

# ICANN/ISOC ccTLD workshop  
# 24-26 October 2006  
# Sofia, Bulgaria  
  
# *implementing IDNs*

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# # schedule for .pl

- October 6, 2003: +German umlauts
- October 20, 2003: +Latin
- November 3, 2003:  
+Hebrew, Arabic\*, Greek
- **February 26, 2004: +Cyrilic**

*\*) Arabic script domain names registration is currently suspended*





# # scripts mixing \_1

- Since the release of the Cyrillic script, allowed characters have been divided into several sets in order to prevent mixing of characters derived from different scripts.
- Valid IDN (ACE form), after ToUnicode operation was applied to, must not contain characters being derived from different sets. Such solution eliminates possibilities of “mix-script spoofing” (see UTR 36).

## **ToUnicode**

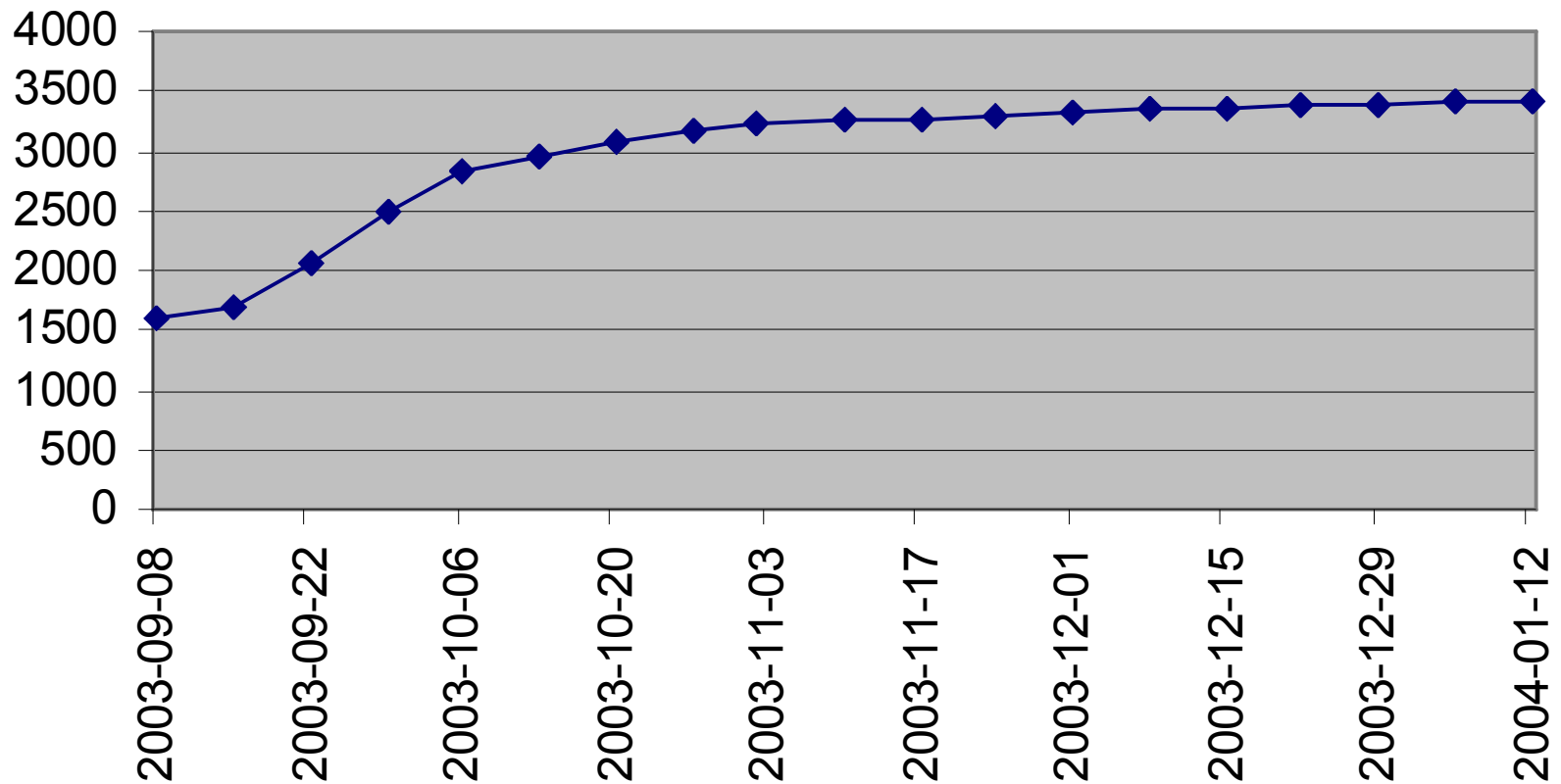
*The ToUnicode operation reverses the action of ToASCII. When applied to an ACE label, it takes off the ACE prefix and decodes the string of code points using decoding algorithm in punycode. In result, the obtained label is equivalent internationalized label (Unicode coded). If applied to a sequence of Unicode code points that make up one label, ToUnicode returns an unaltered sequence of Unicode code points. ToUnicode never fails, because it always returns the original string if decoding would fail. In particular, this means that ToUnicode has no effect on a string that does not begin with the ACE prefix.*

## # scripts mixing \_2

- Nevertheless, this approach do not prevent threat of "single-script spoofing". To address this problem, "ASCII-like" characters have been selected from the Cyrillic set, i.e.: a (U+0430), e (U+0435), o (U+043E), p (U+0440), c (U+0441), y (U+0443), x (U+0445), s (U+0455), i (U+0456), j (U+0458). Any IDN consisting only from hyphen "-", digits 0-9 and mentioned above characters has to undergo a check-up before a registration.
- The ASCII-like characters of the label are mapped to their similar ASCII characters and next received in this way ASCII variant of the Cyrillic IDN is checked against registered or booked domain names in the registry system. If there is no such domain, then the registration process may be continued.

# # stats

New registrations, growing, weekly







# preparations & IDN promotion in .pl



## # preparations cont.

- the rules of registering IDN registration under .pl were published (August 2003) at IETF as internet draft
- all changes in IDN registration rules had been reflected in the subsequent versions of this internet draft
- allowed scripts has been uploaded into (ICANN) IANA Language Table repository – we decided to keep Language Tables up-to-date in ICANN repository as the best source of information for Registrars

# # (international) presentations

- CENTR General Assembly, Administrative and Technical Workshops):  
5 presentations in 2003-2005
- RIPE conferences:  
3 presentations in 2003-2006
- ICANN conferences and GAC meetings:  
5 presentations in 2003-2006
- IETF:  
1 presentation

# # ITU activities as part of international .pl activities

- active participation in ITU activities:
  - Acting as Rapporteur and Chairman for "Question 16" (IDN) of Study Group 17 of ITU-T
  - Promoting ITU-T activities in RIPE, CENTR and ICANN meetings
- promoting IDNs (**ICANN and IETF standards**) among Member States (Governments) in ITU
- focusing on network security risks, use of regional language tables, problems with IDNs adoption worldwide, deployment scenarios etc.
- facilitation role to promote solutions for multilingual internet based on RFC / ICANN standards

FOR MORE INFO GO TO:

[http://www.bartosiewicz.pl/2006\\_10\\_01\\_RIPE\\_ITU.pdf](http://www.bartosiewicz.pl/2006_10_01_RIPE_ITU.pdf)

## # ITU activities cont.

- There is no controversy IMHO between ICANN and ITU in the field of IDNs.
- ITU is promoting IDNs, not creating “new” standards or solutions for IDNs
- ITU is on “our” site (IETF RFC based ccTLD registries)

# # PP and WTSA Resolutions

- *"ITU Plenipotentiary Resolution 102 (Marrakesh, 2002): Management of Internet domain names and addresses"*
- *"ITU Plenipotentiary Resolution 133 (Marrakesh, 2002): Role of administrations of Member States in the management of internationalized (multilingual) domain names"*
- ***World Telecommunication Standardization Assembly (WTSA, 2004) Resolution 48 on "Internationalized Domain Names"***

# *# issues covered by ITU-T SG17*

- Technical background (including IETF, ISO/IEC, ICANN documents)
- Network security risks
- Use of regional language tables,
- Liaison mechanisms with the relevant study groups and appropriate entities
- Requirements for ITU-T Recommendations (if any),
- Problems with IDNs adoption worldwide, deployment scenarios etc.
- Web page open to public dedicated to IDNs hosted by SG17.



**# types of IDNs**

# # IDN types

## General:

- IDN.ASCII
- IDN.IDN

## Types of IDN.IDN:

- Existing ccTLD Registry is offering IDN.IDN domain names
- Third party (not ccTLD) is offering IDN.IDN ccTLD domain names
- gTLD IDN.IDN is offered as "local" implementation of .com/.net/.org/.info

# # IDN.IDN cont \_1

- Existing ccTLD Registry is offering IDN.IDN domain names (examples: China, some Arab States)
- When ICANN implements IDN at the root level, all ccTLDs already offering IDN.IDN will be automatically supported ☺
- Facilitating role, no harm to DNS,
- Win-win situation.

# # IDN.IDN cont \_2

- Third party (not existing ccTLD manager) is offering IDN.IDN ccTLD domain names,
- When ICANN implements IDN at the root level, no clear situation who is IDN-ccTLD Manager,
- Who lose? Internet users.

# # IDN.IDN cont \_3

- Third party (not VeriSign, Afilias, NeuStar...) is offering IDN.IDN gTLD domain names
- Examples: .com/.net/.org version in:
  - Cyrillic script (Regtime.net) **.KOM .HET .OPF**
  - Korean script (Digital Names) **■기관 ■통신**
  - Hebrew script (Domain The Net) **קום.נט.ארג.**
- When ICANN implements IDN at the root level, the problem WHO is the authority over IDN-gTLD arises?



**# how to promote IDNs  
(European experience)?**

# # int. experience

- presentations, meetings
- press and electronic media
- join activities between DENIC, NIC.AT and SWITCH (German speaking countries)
- Registration for free (for limited time):  
NIC.AT, NIC.SE



**# ...before IDN implementations**

# # basic questions to be answered before implementing IDN

- What characters, scripts or languages to support?
- What is the subject of the contract with Registrant? ACE or Unicode form of domain name?
- Is the registration policy:
  - a script-based one
  - a language-based one
- Is necessary to associate IDN registered with a language or script tag?
- With regard to confusable characters issue, did registry implement equivalent domain name registration as a bundle or other solution?



**For more on .pl experience  
and ITU activities visit:**

**[www.bartosiewicz.pl/IDN](http://www.bartosiewicz.pl/IDN)**