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**CULTURAL ADAPTABILITY
AND
"DOG", "DOGHOUSE", "CHIP", ETC.:
A CASE STUDY IN CROSS-SECTORIAL CHALLENGES**

Prepared for:

**JTC1 Cultural Adaptability Workshop (CAW)
JTC1 Business Team on Electronic Commerce (BT-EC)**

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1.0 INTRODUCTORY NOTES

- 1.1 This is a personal contribution. The opinions expressed are those of the authors and not necessary of their respective organization.
- 1.2 This contribution is prepared jointly for the JTC1 Cultural Adaptability Workshop (CAW) and the JTC1 Business Team on Electronic Commerce (BT-EC). The primary purpose of this contribution is to bring to the fore electronic commerce-related perspectives on "cultural adaptability" which go beyond "the special characteristics of natural languages and commonly accepted rules for their use (especially in written form) which are particular to a society or geographic area". {See further 1.9 below}.

The primary purpose of this contribution is to solicit comments and feedback from JTC1/CAW participants, other parties interested in this and related matters some of which are of a general nature and some which are of particular relevance to electronic commerce. JTC1/CAW comments and feedback on this contribution will be carried forward into the JTC1/BT-EC Open Meeting scheduled for 26-28 January, 1998 (Brussels).

- 1.3 ISO/IEC JTC1 has established a Business Team on Electronic Commerce (BT-EC) in order to find out the real and comprehensive requirements for standardization to support and advance interoperability in support of global electronic commerce. At the JTC1/BT-EC Planning Meeting (29-30 September, 1997, Brussels), four horizontal issues were identified and recognized as being of general relevance for all scenarios involving electronic commerce. Therefore, they are to receive prominent attention in the future work of the BT-EC. These four horizontal issues are:
- localization
 - cultural adaptability
 - cross-sectorial; and,
 - IT-enablement.

{See further JTC1/BT-EC N021}

- 1.4 As a follow-up to the Brussels meeting and in preparation for the 13-15 November, 1997 BT-EC Open Meeting held in Atlanta, two contributions were prepared pertaining to these horizontal issues; namely:

- JTC1/BT-EC N029 "Business Requirements: Localization and Cultural Adaptability"

The primary focus of this contribution was to present a number of concepts/terms and associated draft definitions from a business and marketplace perspective and to do so in the context of electronic commerce. They are:

- "global"
- "local"
- "jurisdiction"
- "multilingualism"

- "localization".

This contribution was discussed and supported at the BT-EC Atlanta meeting and the results distributed as JTC1/BT-EC N 036 "Requests for Comments and Contributions: Horizontal Concepts and Definitions".

[Note: An updated version incorporating comments received is in the process of being prepared and is targeted to be ready by 9 January, 1998].

- JTC1/BT-EC "IT-Enablement of Existing Standards used in Commerce (plus Localization and Multilingualism)" (Version 2.0)

The first version of this contribution, i.e., BT-EC N030, was discussed and supported at the BT-EC Atlanta meeting and the results distributed as JTC1/BT-EC N038 "Request for Comments and Contributions: IT-Enablement (plus localization and multilingualism)".

In addition, this first version, BT-EC N030 was discussed at the 11 December, 1997 meeting of the Canadian Advisory Committee for JTC1/SC2 which is coordinating Canadian preparation for the JTC1 Cultural Adaptability Workshop (CAW) to be held 20-22 January, 1998 in Ottawa, CANADA.

[Note: The Version 2.0 of this contribution now known as JTC1/BT-EC N046, has been prepared and submitted to JTC1/CAW in order to meet its 19 December, 1997 deadline for contributions].

This contribution draws attention to the fact that standards exist which are currently used in commerce world-wide. However, many of these standards are paper-based standards. They require the development of IT-enabled and EC-facilitated versions.

From a Canadian perspective, IT-enablement needs to be coupled with the ability to (1) support English and French as natural languages; and, (2) to do so in a Canadian usage context, (e.g., integrating aspects of localization and multiculturalism). Here one should note that the establishment of Nunavut as a new "territory" carved out of the present "Northwest Territories" brings with it the use of the Inuktitut language.

The contribution uses the example of three existing ISO standards; namely "country codes", "language codes", and "currency codes" as well as that of the "commodity codes" of the Harmonized System (HS) of the World Customs Organization. The contribution identifies currently problems with these three ISO standards, their internal inconsistencies for an entity relationship and/or object-oriented perspective, increasing confusion of their interworking, (e.g., on the Internet), and provides some examples of how some of these problems could be addressed by focusing on linguistically neutral identification and unambiguous referencing at the IT interface with an ability to support localization and multilingual needs at the user, i.e., human readable, interface, (e.g., the "written form").

- 1.5 The initial scoping of the "cross-sectorial" horizontal issue is (as taken from JTC1/BT-Ec N021):

"cross-sectorial"

Conflicting understandings of sets of business practices, object identification between economic sectors:

- *may include conflicts of the use of common sets, (e.g., data identification, product codes, etc.), impediments*
- *inability to "communicate" between sectors*
- *change of meanings or importance to objects transferred between sectors*

Scope

- *boundaries between sectors".*

- 1.6 The secretariat of the BT-EC works by electronic means. The BT-EC Nnnn document numbers in this discussion paper refer to those on the BT-EC document server. For further information on accessing this Web site, contact Dr. Ingo Wende, DIN, at e-mail <wende@ni.din.de> or fax: +49 30 26 01 1723. Anyone interested in participating in and contributing to BT-EC work can do so.
- 1.7 ISO/IEC JTC1 at its September, 1997 Plenary, also passed a Resolution #43 pertaining to the organization of a JTC1 Cultural Adaptability Workshop (CAW). Sponsored by JTC1/SC2 and hosted by the Standards Council of Canada, the CAW is scheduled to be held 20-22 January, 1998 in Ottawa.
- 1.8 The Secretariat for CAW is the Japanese member body. It also works by electronic means. CAW referenced documents are posted to the following web site: "http://www.itscj.ipsi.or.jp/caw"
- 1.9 The present (draft) working definition of "cultural adaptability" is found in ISO/IEC JTC1 N4627 (re-issued as JTC1/CAW N04) is:

"Cultural Adaptability"

The special characteristics of natural languages and the commonly accepted rules for their use (especially in written form) which are particular to a society or geographic area. Examples are: national characters and associated elements (such as hyphens, dashes, and punctuation marks), correct transformation of characters, dates and measures, sorting and searching

rules, coding of national entities (such as country and currency codes), presentation of telephone numbers, and keyboard layouts.¹

The requirement for JTC 1 standards to enhance and ensure Interoperability is consistent with the approved JTC 1 Policy on Interoperability.

These characteristics are from the attributes identified in ISO/IEC JTC 1 GII N 123, ISO/IEC JTC 1 GII Roadmap: Guidelines for Evolution, Management and Development of GII Standards. While all the attributes in this document are important and should be taken into account as appropriate, we believe Interoperability, Portability and Cultural Adaptability are critical to the success of JTC 1 standards.

The applicability of these three requirements will vary across the technology directions. Work in each of the technology directions must properly take in account these requirements".

- 1.10 The Case Study on "Dog" and "Doghouse" referenced in this discussion paper and the work involved need not be repeated. Nor do we propose this as a methodology or approach to be implemented. The Case Study represents a very detailed, intensive and tightly focused piece of extensive research. The purpose for referencing it is that it contains findings based on real world examples and economic activities of relevance to furthering the JTC1 work in the areas of both electronic commerce and cultural adaptability.
- 1.11 A draft version 0.1 of this "Case Study" was prepared for the 11 December, 1997 CAC JTC1/SC2 meeting. This version 1.0 benefits from these discussions and feedback from CAC JTC1/SC2 members.

2.0 OBJECTIVES

The objectives of this discussion paper are five-fold; namely:

- to serve as input and focus on one aspect of "cross-sectorial", i.e., the challenge of issues multilingual equivalency among and within industry sectors particularly those related to unambiguity in semantics and interoperability, i.e., those in addition to character sets, scripts, glyphs, etc., as well as those already identified in ISO/IEC DTR 110-17 (1996 (E)) Information technology - Framework for internationalization;
- to outline discussions and work on the four (4) JTC1 BT-EC horizontal issues of "localization", "cultural adaptability", "cross-sectorial" and "IT-enablement" and the approach to these from a business and electronic commerce perspective with JTC1/CAW discussions and work on cultural adaptability;

¹The text of this paragraph is the same as that found in ISO/IEC JTC 1 GII N 123 as the definition for the term "cultural elements".

- bring to fore real world challenges based on a case study so that one can have some appreciation of (1) cross-sectorial issues generally and electronic commerce in particular; and, (2) how they may impact standards development;
- to respond to requests by some BT-EC members and others involved in ISO JTC1-related standardization activities who have seen the original Report on the Case Study on "Dog" and "Doghouse". They are of the opinion that the Case Study contains valuable insights into current standardization issues and work and urged the authors to prepare and distribute a short synthesis; and,
- to raise the question of "special languages" as differentiated from "natural language".

3.0 OUR APPROACH AND PERSPECTIVE

3.1 This discussion paper is based on a "Case Study on 'Dog' and 'Doghouse'" as part of a Bilingual Synonyms and TECHSOURCE project carried out for the Canadian Patent Office. Key findings here are the following.

- (1) Industry sectors have their own use of a natural language in the use and meanings of concepts/terms. Quite often their use of natural language is of the nature of what are called "special languages". Here often the same word, i.e., character string, has different meanings in other industry sectors.
- (2) This problem of polysemy needs to be taken into account, i.e., addressed, in cross-sectorial electronic commerce. Even if one uses only one single natural language as basis the "same" object will be designated by different names in differing cultures using the same natural language.
- (3) There appears to be a trend in the English language by various industry sectors to use existing non-technical "common language" terms with new technical meanings. One result is that a single English language term may well have multiple linguistic equivalents in just one other "natural" language, (e.g., $n \rightarrow 10^+$).

Multilingual equivalency needs an added layer of complexity and even more so for unambiguous cross-sectorial interoperability in support of electronic commerce.

- (4) Local and cultural adaptability conventions and needs do result in the same object being designated by more than one name within a single natural language in various markets. For example, even though there is common use of English by Americans, Australians, British, Canadians, Indians, Irish, New Zealanders, Scottish, South African, Welsh, West Indian, etc. In commerce, the same word can have different meanings and/or the same object can have different names in various locales/markets using the same natural language. Similar market conditions exist for other natural languages such as Arabic, French, German, Spanish, Portuguese, Russian, etc.

- 3.2 Human beings do a tremendous amount of conscious (and unconscious) intelligent filtering in coping with the above noted and similar issues. Computers are dumb. Pragmatic mechanisms and approaches for bridging this gap must be found.

One such mechanism might be an approach based on linguistic neutral and unambiguous identification and referencing of objects used in electronic commerce making (multilingual) natural language-based equivalency a human-user interface and localization matter.

- 3.3 Within industry sectors, established standards and conventions exist for identification and referencing unique objects, naming them, providing associated rules. Although not originally designed to interoperate across and among industry sectors, many have core constructs in common which could be utilized to support cross-sectorial electronic commerce and in a manner which supports cultural adaptability, localization and multilingual needs.

4.0 CASE STUDY ON "DOG" AND "DOGHOUSE"

4.1 OVERVIEW

Intellectual property rights are a key component in present day world and will be even more so in the "Global Information Society".

During the past few years, the Canadian Intellectual Property Office (CIPO), Patent Branch, has invested significant financial and human resources in automating its patent processing operations as well as converting its collection of over 1.2 million patents and laying open its applications in machine-readable form. TECHSOURCE is the name given to this project which CIPO considers to be one of the most important of CIPO's projects in recent years. In addition, CIPO is expanding its public access facilities as part of an overall objective of providing more effective and efficient service to the public. This conversion of Canadian patents (including Canadian claims), from a solely paper collection to an electronically searchable database under TECHSOURCE has highlighted the need for bilingual vocabulary tools to aid users of the new system.

Classifiers and examiners utilize a variety of published vocabulary tools to determine the meaning or appropriateness of words or sets of words as "terms" with specific meanings as used in a patent document or assigned to patent applications. In particular, synonyms (general versus technical, English ↔ French, etc.), and their use and appropriateness are decided upon by classifiers and examiners through referencing various vocabulary tools. Those providing services to the public, i.e., Information Services, face two challenges; namely: (1) how to bridge the gap between (a) the non-technical user who uses common everyday language, and, (b) the equivalent terms for a technical perspective; and, (2) how to provide bilingual services.

In this context, the authors of this paper were contracted by CIPO to undertake a series of projects pertaining to thesauri, automated search and retrieval, bilingual synonyms, facilitating public access, etc. One such project involved very detailed research and analysis work based on real world

examples and examining them at whatever level of detail, i.e., granularity, required. This resulted in the Case Study on "Dog" and "Doghouse".

The reason that these two terms "Dog" and "Doghouse" were the focus of the case study is simply because they were used as a demonstration example by CIPO to indicate that there were cross-sectorial issues within one natural language let alone from bilingual (and multilingual) perspective and needs.

The initial search was on "DOGHOUSE" and the three variant spellings namely (1) "DOGHOUSE", (2) "DOG-HOUSE", and (3) "DOG HOUSE". "DOGHOUSE" is a complex term.²

Since "DOGHOUSE" is a complex term consisting of two stems as term elements, we had the choice of utilizing either "DOG" or "HOUSE" as the "simple term" for this Case Study. We chose the term "DOG" since from a natural use of the English language, we could readily come up with multiple words or terms containing the character string "HOUSE". Because we thought that "DOG" would have less concepts/meanings associated with it than "HOUSE", we chose the simple term "DOG" (and its natural French language equivalent "CHIEN") as the focus of this Case Study .

In retrospect, this proved to be a more fortunate choice for three initial reasons; namely:

- the ordinary person can quite readily bring forward multiple concepts/terms/definitions involving the character string "HOUSE". With respect to multiple concepts/terms/definitions involving the character string "DOG" these were thought to be much less;
- from an English → French equivalent term perspective, the situation is much the same in that one can readily provide multiple possible French equivalents for the English language concept/term "HOUSE" but not that many French equivalents for "DOG"; and,
- from a patent term perspective, we expected to find only a few, i.e., limited, number of meanings associated with "DOG" than with "HOUSE".³

² The other possibilities are:

simple term: Term consisting of only one stem with or without affixes; or,

compound term: Complex term in which the elements have a fixed position within the term as a whole but are not linked by morphological devices. Examples here include "fault recognition circuit", or "agrafe de châssis de moulage" (in English = "moulding casings").

The ISO definition of "complex term" is *"term consisting of more stems with or without other term elements"*.

³Whether this is true or not, we do not know. It would take at least two weeks or more of full time work to find out. Quite frankly we, as well as the CIPO Advisory Committee for this project, were surprised to find as many concepts/meanings associated with the term "DOG" as we did. Even then, we restricted ourselves to technical aspects, i.e., those found in the patent world, and not other natural language uses of "DOG", such as those in relation to animals, as well as those found in colloquial uses such as "to be in the doghouse", (with one's spouse), dog-faced, dog-eared, etc.). We also excluded specific scientific uses of the term "DOG", i.e., in botany, chemistry, pharmacology, medicine, etc.

In order to determine all the current real world uses and meanings of the term "dog" and "doghouse" and "dog" concept-related objects, detailed research and analysis was undertaken of eleven (11) major technical/scientific vocabulary English ↔ French tools (in hard-copy and electronic form).⁴

In short, this Case Study focused on recognized uses of the terms "dog" and "doghouse" in multiple industry sectors and economic areas of activity, i.e., otherwise these would not be identified in the technical and scientific vocabularies, dictionaries and terminological data banks referenced.

For the word "DOG" in English language dictionaries, a number of different meanings for "DOG" were identified as "terms" including concepts/definitions associated with these meanings as well as their synonyms. Consulting English → French vocabulary tools not only provided French language equivalents to the English term "DOG" but also introduced new concepts and terms related to "DOG", (e.g., those associated with "chien").

Included in this analysis were the impact on automated search and retrieval of singular and plural forms, variant spellings, related complex or compound terms, their English-French equivalents, etc.

With respect to the results of this detailed research and analysis, it suffices to state that the **number of different concepts/meanings associated with the term "DOG" and its French language equivalents across all industry sectors was surprisingly large.**

Three (3) restrictions were applied to our research for this Case Study; namely:

- "DOG" had to be a "head" or key term in any compound term contain the character string "DOG";
- we focused only on technical meanings. Excluded were uses of "DOG" as an animal, in botany, medicine, chemistry, trademarks, or colloquial uses; and,
- we basically went from "DOG" to French language equivalents only and not "CHIEN" to all its English language equivalents.

Even with these restrictions, three hundred and six (306) English → French entries were identified as a result of the research and analysis of the vocabulary tools.⁵ It should be noted here that an "entry" here consists of a unique instance of the combination of (1) English term, (2) French language equivalent, (3) source vocabulary tool, and (4) its qualifier/domain.

⁴{See Annex A for a listing of the vocabulary tools utilized}.

⁵Ernst and Le DOC yielded the most with fifty-seven (57) entries each.

Allowing for a couple of natural language meanings for the concept/term "DOG" as an animal, the vast majority of the English language concepts/terms related to "DOG" have a technical meaning/relationship in a wide variety of industry sectors.

Even if one undertakes further analysis and work from a linguistic and terminological perspectives as well as the scientific and/or technical contexts and as a results reduces this larger number by 30 or 50% due to "overlap", i.e., to 150 entries, this still is a very large number of potential "bilingual synonyms". A complete list is available on request.

From another perspective, in addition to "DOG" and "DOGHOUSE" as unique sets of character strings, another eighty-six (86) unique character sets were identified as representing other concept/meanings associated with DOG. From a French language equivalency perspective, we find one hundred and eighty-nine (189) distinct different French language equivalent expressions.

In concluding this finding, we note that even taking into account the three (3) restrictions, we cannot state that our results are exhaustive, i.e., complete. We estimate the results to be in the 95% range. For example, in searching the IPC:CLASS CD-ROM {See below} we found additional patent-related meanings for "DOG" not found in the eleven vocabulary tools, (e.g., "anti-cracking dog").

4.2 CROSS-SECTORIAL EXAMPLES ^¾ BASED ON TECHNICAL/SCIENTIFIC VOCABULARY TOOLS

4.2.1 DOMAINS AND INDUSTRY SECTORS

One result of our analysis is the possibility of an object-oriented "underlayer" in all this. The widespread practice of using common language terms, i.e., everyday words, for many different meanings in various technical/industry sector is that it is a specific attribute associated with the concept "DOG" which is being referenced, i.e., a dog paw, the biting and grabbing ability associated with a (mouth) of a dog, the diminutive nature of the structure of a doghouse, a dog on a leash attached to doghouse, etc. This becomes apparent when we sought to find the appropriate bilingual English ↔ French equivalent pairs.

Similarly, when discussing the results of this Case Study with the other cultures, non-English or French-speaking language users, other attributes associated with DOG in those cultures came to the fore, (e.g., those associated with "dog cart" common in the history of non North American cultures). For example, in Dutch the term "hond" is also used to designate an object consisting of a small, square pallet (usually wood) on four small wheels used in the transportation industry by those moving household furniture.

[NOTE: READERS ARE ENCOURAGED HERE TO PROVIDE ADDITIONAL EXAMPLES OF OTHER USES OF THE TERM "DOG" IN THEIR CULTURE OTHER THAN "DOG" AS ANIMAL]

The technical/scientific vocabulary tools referenced when providing the various meanings of the terms dog and doghouse and associated English ↔ French equivalents. They do so within specified contexts which they call "categories", "qualifiers", "subject fields", "classes", "domains", etc. Each represents a different organizational schema. Some are hierarchical, others are not, i.e., simple "flat" listing of categories.

While these schemas all differed, the common thread is that they all referred to industry sectors (or sub-sectors). The different meanings associated with DOG etc., result from combining an attribute associated with DOG with a specific context or domain.

4.2.2 DOG

Consolidating the different concepts/meanings associated with the word "DOG" as a term in different technical and business use contexts, industry sectors, etc., i.e., domains, we found that there are at least forty-one (41). This finding is based on determining their French language equivalent. They are:

1. agrafe	14. crochet	27. pompe de serrage
2. bride de couvercle	15. coussinet de serrage	28. poupée à pompe
3. butée	16. détente	29. renard (crochet à bois)
4. butoir	17. doguin	30. sergent
5. came	18. doigt d'encliquetage	31. serre
6. cavalier	19. entraîner	32. sergent (d'établi)
7. chien	20. étrier	33. tampon
8. clabot	21. fermeture à tourniquet	34. taquet
9. clameau	22. griffe	35. tire-cercle
10. claquette	23. griffe d'entrînement	36. toc
11. cliquet	24. griffe de serrage	37. toc (de tour)
12. crabot	25. mâchoir	38. tréteau
13. croc	26. mors	39. triangle
		40. valet
		41. valet d'établi

In the rest of this section, we present some detailed information on the different meanings of the English term DOG in various industry sectors based on only two of the eleven (11) technical/scientific vocabulary tools referenced. Included here are also English ↔ French equivalent terms at the research or working level stage of these terminology data banks.

The first set is based on "TERMIUM™" as the source. The second set is based on "Le DOC" as the source {See Annex A for the complete bibliographic reference for each of these sources} Not included here are entries where "DOG" is a synonym for another term. Here we provide not only the English and French definitions but also the "domain" (or context) of the source within which this definition is relevant.

➤ TERMIUM and DOG

Term (E)/Definition	Term (F)/Definition	Domain(s)
dog	clabot	aeroindustry - air transport
dog <u>DEF</u> ⁶ : - A short, heavy piece of steel, acutely bent, pointed at one end (for driving into timber) and having a ring or eye at the other to take e.g., a butt hook or a chain (chain dog).	clameau <u>DEF</u> : - Pièce d'acier, courte et lourde, recourbée, ayant une extrémité pointue (qui permet de l'enfoncer dans le bois) et comportant un anneau ou œil à l'autre extrémité, auquel peut s'adapter un crochet de culée ou une chaîne.	transport of wood
dog <u>OBS</u> ⁷ : - Horse that is not worth much, usually one that is stubborn and of poor conformation.	claquette <u>OBS</u> : - Terme péjoratif qui désigne un cheval de selle d'ossature de musculature faibles.	horse husbandry - horse racing & equestrian sports
dog <u>OBS</u> : - for high gear the mainshaft second speed gear is d[is]id [<i>sic</i>] out of engagement with the second speed gear on the counter-shaft and forward until (...) dogs (...) of the pinion shaft gear engage with (...) the mainshaft second speed gear.	crabot <u>OBS</u> : - la prise directe est obtenue en accouplant directement l'arbre primaire et l'arbre secondaire. L'accouplement se fait quelques fois par des dents taillées en bout ou...	automotive transmission systems - couplings (mechanical components)
dog	cliquet	aeroindustry - air transport
dog <u>DEF</u> : - ...a hinged steel hook...used mainly in turning and handling logs. <u>OBS</u> : - used on a peavey. <u>SYN</u> ⁸ : 1. dog-hook	crochet <u>DEF</u> : - crochet pour manoeuvrer les billes qu'on appelle "dogue" au Canada. <u>OBS</u> : - s'emploie sur un tourne-billes à éperon. <u>OBS</u> : - Le terme "dogue" - calque de l'anglais "dog" - fait plutôt partie de la tradition historique québécoise et il s'éloigne, par conséquent, de la norme culturelle (français normatif). <u>SYN</u> : 1. renard 2. dogue	forestry operations - facilities & equipment (wood industries)
dog <u>OBS</u> : - lathe dogs	doguin <u>OBS</u> : - doguins de tours SD 50 TD and R119	mechanics and heat
dog <u>DEF</u> : - A steel tooth-like projection for holding logs firmly in position, as fitted, e.g., to the knee of a log carriage...or in a plate...fixed to the	griffe <u>DEF</u> : - Pièces d'acier en forme de griffes qui permettent d'agripper fermement les grumes et d les fixer aux poutres du chariot port-grumes d'une scie pour les mettre en bonne position de	wood sawing - facilities & equipment (wood industries)

⁶DEF. = definition

⁷OBS. = observation

⁸SYN: = synonym

Term (E)/Definition	Term (F)/Definition	Domain(s)
endless chain of a log haul-up. <u>SYN:</u> 1. log dog 2. sawyer's dog	sciage [ou] (...) qui permet de fixer les grumes aux palques de la chaîne sans fin d'un convoyeur. <u>SYN:</u> 1. griffes 2. griffe de serrage 3. griffes de serrage	
dog	griffe	air transport - aeroindustry
dog <u>DEF:</u> - A bevelled bar dropped in the groove of a plate to fasten the plate to another cylinder on a rotary press	griffe de serrage <u>DEF:</u> - Pince bisautée qui s'insère dans une des rainures de la plaque afin de fixer cette plaque fermement au cylindre de la rotative. <u>SYN:</u> 1. pince de serrage	printing machines & equipment - lithography, offset printing and collotype
dog <u>DEF:</u> - A clamp type device that is fastened to work held between centres. <u>SYN:</u> 1. carrier 2. lathe dog	toc <u>DEF:</u> - Accessoire de tournage servant à rendre la pièce solidaire du mouvement de rotation de la broche. Is se bloque sur la pièce au moyen d'un ou plusieurs boulons et est entraîné par le plateau pousse-toc.	lathe work (machine-tooling)

➤ Le DOC and DOG

Term (E)/Definition	Term (F)/Definition	Domain(s):
dog	agrafe	métallurgie - aluminium
dog Steel tie used to join two members of timber as in the case of stays or braces for the purpose of which the tie is formed into a hook at each end perpendicularly to its length so that the hooks may be driven into the wood. <u>Entrée(s) additionnelle(s):</u> 1. clip	agrafe Pièce d'attache en acier, servant à joindre deux pièces de bois d'oeuvre, comme dans le cas d'étayage, auxquelles fins la pièce est formée en crochet à chaque extrémité perpendiculairement à la longueur, de sorte que les crochets puissent être enfoncés dans le bois. Accessoire servant à réunir des éléments de construction. L'agrafe, généralement métallique, peut être en forme de crampon, de pince à ressort, etc.	matériel de fixation
dog <u>Entrée(s) additionnelle(s):</u> 1. stop	battement <u>Note(s):</u> - (Relatif à:) scie alternative	industrie du bois
dog A short, heavy piece of steel, acutely bent, pointed at one end (for driving into timber) and having a ring or eye at the other to take, e.g., a butt hook or a chain (chair dog). <u>Note(s):</u> - Region of currency (or this term) North America <u>Synonyme(s):</u> 1. log dog 2. log grab <u>Entrée(s) additionnelle(s):</u> 1. chain dog 2. dragging pin <u>Voir aussi:</u> choker	clameau Pièce d'acier, courte et lourde, recourbée, ayant une extrémité pointue (qui permet de l'enfoncer dans le bois) et comportant un anneau ou oeil à l'autre extrémité, auquel peut s'adapter un crochet de culée ou une chaîne (en anglais chain dog).	foresterie - transport du bois
dog <u>Entrée(s) additionnelle(s):</u> 1. washer dog	cliquet <u>Entrée(s) additionnelle(s):</u> 1. butée 2. chambrière	génie mécanique - organe mécanique
dog	crabot Dents d'entraînement dans un embrayage à griffes	génie mécanique - accouplement d'arbres
dog	croc	foresterie - transport du bois; outil de récolte du bois

Term (E)/Definition	Term (F)/Definition	Domain(s):
dog	doguin	métallurgie - aluminium
dog A handle used on hinged watertight doors to force the door frame against its gasket. <u>Synonyme(s)</u> : 1. clip 2. snib	fermeture à tourniquet <u>Synonyme(s)</u> : 1. tourniquet	marine
dog A steel tooth-like projection for holding logs firmly in position, as fitted, e.g., to the knee of a log carriage (top dog, bottom dog), or in a plate (log dog) fixed to the endless chain of a log haul-up. <u>Voir aussi</u> : (top dog); (bottom dog); log dog)	griffe de serrage Griffe(s) (de serrage): Pièces d'acier en forme de griffes qui permettent d'agripper fermement les grumes et de les fixer aux poupées du chariot porte-grumes d'une scie pour les mettre en bonne position de sciage (griffe supérieure et griffe inférieure); (2) outil du même type qui permet de fixer les grumes aux plaques de la chaîne sans fin d'un convoyeur. <u>Voir aussi</u> : (griffe supérieure); (griffe inférieure); (plaque); (placer)	agriculture - sylviculture
dog	griffe de serrage Pièce d'acier pointue et recourbée qui permet de maintenir la grume sur le chariot en position de sciage. <u>Synonyme(s)</u> : 1. griffe	industrie du bois - chariot à grumes
dog	mors	métallurgie - tube métallique
dog	poupée	métallurgie - aluminium
dog	poupée à pompe	métallurgie - aluminium
dog	serre	métallurgie - aluminium
dog	taquet Dispositif d'arrêt d'une cage à une recette	industrie minière
dog A device attached to the workpiece by means of which the work is revolved.	toc Dans la ponceuse pour pièces tournées, organe de la cage d'écurie qui sert à maintenir et à entraîner la pièce à poncer.	industrie du bois - machine à bois
dog A clamp type device that is fastened to work held between centers. <u>Synonyme(s)</u> : 1. lathe dog <u>Contexte(s)</u> : A lathe dog is used to drive long workpieces which	toc Accessoire de tournage servant à rendre la pièce solidaire du mouvement de rotation de la broche.	travail des métaux - tour à métaux

Term (E)/Definition	Term (F)/Definition	Domain(s):
cannot be chucked 2. carrier 3. lathe-dog 4. lathe carrier <u>Entrée(s) additionnelle(s):</u> 1. drive dog		
dog	toc <u>Entrée(s) additionnelle(s):</u> 1. valet 2. sergent 3. taquet 4. mâchoire 5. griffe 6. cliquet	genie mécanique - organe mécanique
DOG used as synonym/additional entries		
stop Any projecting piece designed to strike against some other piece having motion relative to the first piece. <u>Synonyme(s):</u> 1. dog 2. seat	butée Toute pièce poréminente contre laquelle vient heurter une pièce ayant un moubement relatif par rapport à la première. On monte généralement 2 ou 4 butées opposées autour de la pièce à immobiliser.	génie mécanique - organe mécanique
skidding hooks <u>Synonyme(s):</u> 1. head grabs 2. dog 3. grabs	grappin	foresterie - récolte du bois
pawl <u>Synonyme(s):</u> 1. dog 2. lock pawl	parachute Arrêtoir permettant de verrouiller le plan mobile d'une échelle coulissante à la hauteur voulue.	protection contre l'incendie - équipement d'intervention- incendie
cramp iron <u>Synonyme(s):</u> 1. cramp 2. dog 3. dog timber	clameau Pièce servant à réunir rapidement de grosses pièces de bois.	bâtiment

4.2.3 DOGHOUSE

Consolidating the different concepts/meanings associated with the word "DOGHOUSE" as a term in different technical and business use contexts, industry sectors, etc., i.e., domains, we found that there are twelve (12) based determining their French language equivalents. They are:

1. abri de sondeur	5. chapelle	9. niche à chien
2. abri-bureau	6. fontaine (Belg.)	10. niche d'enfournement
3. cabane de syntonisation	7. garage d'un receleur de voitures	11. niche de source (Belg.)
4. cage de moteur	8. logement du système d'accord d'antenne	12. protubérance pour instrumentation

From another perspective, we summarize the use and meaning of the term "DOGHOUSE". We do so by giving the domain or industry sector, the French language term and a short explanation.

Domain/Industry Sector	French Term	Short Definition
natural resource sector (energy, oil, mining)	abri de sondeur	shed by power stations mining operations, oil industries for workmen to store or change clothes
performing arts	garage d'un receleur de voiture	small theatre ("garage") for trying out a play
refractories, furnaces, ovens	niche à chien	small arched chamber through which is inserted a fuel burner
glass manufacturing	niche d'enfournement	small extension of glass tank furnace
oil and natural gas	abri-bureau	a small office or shed by an oil rig
automobile	cage de moteur	engine tunnel or compartment which partially or entirely houses the engine
telecommunications	cabane de syntonisation	structure (small) by a transmission antenna housing the instrumentation
telecommunications	logement du système d'accord d'antenne	structure (small) by a transmission antenna housing the instrumentation
space	protubérance pour instrumentation	telecommunications "doghouse" on a space vehicle/station

Further, we note there are cultural differences within industry sectors as well. For example, in the context of "doghouse" as part of a furnace one equivalent term in French in France is "chappelle", while that in French in Belgium is "fontaine".

[Note: This is of the same nature as "truck" versus "lorry"; "elevator" versus "lift"; or "(baby) carriage" versus "pram", etc., as different names for the same object in the English language]

4.3 CROSS-SECTORIAL EXAMPLES ^¾ BASED ON INTERNATIONAL PATENT CLASSIFICATION (IPC) SYSTEM

The International Patent Classification (IPC) system is the authoritative taxonomy of the set of contexts and domains along with their hierarchical relations within which natural language terms and terms found in special languages, (e.g., technical, scientific, etc.), have particular meanings and with these meanings are used for the classification and examination of patent applications.

The IPC derives this world-wide authority through its adoption under the **Strasbourg Agreement Concerning the International Patent Classification** (1971), Canada is a signatory to this Strasbourg Agreement. The IPC is administered by WIPO - the World Intellectual Property Organization. The first version of the IPC entered into force on 1 September, 1968, and the most current version is the sixth of 1 January, 1995.

The IPC and its different language versions exist in electronic form. The IPC:CLASS CD-ROM disc contains the IPC texts: IPC¹ through IPC⁶ in English and French, IPC⁵ and IPC⁶ in Hungarian and Spanish, IPC⁴ to IPC⁶ in German. Here IPC¹ IPC², etc., represent the various versions of the IPC. The disc includes catchword indexes, revision concordance data among all the IPC versions and valid IPC symbols.

The International Patent Classification (IPC) system is the authoritative set of contexts or domains within which natural language terms, scientific language terms and/or technical language terms have specific meanings and thus are used from a patent information perspective. Whatever its internal inconsistencies in language equivalencies, lack of consistency and continuity in classification of concept/terms, etc., the IPC is and will remain the world-wide common reference point and authority for classifying patents and associated use of patent terms as well as doing so multilingually.

The basic structure of the IPC consists of a number of key components; namely:

- the IPC symbol which acts as a unique composite code or identifier for the permitted, i.e., valid, combinations of:
 - IPC class identifier
 - IPC sub-class identifier
 - IPC group identifier
 - IPC sub-group identifier

The resulting IPC symbol is of the nature of "ANNA NNN/NNN."⁹ The IPC:CLASS CD-ROM contains a list of all the valid IPC symbols.

- the text associated with each
 - IPC class
 - IPC sub-class
 - IPC group
 - IPC sub-group

While the eight (8) IPC classes remain constant, the "NNA" sub-class(es) series for each IPC class can and does change at times between IPC version releases. Nor are the "NNA" series of codes/symbols for each IPC class continuous, i.e., gaps do exist in the sequences. The IPC symbols can, however, be considered to be unique and unambiguous and culturally/linguistically neutral. The same condition applies for each of the IPC groups in relation to their respective IPC sub-class and even more so for each IPC sub-group set of symbols in relation to the sub-group of which it forms part. **As such the IPC symbol acts as the unique code identifying each patent concept and scope irrespective of the associated linguistic expressions, i.e., as expressed in human understandable text.** This is important to note since the IPC text is currently being made available in six (6) languages on the IPC:CLASS CD-ROM; namely, English, French, Spanish, German, Russian, Hungarian, and with a Catchword Index for each except in Hungarian. **The only common link among all these six different linguistic expressions is the unique and linguistically neutral IPC symbol¹⁰, and it is through the focus of the context (domain, sub-domain) of each IPC symbol than one manages multilingual equivalents for each industry sector (as identified and bounded through the IPC).**

As part of the Case Study on "Dog" and "Doghouse" we found that the concept term "dog/chien" is a meaningful term in the IPC text associated with forty-three (43) different IPC symbols and their scope/definition. A quick tabulation of these 43 IPC symbols reveals that they represent:

- five (5) different IPC classes, i.e., A, B, D, E and F;
- twenty-one (21) different IPC sub-classes;
- twenty-eight (28) different IPC groups¹¹; and,
- twenty-eight (28) different IPC sub-groups.¹²

⁹With respect to the NNN/NNN, it should be noted that leading zeros, i.e., those on the left, do not appear in IPC symbols associated with results of searches. However, when searching by IPC symbol the full three digits of "NNN" must be entered.

¹⁰Text equivalents for IPC system and IPC symbols exists in many other languages as well but are not currently being distributed by WIPO on its IPC:CLASS CD-ROM.

¹¹Four (4) symbols had no group level.

¹²Twelve (12) IPC symbols had no sub-group level or if they did it was "00" and therefore not included in this count.

The case study had its origin in the search on the complete database of 1.2 million Canadian patents of CIPO, i.e., TECHSOURCE. Of the eight (8) primary patent classes of the IPC, which have remained the same throughout all versions of the IPC, the only IPC class which did not have patents containing the terms "dog" or "doghouse" was Class G - Physics.

4.4 OTHER CROSS-SECTORIAL EXAMPLES "CHIP" AND "WAFER"

The Case Study on "Dog" and "Doghouse" and its results are not an aberration or unique case. Two other examples suffice to underscore this point, namely the English language terms "CHIP" and "WAFER". These are English language words that have been in existence a very long time, i.e., according to the Oxford Dictionary, "CHIP" since 1330, and "WAFER" since 1295. However, these two common terms are used in multiple technical contexts in various industry sectors as can be seen by the choice of possible French language equivalents. For example for "CHIP"*¹³, these include twenty-three (23) possible French language equivalents already identified. They include (presented here in alphabetical order):

- | | |
|------------------------|-----------------------|
| ➤ bicopeaux | ➤ gravillon |
| ➤ bribe | ➤ jeton |
| ➤ circuit intégré | ➤ micro-image optique |
| ➤ copeau | ➤ microplaquette |
| ➤ coupure de microfilm | ➤ morceau |
| ➤ cristaux | ➤ planure |
| ➤ ébéchure | ➤ plaquette |
| ➤ écaillé | ➤ pastille |
| ➤ equisure | ➤ puce |
| ➤ élément | ➤ rose brute |
| ➤ esquille | |
| ➤ fragment | |

Similarly for "WAFER"*, we have identified (very quickly) already eleven (11) possible French language equivalents; namely: (in alphabetical order)

- | | |
|-----------------------------|--------------------|
| ➤ cachet | ➤ grande particule |
| ➤ cube de fourrage comprimé | ➤ plaquette |
| ➤ galette | ➤ ptelea trifolié |

¹³ * From a medical perspective, "CHIP" pertains to fragments of bone, and "CHIP-BLOWER", according to Stedman's Medical Dictionary, is "*an instrument for blowing the debris out of, or drying, a tooth cavity that is being excavated for a filling; it consists of a rubber bulb with a metal nozzle*", which will certainly have different patent classes and patents for it than "CHIP-BLOWERS" used in forestry or the semi-conductor industry (or for putting the chocolate chips in cookies?). WAFERS are used as a delivery device for drugs to be taken orally, i.e., "a thin sheet of dried flour, used to enclose a powder, the wafer being moistened and folded over the drug, so that it can be swallowed without taste". Excluded for "WAFER" are special language equivalents in the religious domain.

- gaufre
- gaufrette
- grand copeau
- rondelle
- tranche

We conclude this example with the observation that dealing with "technical" industry sector terms and their multilingual equivalents in English, French, German, Dutch, Spanish, etc., in support of cross-sectorial electronic commerce may well be much less of a challenge than new uses, i.e., meanings, of existing "non-technical" common language terms for new technologies, products and services.

5.0 LESSONS LEARNED APPLICABLE TO CULTURAL ADAPTABILITY AND CROSS-SECTORIAL ASPECTS USE IN STANDARDIZATION

5.1 NATURAL LANGUAGES AND SPECIAL LANGUAGES (NATURAL, SCIENTIFIC AND TECHNICAL)

The definition of the concept/term "cultural adaptability" as found in JTC1 CAW N04, currently appears to have a focus on special characteristics of natural languages and commonly accepted rules for their use (especially in written form) which are particular to a society or geographic area. The emphasis here appears to be on character sets, scripts, glyphs, etc., their ordering, sorting, search, etc.¹⁴ However, in day-to-day commerce (and administration) world wide it is not so much the natural language but the usage of special languages which forms a significant challenge to providing interoperability in electronic commerce. This is true especially for "technical" uses of natural languages by different industry sectors. Differences in uses of a language exist also in industry sectors which represent other sets of requirements different from "particular society or geographic area". Here it is useful to present some other ISO standards and terms and definitions.

➤ **Applicable existing ISO terms/definitions to this contribution and CAW**

"3.1 **Character**

a member of a set of elements that is used for the representation, organization or control of data".¹⁵

¹⁴{See also the JTC1/SC22/WG20 produced Technical Report ISO/IEC DTR 11017 Information technology - Framework for Internationalization (1996). It has a similar orientation}.

¹⁵This definition is taken from the ISO/IEC 2382 standard "Information Processing -- Vocabulary: Part 4 Organization of Data", i.e., "04.01.01 character" or "04.01.01" **caractère**: *Élément d'un ensemble employé pour constituer, représenter, ou gérer des données*. ISO/IEC 2382 defines "**data**": *A reinterpretable representation of information in a formalized manner suitable for communication, interpretation or processing*". Data can be processed by humans or automatic means; or as **données**: "*Représentation réinterprétable d'une information sous une forme conventionnelle convenant à la communication, à l'interprétation*". The term **information** in turn is defined in information processing as "*knowledge concerning objects, such as facts, events, things, processes, or ideas, including concepts, that within a*

A "character string" then is "one or usually more characters forming a unit which is marked off by spaces or punctuation marks before and after". The most common category of character string is that which we know as "words".

The ISO 1087 definition of "word" is "*smallest linguistic unit conveying a specific meaning capable of existing as a separate unit in a sentence*".

Generally "words" are character strings found in natural languages. On the whole words which exist in these natural languages are human understandable and are those found in their published vocabulary tools, (e.g., Oxford/Webster, Larousse/Robert, etc.). We define "word" through two key attributes:

- (1) a word is a character string (or alphanumeric string), normally one, understandable by human beings;
- (2) a word must be "write-able" not just "pronounce-able", i.e., the "written form" requirement of "cultural adaptability".

However, **a single, unique word in a single written form in a natural language quite often can and does have many different meanings/uses.** To understand this differentiation, it is necessary to note the concept of a "term".

The ISO/IEC 1087 "Terminology -- Vocabulary" standard defines "**term**" as "*designation of a defined concept in a special language by a linguistic expression*". The standard notes that "a term may consist of one or more words, i.e., simple term, or complex term or even contain symbols".¹⁶

ISO 1087 defines "**special language**" as "*a linguistic subsystem, intended for unambiguous communication in a particular subject field using terminology and other linguistic views*". Examples of "special languages" here include the scientific and technical languages. Further, "**subject field**" is defined in ISO/IEC 1087 as "*a section of human knowledge, the border lines of which are defined from a purpose-related point of view*".

We note here that "unambiguity" is a key requirement in being able to support "interoperability".

5.2 QUESTIONS FOR CAW - SCOPE OF CULTURAL ADAPTABILITY

*certain context has a particular meaning" (or "information" (en traitement de l'information): *Connaissance concernant un objet tel qu'un fait, un événement, une chose, un processus ou un idée, y compris une notion, et qui, dans un contexte déterminé, a une signification particulière*).*

¹⁶Or in French "**terme**": *Désignation au moyen d'une unité linguistique d'une notion définie dans une langue de spécialité. Note: Un terme peut être constitué d'un ou de plusieurs mots, i.e., terme simple ou terme complexe et même de symboles*. Scientific and technical terms and notations often use symbols, (e.g., chemical formulae).

With respect to the CAW N04 definition of "cultural adaptability", we note that "special languages", i.e., scientific and/or technical, are not "particular to a society or geographic area", i.e., can we/should we consider them to be "culturally neutral"?

Standards development work by ISO/SC2 has reached that stage that any natural language can be supported in its written form, i.e., through use of the multipart "ISO/IEC 10646 Universal Multiple-Octet Coded Character Set (UCS)" standard.

However, key areas of human activities such as electronic commerce and electronic administration are not based on unstructured written form textual documents. Rather, they are based on the interchange of predefined and structured data elements (and permitted combinations thereof). On the whole, these are of the nature of "special languages". Here ensuring interoperability raises a whole other set of IT-related issues.

The question is then the following: "Is the scope of the CAW and "cultural adaptability" only that of natural languages in written form?" Or does it also include "special languages" and their use in electronic commerce, economic/industry sectors, scientific areas, etc.?

Scientific languages appear to represent less of a problem due in part to the systematic and unambiguous nature of science and the associated sets of authoritative controlled vocabularies used world-wide. In the Case Study on "Dog" and "Doghouse", we did some brief research in this area. We found that one can deal with non-technical term equivalents for scientific names in areas such as chemistry, medicine, pharmacology, etc., ("aspirin" as the non-technical term for "acetyl-salicylic acid" or PCB for "polychlorinated biphenyl"), as well as their French language equivalents. Authoritative sources exist for each of these "scientific" domains such as the Merck Index, Sax's Dangerous Properties of Industrial Materials, the CAS Registry, etc. Further English ↔ French language equivalents here tend to be of the nature of a one-to-one mapping for the technical term and in most cases also for its non-technical equivalent.

We also note from a scientific, i.e., medical, perspective that the term "dog" can be part of non-technical synonym for a scientific term. Here are a few examples:

Scientific Term	Non-Technical Equivalent Term - English
➤ Nux Vomica	➤ dog buttons
➤ Triticum	➤ dog grass
➤ Apocynum androsaemifolium	➤ dogbane
➤ Apocynum canna-binum	➤ Indian dogbane
➤ Cornus	➤ dogwood
➤ Trangua	➤ black dogwood

From the same scientific/medical perspective, Stedman's Electronic Medical Dictionary was searched for the term "dog" resulting in hits such as "dog disease", "dog ear", and "dog nose" which

are all common names for diseases having scientific names. A "dog unit" is a unit of measurement. Undertaking right or left truncated searches on the term "dog" yielded results which lead us even further afield, (e.g., Dogiel (or Dogiel's cells), dogmatic, codogenic, endogenous, etc.).

From another scientific perspective, namely that of dangerous properties of industrial materials, i.e., using Sax's on CD-ROM and searching on the term "Dog" we had 1246 "hits". This was due to re-occurrences of "dog" under the Toxicity field in the context of routes for administration to, or exposure of, animal species to toxic substances, (e.g., "oral-dog", "intracerebral-dog", "intravenous-dog", etc.).

Searching Hawley's Condensed Chemical Dictionary on the term "dog" not only brings us chemical compounds used for animals including dogs, but also "DOGTOOTH SPAR", as a common English language synonym for "calcite" (CaCO_3)

The result of this research would indicate that with respect to scientific languages:

- (1) they can be deemed to be linguistically and culturally neutral in their unique and unambiguous identification and referencing of objects in their specific scientific domains, (primarily through authoritative controlled vocabularies of terms for each domain).
- (2) cultural adaptability here is primarily a case of providing a local use language equivalent to the scientific term for understanding and use by those not knowledgeable in that scientific discipline.
- (3) from an IT perspective, technologies do exist which manage the notational "shorthand", special encoding requirements and related rules of scientific disciplines and their particular "languages", (e.g., chemical formulae, structures, scientific symbols, mathematical equations, etc.).

We could consider a scientific language to be "exchange language" which in turn has multiple natural language and culturally dependent linguistic equivalent terms.

However, technical language and their use in particular industry sectors do present particular challenges to cultural adaptability and cross-sectorial interoperability since they do not have the attributes of scientific languages. Technical languages as linguistic sub-systems are different enough to handle even within their industry sector, in one natural language. To this are the added challenges of localization, multiculturalism and cross-sectorial interactions in (electronic) commerce. Are these challenges considered part of "cultural adaptability", i.e., to be discussed/addressed at the Cultural Adaptability Workshop? Or is the scope of "cultural adaptability" to be only that as stated in JTC1/CAW N04? The perspective and view of this contribution is that "cultural adaptability" is more than national characters, sorting and searching rules, keyboard layout.

Further, in either case one needs also to address IT-enablement of standards used in commerce world-wide supporting multilingual, cross-sectorial and localization requirements.

5.3 HUMAN « IT CULTURAL ADAPTABILITY ISSUES AND INTEROPERABILITY

The major focus of IT standardization in the area of cultural adaptability has been on ensuring that IT standards exist which support the special characteristics of natural languages and the commonly accepted rules for their use (especially in written form), i.e., use of computers by humans in a textual mode and for communicating the same usually in the form of an (unstructured) document. Multilingual communications here are being supported through computer-assisted translation (again of text, phrases, words, etc.). On the whole, this is a human → IT → human relation of written form communications. Here IT is utilized primarily to communicate/transmit written forms in various natural languages.

The advent of the Internet, the concept of the GII, etc., are visioning a world of human (and to his/her computer) → IT → IT, etc., → IT of human. That is persons, (natural or legal), interact globally via their computer systems and in doing so before the conclusion of their communication or transaction invoke the participation and activate the services of multiple other parties, (e.g., mailboxes, digital signatures, certification authorities, financial services, etc.). **Here the use of IT is much transaction-based with an emphasis on computational integrity¹⁷, i.e., versus communication/transmission and representation.**

This is true especially where such interaction involves the buying and selling of a good or service, i.e., of the nature of commercial business transaction. Where done electronically this is commonly known as "electronic commerce" (or EC).

EC is data element-based, i.e., EDI-based. Electronic Data Interchange is defined as "the automated exchange of pre-defined and structured data for business purposes among information systems of two or more organizations" (ISO/IEC 14622). "Organization" is defined as "a unique framework of authority within which a person or persons act, or are designed to act, towards some purpose. (ISO 6523).

Electronic commerce involves logistic chains consisting of the "automated" participation of IT systems of multiple organization. Key factors here are unambiguity and completeness in the semantics of the data interchanged and the transactions and computations involved. The BT-EC is focusing its work on the "individual ↔ business" aspect of electronic commerce (primarily due to time and resource constraints). This means that in addition to whatever the number of organizations and their IT systems are involved in the purchase and delivery of a good or service (physical or virtual), there is at the beginning and end of each business transaction a human user interface requirement with its associated cultural adaptability needs.

POST SCRIPTUM THOUGHTS

- (1) Human Interface = cultural adaptable supports localization and multilingual aspects

¹⁷{See further the companion contribution to JTC1/CAW and BT-EC titled "IT-enablement of Existing Standards used in Commerce (plus Localization and Multilingualism)"}

- (2) From Human's IT System → to/among participating IT systems one maximizes linguistically neutral unique and unambiguous identification of objects being transferred. Here there is the added need for cross-sectorial interoperability.
- (3) Participating parties in whatever country, society, geographic area should be able to obtain the written language equivalent according to their local and linguistic needs.

[Note: In the area of financial services, the ATMs of banks have already implemented this].

ANNEX A ¾ TECHNICAL/SCIENTIFIC ENGLISH « FRENCH VOCABULARY TOOLS
UTILIZED IN THE CASE STUDY

Source ID	Source Name (Short)	Citation
1	Belle-Isle [1977]	Belle-Isle, J.-G. <u>Dictionnaire technique général anglais-français</u> . Montréal: Beauchemin, Dunod, 1977, 2 nd ed.
2	Cusset [1967]	Cusset, F. <u>Technical Dictionary. English-French, French-English</u> . NY: Chemical Publishing Co., 1967, 7 th ed.
3	Ernst [1982]	Ernst, R. <u>Comprehensive Dictionary of Engineering and Technology. Vol IX - French-English</u> . Wiesbaden: Oscar Brandstetter Verlag, 1982.
4	Ernst [1984]	Ernst, R. <u>Dictionnaire anglais/français des techniques industrielles</u> . Paris: Éditions de l'usine, Vol. 10, 1984.
5	Forbes [1980]	Forbes, J.R. <u>Dictionnaire des techniques et technologies modernes anglais/français = Modern Dictionary of Engineering and Technology English-French</u> . Paris: Secaucus NJ: Lavoisier, 1980.
6	Ketteridge [1980]	Ketteridge, J.O. <u>French-English and English-French Dictionary of Technical Terms and Phrases</u> . London: Boston Henly: Routledge and Kegan Paul, 1980.
7	Malgorn [1976]	Malgorn, G. <u>Dictionnaire technique français anglais</u> . Paris: Bordas, 1976.
8	Markov [1984]	Markov, A.S. et. al. <u>Dictionnaire multilingue scientifique et technique, anglais, allemand, français, néerlandais, russe = Dictionary of Scientific and Technical Terminology</u> . The Hague: Martinus Nijhoff, 1984.
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