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## Cultural and linguistic adaptability:

a crucial issue for the interoperability  
of infostructures, and a business  
opportunity on the Internet

**Aylmer**

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## INTRODUCTION

***“Web users stay twice as long and are three times as likely to buy from sites presented in their native language”***

***Gartner Group***

## CONTEXT

- ➔ **Many countries have more than one official language**
- ➔ **International languages, but local characteristics**
  - ⇒ **US English ≠ UK English**
- ➔ **Commerce: more and more international agreements**
- ➔ **The challenge**
  - ⇒ **The adequate use of information technology and of the Internet to fully address local requirements (cultural and linguistic)**

## **USERS REQUIREMENTS: TOOLS OFTEN INADEQUATE**

### **Software**

#### **1- Inadequate translation example:**

**An American manufacturer in Miami printed T-shirts for the Spanish market which promoted the Pope's visit. Instead of "I saw the Pope" (el Papa), the T-shirts read**

**"I saw the Potato" (la papa)**

## USERS REQUIREMENTS: TOOLS OFTEN INADEQUATE (cont'd)

### Software (cont'd)

**2- “Weird” translations, ambiguous and full of mistakes**

**example:**

⇒ **“Usefoul tool to be use in Internet”**

## **USERS REQUIREMENTS: TOOLS OFTEN INADEQUATE (cont'd)**

### **Software (cont'd)**

#### **3- Inadequate cultural adaptability example:**

**→ Presentation of dates in a language**

- 08-12-2001,  
in English “August 12th, 2001”**

**versus**

- 08-12-2001,  
in French “December 8th, 2001”**

## **USERS REQUIREMENTS: TOOLS OFTEN INADEQUATE (cont'd)**

### **Metadata capture and update**

- ➔ Unequal content between versions in different languages**
- ➔ Desynchronization problems between versions**

## **USERS REQUIREMENTS: TOOLS OFTEN INADEQUATE (cont'd)**

### **Search engines**

- ➔ Incomplete results**
- ➔ Root causes of the problem?**
  - ⇒ Searches use character strings (words)**
    - “watershed” versus  
“bassins hydrographiques”**
  - ⇒ On-the-fly translation:**
    - limited**
    - “home made”**

# **INTEROPERABILITY: TECHNICAL INTEROPERABILITY + ...**

**... + “Semantic interoperability”**

**The ability of a user...**

**...to fully understand...**

**...the information received...**

**...in order to be able to make full use of it**

**How to help “semantic interoperability”?**

# **"CULTURAL AND LINGUISTIC ADAPTABILITY" ... ... "CLA" ???**

## **ISO/IEC JTC 1**

**"CLA is the ability for a product, while keeping its portability and interoperability properties, to:**

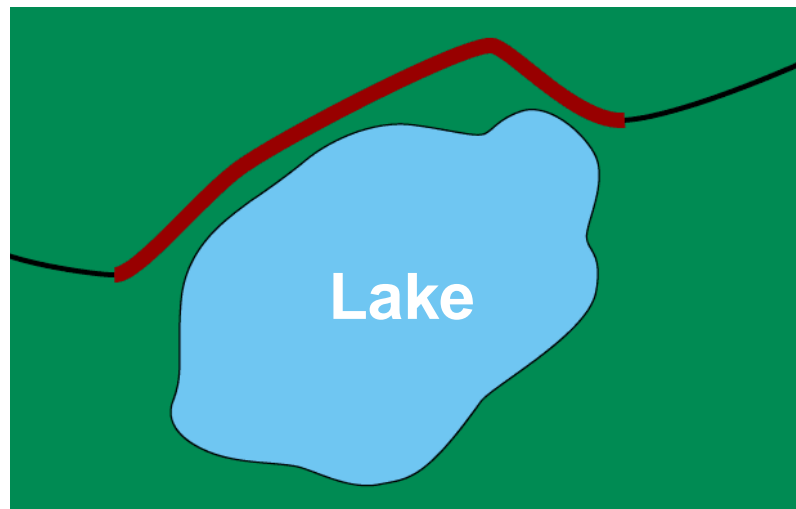
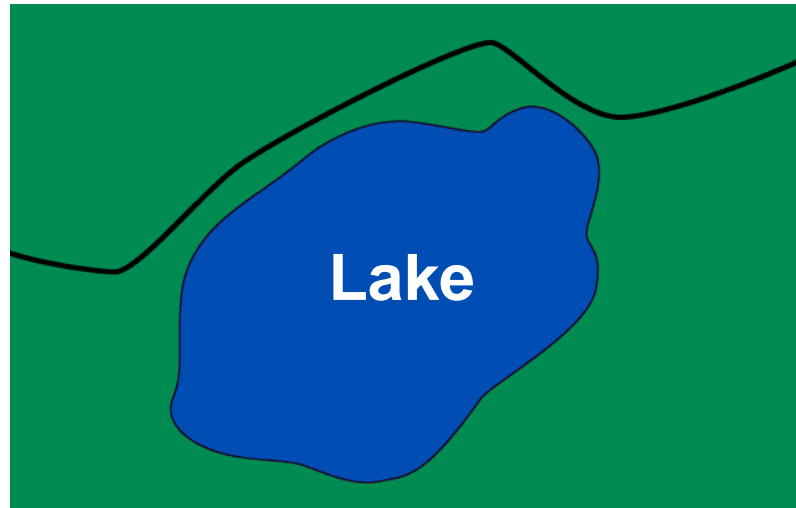
- ⇒ be internationalized, that is, be adapted to the special characteristics**
  - of natural languages and the commonly accepted rules for their use**
  - or of cultures in a given geographic region**
  
- ⇒ fully take into account the needs of any category of users"**

**“CULTURAL AND LINGUISTIC ADAPTABILITY” ...  
... “CLA” ???**

**The keywords:  
“...ability ... to be adapted”**

# A CONCEPT ALREADY IN USE IN THE GEOGRAPHIC INFORMATION REALM

## “Cartographic Rendering”



# IMPLEMENTING CLA: PROVEN SOLUTIONS ARE AVAILABLE

## ➔ Software

- ➔ At the early stages of design, pay attention to CLA principles
- ➔ Use a specialist to ensure the quality of the translation

## ➔ Metadata capture and update software

- ➔ Use a single data structure  
+ with unambiguous and unique identifiers



# IMPLEMENTING CLA: PROVEN SOLUTIONS ARE AVAILABLE (cont'd)

+ Multilingual support of “free text” fields

## Excerpt from ISO 19115

Example of multi-languages occurrences on free text metadata element titled "useLimitation"			
Language code (Optional)	Country code (Optional)	Character set code (Optional)	Plain text (Mandatory)
eng (English) (see Note)	826 (United Kingdom) (see Note)	017 (ISO/IEC 8859-15) (see Note)	Weight restriction on bridges Lorries exceeding five metric tonnes gross weight are not permitted on bridges
fra (French)		017 (ISO/IEC 8859-15)	Limitation de poids sur les ponts: Les camions dont le poids total excède 5 tonnes métriques ne sont pas autorisés à circuler sur les ponts.
ara (Arabic)		011 (ISO/IEC 8859-6)	محدد التقل على الجسور ممنوع على المائلات بمقدار أكثر من ٥٠٠٠ كيلوغرام متري العبور على الجسور
zho (Chinese)		004 (utf8)	桥梁承重限制: 卡车毛重超过五公吨不得上桥

NOTE If "English", "United Kingdom" and "ISO/IEC 8859-15" would have been specified as default values for the entire metadata file, it would not have been necessary to specify them in this occurrence.

# IMPLEMENTING CLA: PROVEN SOLUTIONS ARE AVAILABLE (cont'd)

## + Multilingual support of “free text” fields

Plain text (Mandatory)
Weight restriction on bridges Lorries exceeding five metric tonnes gross weight are not permitted on bridges
Limitation de poids sur les ponts: Les camions dont le poids total excède 5 tonnes métriques ne sont pas autorisés à circuler sur les ponts.
محدود التقل على الجسور ممنوع على الحافلات بمقدار أكثر من ٥٠٠٠ كيلوغرام متري العبور على الجسور
桥梁承重限制: 卡车毛重超过五公吨不得上桥

## **IMPLEMENTING CLA: PROVEN SOLUTIONS ARE AVAILABLE (cont'd)**

- + Code lists instead of “free text” fields**
- + Metadata elements registry  
(ISO/IEC 11179-3)**

## IMPLEMENTING CLA: PROVEN SOLUTIONS ARE AVAILABLE (cont'd)

### Search engines

- ➔ Unambiguous and unique identifiers
- ➔ Metadata elements registry (ISO/IEC 11179-3)
- ➔ Multilingual thesaurus structure?

# ISO/TC 211 AND CLA: CANADA IS "THE" LEADER

## ➔ ISO/TC 211 involvement

- ➔ Metadata (ISO 19115)
- ➔ Encoding (ISO 19118)
- ➔ Registry (new work item)

## ➔ Next targets?

- ➔ Registries (ISO/TC 211)
- ➔ Canadian profile on metadata (ISO 19115)
- ➔ North American profile on metadata (ISO 19115)

## CONCLUSION

**An infostructure...**

**...will be successful in as much as...**

**...its users will feel on familiar ground...**

**...thanks to cultural and linguistic  
adaptability**

## CONCLUSION (cont'd)

### Canadian industry and CLA

- ➔ an undeniable business opportunity
- ➔ a challenge



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**information**

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***Merci!***