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DNSSEC Progress in .UK

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Where Are We Now?

- **.uk** was signed using OpenDNSSEC in March 2010
    - 14 top level domains affected
    - No adverse impact on the zone

- Trial of both the technology and our processes
    - Getting key signing procedures correct
    - Eating our own dog food with OpenDNSSEC

- Creating a solid foundation for moving onto **.co.uk** and other second level zones

Where Are We Going Next?

- Pushing on with getting **.co.uk** and other second level zones signed by **Q1 2011**

- Continuing to contribute to the development of OpenDNSSEC

- Working with SIDN and NLNETLABS to create a joint testing partnership for dynamic zones

- Looking at options for providing the best possible future for OpenDNSSEC development and support

Why not sign co.uk earlier?

- **.co.uk** has 8.5 million domains

- **.co.uk** is a dynamic zone. OpenDNSSEC doesn't yet support dynamic updates

- Allow **.uk** (and the **root**) to bed in first.

- We want to take a holistic approach – this is not just a technology challenge, but also education and awareness

The Challenges for the Registry?

- We need to make changes to:
    - Our operational systems
    - Our practices and processes

- Creating awareness amongst our registrar and ISP community
    - Getting them to care
    - Getting them to act
    - This is not a Y2K problem

- Ensuring that we do nothing that affects the stability and reputation of the registry

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The Technical Challenges: DNS

- How to sign very large highly dynamic zones
    - Updated every minute
    - Need to 'continuously sign' data

- We want to use OpenDNSSEC (ODS)
    - Currently limited to static zones
    - Continuous signing for dynamic zones in V2

- We want to use BIND 9.7
    - Funded development of continuous signing
    - Funded HSM support

The Technical Challenges: Registry

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- Extend the database
    - Store DS record information

- Extend Whois interface
    - Show DS record information

- Extend the EPP interface
    - To allow registrars to channel DS records

- Roles
  - Safe keeper, holds credentials to access the safe.
  - Security Officer, holds credentials to manage HSM
  - Administrator, manages the non-crypto part of system
  - Auditor, audits the procedures.

- Procedures
  - All the actions one can perform on the signing system
  - Acceptance tests, exports, key-roll, etc.

- Actors
  - Strictly tied to level of responsibility
  - Safe keeper: CEO/CTO,
  - Sec.Officer & auditor: Team Leaders

Project Approach

- Agile approach
  - Close cooperation between individuals
  - Frequent updates between self-organizing teams
  - Continuous attention

- Dualistic/parallel track
  - The Signing System
  - The Registry Changes

- Partners
  - Kirei: Signer Design
  - SIDN: Testing
  - Sinodun: Development
  - ISC: BIND 9 support

Thank you

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- Looking for folks using BIND 9.7's continuous signing, and more support for BIND 10.

- OpenDNSSEC milestones: Version 1.1.0 released
  - Now used by ICANN, DK, SE and UK.

- Questions?