

ISO/IEC JTC 1/SC 32 N 0272

Date: 1999-05-13

REPLACES: --

<p style="text-align: center;">ISO/IEC JTC 1/SC 32</p> <p style="text-align: center;">Data Management and Interchange</p> <p style="text-align: center;">Secretariat: United States of America (ANSI) Administered by Pacific Northwest National Laboratory on behalf of ANSI</p>

DOCUMENT TYPE	Proposed NP (proposal under review by WG)
TITLE	Proposal for a New Work Item (NWI for standardization work: Identification, Mapping and IT-enablement of Existing Standards for Widely Used Encodeable Value Domains
SOURCE	National Body - Canada
PROJECT NUMBER	
STATUS	Draft proposed NWI for Discussion in Matsue.
REFERENCES	
ACTION ID.	COM
REQUESTED ACTION	submitted for discussions at the Matsue meetings of JTC1/SC32 and also in WG1 and/or WG2.
DUE DATE	
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*Pacific Northwest National Laboratory (PNL) administers the ISO/IEC JTC 1/SC 32 Secretariat on behalf of ANSI

TITLE: PROPOSAL FOR A NEW WORK ITEM (NWI FOR STANDARDIZATION WORK: IDENTIFICATION, MAPPING AND IT-ENABLEMENT OF EXISTING STANDARDS FOR WIDELY USED ENCODABLE VALUE DOMAINS

SUPERSEDES: CAC/JTC1/SC32 C0046

SOURCE: CAC/JTC1/SC32, Canada

STATUS: NWI Proposal (Next-to-final Draft)

ACTION: For discussion by JTC1/SC32/WG1 and WG2 at the Matsue, Japan meeting, 24-28 May, 1999

DATE: 6 May, 1999

1.0 INTRODUCTION

1.1 The pages which follow contain the next-to-final draft of a Proposal for a New Work Item (NWI) and supporting Annexes in compliance with ISO/IEC Directives.

Results from the Matsue meeting will be incorporated into the final version of this NWI. The Canadian National body will then forward this NWI to JTC1 for NP ballot. With respect to Preparatory Work and Target Dates, see Annex D below.

1.2 Restricted and Pragmatic Focus of this NWI

This proposed NWI has a restricted and pragmatic focus, i.e., that which is "do-able", most useful and can be accomplished in eighteen (18) months for FCD ballot. One intends to apply the Pareto Principle, i.e., 20% of the total work required will cover 80% of a set of business requirements, to cover the remaining 20% will take 80% more work.

Development work already under way identified well over 150 ISO standards which involve the use of "code sets representing X"... In addition, UN/EDIFACT has/references over 300 code sets while ANSI X.12 has/references over 450 code sets. These are over and above the existing standards of SC32 and those under development.

The concluding assumption is that existing ISO/IEC, ISO and other standards including those pertaining to "code sets" already contain most, if not all, of the requirements which need to be integrated into a bridging standard for IT-enablement of "code sets representing X" with localization and multilingualism. {See further both Annexes D and F}.

1.3 Assignment of NWI

This NWI can be assigned to either (1) SC32/WG1 in support of required standardization work related to "roles" and "information bundles" of ISO/IEC 14662 "Open-edi Reference Model"; and/or (2) SC32/WG2 in the context of "data structures" as an extension of work on ISO/IEC 11179 "Specification and Standardization of Data Elements.

This needs to be discussed at the Matsue meetings of SC32/WG1 and SC32/WG2. One option is a collaborative effort.

1.4 Secretariat and Project Leader/Editor

Canada is willing to provide the Secretariat for this NWI using SCC Forum. It is assumed that standard development work in support of this proposed NWI will be conducted through electronic means.

Canada will be proposing Dr. Jake V.Th. Knoppers as project leader/editor for this proposed NWI. Active participation of Canadian experts in TC211 - Metadata and ISO/IEC JTC1 SC2 and SC35 multilingual work has already been secured. It is assumed that approval of the NWI ballot ensures active participation internationally and inputs into this standardization work as a collective effort.

PROPOSAL FOR A NEW WORK ITEM

Date of presentation of proposal:
 YYYY-MM-DD
 Secretariat:
 SCC

Proposer:
 CANADA
 ISO/IEC JTC 1 N XXXX

A **proposal for a new work item** shall be submitted to the secretariat of the ISO/IEC joint technical committee concerned with a copy to the ISO Central Secretariat.

Presentation of the proposal - to be completed by the proposer Guidelines for proposing and justifying a new work item are given in ISO Guide 26.

Title (subject to be covered and type of standard, e.g. terminology, method of test, performance requirements, etc.) Identification, Mapping and IT-enablement of existing standards for widely used encodable value domains

Scope (and field of application) See Annex A.2

Purpose and justification - attach a separate page as annex, if necessary See Annex A.3, Annex C

Programme of work

If the proposed new work item is approved , which of the following document(s) is (are) expected to be developed?

- X a single International Standard more than one International Standard (expected number:)
- ___ a multi-part International Standard consisting of parts
- ___ an amendment or amendments to the following International Standard(s)
- ___ a technical report , type

Relevant documents to be considered See Annexes A, B and E

Cooperation and liaison See Annex B

Preparatory work offered with target date(s) See Annex D

Signature:

Will the service of a maintenance agency or registration authority be required? . NO See Annex A

- If yes, have you identified a potential candidate?
- If yes, indicate name

Are there any known requirements for coding?

-If yes, please specify on a separate page

Does the proposed standard concern known patented items? NO

- If yes, please provide full information in an annex

Comments and recommendations of the JTC 1 Secretariat - attach a separate page as an annex, if necessary

Comments with respect to the proposal in general, and recommendations thereon:

It is proposed to assign this new item to JTC 1/SC 32/WG1 or WG2

Voting on the proposal - Each P-member of the ISO/IEC joint technical committee has an obligation to vote within the time limits laid down (normally three months after the date of circulation).

Date of circulation:
 YYYY-MM-DD

Closing date for voting:
 YYY-MM-DD

Signature of JTC 1 Secretary:
 Lisa A. Rajchel

NEW WORK ITEM PROPOSAL - PROJECT ACCEPTANCE CRITERIA

Criterion	Validity	Explanation
A Business Requirement		
A.1 Market Requirement	Essential X Desirable ___ Supportive ___	See Annexes B and C
A.2 Regulatory Context	Essential ___ Desirable ___ Supportive X Not Relevant ___	See Annex C
B. Related Work		
B.1 Completion/Maintenance of current standards	Yes X No___	See Annex C

B.2 Commitment to other organization	Yes <input checked="" type="checkbox"/>	See Annex C
	No <input type="checkbox"/>	
B.3 Other Source of standards	Yes <input checked="" type="checkbox"/>	See Annexes C and E
	No <input type="checkbox"/>	
C. Technical Status		
C.1 Mature Technology	Yes <input type="checkbox"/>	
	No <input type="checkbox"/>	
C.2 Prospective Technology	Yes <input type="checkbox"/>	
	No <input type="checkbox"/>	
C.3 Models/Tools	Yes <input checked="" type="checkbox"/>	See Annex C
	No <input type="checkbox"/>	
D. Conformity Assessment and Interoperability		
D.1 Conformity Assessment	Yes <input checked="" type="checkbox"/>	See Annex C
	No <input type="checkbox"/>	
D.2 Interoperability	Yes <input checked="" type="checkbox"/>	See Annex C
	No <input type="checkbox"/>	
E. Other Justification		
Cultural and Linguistic Adaptability Statement		See Annex F

Notes to Proforma

A. Business Relevance. That which identifies market place relevance in terms of what problem is being solved and or need being addressed.

A.1. Market Requirement. When submitting a NP, the proposer shall identify the nature of the Market Requirement, assessing the extent to which it is essential, desirable or merely supportive of some other project.

A.2 Technical Regulation. If a Regulatory requirement is deemed to exist - e.g. for an area of public concern e.g. Information Security, Data protection, potentially leading to regulatory/public interest action based on the use of this voluntary international standard - the proposer shall identify this here.

B. Related Work. Aspects of the relationship of this NP to other areas of standardization work shall be identified in this section.

B.1 Competition/Maintenance. If this NP is concerned with completing or maintaining existing standards, those concerned shall be identified here.

B.2 External Commitment. Groups, bodies, or fora external to JTC1 to which a commitment has been made by JTC for cooperation and or collaboration on this NP shall be identified here.

B.3 External Std/Specification. If other activities creating standards or specifications in this topic area are known to exist or be planned, and which might be available to JTC1 as PAS, they shall be identified here.

C. Technical Status. The proposer shall indicate here an assessment of the extent to which the proposed standard is supported by current technology.

C.1 Mature Technology. Indicate here the extent to which the technology is reasonably stable and ripe for standardization.

C.2 Prospective Technology. If the NP is anticipatory in nature based on expected or forecasted need, this shall be indicated here.

C.3 Models/Tools. If the NP relates to the creation of supportive reference models or tools, this shall be indicated here.

D. Any other aspects of background information justifying this NP shall be indicated here.

D. Conformity Assessment and Interoperability

D.1 Indicate here if Conformity Assessment is relevant to your project. If so, indicate how it is addressed in your project plan.

D.2 Indicate here if Interoperability is relevant to your project. If so, indicate how it is addressed in your project plan.

ANNEX A¹ - PROPOSAL FOR A NEW WORK ITEM FOR STANDARDIZATION FOR THE IDENTIFICATION, MAPPING AND IT-ENABLEMENT OF EXISTING STANDARDS FOR WIDELY USED ENCODABLE VALUE DOMAINS

1.0 TITLE

"Identification, mapping and IT-enablement of existing encodable value domains resulting from common business practices".

2.0 SCOPE

ISO standardization in the field of identification, mapping and IT-enablement of existing encodable value domains resulting from common business practices which are rule-based. This work to be done in conformity to existing requirements with a priority on those code sets used in several sectors of electronic commerce.

3.0 PURPOSE AND JUSTIFICATION

3.1 FOLLOW-UP TO RECOMMENDATIONS OF THE JTC1 BT-EC AND SUBSEQUENT REVIEWS/RESOLUTIONS OF JTC1 AND ITS COMMITTEES

In this section is provided the purpose and justification for this NWI based on identification by JTC1 committees of market requirements for standardization work.

3.1.1 Recommendation of the ISO/IEC JTC1 Business Team on Electronic Commerce (ISO/IEC JTC1 N5696)

In July, 1997, ISO/IEC JTC1 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 electronic commerce".

The BT-EC submitted its report (JTC1 N5296) to JTC1 in May, 1998. The BT-EC report included in its Section 1.0 Executive Summary Table 1 "Recommended High Priority Work Items for New Standardization Work". Two of these are recommendations C.1 and C.2:

"C.1 standardize an approach for the identification and mapping of encodable value domains (see 7.4.2)"; and,

"C.2 develop standards for IT-enablement of existing standards using the approach defined in the standard for Work Item C.1 (See 7.4.2)"²

¹In addition to meeting the requirements for proposed New Work Items of the ISO/IEC JTC1 Directives, this NWI contains additional information so that this document can be used to obtain participation of experts and organizations outside of ISO/IEC.

²Refers to section in BT-EC Report JTC1 N5296. See further Annex B below which contains relevant text extracted from the BT-EC Report.

Preliminary follow-up work undertaken by Canada on BT-EC recommendations C.1 and C.2, made it evident that progress of standardization work in these areas will benefit from:

- (1) limiting the scope of this NWI with respect to those encodable value domains which are the results of common existing business practices,³ which are rule-based but for which the rules are not (yet) explicitly stated/captured using formal description techniques (FDTs); and,
- (2) linking such standardization work to using real world examples of existing code sets found in existing ISO and non-ISO standards of a "codes representing X" nature. {See further Annex E and ISO/IEC JTC1 N5626}

3.1.2 Resolution 8 of ISO/IEC JTC1 Sendai Plenary

The BT-EC Report was dealt with at the 12th Plenary Meeting of JTC1 held in Sendai, Japan, 2-5 June, 1998. The JTC1 resolutions {See document JTC1 N5448} include:

"Resolution 8 JTC1 accepts the report of the electronic business team and requests its National Bodies and SCs to review this document and submit comments in time for the January, 1999 plenary meeting in Brazil".

3.1.3 Resolution 34 of ISO/IEC JTC1 Rio Plenary

The comments from National Bodies and SCs were reviewed by JTC1 at its 13th Plenary Meeting held in Rio de Janeiro, Brazil, 25-29 January, 1999. Resolution 34.2 of the JTC1 Rio Plenary (See JTC1 N5748) requests SCs identified in the report and National Bodies, to consider the recommendations and take appropriate action, including submission of NWIs if needed during the succeeding JTC1 Plenary cycle. Canada is of the opinion that this NWI is needed.

3.1.4 Contributions of JTC1/SC32 Data Management Interchange in Support and of this New Work Item

In response to the JTC1 request for comments on the high priority recommendations of the BT-EC report for new standardization work:

- ISO/IEC JTC1 SC32 established an Ad-Hoc to consolidate comments on the BT-EC Report from all its Working Groups into an integrated response to JTC1, i.e., ISO/IEC JTC1 N5695. SC32 concurred that "this is a high priority item for standardization work and will likely involve the joint efforts of SC32/WG1 and WG2 within whose scope it falls. There will likely be active participation of WG4 also".

With respect to recommendation C.2, SC32 in its response, (p.12) recognized that the ISO standards noted are the domains of the referenced committees and especially their contents. Here SC32 also noted (pages 12-13) that the BT-EC recommended this work item not only includes standards for encodable value domains, i.e., the scope of SC32/WG2, but also the identification and specification of business rules and conditions and agreement on the same for establishing

³A key characteristic of commerce world-wide is that consists of "business transactions", (for definition of term, see ISO/IEC 14662), which are rule-based and make extensive use of commonly accepted code sets. These code sets represent pre-defined mutually agreed upon common business practices.

boundaries and use of domains, i.e., contextual specification, which is part of the scope of SC32/WG1.

- in addition ISO/IEC JTC1/SC32/WG2 as part of its resolution WG2/1, at its February, 1998 meeting (see JTC1/SC32 N0226) BT-EC Recommendation resolved to request:

"...National Bodies to submit New Work Item Proposals that address the issues raised by SC32 N201 BT-EC recommendations C.1, C.2 and C.8".

This Canadian National Body NWI proposal focuses on BT-EC recommendation C.1 and C.2.

3.2 INTERNATIONAL ECONOMIC DEVELOPMENTS

3.2.1 Support Implementation of OECD "Global Action Plan" for Electronic Commerce

The same set of global change factors which led to ISO/IEC JTC1 establishing its Business Team on Electronic Commerce also led the OECD to dedicate a Ministerial Conference on Electronic Commerce held in Ottawa, 7-9 October, 1998.

This proposed NWI is positioned as an element in support of the implementation of realizing the objectives of this OECD Ministerial Conference "A Borderless World: Realizing the Potential of Global Electronic Commerce". {See further Annex C, Section A.1.2}

3.2.2. Support the Coordinated Implementation of the Canadian Electronic Commerce Strategy

Just prior to the OECD Ministerial Conference on Electronic Commerce, the Government of Canada made public "The Canadian Electronic Commerce Strategy". {See further <<<http://e-com.ic.gc.ca>>>}. The Canadian Electronic Commerce Strategy is based on private and public sector partnerships. The four priorities for action are:

- building trust in the digital economy;
- clarifying marketplace rules;
- strengthening the information infrastructure (including open standards); and,
- realizing the opportunities.

A major thrust of the Canadian Electronic Commerce Strategy is "strengthening the information infrastructure". Growth of e-commerce (and e-business, e-administration, e-logistics, etc., and other Open-edi based applications), is underpinned by the strength of the information infrastructure. Currently there are major disconnects between that of the world of commerce and that of the information technology infrastructure. One of these major disconnects has already been identified as horizontal issues. **Here a major gap in standards has been identified, namely the need for a standard for the IT-enablement of existing code sets used in commerce and one which also supports localization and multilingual requirements.**

4.0 PROGRAMME OF WORK

The programme of work will be based on and integrate the following approach and functional requirements.

4.1 BT-EC REPORT REQUIREMENTS STATEMENT

A starting point for the Programme of Work and problem definition is the summary of business requirements for this NWI as found in the BT-EC Report, Section 7.4.3. {See Annex B}

4.2 ISO/IEC JTC1 RESOLUTION 8, SENDAI PLENARY (JTC1 N5448)

Resolution 8 contains the following statement applicable to the approach for the Programme of Work to be undertaken for this NWI; namely:

"JTC1 recognizes that EC also addresses issues that potentially fall into the legal or regulatory domain. JTC1 understands that fundamentally different views exist as to the degree to which legal or regulatory measures are needed. Therefore, self-regulation is often considered an appropriate instrument to address such issues, (e.g., regarding:

- *harmful content,*
- *protection of privacy,*
- *cost transparency.*

JTC1 does not make an assessment regarding the appropriateness of self-regulation versus regulation in any of these and other domains. To support self regulation or regulation, standards, in principle, may be useful tools. JTC1 strongly recommends that any related standardization work is initiated only on the basis of a sound a priori agreement of the parties involved in such self-regulation".

Canada as proposer of this NWI supports this JTC1 resolution. Standardization work undertaken will be independent of and neutral with respect to self-regulation versus regulation as the policy for use of the standard.

5.0 RELEVANT DOCUMENTS TO BE CONSIDERED

In addition to relevant documents identified in this Annex A, Annexes C and F identify additional documents to be considered.

6.0 MAINTENANCE AGENCY

A primary purpose of this standard is to serve as a tool to be utilized by existing registration authorities for the development of IT-enabled versions of "code set" standards for which they are already responsible.

ANNEX B - EXTRACTS FROM ISO/IEC JTC1 N5296 "REPORT TO JTC1: WORK ON ELECTRONIC COMMERCE STANDARDIZATION TO BE INITIATED"

1.0 FROM EXECUTIVE SUMMARY, TABLE 1: SUMMARY OF HIGH PRIORITY WORK ITEMS (p. 7)

"C.1 Standardize an approach for the identification and mapping of encodable value domains (See 7.4.2)".

"C.2 Develop standards for IT-enablement of existing standards using the approach defined in the standard for Work Item C.1 (see 7.4.2)"

2.0 FROM CLAUSE 7 STANDARDS URGENTLY NEEDED TO SUPPORT ELECTRONIC COMMERCE (p.38- 39)

7.4 C Definition and encoding of data and other objects

7.4.1 Introduction

Through some of the requirements below primarily result from Electronic Commerce in the Business-to-Business or Administration domain, they are given here altogether for further consideration by JTC1 and other Technical Committees. Standardization work is needed in the following areas:

- (a) *identification of all value domains involved in Electronic Commerce;*
- (b) *IT-enablement of existing standards for widely used value domains (such as countries, currencies, languages) for use in Electronic Commerce;*
- (c) *widely used value domains for which no standards exist such as jurisdictional domains affecting Electronic Commerce; ...*
- (e) *localization for a specific point of use (for example a mix of jurisdictions, languages), of the terms available for referring to all information used in Electronic Commerce; ..."*

"7.4.2 Identification and IT-enablement of existing standards for widely used encodable value domains

Many of the value domains needed for use in Electronic Commerce are bounded sets in the sense that the value domain and the set of permitted values in that domain are pre-defined and enumerated in the standard. Most of these are of the nature of "codes representing X". From a global Electronic Commerce perspective, standardization work is required for the identification and referencing of such objects in an unambiguous, linguistically neutral, IT-processable and Electronic Commerce-facilitated manner. These standards need to be re-cast in a computer processable form in order to support more fully the objective of computational integrity, a key part of IT-enablement and in a manner which supports localization and multilingual requirements.

Other value domains are unbounded in the sense that the set of possible values cannot be prescribed. A standard may be defined for the format of the values in such a domain.

The following work item is identified:

Work Item C.1: Standardize an approach for the identification and mapping of encodable value domains.

Work Item C.1 is a part of the IT infrastructure for Electronic Commerce and should be defined in JTC1.

Work Item C.2: Develop standards for IT-enablement of existing standards using the approach defined in the standard for Work Item C.1 .

Examples of standards which need to be redrafted are the following:

- *ISO 4217 (Currency Codes) of ISO/TC 68;*
- *ISO 3166 (Country Codes) of ISO/TC 46;*
- *ISO 639 (Language Codes) of ISO/TC 37.*

Work Item C.2 represents the application and use by ISO Technical Committees of JTC1 standard(s), i.e., tools. When the above noted examples are IT-enablement [sic], the JTC1 tool set of standards will be improved."

ANNEX C - NWI PROPOSAL - PROJECT ACCEPTANCE CRITERIA

A. BUSINESS REQUIREMENT

A.1 MARKET REQUIREMENTS

A.1.1 ISO/IEC JTC1

The ISO/IEC JTC1 Business Team on Electronic Commerce (BT-EC) identified this area as a high priority work item for standardization (See further Annex B)

ISO/IEC JTC1/SC32 in its response to the BT-EC report (JTC1 N5695) identified BT-EC proposed new items "C.1" and "C.2" (1) as being within the scope of SC32 work; and, (2) noted that proposed new items were in areas covered by SC32/WG1 and SC32/WG2.

A.1.2 OECD Ministerial Conference on Electronic Commerce (Public and Private Sector)

The Organization for Economic Co-operation and Development (OECD) held a Ministerial Conference on Electronic Commerce in Ottawa, Canada 7-9 October, 1998. A pivotal element in the success of this OECD Ministerial was the high level and substantive participation of the "world's leading business organizations" and senior executives of Fortune 500 companies. {See further <<www.oecd.org//subject/e_commerce/>>}.

The participation included the preparation of A Global Action Plan for Electronic Commerce prepared by Business with Recommendations for Governments by a coalition including:

- Business and Industry Advisory Committee to the OECD (BIAC);
- Global Information Infrastructure Commission (GIIC);
- International Chamber of Commerce (ICC) (of 51 countries);
- International Telecommunications User Group (INTUG);
- World Information Technology and Services Alliance (WITSA).
- Seventy-five (75) major industry, business and information technology organizations from thirty-nine (39) countries; etc.

{For a complete list see << http://www.ottawaoecdconference.org>>}

The major elements of the OECD Global Action Plan include:

- rule-based commerce in an electronic environment;
- fundamental principles;
- action plan elements:
 - building trust for users and consumers;
 - establishing ground rules for the digital marketplace;
 - enhancing the information structure for electronic commerce;
 - maximizing the benefits - economic and social benefits.

The proposed NWI is an essential step in the coordinated implementation of this Global Action Plan. The objectives of (1) "rule-based commerce in a dynamic electronic environment", (2) "building trust", (3) "establishing ground rules for the digital marketplace"; and, (4) "enhancing the information infrastructure" require the existence of tools and mechanisms for the IT-enablement of existing code sets

resulting from common business practices. An associated requirement is the ability to support localization and multilingual requirements.

A.2 REGULATORY CONTEXT

The focus and scope of the proposed NWI is independent of a self-regulatory or regulatory approach. It is assumed that rules and common business practices already exist governing mandatory/voluntary as well as self-regulatory versus regulatory requirements of existing code sets.

B. RELATED WORK

B.1 COMPLETION/MAINTENANCE OF CURRENT STANDARDS

The standard resulting from this NWI will facilitate data management and interchange as well as change management, including computational integrity of existing "code set" standards in an IT-enabled manner and one which supports localization and multilingual equivalency requirements.

B.2 COMMITMENT TO OTHER ORGANIZATIONS

ISO/IEC JTC1/SC32/WG2, ISO TC13, ISO TC46, ISO TC68, ISO TC104, ISO TC154, ISO TC211, ISO/IEC JTC1/SC17, ISO/IEC JTC1/SC31. ISO/IEC JTC1/SC27, ISO/IEC JTC1/SC35, WCO, WTO, IATA, IMO, UNEP (and others).

[Note: Standardization bodies responsible for "codes representing X" standards will be notified of standardization work on this NWI. {See further Annex F}].

B.3 OTHER SOURCES OF STANDARDS

No external standard or specification in this topic area is known to exist or is planned in this area.

Cooperation and collaboration with relevant standards work includes that pertaining to:

- ISO/IEC 1466 2 - Information technology - Open-edi Reference Model;
- ISO/IEC 11179 - Information technology - Specification and Standardization of Data Elements;
- ISO/IEC TR 11107 - Information technology - Framework for internationalization; and,
- ISO/IEC DIS 14652 - Information technology - Specification for Cultural Conventions.

{See further Annex F - OTHER SOURCES OF STANDARDS }

C. TECHNICAL STATUS

The proposed NWI relates to the creation of a supportive tool whose purpose is to allow standards developers to (1) develop IT-enabled versions of code sets; (2) convert existing code sets into IT-enabled code sets; and, (3) do so in a manner which supports localization and multilingual equivalency requirements.

It is assumed that current technologies as well as existing ISO/IEC JTC1 standards will be able to support the requirements of the supportive tools embodied in the resulting standard.

D. CONFORMITY ASSESSMENT AND INTEROPERABILITY

D.1 CONFORMITY ASSESSMENT

Conformity assessment is relevant to this proposed NWI. Many "code sets representing X" contain various levels of granularity. It will be necessary to explicitly state the degree and granularity of conformant assessment requirements.

D.2 INTEROPERABILITY

Interoperability is most relevant to this proposed NWI. A key, if not primary, requirement of Open-edi and Metadata, as well as global electronic commerce, is interoperability of data, i.e. data element-based, among heterogenous information systems of autonomous organizations (and individuals) generally and particularly where such data interchanges are part of business transactions.

ANNEX D - PREPARATORY WORK AND TARGET DATES

PREPARATORY WORK

Preparatory Work has included that undertaken leading up to the summary text and recommendations of the JTC1 BT-EC Report. A priority of standardization work in support of E-Commerce should be on a new standard focused on transforming data elements of the nature of code sets used in commerce into IT-enabled versions supporting localization and multilingual equivalency requirements. {See further Annex B}

Standardization work in the area of electronic data interchange (edi) and particularly that resulting in ISO/IEC 14662 Open-edi Reference Model resulted in contributions pertaining to what are now known as "information bundles" and "semantic components". These contributions are in the process of being mined for re-use in support of this proposed NWI.

Standardization work of former JTC1/SC14 (now part of SC32/WG2 - Metadata) included substantial work in the area of structuring, maintaining and registration of code sets. Various contributions made earlier now appear to be relevant and will be mined for re-use in support of this NWI.

Current standardization work of SC32/WG2 associated with ISO/IEC 11179 Specification and Standardization of Data Elements has brought forward the need to be able deal with "data structures". Code sets can be viewed as a peculiar category of data structures.

Follow-up work in Canada on the recommendations of the JTC1 BT-EC Report, in the context of implementation the Canadian Electronic Commerce Strategy, revealed that the degree to which ambiguity can be minimized is directly related to realizing the opportunities in and potential of e-commerce as well as its widespread adoption and use. Here a standardization priority should be placed on data which is of the nature of data elements and within this context data elements which are (or should) be predefined and structured. Data of this nature already exists and is used in many application areas already, i.e., not just in commerce. It is a category commonly known as "code sets". Exhibit 1 provides an illustrative view.

Code sets used in commerce represent current intersections of predefined and structured data elements representing the level of granularity appropriate to their purpose and scope of use in business transactions which are primarily paper-based. These code sets represent agreed upon common business practices and rules. These code sets represent only the "tips of icebergs" of the common business practices and rules, many of which are not even explicitly stated. Even if these code sets are distributed in electronic form, they cannot be "plugged in" for use in E-Commerce. Much of the intelligence in ISO (and non-ISO) code sets is human understandable or discernable explicitly or implicitly. From an analytical/logical IT perspective, (e.g. entity-relationship or object-oriented modelling), these code sets are "a mess". They have not formally been described using Formal Description Techniques (FDTs).

Consequently, each organization (private or public sector) using these code sets has to spend considerable time and effort to: (1) figure them out and interpret them; (2) build applications; and (3) pray that their interpretation is interoperable when their interpretation, as imbedded in their application, is interoperable when they interwork with networks of other enterprises on a global and multi-sector basis.

One key objective of the needed new standard as a mechanism to support IT-enablement with localization and multilingualism is to ensure that code sets used in commerce, and e-commerce, will become "callable objects", i.e. as "dapplets" in a manner similar to that for application programming code or "applets".⁴ An initial illustrative representation of the new standard is and its functioning is provided in Exhibit 2.

⁴{See further the article by Dr. Jake V. Th. Knoppers titled "Global electronic commerce through localization and multilingualism" in Computer Standards and Interfaces, 20(1998)101-109.}

Annex D – Exhibit 1

*A Priority Focus of
E-Commerce
Standardization Work is
“IT-enabled code sets”
in support of common
business practices*

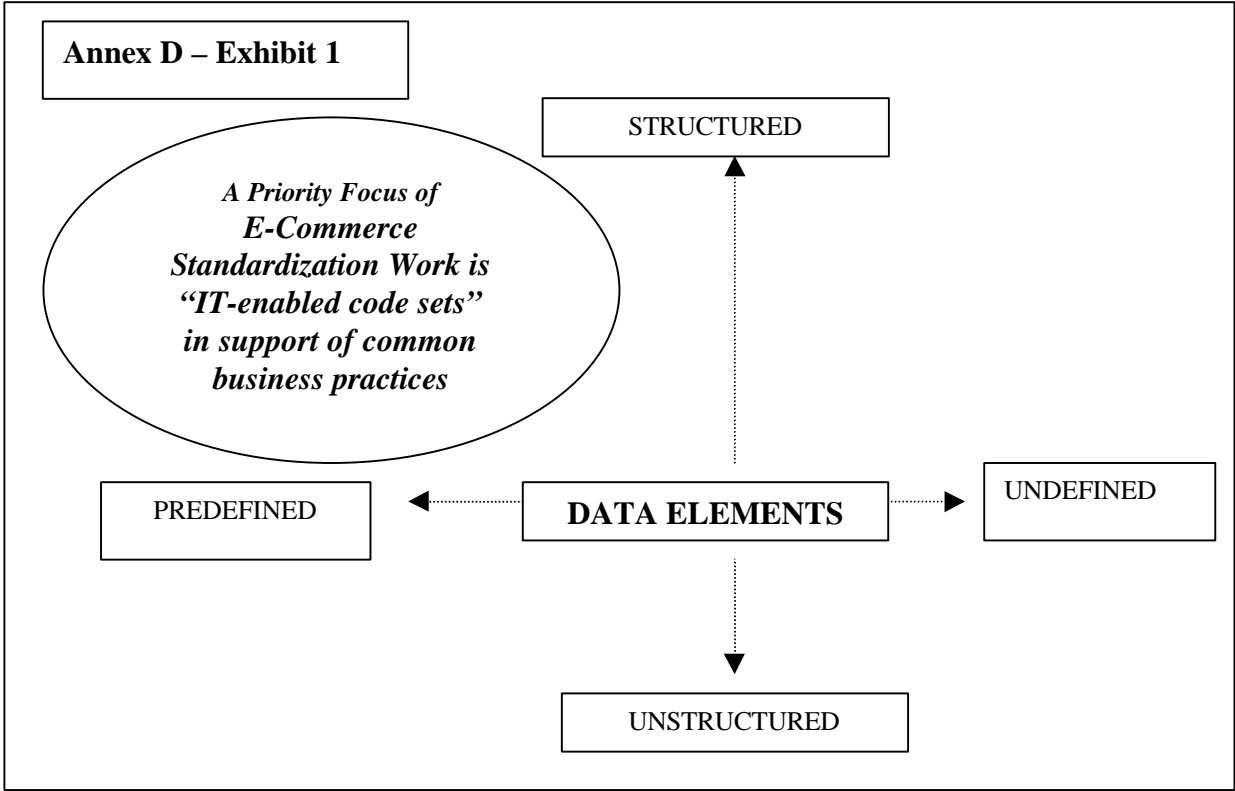
PREDEFINED

DATA ELEMENTS

UNDEFINED

STRUCTURED

UNSTRUCTURED



Annex D – Exhibit 2

Common Business Practices

Explicitly Stated Rules, Levels of Granularity, Entity Relationships, Code Set(s) Attributes, Change Management, Computational Integrity, IT-Interface Reg'mts, Localization Reg'mts, Multilingual Reg'mts, *Pareto Principle* (20/80 Rule), etc.

Common Business Practices & Recognized Authorities

Standard Code Set(s)

Needed New Standard for IT-enablement with Localization & Multilingualism

Formal Model(s) (Graphical and/or Lexical)

IT-Enabled Rule Base for Code Set(s)

Formal Description Technique(s) -FDTs

Code Set

Code Set

Etc.

Mapping into existing standards tools for repositories, interchange, access, encoding, syntax, (e.g. ASN.1, IRDS, SQL, HTML, XML, ANSI X.12, UN/EDIFACT, etc.)

Callable Data Objects "Dapplets"

TARGET DATES

Based on the assumption that the vote on this proposed NWI is successful, the following work effort will be carried out by SC32/WG?:

- based on completion of analysis of existing "code sets" and related standards identified in Annex F:
 - (1) prepare a draft set of sections of the new standard;
 - (2) identify/specify the attributes required to support:
 - unambiguous and linguistically neutral identification and referencing of code sets, permitted values within code sets, use of additional codes/qualifiers to reduce ambiguities in existing code sets, levels of granularity and other attributes required for the IT interface;
 - data management, change management, computational integrity;
 - (3) identify/specify a systematic and structured approach to supporting localization and multilingual equivalency requirements.

[Note: This requires (significant) progress of completion of standardization work on proposed NWI titled "Identification and Mapping of Various Categories of Jurisdictional Domains"].
 - (4) prepare a draft set of candidate common terms and definitions for this standard (maximizing use of terms and definitions in existing standards).
- define a draft set of functional requirements to be supported by this standard including differentiating between those required to support IT interface requirements and those required to support human interface requirements; and,
- determine whether as an annex or otherwise, guidance should be given in the area of compliance with this standard, and if so, develop such guidance.

The schedule for the proposed effort is as follows:

➤ Distribution of NP ballot	June, 1999
➤ Resolution of ballot comments	November, 1999
➤ Distribution of WD for SC32 CD registration and comment	June, 2000
➤ Distribution for CD ballot	November, 2000
➤ Distribution for FCD ballot	February, 2001
➤ Distribution for FDIS ballot	June, 2001
➤ Submission for IS publication	November, 2001

ANNEX E - OTHER SOURCES OF STANDARDS

The ISO/IEC JTC1 Business Team on Electronic Commerce (BT-EC) identified the need for to develop a standard for IT-enablement of existing standards and provided three examples of essential standards which needed to be "IT-enabled" to facilitate their use in E-Commerce; namely:

- ISO 4217 (Currency Codes) of ISO/TC 68;
- ISO 3166 (Country Codes) of ISO/TC 46; and,
- ISO 639 (Language Codes) of ISO/TC 37.

A cursory examination of existing ISO standards revealed that there are well over one hundred and fifty (150) ISO standards which involved the use of "code sets". A preliminary examination of the three examples used by JTC1 BT-EC and some of the 150 other ISO standards revealed that:

- many have common elements;
- many have elements which are unique to that ISO standard but which from an E-Commerce perspective are candidates for inclusion into a more generic and comprehensive standard for building "IT-enabled code sets".

International code set standards which should be mined for content elements as candidates for incorporation into the "IT-enabled code set" standard include:

ISO/TR 8357:1996 Road vehicles -- Instructions for the implementation of the assignment of world manufacturer identifier (WMI) codes for vehicle identification number (VIN) systems and for world parts manufacturer identifier (WPMI) codes

ISO 8440:1986 Location of codes in trade documents

ISO 8583-2:1998 Financial transaction card originated messages -- Interchange message specifications -- Part 2: Application and registration procedures for Institution Identification Codes (IIC)

ISO 8583-3:1998 Financial transaction card originated messages -- Interchange message specifications -- Part 3: Maintenance procedures for codes

ISO 9362:1994 Banking -- Banking telecommunication messages -- Bank identifier codes

ISO 9897:1997 Freight containers -- Container equipment data exchange (CEDEX) -- General communication codes

ISO 10374:1991 Freight containers -- Automatic identification

ISO 10383:1992 Codes for exchanges and regulated markets -- Market identifier codes (MIC)

ISO/DIS 13584-26 Industrial automation systems and integration -- Parts library -- Part 26: Supplier identification

ISO/TR 13668:1998 Digital coding of oral health and care

ISO/DIS 15394 Packaging -- Bar code and two-dimensional symbols for shipping, transport and receiving labels

ISO/ISO DIS 16022 Information technology -- International symbology specification -- Data matrix

ISO/IEC DIS 16388 Automatic identification and end capture - Bar code symbology and specification -- Code 39

ISO/IEC DIS 16390 Automatic identification and data capture - Bar code symbology specifications - Interleaved 2 of 15

In addition, ISO/IEC JTC1/SC32 - "Data Management and Interchange" has a number of standards, key elements of which need to be included/incorporated in the "codes representing X" standard. These include (in numerical order):

ISO/IEC 7826-1:1994 Information technology -- General structure for the interchange of code values -- Part 1: Identification of coding schemes

ISO/IEC 7826-2:1994 Information technology -- General structure for the interchange of code values -- Part 2: Registration of coding schemes

ISO/IEC 10027:1990 Information technology -- Information Resource Dictionary System (IRDS) framework

ISO/IEC 10032:1995 Information technology -- Reference Model of Data Management

ISO/IEC 11179-3:1994 Information technology -- Specification and standardization of data elements -- Part 3: Basic attributes of data elements

ISO/IEC 11179-4:1995 Information technology -- Specification and standardization of data elements -- Part 4: Rules and guidelines for the formulation of data definitions

ISO/IEC 11179-5:1995 Information technology -- Specification and standardization of data elements -- Part 5: Naming and identification principles for data elements

ISO/IEC 11179-6:1997 Information technology -- Specification and standardization of data elements -- Part 6: Registration of data elements

ISO/IEC 13238-3:1998 Information technology -- Data Management -- Part 3: IRDS export/import facility

ISO/IEC DIS 13645 Information technology -- Guidelines for the design of IRDS content modules

ISO/IEC 14662:1997 Information technology -- Open-edi reference model

ISO/IEC 14957:1996 Information technology -- Notation of format for data element values

Other standards which are likely to be relevant to standardization work on this standard include:

ISO 1087 Terminology and Vocabulary

ISO/IEC 2282 Information technology - Vocabulary

ISO 2788 Documentation - Guidelines for the establishment and development of monolingual thesauri

ISO 5964 Documentation - Guidelines for the establishment and development of multilingual thesauri

ISO/IEC 10646-1 Information technology -- Universal Multiple-Octet Coded Character Set (UCS) - Part 1: Architecture and Basic Multilingual Plane

The concluding assumption is that existing ISO standards including those pertaining to "code sets", as already identified above, already contain most, if not all, of the elements which need to be integrated into a bridging standard for IT-enablement of "codes sets representing X".

ANNEX F - CULTURAL AND LINGUISTIC ADAPTABILITY STATEMENT

ISO/IEC JTC1 Rio Plenary Resolution 44a {See JTC1 N5748} requests known requirement for cultural and linguistic adaptability to be stated on a separate page.

There are cultural and linguistic adaptability requirements associated with this proposed NWI.

Results of preliminary work and approach to the ability to support cultural and linguistic adaptability requirements are summarized in the Canadian National Body Contribution to ISO/IEC JTC1 N5626 "Electronic Commerce and Cultural and Linguistic Adaptability : Practical Examples and Horizontal Issues". (1998-12-07).

Relevant text here extracted from Clause 6 "Horizontal Issues" of the BT-EC Report to JTC1 reads as follows:

"Depending on the interplay of multilingual and localization requirements, in Electronic Commerce, a singular product or service being offered for sale will have multiple names and differing names even in the "same" language. This, if we wish to ensure rapid and widespread use of Electronic Commerce globally, we must on the one hand identify "objects", i.e., products or services being offered for sale, in an unambiguous, linguistically neutral, and IT-processable and EC-facilitated manner, and, on the other hand, present the same via a range of linguistic names (and associated character sets) from a point-of-sale perspective, i.e., human-readable user interface, as required by the "local" marketplace.

In order to provide a focus for its work on horizontal issues, the BT-EC utilized four real world examples; namely:

- *Currency Codes;*
- *Country Codes;*
- *Language Codes;*
- *Commodity Codes.*

{For details of these examples, see 12.3 and JTC1/BT-EC N047}

These examples represent standards used for commerce world-wide and are presently implemented by enterprises and their information systems in wide variety of different ways. There are also no "standard" ways for the interworking among these and similar standards. This does not promote global interoperability. The recent widespread use of the Internet is exacerbating existing ambiguities.

From a BT-EC perspective, these four examples underline the fact that with respect to electronic commerce there may be less of a need for new standards. Rather the immediate challenge may well be the development of a category of information technology standards which will facilitate the development of information technology enabled versions of existing standards used in commerce and do so in a manner which also supports the interplay of localization and multilingual requirements, i.e., "bridging standards".

BT-EC wishes to pass on the following considerations for such standardization work in support of Electronic Commerce; namely:

- (1) *Standards must focus on the interface (as opposed to implementation) as the best means of arriving at globally harmonized solutions for interoperability from both a business and information technology perspective.*
- (2) *Standard interfaces among information systems must be technology neutral accommodating advances in technology to the extent possible. Further, such standard interfaces must be linguistically neutral to the furthest extent possible.*
- (3) *In order to empower users and consumers, standards should be adaptable to local and multilingual requirements at national and regional levels, while ensuring full transparency of available market solutions to the consumer. Multilingualism must be considered. The expansion of open, multilingual standards could significantly increase the volume and value of world-wide Electronic Commerce".*

Standardization work on this New Work Item will incorporate the above four considerations of a "cultural and linguistic adaptability" nature.