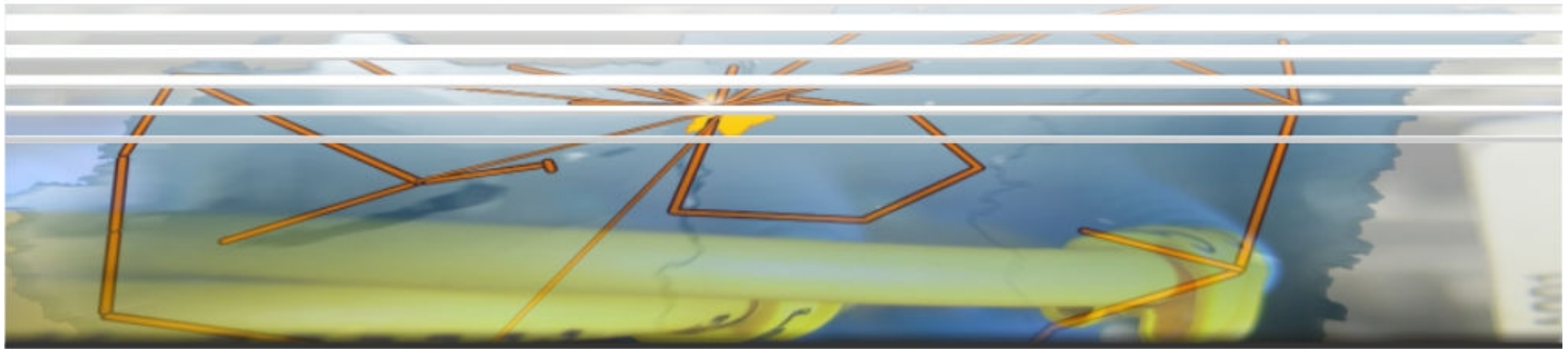


International R&E collaboration environment



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VICES Project partner visit

Budapest

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Content

- Motivation
- Collaboration with other NREN communities
 - Global Dialing Scheme
 - nrenum.net initiatives
 - GN2 educonf
- TERENA Task Forces

Motivation

- Motivation:
 - Isolated video network has limited usage/coverage
 - Projects go international (→EU)
 - Knowledge transfer
 - Science is international
- Technical requirements:
 - No proprietary systems and solutions
 - Standards, standards, standards...
 - Operational environment



Global Dialing Scheme

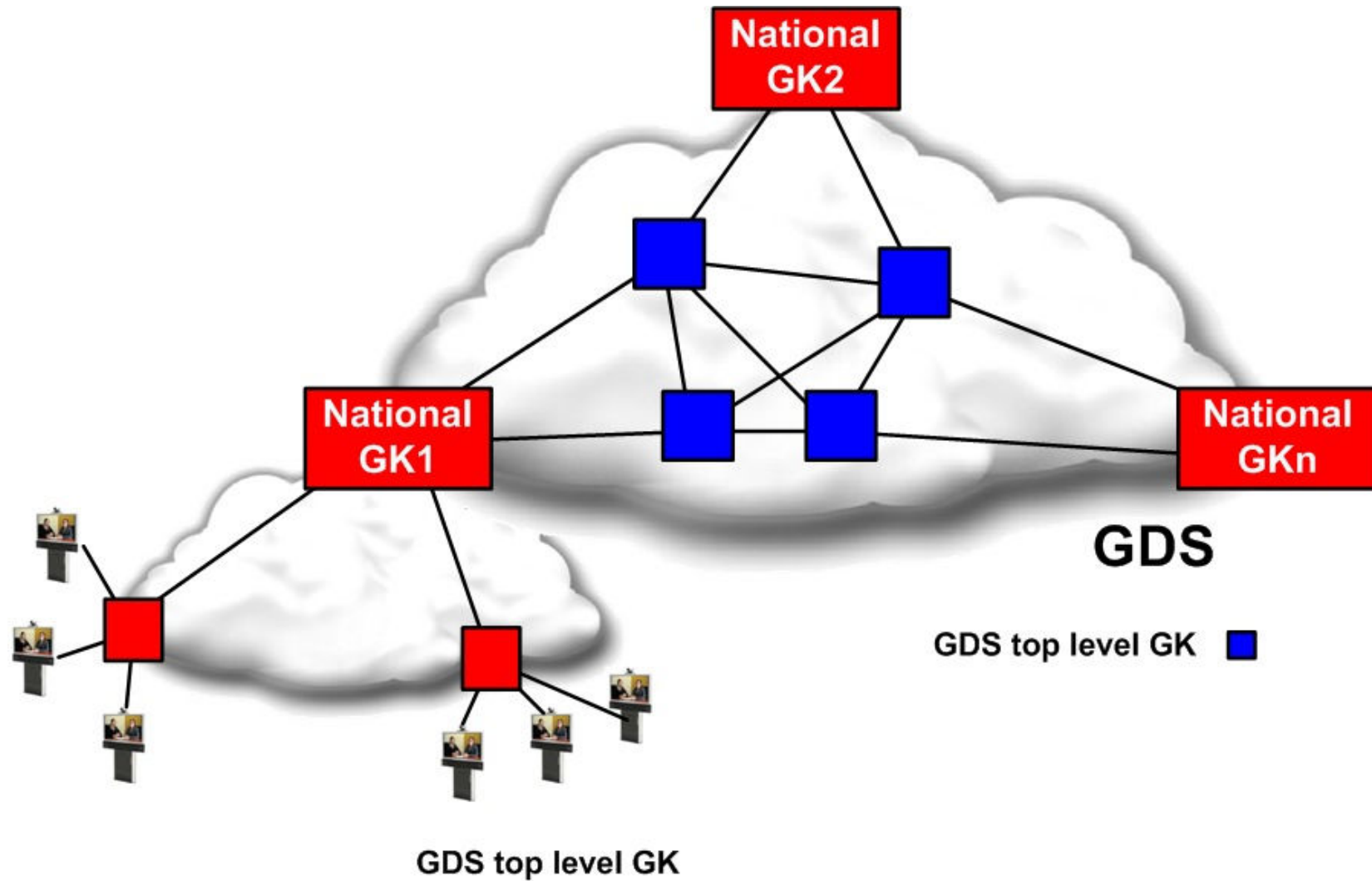
Global Dialing Scheme

- International numbering plan for global collaboration
- H.323 video/voice network (standards-based!)
- Developed by ViDeNet (Internet2) and some European NRENs
- Global network of H.323 gatekeepers
- Scales to unlimited GKs (in theory)
- E.164-like terminal numbers
- Users:
 - Mostly became an NREN community service
 - Originally: R&E + commercial organizations
- Plans to out phase (not yet possible!)
 - VC world is still too H.323 biased
 - Legacy deployments?

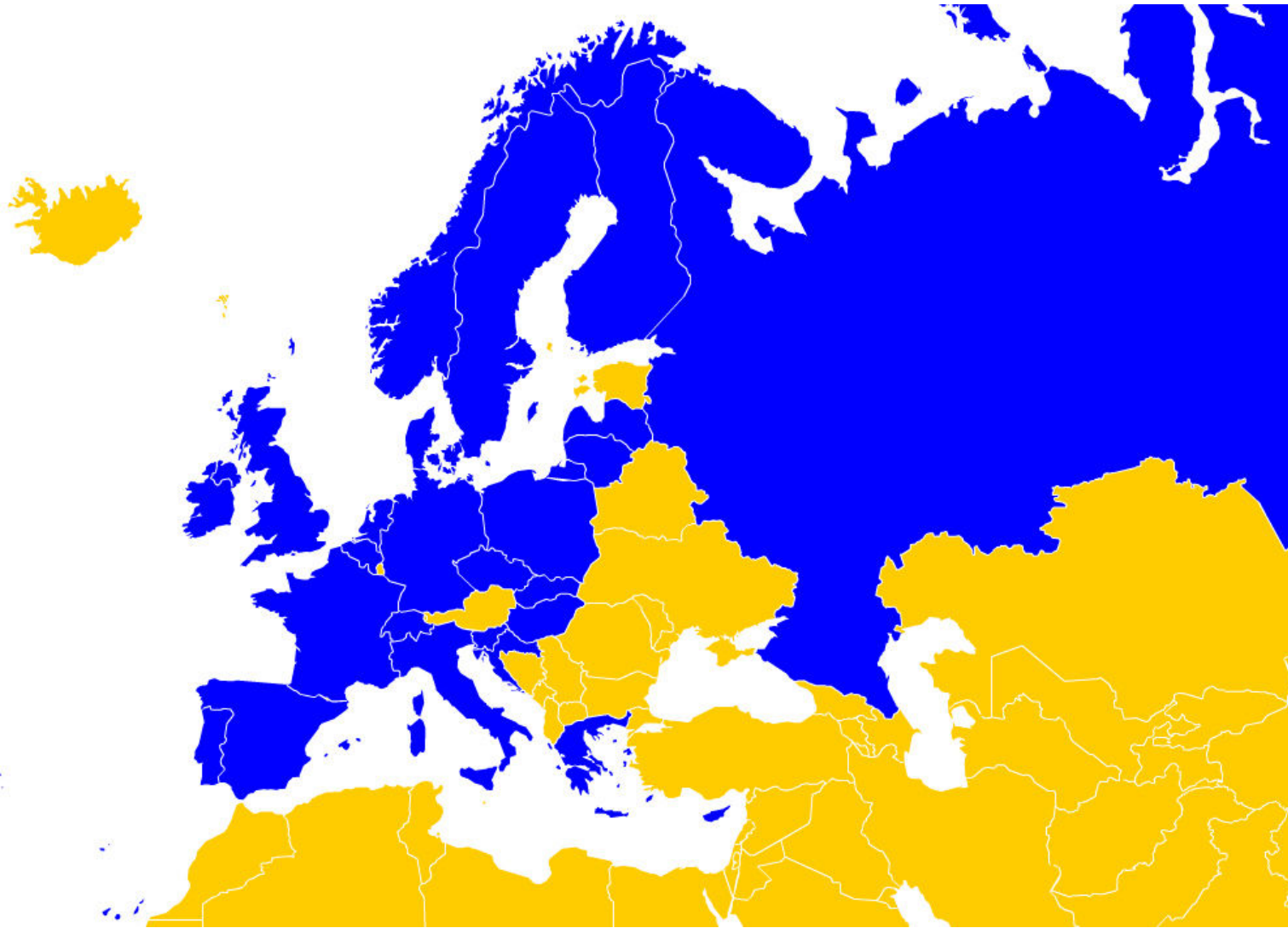
GDS numbering

- GDS number = <IAC><CC><OP><EN>
 - IAC = International Access Code (00)
 - CC = Country Code (see ITU-T codes)
 - OP = Organizational Prefix
 - EN = Endpoint Number
- Example: 0036**100**1010
 - CC = 36 (Hungary)
 - OP = 100 (prefix of our gatekeeper)
 - EN = 1010 (VC terminal extension)
- E.164-like:
 - Familiar to end-users
 - E.164 uses „+” instead of „00”

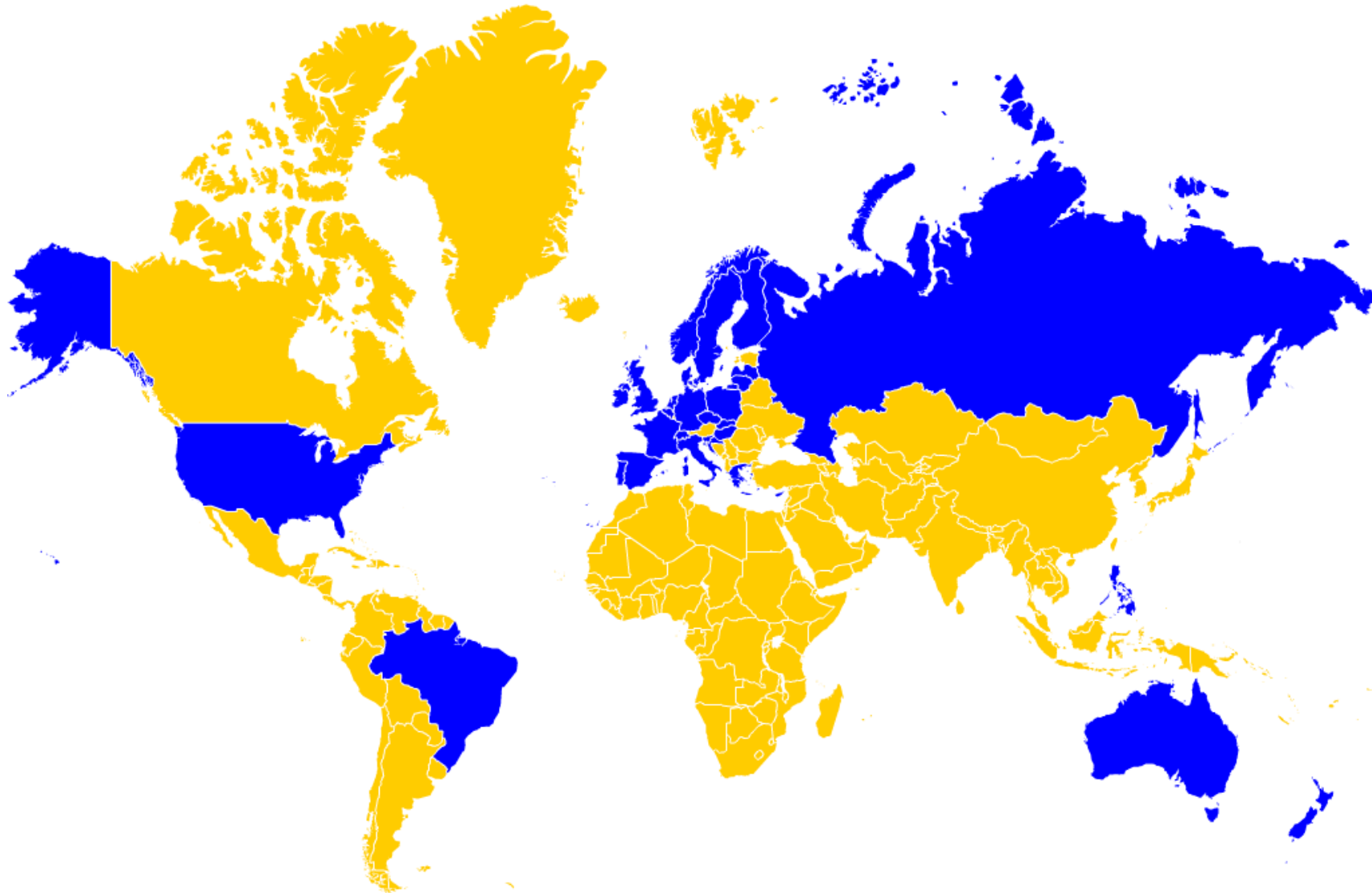
GDS architecture



GDS coverage - Europe



GDS coverage - world



What should be done?

- Request your national space:
 - Informal process
 - All partners should do this:
 - Macedonia
 - Serbia
 - Albania (depends on the number of endpoints)
- Set up your own national gatekeeper
 - Linux + GnuGk is advised (<http://www.gnugk.org>)
 - You will get help from community
- Configure your gatekeeper(s)
- Get the blue colour on map 😊



nrenum.net – Home for the homeless

What is it all about?

- ENUM is using domain **e164.arpa**
- e164.arpa:
 - Called as “Golden tree”
 - Operated/allocated by national telecom authorities
 - Access is regulated
- Availability:
 - In some countries
 - Not available in most of the countries
- nrenum.net:
 - Temporal private DNS tree for NRENs
 - Allow ENUM based operation...
 - Until e164.arpa becomes available locally
 - You have to prove e164.arpa unavailability
- Started by SWITCH, now handed over to TERENA
- More info: <http://www.nrenum.net>



GN2 educonf - In support of European collaboration

GN2 educonf – Addressed problems

- Inter-NREN technical problems:
 - Very slow resolution (see GDS)
 - No co-ordination between NREN VoIP/VC groups
- Lack of information:
 - Service contact points
 - Endpoint locations (VC venues)
 - Technical documents
- Lack of common helper tools:
 - No global status of inter-NREN infrastructure
 - No tools to support joint work of NREN admins
- No multipoint resources for international meetings:
 - Volunteered, without guarantees

GN2 educonf – Basics

- History: TERENA initiatives (TF-VVC, TF-VSS)
- GN2 new service activity (SA6) started in Y4 (Sept, 2007)
- Service name: educonf
- Partners:
CARNET, CESNET, GRNET, HEANET, HUNGARNET, NORDUnet, PSNC, REDIRIS, SWITCH, TERENA, UoM
- Project timescale: Sept 2007 to March 2009
- Effort: ~55MM
- Service website:

<http://educonf.geant2.net>

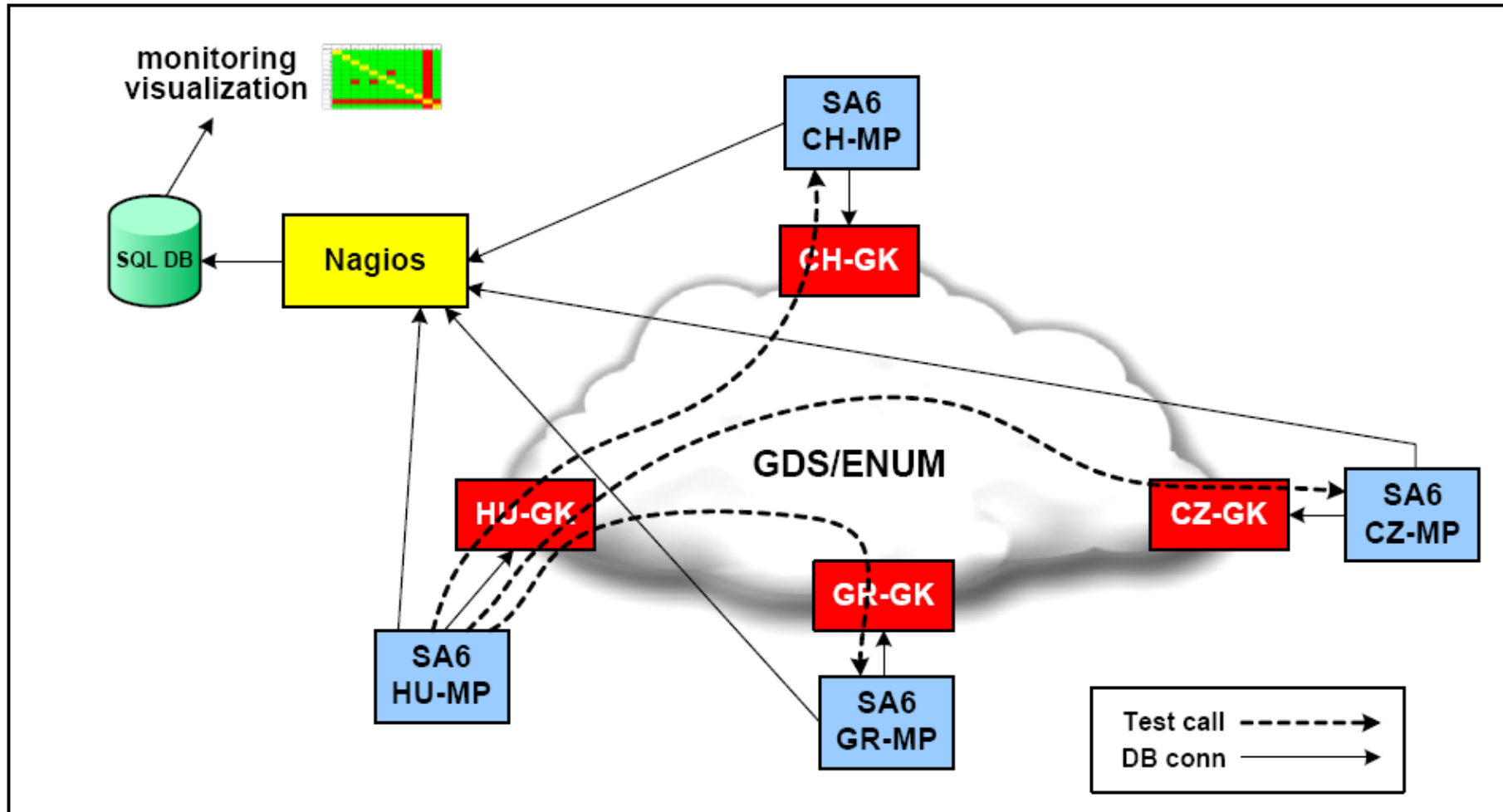
GN2 educonf – Inter-domain support

- Co-ordination of interdomain VC/VoIP problem resolution
 - GDS connectivity between countries (H.323, old)
 - ENUM connectivity (SIP, new)
 - Introduce lightweight procedures
- Provide helper tools for admins:
 - Joint educonf-admins mailing list
 - Trouble Ticketing System
 - Interdomain monitoring system (GDS, ENUM)
 - Directory (contact database)
 - wiki (Knowledge Base)

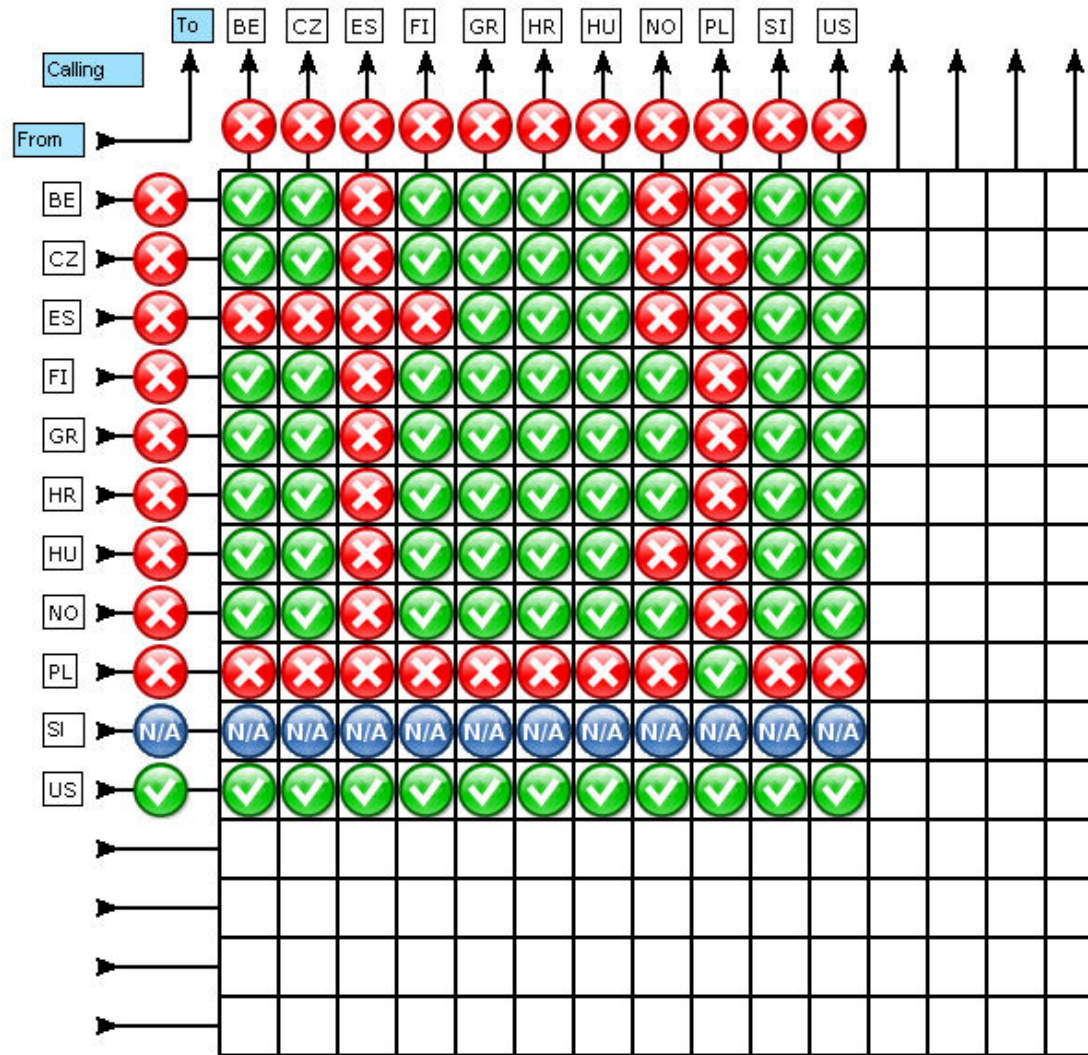
GN2 educonf – Inter-domain monitoring

- Goal: monitor interdomain H.323 and SIP infrastructure
 - Measure connectivity between countries
 - Develop a country reachability matrix
 - Alert generation for admins
 - Historical view and statistics
- Implementation:
 - Nagios based architecture
 - Measurement points:
 - Regular test calls to remote countries
 - Terminate test calls from remote countries
 - Web based visualisation (Matrix)

GN2 educonf – Inter-domain monitoring



GN2 educonf – Inter-domain monitoring



GN2 educonf – Directory

- Directory information scope:
 - Basic organization info
 - Your contact points (general, service admins)
 - Prefixes of your organization and their reachability (routing)
 - Your gatekeepers and SIP proxies
 - Your MCUs and their use policies
 - VC endpoint deployment info, geographical view
- Architecture:
 - Based on XML data provided by data maintainers (HTTPS)
 - Regular data harvesting
 - Storing and retrieval from central XML DB
 - Search by: geographical location and web forms

GN2 educonf – Directory

The screenshot shows a web browser window with the address bar containing `http://educonf.geant2.net/directory/result.php`. The main content area displays a search form with the following fields: Country (set to Hungary), City, Organization, and Prefix. A 'Submit' button is located to the right of the Prefix field. Below the form, the search results are displayed as follows:

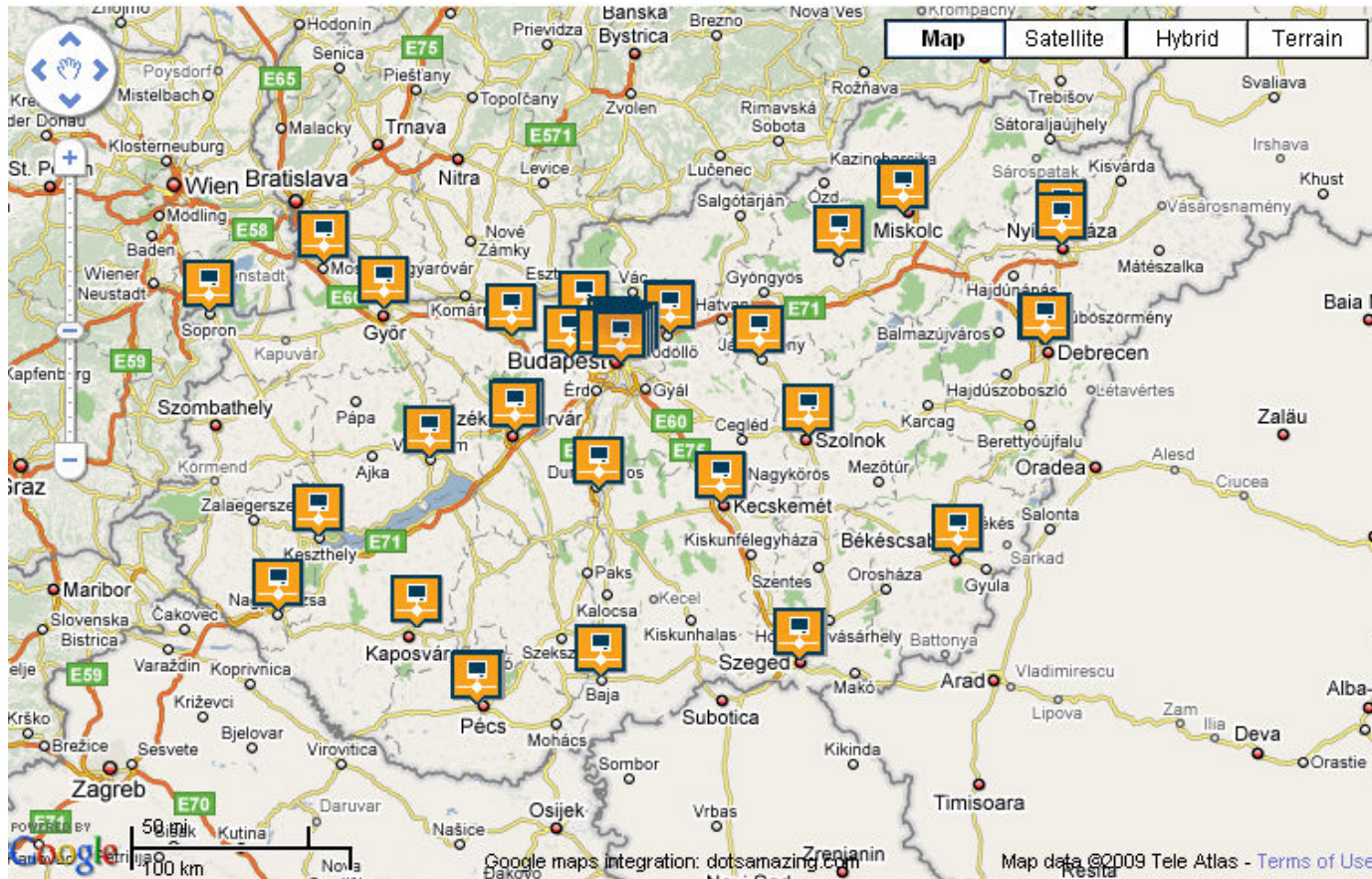
1 result found in 0.441 s.
[back to queries](#)

1 Budapest, Hungary

Country	Hungary
Organization	NIIF Institute (HUNGARNET) - National Information Infrastructure Development Institute (Hungarian Academic and Research Network) NIIF Intézet - Nemzeti Információs Infrastruktúra Fejlesztési Intézet
Contact	NIIF Institute general information NIIF Intézet információ intezet@niif.hu pstn:003614503060
Location	NIIF Institute offices Victor Hugo 18-22, 1132 Budapest NIIF Intézet Coordinates: 47.51810455, 19.05579567 See location on map

The browser's taskbar at the bottom shows a single window titled 'educonf'.

GN2 educonf – Directory



Organizations

Endpoints

- Croatia
- Czech Republic
- Finland
- Greece
- Hungary
 - NIIF1 (Budapest)
 - NIIF-HD2 (Budapest)
 - NIIF2 (Budapest)
 - BMK (Békéscsaba)
 - BKAE (Budapest)
 - BCEINFO (Budapest)
 - BMF (Budapest)
 - BME (Budapest)
 - BME-GTT (Budapest)
 - DE2 (Debrecen)
 - DE3 (Debrecen)
 - DF (Dunaújváros)
 - ELTE (Budapest)
 - ELTE-TOFK (Budapest)
 - EJF (Baja)



GN2 educonf – Pan-European multipoint?

- Ideas:
 - Multipoint resource for European research projects and collaboration
 - Address digital divide
 - Help R&E communities without national VC services
 - NREN backup
- Possible solutions:
 - Use spare capacities of NRENs
 - Dedicated European multipoint facility
- Cancelled:
 - Would require broad consensus
 - Against NREN pay-services



TERENA Task Forces

TERENA Task Forces

- International discussion/development groups
- Each focusing on a single topic
- Participants: NRENs, universities
- Best effort basis
- Good source of information, knowledge transfer
- Topics:
 - Everything from network...
 - ...through middleware to collaboration
- Open for NRENs, universities, etc.

TERENA video/voice related Task Forces

- TF-STREAM (1999-2001): streaming
- TF-Netcast (2003-2004): streaming
- TF-VVC (2004-2006): VC + streaming
 - Best practice documents
 - IP telephony cookbook v1
- TF-VSS (2006-2007): educonf study
 - State-of-the art studies
- TF-ECS (2006-2008): voice/video collaboration (SIP)
 - SIP based collaboration model
 - VMWare VoIP image
 - IP telephony cookbook v2
- Media Management and Distribution (2008-): video content portals, streaming

Thank You!



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