

« networking the networkers »



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NRENum.net

TRANS-EUROPEAN RESEARCH AND EDUCATION NETWORKING ASSOCIATION



Outline

- › About TERENA
- › NRENum.net history
- › Service principles and architecture
- › Status update
- › Development plans



About TERENA

- 
- The background features a vertical grey bar on the left containing a close-up of a thick, braided rope with a knot. On the right side, there are several diagonal, overlapping bands in shades of purple, blue, and red, creating a dynamic, upward-pointing visual effect.
- › TERENA offers a forum to collaborate, innovate and share knowledge in order to foster the development of Internet technology, infrastructure and services to be used by the research and education community.
 - › TERENA is first and foremost a collaborative organisation.
 - › Its core business is to bring together managers, technical specialists and other people in the research networking community with their counterparts from other countries in Europe, mobilising the expertise and experience of hundreds of professionals in the research and education networking area.



TERENA Community

- › National members

- › 39 NRENs

- › International members

- › CERN, ESA

- › Associate members

- › DANTE, NORDUnet, vendors...



- › Peers

- › Internet2, APAN, CLARA, Ubutunet...



- › Affiliated communities

- › EGI, EUNIS, GLIF, Europeana...

- › research and education communities...





Activities

- › TERENA Compendium
 - › Printed
 - › On-line: <http://www.terena.org/activities/compendium/>
- › TERENA Networking Conference
 - › Seminars
 - › Technical workshops
 - › Trainings
- › Task Forces
 - › Meetings
 - › Small projects
 - › EC funded projects
- › Services
 - › TACAR, REFEDs, SCHAC, TI, TCS, eduroam, NRENum.net





NRNEum.net history

- › ~ Sept 2006 - NRENum.net was initiated by SWITCH (*Bernie Hoeneisen*) and AARnet (*Kewin Stoeckigt*) to provide countries where the Golden ENUM Tree (e164.arpa) is not (yet) available, with the possibility to publish ENUM data
- › 2006-2008 - TF-ECS looks after the service (trial period)
- › 27 Feb 2008 - Migration of the NRENum.net trial service to TERENA was decided
- › 8 Jan 2009 - TERENA ensures the continuation of the NRENum.net (trial) service
- › 4 April 2011 – NRENum.net service upgrade (new Wiki, new operators, updated policy doc)



Motivations

- › Golden tree was/is not (yet) available in many countries...
 - › Basic question was: Who is the Tier1 registry?
 - › Run a trial: a temporary alternative to e164.arpa (no competition) Tier1 != NREN
 - › Migration path towards the Golden tree.
- › NRENum.net is a voluntary effort of National Research and Education Networks (NREN)
 - › Well-established community, based on trust, maintained by TERENA
 - › Only registered NRENs can take the role of a national Tier-1 Registry
 - › NREN to sub-delegate zones to Universities / Research Institutes



Service principles (policy doc)

Delegation in the nrenum.net tree are done only if either of the following applies:

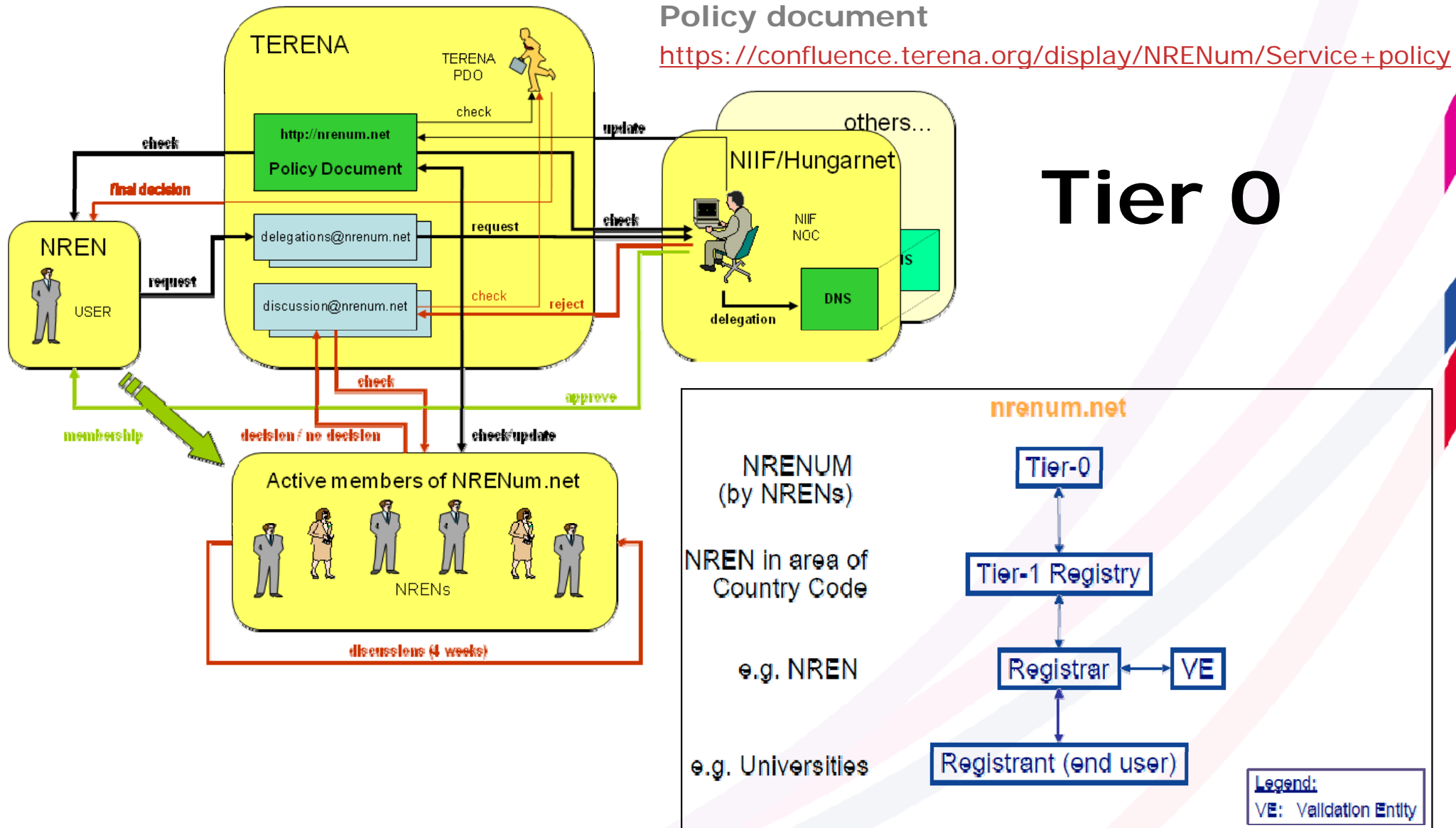
- › a) e164.arpa is not delegated (technically) for the country code in question
- › b) access to e164.arpa is not available e.g., due to non-operating ENUM Registry (i.e. ENUM service is not in production)
- › c) conditions in e164.arpa are unacceptable e.g., due to administrative overhead, financial reasons or political situation in the country

Zones delegated to NRENum.net have to be configured correctly (DNS state of the art) on at least two independent name servers

- › Only well formed (valid) E.164 numbers are to be entered in the nrenum.net tree



Service architecture





Service principles (policy doc)

Operation of zones under nrenum.net

- › Members have to ensure their name servers hosting zones subordinate to the zone nrenum.net are running permanently and are configured correctly at any time
- › Zones that cause operational problems may be temporarily removed from nrenum.net

Migration

- › NRENum.net tree delegations shall migrate to e164.arpa as soon as the conditions (described above) do not apply anymore

Querying NRENum.net

- › If an entity queries an ENUM, the official e164.arpa tree shall be queried first, and the nrenum.net tree is queried right after the e164.arpa tree.



Recent motivations

- › Slow e164.arpa uptake
 - › e164.arpa (in some countries) seems to be poorly populated in the academic community

- › Even if e164.arpa is in production status
 - › bureaucratic issues, e.g., revalidation paper work that has to be done every 6 months
 - › NRENs have almost no chance to force their institutions to maintain the records and cannot do that on behalf of the institutions

- › In conclusion...
 - › NRENum.net participants anticipate the existence of multiple trees in a longer term
 - › of which NRENum.net can play a significant role for the R&E community



Status update

› Tier-0: 12 delegations at the moment

› recently happened:

- › 11 November 2010 – CARnet, Croatia (+385)
- › 28 April 2011 – AMRES, Serbia (+381)

› Full list can be found at:

<https://confluence.terena.org/display/NRENum/Members>
...of which SURFnet, LITNET (under investigation)

3 known NREs to query NRENum.net

- › CESNET (may be delegated), SANET, UNINETT

› About Tier-1s' size...

- › FCCN: ~35.000 numbers
- › GARR: 39 institutions



Development plans

- › Approach potential new service participants (VoIP only !!!)

| Delegation confirmed | Ask about the plans | Query the NRENum.net tree? | NRENum.net delegation? |
|----------------------------|----------------------------|----------------------------|------------------------|
| GRNET, Greece | ANAS, Azerbaijan | PSNC, Poland | ULAKBIM, Turkey |
| BELNET, Belgium | BREN, Bulgaria | DFN, Germany | RENATER, France |
| RedIRIS, Spain | CyNet, Cyprus | | |
| FCCN, Portugal | MARNET, FYR of Macedonia | | |
| NIIF, Hungary | MREN, Montenegro | | |
| ARNES, Slovenia | RENAM, Moldova | | |
| AMRES, Serbia | RESTENA, Luxembourg | | |
| GARR, Italy | RoEduNet, Romania | | |
| SWITCH, Switzerland | IMCS UL, SigmaNet, Latvia | | |
| CARnet, Croatia | University of Malta, Malta | | |
| SURFnet, Netherlands | | | |
| LITNET, Lithuania | | | |
| CESNET, Czech Republic (Q) | | | |
| SANET, Slovakia (Q) | | | |
| UNINETT, Norway (Q) | | | |

- › Internet2, USA / CANARIE, Canada: +1 delegation ???

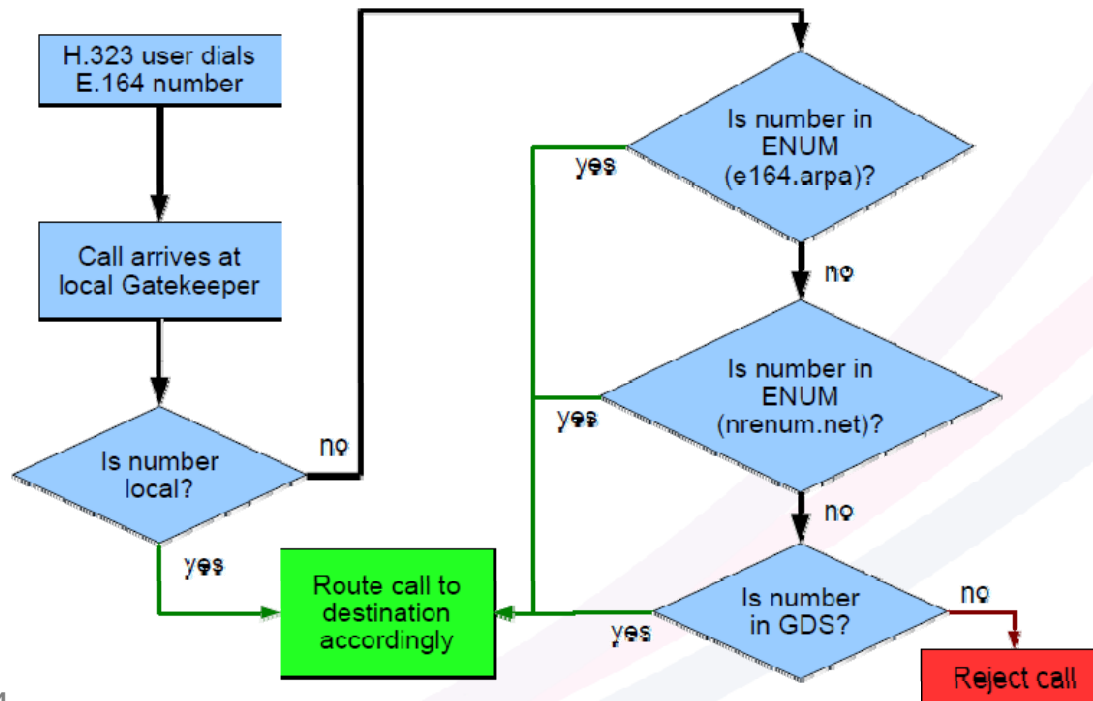


Development plans

- › Publish H323 NAPTR records via NRENum.net

```
.6.5.4.3.2.1.nrenum.net. IN NAPTR 100 10 "u" "E2U+h323"  
"!^+12(3456.*)$!h323:\\1@sample.edu!"
```

- › Replace the GDS gatekeeper hierarchy with a DNS lookup service
- › Possible H323 call scenario (GN3 educonf ???)





Questions....

More information about the service at:

› <https://www.nrenum.net>

