# The Latin Script LGR 

Bill Jouris

## The Cast

member origins:

- Serbia (Chair)
- Peru (Sub-chair - Variants)
- Germany (2)
- Sweden
- United States
- Egypt


## What We're Looking At

## Repertoire

Variants

# The Latin Script is a Mess 

 (That's why it's taken us 7 years)
## -445 living languages

-210 languages included

- 221 characters (glyphs)


## Which Languages Included?

- Official languages (EGIDS 0-4)
- National
- State, provincial or regional
- Large populations and EGIDS 5 (substantial literature)

And over 1 million native speakers

## Letters

> abcdef ghiklmnop
> q r st vxyz

Excluded:
‘ ! | \| $\ddagger$

## Diacritics

Grave Accent
Acute Accent
Circumflex Above
Tilde
Macron
Breve
Caron
Dot Above
Diaeresis
Double Acute

Ring Above
Hook Above
Horn '
Cedilla
Ogonek
Dot Below
Comma Below
Circumflex Below
Macron Below

## Variants

"What you see is what you get" . . . only works if what you see is what you think you see.

What you want:

- As a user, go where you expect to go
- As a registrant, having your customers/users reliably come to your site, not go somewhere else


## A Small Slice

Any given language only uses a few diacritics.

- English: None!
- Spanish: Tilde, Diaeresis, Acute
- French: Cedilla, Acute, Circumflex, Grave, Diaeresis

Variants:
Is cañon noticeably different from cañon, if you don't know the Macron diacritic?

Is café noticeably different from cafè, if you don't know the Dot Above diacritic?

## 30 variations of Letter O alone!

 Plus other languages| - | $\bigcirc$ | o | o | ó |  |  | ¢ | ö |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\varnothing$ | ¢ | o' | ó | ó |  |  |  |  |
| $0$ | ọ | ọ | ó | ố |  |  |  |  |
|  | ớ | ờ | ở | õ |  |  |  |  |

Greek: o ó Cyrillic: o ö ө
Armenian: o
Hebrew: o
Malayalam:


Myanmar: o
Oriya:

## Variants vs Confusables vs Different What are they?

The "reasonably careful user"

| . com |  |
| :--- | :--- |
| .COM | ALL CAPS |
| .com | M with Dot below |
| .cơm | O with Horn |
| .çom | C with Cedilla |
| .cỗm | O with Circumflex and Tilde |
| .corn | C O R N |
| .com | Cyrillic |

## Variants Process

| Uricode Name | Unicoole Code Point | Glyph | Glygh Uncode Unt Unicode Name |  |  | Inspedors |  |  |  |  |  |  | $\begin{aligned} & \text { Pand } \\ & \text { nspeiln } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | 嗗 | T 0 | Ej | HH | 楼 | ME | Hity |  |
|  |  |  |  |  |  |  |  | ${ }^{2} \mathrm{H}$ |  |  |  |  | Conlimat <br>  |
| Smal Letter Tham | OOFE | $p$ | p | 0145 | Smal Leither P with Hock | 3 | 3 | 3 | 3 | 3 | 4 | 3 | Nota wariant |
|  |  | $p$ | $p$ |  |  | 3 | 3 | 2 | 2 | 3 | 3 | 2 |  |
|  |  | F | $\beta$ |  |  | 3 | 3 | 4 | 3 | 3 | 4 | , |  |

b 6 Times New Roman
p $\rho$ Arial
p $\bar{f}$ Courier New

## How Much is Enough?

| 00E8 | Latin Small | Lè | é | Latin Small |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  | Letter E With | Letter E With | 1EBB |  |  |
|  | Grave | è | è | Hook Above |  |

A majority isn't

## Too Much Information

| Latin Small Letter T | $\mathrm{t} \leftrightarrow \downarrow$ | Latin Small Letter L with Stroke |
| :--- | :--- | :--- |
| Latin Small Letter J | $\mathrm{j} \leftrightarrow \mathrm{i}$ | Latin Small Letter I with Ogonek |
| Latin Small Letter Eth | $\searrow \leftrightarrow đ$ | Latin Small Letter D with Stroke |
| Latin Small Letter C | $\mathrm{c} \leftrightarrow \mathrm{C}$ | Latin Small Letter C with Hook |
| with Acute |  |  |
| Latin Small Letter F | $\mathrm{f} \leftrightarrow \mathrm{f}$ | Latin Small Letter T with Hook |

## In-Script Variants

Schwa
lota
D with Caron
d'
ă
ö
æ ( $\mathscr{C}$ )
k
ə Turned E
Dotless I
D with Hook
ǎ A with Caron
ő O with Double Acute Ligature OE
K with Horn

## Cross-Script Variants Related languages

- Cyrillic - Latin Variants 29 including:

Er
Es with descender

- Greek - Latin Variants Nu
Beta
p p
ç ç
18 including: v V
B $\quad \beta$


C with cedilla
V
Sharp S

- Armenian - Latin Variants 7 including:

Seh
g $\quad \mathrm{g}$
G
Yiwn
l
し
lota

## Cross-Script Variants <br> Generic Symbols

| I | 0 | c | 0 | Latin |
| :--- | :--- | :--- | :--- | :--- |
| I | 0 | c |  | Cyrillic |
| I | 0 |  |  | Hebrew |
|  | 0 |  |  | Greek |
|  | 0 |  |  | Armenian |
| ו | 0 | C | o | Myanmar |
|  |  | C | 0 | Lao |
| I | 0 |  |  | Oriya |

## Oddities <br> Dot Above vs Acute (and Grave)

- Consonants

$$
\dot{c} \leftrightarrow \dot{c} \quad n \leftrightarrow \dot{n} \quad z ́ \leftrightarrow \dot{z}
$$

- Vowel (Due only to Transitivity with Greek)

$$
i \leftrightarrow i
$$

- Vowels NOT Variants

$$
\text { é } \leftrightarrow \dot{\mathrm{e}} \quad \text { è } \leftrightarrow \dot{\mathrm{e}} \quad \mathrm{i} \leftrightarrow \mathrm{i}
$$

## No Underlining

www.example.test www.example.test www.example.test www.example.teșt www.example.test www.example.test

No diacritics
L with Dot below
E with Macron below
S with Comma below
L with Circumflex below
M with Cedilla

## With Underlining

www.example.test www.example.test www.example.test www.example.teșt www.example.test
www.example.test

No diacritics
L with Dot below
E with Macron below
S with Comma below
L with Circumflex below
M with Cedilla

