DENIC ENUM tag

Dutch Cable SIP Exchange the benefits

Sikko de Graaf - CAIW Diensten, The Netherlands
Dutch Cable facts & figures

<table>
<thead>
<tr>
<th>Subscribers per cable company x 1000</th>
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<tbody>
<tr>
<td>UPC</td>
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<td>Essent</td>
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<td>Casema</td>
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<td>Multikabel</td>
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<td>CAIW</td>
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<tr>
<td>Others</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
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Cable Companies in The Netherlands
Dutch Cable facts & figures

Cable Broadband customers 1,700,000

Graph showing the growth in Cable Broadband customers from 151,000 in 2000 to 1,040,000 in 2006.
Dutch Cable facts & figures

- Broadband market very competitive
- Highest penetration broadband
- Tough but innovative environment
Dutch Cable facts & figures

Existing Broadband infrastructures each covering the Netherlands
Dutch Cable facts & figures

Digital Telephony Dutch Cable industry. (Voip)

- Fast growing market
- Growth 2005 from 200,000 to 435,000 subs
- Estimated growth 2006 with +500,000
- End 2006 1,000,000 subs digital telephony

- 5 Cable companies vs Dutch Telecom (KPN)
- UPC/Essent/Casema/Multikabel/CAIW
2005 initial phase & trends

- SIP is becoming the standard
  - Hardware/software
- Flat fee calling trends
- On-net calling for free between Cable operators
- First publications carrier Enum

- JCC, Dutch joint cable initiative
- Q3 2005 start of project
SIP exchange

- Taskforce Joint Cable
- Research
- Technical specifications
- Request For Information
Specifications

- Carrier Enum for number translation
- SIP as standard, support for most common codec’s
- Multi operator environment, with automatic provisioning
- De-centralised traffic of codecs data
- Support for roaming and/or peering
- Secure and redundant service
- Scalability > 1,000,000 subs
- Cable industry standards; packet cable multi media
- QoS support
Research

- What’s on the market?
- AMS-IX, Dutch regulators (COIN/FIST), Dutch internet domain registration.
- Consultation European SIP specialists
- Multi operator environment, with automatic provisioning
- De-centralised traffic of codec’s data
- Support for roaming and/or peering
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- Scalability > 1.000.000 subs
- Cable industry standards; packet cable multi media
- QoS support
Research results: no turn key solution available

Looking for partners

AMS-IX location of exchange

RFI
  - Xconnect / Kayote networks
Basic provisioning

Provisioning process:
Add, change or terminate users

Operational process:
Setup call

Provisioning interface

SIP Exchange

Provisioning

Reporting

DNS

SIP redirect server

Registration

SIP message interface

SIP Proxy operator A

SIP Proxy operator B

SIP Proxy operator n

CAIW Holding
1 maart 2007
14 maart 2007
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Hoe werkt het Media

Voorbeeldscenario SIP Exchange
- Stateful SIP Proxies
- Provider maakt gebruik van "local tree" ENUM
- zoekstrategie eerst lokaal zoeken naar geadresseerde, als tweede altijd naar SIP Exchange (met getekend als derde naar SIP-PSTN gateway);
- Niet getekend provisional responses, NAT in netwerk, e.v.t. autorisatie/autenticatie

Softphone
SIP:b@pc1.net2.nl
With user b@net2.nl
With e164 nr:
+31 1234 456789 on IP Address yyy.yyy.yyy

Belt telefoonnummer
0123-456789

SIPATA
SIP:ata12@ata12.net1.nl
With user SIP:a@net1.nl

SIP registrar

SIP proxy A

SIP proxy B

Central DNS

Local DNS

SIP proxy (B2B UA)

SIP registrar (mapping of AoR URI to SIP URI)

Media Relay

Media Relay

6. SRV Query net2.nl
7. result: "IP Address of SIPproxy B"
8. Invite sip:b@net2.nl
9. lookup SIP:b@net2.nl
10. result: SIP-b@pc1.net2.nl at IP4 yyy.yyy.yyy.yyy
11. invite yyy.yyy.yyy.yyy
12. 200 OK
13. 200 OK
14. 200 OK
15. 200 OK
16. ACK
17. ACK
18. ACK

Map E164 number to AOR URI

SIP@net1.nl online on xxxxxxxxxx
SIP@net2.nl online at SIP:b@pc1.net2.nl at yyy.yyy.yyy.yyy

2. Invite tel+31123456789
4. Resultsip:b@net2.nl
SIPexchange problems

- **Succes of digital telephony**
  - >50,000 subs a month
  - Project team resources

- **Mixed SIP solutions at operators**
  - SER / Siemens / Nortel
    - SIEMENS / Nortel SIP for cable solutions 2006/2007 work arounds
    - SIEMENS no ENUM, alternatives (SIP redirect)
Sipexchange actual status 2007

- **SIPexchange central servers installed on AMS-IX**
- **Proof of concept positive**
  - System has been accepted
- **Preparation next steps and launch**
  - Legal issues
  - Reporting for peering/roaming services
  - Video and Multimedia codec’s testing
  - Network architecture, SBC’s, local provisioning
  - CAPEX / OPEX issue’s
Full launch for Dutch cable operators

- On-net calling between cable operators
- New extended SIP services for cable customers.
- All (S)IP solutions TV/Internet/Telephony
Sipexchange Benefits

- Full Codec support
- Full SIP RFI support
- Multiple SIP sessions
- All IP strategie

- New Customer services
  - Buddy list / Do not Disturb / Presence and much more
  - Fixed Mobile convergence
    - SIP services on mobile hardware
  - Nomadic telephony services
    - Soft phones
    - Micro devices / Stick telephone
  - Video telephony
    - Special Interest Groups (elderly, Service Centre)
    - Integrated SIP device DVB setup boxes, sip client on TV
Sipexchange Benefits

CAIW Holding
1 maart 2007