

# DNSSEC and the Zone Enumeration

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## Abstract

- Known Facts
- Claimed problems
- Way ahead

## Facts

- The introduction of DNSSEC with the current form of the specification provides Zone Enumeration:
  - <http://josefsson.org/walker/>
- An authoritative denial of existence of a given domain name **delivers** as a proof the **next existing domain name**.
- There were protocol chances to refuse AXFR

## Facts

- Some key players for a successful widespread deployment of DNSSEC consider this as a **problem**:
  - Security problem?
  - Policy problem?
  - Legal problem?

## Security problem?

- An attack begins by identifying your target:
  - <http://www.research.att.com/~smb/papers/dnshack.pdf>
- “But domain names can be gathered by other means, for instance, dictionary attacks”
  - German + English dictionary + John the Ripper = 1% of the de-zone
  - Brute force on all 8-characters delivers 13% of the de-zone.
  - com-zone as a dictionary = 42% of the nl-zone

## Policy problem?

- DNS information is public...
- ...there's a **qualitative difference** between:
  - Making data available as a query/response mechanism
  - Making data available as a compilation
- DENIC's policy:  
[http://www.denic.de/en/faqs/allgemeine\\_faqs/index.html#section\\_185](http://www.denic.de/en/faqs/allgemeine_faqs/index.html#section_185)

## Legal problem?

- IANAL
- Nominet's position:  
<http://ops.ietf.org/lists/namedroppers/namedroppers.2004/msg00687.html>
- DENIC's position:
  - In conflict with Germany's Federal Data Protection Act

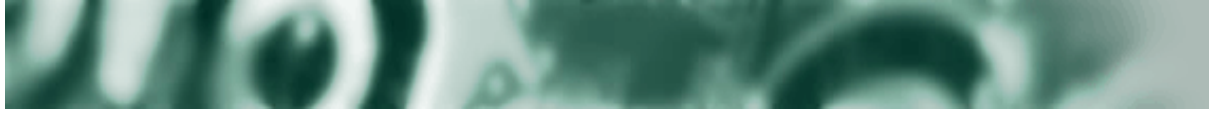
## Way ahead

- IETF dnsect wg decided to advance the current specification as a proposed standard
- Immediately started to work on the problem following *The Engineering Way* (TM):
  - Listing the requirements for a denial of existence
  - Weighting their relevance, since sometimes trade-offs exist
  - Evaluating proposals



## Working documents

- <http://www.ietf.org/internet-drafts/draft-ietf-dnsext-signed-nonexistence-requirements-00.txt>
- <http://www.links.org/dnssec/requirements-matrix.htm>
- <http://www.links.org/dnssec/draft-laurie-dnsext-nsec2-01.txt>
- <http://www.ietf.org/internet-drafts/draft-arends-dnsnr-00.txt>
- <http://www.ietf.org/internet-drafts/draft-ietf-dnsext-dnssec-trans-00.txt>



**Thanks for your attention**  
**Any questions?**