New gTLD Subsequent Procedures PDP WG
Patrik Fältström
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SAC094

- Input to the GNSO Policy Development Process Working Group on new gTLD Subsequent Procedures

- The SSAC revisited past advisories and curated advice relevant to many of the working group's questions.

- New advice was not generated and old advice was not altered in preparation of SAC094.

Stability of the Domain Namespace

Domain Namespace

- The domain namespace is the set of all possible domain names that can be assembled from a tree-structured hierarchy of individual labels.

- The domain namespace and the DNS protocol are also used in environments that are intended to be separate from the global public DNS.

- Domain names cannot be rigidly scoped in practice: context and other cues are insufficient for applications to determine "what to do" when encountering a domain name.

ICANN

Names External to ICANN Universe

- "Special-Use" Names (.onion, .local, .example, .invalid)
  - IANA Special-Use Domain Names Registry

- "Private Use" Names (.mail, .home, .corp, .lan)
  - Independently selected and used within many organizations

- Other Names (.bit, .gnu)
  - In use by protocols and individuals for various purposes

SAC090 Findings

- Uncoordinated use of the domain namespace in different environments can lead to ambiguity when those environments overlap and their names collide.

- Lack of coordination among the activities of more than two groups contributes to the domain namespace instability:

  - ICANN, in its role as coordinator of the allocation and assignment of names in the root zone of the Domain Name System;

  - The Internet Engineering Task Force (IETF), in its role as the Standards Development Organization for the DNS protocol;

  - Other individuals and institutions, by using independently selected domain names.

SAC090 Recommendations

- The ICANN Board take steps to establish definitive and unambiguous criteria whether or not a label could be a TLD. Including;
  - Should ICANN formalize the status the names on reserved lists?
    - Applicant Guide Book, IANA Special-Use Domain Names Registry, etc
  - What should ICANN's response be to groups that assert their own special list of names?
  - Should ICANN formalize the status of "private use" names?

- The ICANN Board establish effective collaboration with relevant groups, including IETF.

- ICANN complete this work before adding new TLD names.

Internationalized Domain Names

Principles of Label Inclusion from SAC084

- Conservatism Principle
  - The decision to add a label to the root should be governed by a conservative bias in favor of minimizing the risk to users and minimizing the potential for the need to make decisions that later must be changed or overridden. In order to minimize risk, doubts should always be resolved in favor of rejecting a label for inclusion rather than in favor of including it.

- Inclusion Principle
  - A TLD label should be added to the root zone only if it is known to be "safe" in terms of usability and confusability. This is particularly important for labels whose form as normally presented to a user contains non-ASCII characters because the number and kinds of possibilities for usability and confusability problems is much greater.
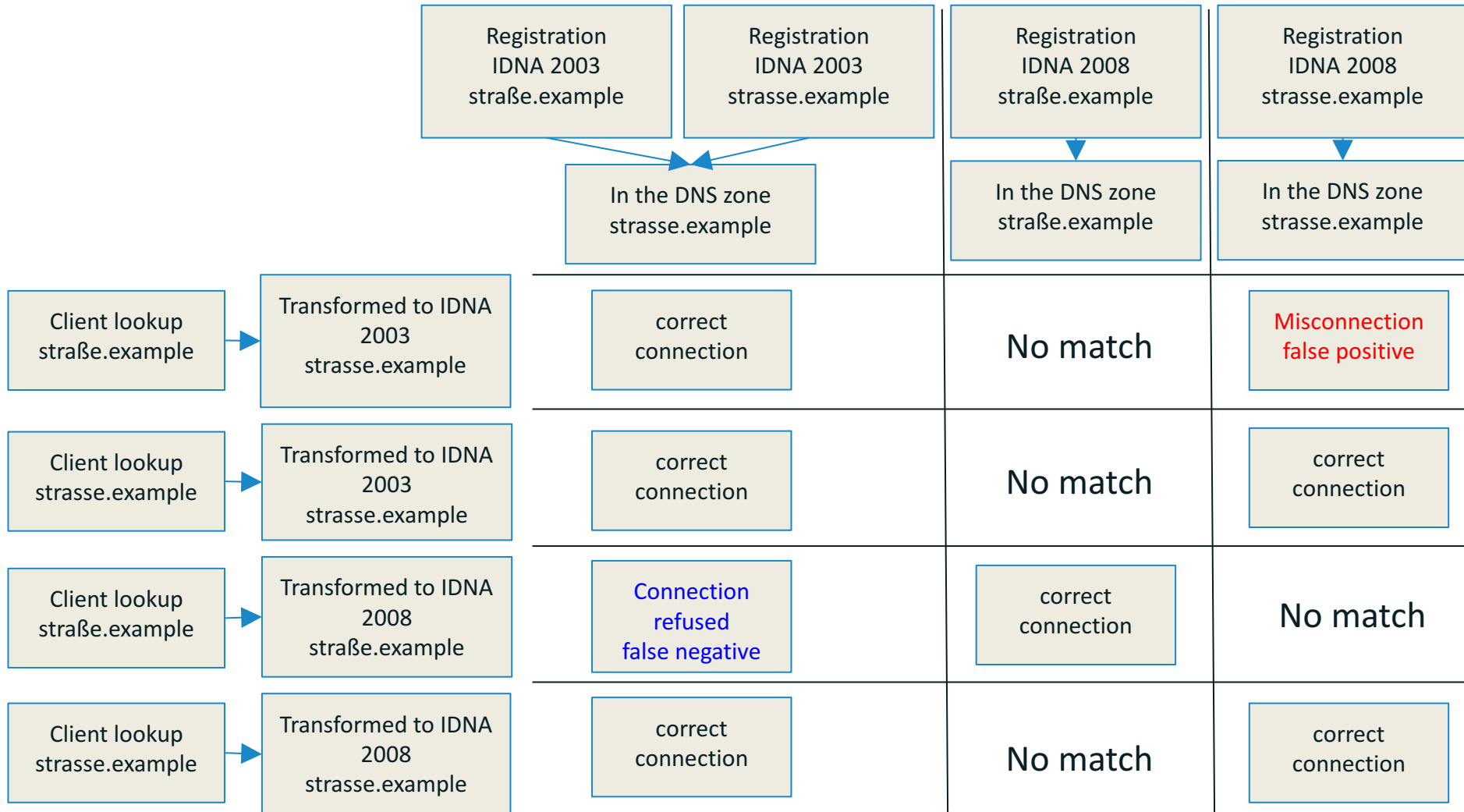
Principles of Label Inclusion from SAC084 (cont)

- Stability Principle
  - The list of permitted labels in the root zone should change at a rate that does not negatively impact the stability of the root of the DNS, and usually only in the direction of permitting an addition as time and experience indicate that inclusion of such a TLD label is both safe and consistent with these principles.

- These principles have been reflected in ICANN IDN guidelines that have been in place for more than a decade, in past SSAC advisories on IDNs, in input documents to ICANN's Root Zone Label Generation Rules (LGRs), and as overall principles for the IDN ccNSO Policy Development Process. The SSAC recommends that these principles be applied as part of any process that evaluates IDN or ASCII character strings as potential new TLD labels.

Additional Points from SAC088

- Confusability is a Security Concern
  - Confusability cannot be considered in isolation from other issues related to security. Phishing and other social engineering attacks based on domain name confusion are a security problem for end users. As such, adding a label to the root zone that is potentially confusable violates the Inclusion Principle's requirement that a TLD label be known to be 'safe'.

- Harmonization needed for Confusability between ccTLDs and gTLDs
  - The SSAC believes that a clear and consistent set of rules for 'confusing similarity' should be developed and the resulting rules should be applied to both ccTLDs and gTLDs.

Collisions due to False Positives

	Registration IDNA 2003 straße.example → In the DNS zone strasse.example	Registration IDNA 2003 strasse.example → In the DNS zone strasse.example	Registration IDNA 2008 straße.example → In the DNS zone straße.example	Registration IDNA 2008 strasse.example → In the DNS zone strasse.example
Client lookup straße.example → Transformed to IDNA 2003 strasse.example	correct connection		No match	Misconnection false positive
Client lookup strasse.example → Transformed to IDNA 2003 strasse.example	correct connection		No match	correct connection
Client lookup straße.example → Transformed to IDNA 2008 straße.example	Connection refused false negative		correct connection	No match
Client lookup strasse.example → Transformed to IDNA 2008 strasse.example	correct connection		No match	correct connection

Emoji in Domain Names

- The SSAC this week finalized the SSAC Advisory on the Use of Emoji in Domain Names.

  - The SSAC recommends that the ICANN Board reject any TLD that includes emoji.

  - The SSAC strongly discourages the registration of any domain name that includes emoji in any of its labels.

  - The SSAC advises registrants of domain names with emoji that they may not function consistently or be universally acceptable.

Thank You