MCU (ports) through the user (scheduling)
  - **ad-hoc** conferences
  - **Video quality:** at least 384 Kbit/s (per user)
  - **Audio quality:** G.722
  - **T.120** for application sharing
  - **Continuous Presence, Transcoding**
  - Support for all **configuration** and **operational problems (e.g. firewall problems)**

Demands (II)

- from a service and management point of view
  - **consulting service**
    - training of local administrators
    - device tests, hotline, FAQs
  - **User directory**
  - **Monitoring** (failures, performance)
  - **Gatekeeper structure** (international)
  - **Firewall**
  - Goal: system should serve up to 20.000 users

Service (Architecture)



Service Model

- **Who may use** the service?
  - users in DFN member organisations and

    users in national/international partner organisations (guests)
  - member **organisation contracts DFN** and pays flat **charge to DFN** according to the bandwidth of the DFNInternet connection
- **How to use** the service **- 2 scenarios**:
  1. Computing centres administer their users via own Gatekeeper (GK) (**local administrator**),

     user support from local administrators
  2. Users register with the DFN-GK, get direct support

Operational Model

- Responsibilities DFN
  - **Management** of all technical components
  - Setting up a **dial plan** for the GK structure
  - Provision of the **VC portal**
  - **Training courses** for local administrators
  - **Hotline**, mailing lists, documentations, charging
- Responsibilities Organisations
  - Installation of a **technical administrator**
  - Participation at **training courses**
  - Choice of **VC end systems** & operating a **gatekeeper**
  - **Training** & **First level support** for the users

Service Components

- Equipment provided:
  - **MCU** viaIP-400 Radvision V2.2 (4 MCU-100, 1 MCU-60), upgrade to V3.0
  - **Gateway** viaIP gw-P20 Radvision V 1.0
  - **Data Collaboration Software** viaIP DCS 100 Radvision V 2.0
  - Enhanced Communication Software **Gatekeeper** viaIP ECS 3000 Radvision V 2.0
  - **Video Processing** Server VPS V 2.2.9
  - **Audio Transcoder** Modul TCM-30

Service Features

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- The service :
  - allows **ad hoc** conferences
  - offers Dial-In for **H.320**-systems
  - supports **preparation** and **initiation** of conferences (self dialing)
  - provides a **Global Dialing Scheme**
  - makes available **test results** and descriptions for VC systems
  - offers **hotline** and **training courses** for administrators

Pilot Service

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- Participants during pilot (status 01/03)
  - 75 **organisations** and institutes
  - 26 organisations with **own gatekeeper**
  - ~300 **VC endpoints in DFN zone**
- International Event during pilot
  - participation in the international **Megaconference**
  - Dec 10, 2002: interconnection of 16 MCU's
  - 200 participants worldwide, 41 devices on DFN-MCU

Open Issues

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- **Service Administration** including authorisation, authentification and accounting
- **Management** component to administer and control all **ressources** (end-to-end)
- **Reservation system** for MCU ports
- Distributed **directory** (LDAP technology)
- Examination of system **security** and **service quality**
- Integration of **new functions** (e.g. streaming, VoIP structure, SIP based signalisation)

Summary

Hints for interested organisations

- **Introduction** into the topic
  - Videoconference Cookbook **http://vcc.urz.tu-dresden.de**
  - VC portal **http://www.vc.dfn.de**
  - Attendance of a training course
- **Procurement** of VC systems and gatekeeper
  - Consulting via hotline and have a look at **http://vcc.urz.tu-dresden.de/vc-systeme/**

Thank you!