Unified Communications mit ENUM

ENUM-Tag der DENIC eG

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Vision and Strategy

Agenda

Current Technology & Market Trends

SEN Vision and Strategy

SEN Portfolio and Open Communications Environment
Today’s Communications Challenges

The Communication Dilemma: Fragmented Communications

- Multiple interconnected PBXs
- Meshed networks and complex routing
- User licenses tied to sites
- Proprietary hardware and devices

Increasing Mobility Essential for Business

Need to Modernize Business Processes and Team-Working

Need to Converge IT and Comms Domains

... with acceptable Operations and Support Costs
Major Trend – Deploying Open Communications

- Proprietary TDM
- On-Site Architecture
- Cordless Mobility
- On-Site applications
- Voice & Voicemail
- Inter-Site Interworking

- VoIP
- Distributed
- Advanced Mobility
- Advanced applications
- Advanced features
- Excellent legacy support

Enhances Data Centers by
- Unified Communications
- Open IT Based Communications
- Fixed Mobile Convenience
- Business Process Integration
- Rich User Experience
- Deployment Choices
- Business Continuity and Integrity
Enterprise PBX market – still high demand for converged platforms, with pure IP picking up quickly

Source: Gartner, 12/06
* Analysis based on Gartner numbers: Sum of Conv TDM and Conv IP
Vision and Strategy

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Current Technology & Market Trends

SEN Vision and Strategy

SEN Portfolio and Open Communications Environment
Seamless Integrated Enterprise Architecture, SIENA

Open Communications
Enterprise 2.0

Customized IT Suite
- CRM
- ERP
- Workflow Management
- Process Management
- Presence & Profile

System Integration
- Fixed Network (LAN / WAN)
- Cellular Network (GSM, UMTS, WiMax)
- Wireless Network (DECT, WLAN)

Open Connectivity

SOA
- Collaboration
- Identity & Location Management
- System Management

Security
- IT Adaptors
- Accounting
- Authentication
- Authorization

Enterprise 2.0
- CRM
- ERP
- Communications
- Mobility

Any Device

Open Communications

Any Network
Siemens’ Perspective
A software and services approach to business communications

Voice will stay fundamental
Software-based
Maximizes business value
Multi-Vendor Infrastructure
Multi-Vendor services capabilities
Vision and Strategy
Agenda

Current Technology & Market Trends

SEN Vision and Strategy

SEN Portfolio and
Open Communications Environment
OpenScape Unified Communications Suite – Vision
A comprehensive software and services portfolio

OpenScape Service Management

OpenScale Integration Services
- CEBP Microsoft Ecosystem
- CEBP IBM Ecosystem
- CEBP Other Line of Business Apps
- CEBP Vertical Industry Apps
- Security

OpenScape Applications
- OpenScape Voice*
- OpenScape Video
- OpenScape Messaging
- OpenScape UC Application
- OpenScape Mobility
- OpenScape Contact Center

Software Foundation

OpenScape Unified Communications Server
- SIP Session Control
- Aggregated Presence
- QoS Management
- Session Detail Reporting
- Admin. & Licensing
- Availability Management

Any Client, IP, IT, or Telephony Infrastructure

* HiPath 8000 V3.1 R2
OpenScape Exchange
Hierarchical Routing of Calls within Enterprises

Works as “Intelligent Tandem Routing Engine”

*) Future
HiPath 8000 ENUM Server
Networking

DMZ

ENUM Server
FQN: 089-636-123 ?

HiPath 8000

ENUM Client
FQN: 089-636-123 ?
sip:alice@enter.de

Session Boarder Controller

INVITE sip:alice@enter.de

089-722-***

Public Network(s)

089-636-123
sip:alice@enter.de
## ENUM in standards

### IETF:

<table>
<thead>
<tr>
<th>RFC</th>
<th>Description</th>
<th>Obsoleted by</th>
</tr>
</thead>
<tbody>
<tr>
<td>2915</td>
<td>The Naming Authority Pointer (NAPTR) DNS Resource Record</td>
<td>RFC4301, RFC3402, RFC3403, RFC3404</td>
</tr>
<tr>
<td>2916</td>
<td>E.164 Number and DNS</td>
<td>Obsoleted by RFC3761</td>
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<tr>
<td>3761</td>
<td>The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM)</td>
<td></td>
</tr>
<tr>
<td>3764</td>
<td>Enumservice registration for SIP Address-of-Record</td>
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### ETSI:

<table>
<thead>
<tr>
<th>ETSI TS 102 172</th>
<th>Minimum requirements for interoperability of ENUM implementations</th>
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</thead>
<tbody>
<tr>
<td>ETSI TS 102 051</td>
<td>ENUM Administration in Europe</td>
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</tbody>
</table>
HiPath 8000 ENUM Client – Current Status
Status HiPath 8000 V3.1 (available)

- RFC3761 is supported.
- Multiple ENUM servers can be supported. Each ENUM server can have primary and secondary IP address for fail-over cases. The fail-over mechanism assures that if the primary ENUM server is not available the secondary ENUM server is contacted.
- DNS ENUM Queries always use international E.164 numbers.
- Multiple URIs in DNS responses are supported.
- Additional records in a NAPTR response such as SRV and A records are supported.
- Caching of DNS SRV and DNS A records is supported.
- All URI parameters received in DNS responses will be contained in the subsequent SIP INVITE requests.
- ENUM translation is possible on all calls or only on particular calls (for selected directory numbers only)
- In case no DNS ENUM lookup answer is obtained from the DNS server normal call handling, e.g. via the PSTN or even via IP takes place.
- The ENUM Tier 0 Zone can be configured per HiPath 8000. The default value is “e164.arpa”.
- With HiPath 8000 digit translation it is possible to specify an alternative Tier 0 zone per dialed directory number. Furthermore, alternative country codes may be obtained per dialed directory number.
Security Features

- **End points security**
  - 802.1x support
  - Digest Authentication
  - Transport Layer Security (TLS)
  - SRTP encryption

- **Management security**
  - Secure FTP (SFTP)
  - Security Shell (SSH)
  - IPSec
  - User access control
  - Authorization profiles

- **Platform security**
  - Hardened platform
  - Traffic separation / filtering
  - DoS protection
  - Virus protection

- **Network security**
  - Use of Session Border Controller
  - Perform NAT/PAT (as B2BUA)
OpenScape Unified Communications Suite – Vision
Ein umfassendes Software- und Service-Portfolio

OpenScape Service Management

OpenScape Integration Services
- CEBP Microsoft Ecosystem
- CEBP IBM Ecosystem
- CEBP Other Line of Business Apps
- CEBP Vertical Industry Apps
- Security

OpenScape Applications
- OpenScape Voice*
- OpenScape Video
- OpenScape Messaging
- OpenScape UC Application
- OpenScape Mobility
- OpenScape Contact Center

OpenScape Unified Communications Server
- SIP Session Control
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- Admin. & Licensing
- Availability Management

OpenSOA

* HiPath 8000 V3.1 R2

Jede Client-, IP-, IT- oder Telefonie-Infrastruktur
Siemens SIP Portfolio - Innovative Devices, Softclients and Standard Mobile Phones

OpenStage

OpenStage 20
OpenStage 40
OpenStage 60
OpenStage 80

OpenPoint
WL2 professional
optiPocket
optiClient130

Standard Mobile Phones w/ FMC client
SIP Interoperability …
… is Reality

OpenScape Voice

Applications
• iPeria Application Server
• Pactolus Application Server
• IPUnity Application Server

Gateways
• Mediatrix
• Audicodes
• Vegastream
• Cisco

Telephones
• Cisco
• Pingtel
• Polycom
• WiSIP for WLAN
• Sipgate Softclient, X-Lite

Conform with RFC 3261
OpenScape Video is an Open Video Strategie

Desktop Video

OpenScape Client

Conference Room Video / HD Video

Siemens Video HD

a) VHD 400 (Team)
b) VHD 600 (Group)

3rd party High End Video / Conferencing

a) Tandberg
b) Others
HiPath MobileConnect
*Mobile Communication via WiFi/Internet and GSM*

- Eliminate mobile network service costs while employees are on campus.
- Roaming between Networks occur transparently and automatically for seamless call continuity
- Provide employees with only one communications device.
- Utilize enterprise network least-cost-routing capabilities.
- Enhance user experience with a single number, device, interface, mail box.
- Deliver enterprise call features to users on and off campus.
Siemens Application Strategy
Open Communications Based on OpenScape

Connectivity to any TC and IT Infrastructure

Collaboration
Presence based communication

OpenScape Suite

SDK/SOA APIs, Web Services/Portlets

Service Oriented Architecture (SOA)

Integration into Business Process Applications

Various Devices

Integration with
alt. Microsoft
- OCS 2007
- Exchange 12

Siemens Application Strategy
Open Communications Based on OpenScape
User orientented Communications

PC Client (SIP & HFA)

Web Client

Mobile Client

OpenStage Client

Groupware Plug-Ins

Voice Portal Client
Open Communications is Available: Miercom tested HiPath 8000

Key findings and conclusions:

- “The HiPath 8000 is a native SIP softswitch supporting open standards designed for centralized data center deployment.

- HiPath 8000 and OpenScape systems integrate presence and telephony functions with Microsoft Office Communicator and IBM Sametime clients.

- It offers Fixed Mobile Convenience as illustrated by the seamless handover between the WLAN and cellular environments.

- HiPath 8000 and OpenScape offer extensive Software Development Kits to allow telephony and presence integration for customizing business applications.

- Over 300,000 calls processed with zero failures in a nine hour reliability test.”
Open Communications

User-oriented
Seamless, intuitive and convenient
Consistent, open, unified interfaces
Flexible, scalable, resilient
Any device, location, network
... and lowest TCO

Grow Revenue
Asset Efficiency
Corporate Excellence
Reduce Operating Costs
Thank you!

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