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ISO/IEC JTC 1/SC 32

Data Management and Interchange

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References: [N5448] JTC1 N5448 Resolutions of the Twelfth meeting of ISO/IEC JTC1, 2-5 June 1998, Sendai, Japan

[N5296] JTC1 N5296 Work on Electronic Commerce standardization to be initiated (Report by JTC1 Business Team on Electronic Commerce)

The SC32 comments consist of three parts;

    I.   Executive Summary
    II.   Detailed Response
    III.   Open-edi Comments

I   EXECUTIVE SUMMARY

I.1   Background

SC32 has reviewed Reference Document [N5296] and feels that this represents a clear direction   to   JTC1 concerning further initiatives in the wide ranging subject of Electronic Commerce. It is clear that this subject is so broad that it would be unreasonable for any one standards committee to be given full responsibility.

The report indicates that some of the work that is required can   be categorized as developing an "information technology infrastructure". SC32 feels that standards work in this category which clearly is applicable not only to electronic commerce but also to other potential uses of information technology, should remain under the aegis of JTC1. However, this class of standards is also in itself very broad and should be apportioned across different JTC1 Committees.

There are several standards needed which are not necessarily for end users, but for use by standardization committees outside JTC1 which focus on a specific industrial areas (or sectors).

II.2   Role of SC32 Data Management and Interchange

SC32 is a new committee responsible for Data Management and Interchange. The effective interchange of data is fundamental to the success of the Electronic Commerce. It is noted that the original term "electronic data interchange" has evolved into "electronic commerce" and that this term has subsequently evolved further into "electronic business" (as used in the ISO/IEC/UN Memorandum of Understanding). Despite the broadening of the term, one of several key issues remains is that of how to effectively interchange data among systems which were not originally designed with such interchange in mind. This problem is clearly recognized in the Open-edi Reference Model.

There are numerous proposals for the way in which data should be interchanged. Because the early work on EDI concentrated solely on standardizing message type, many of the resulting messages are unnecessarily complex and unworkable.

When considering the broader problems of electronic commerce, it is important to ensure that the way in which data

is defined and structured for interchange is fully semantically consistent with the way data is defined and structured in the information systems of the enterprises which are partners in electronic agreements and hence in the associated business transactions. This will go a long way towards ensuring consistency in the way that the data is unambiguously understood and acted upon in the enterprises.

I.3 BT-EC Work Items within the Scope of SC32

SC32 has identified seven out of the 34 proposed new items in the BTEC report which are felt to be within the scope of SC32. These seven items, are identified in the BT-EC Report [N5296], as C1, C2, C3, C4, C6, C7 and C8. The titles given to each of these in the BTEC report are as follows:

> C.1 Standardize an approach for the identification and mapping of encodable value domains.
>
> C.2 Develop standards for IT-enablement of existing standards using the approach defined in the standard for Work Item C.1
>
> C.3 Standardize the identification and mapping of the various categories of jurisdictional domains (with priority on those impacting several sectors of Electronic Commerce).
>
> C.4 Develop a standard facility for defining the kinds of messages used in Electronic commerce
>
> C.6 Define an approach for defining localization factors for the local use of Electronic Commerce
>
> C.7 Define how to register and maintain various aspects of the value domains defined in the customer profile standards and in standards for localization factors
>
> C.8 Standardize an approach to defining sets of values for unbounded domains and for defining the format of the sets of values for unbounded domains.

I.4 Assignment of Work Items within SC32

The seven proposed work items are pertinent to the scope and work of SC32 and its WGs and should each be assigned to a SC32 Working Group as follows:

> C1 WG1 Open-edi, WG2 Metadata and WG4 SQL Multimedia and Application Packages
> C2 WG1 Open-edi and WG2 Metadata
> C3 WG1 Open-edi
> C4 WG1 Open-edi, WG5 Remote Database Access and RG1 Data Management
> Export/Import
> C6 WG1 Open-edi in active liaison/coordination with SC34 and SC35
> C7 WG1 Open-edi
> C8 WG1 Open-edi, WG2 Metadata and WG4 SQL Multimedia and Application Packages.

I.5 Work Items in which SC32 has a Liasion Interest

SC32 can identify two proposed work items in which SC32 has a liaison interest if the proposed work item proceeds as follows:

> B2 Develop a limited set of standard payment methods, including standard payment objects; and,
> B3 Harmonize digital signature methods.

SC32 can identify six proposed work items in which SC32 has a potential liaison interest depending on how the proposed work item is further defined; and whether it proceeds. These are A.2, A.3, A.4, A.5, A.6, and C.7. More details are given in Part II of this document.

I.6 Work of Sc32/WG1 and WG2

In Part III below SC32 identifies the leading role that SC32/WG1 should play in the development, monitoring and maintenance of standards that may arise in response to specific recommendations for standrdization work of the BT-EC Report. SC32 notes that, in addition to this role of WG1, WG 2 will also play an important role in addressing the standardization work identified as required by the BT-EC Report. A priority of ongoing work of SC32/WG2 is that of ISO/IEC 11179 "Specification and Standardization of Data Element, a multi-part standard. Here SC32 notes that ISO/IEC Part 3 (Basic Attributes of Data Elements) is under revision and ISO/IEC DTR 15452 (Specification of data value domains) is at the DIS stage. Other planned work of WG2 will address issues raised in the BT-EC Report.

As for WG1 and other SC32 WGs and RGs, the relevance of existing and planned work of the WG2 is already noted in section I.3 above and in relation to specific BT-EC recommendations in sections II.8 and II.9 below.

I.7   Horizontal Issues

SC32 notes that:

(1)   the BT-EC Report identified four horizontal issues of being of general relevance for all scenarios; namely:

> ➢   information technology (IT)-enablement;
> ➢   localization including multilingualism;
> ➢   cross-sectorial aspects;
> ➢   cultural adaptability.

(2)   on this matter the BT-EC Report concluded by stating that:

> *"From an Electronic Commerce perspective, standardization work addressing the three horizontal issues associated with,*
>
> > .   *"IT-enablement"*
> > .   *"Localization and Multilingualism"*
> > .   *"Cross-Sectorialization"*
>
> *should resolve some of the requirements for "cultural adaptability". It then remains to be seen what other "cultural adaptability" requirements remain, i.e. those of a societal nature*"

(3)   SC32/WG1 has already resolved to address the first three horizontal issues in its standardization work where relevant and appropriate.

(4)   Other SC32 WGs and RGs are encouraged to take an approach to these horizontal issues similar to that of SC32/WG1.

I.8   Concluding Remarks

In conclusion, SC32 observes that:

(1)   the BT-EC recommendations of work items requiring standardization do not map directly, i.e., one-to-one, to existing scopes of standardization committees and division of standardization work. Further, that this could be expected since the recommendations are made from a business needs perspective; and,

(2)   many of the recommendations of the BT-EC Report for standardization work are already covered (to various degrees) by existing standardization work. SC32 considers it most unfortunate that the Business Team did not spend more time taking stock of exisiting standards and assessing the role of each in Electronic Commerce. In particular, the Open-edi Reference Model (for which SC32 is now responsible) could have been used more effectively as a driver in the work of the Business Team. The appropriate response to many of the BT-EC recommendations here may be a shift in focus and priority as well as more intensive coordination of existing standardization work. {See further below "Part II. Detailed Response"}

II   DETAILED RESPONSE

II.1   Purpose

This detailed response has two purposes:

 (1)   <u>to serve as as the rationale for the SC32 response to JTC1 on BT-EC recommendations for standardization work to be initiated</u>

SC32 realizes that its detailed response contains references to standardization work of other bodies which more properly made through National member body responses to JTC1. However, a key reason for this is that many of the BT-EC recommendations for standardization work impact more than one standardization committee. Where this is so SC32 would be remiss, if in addition to noting its own interest, it did not mention possible interests of other committees, i.e., as a result of SC32 liaison and coordination of its work with those of other committees.

 (2)   <u>to provide SC32 members with an understanding of the link of BT-EC recommendations to the work of SC32 (and other JTC1 SCs)</u>

Most members of SC32 did not participate in the work of the JTC1/BT-EC and are not familiar with it. Lack of resources, (e.g., funding), was a major constraint.

Further, a primary focus of the BT-EC was to review and analyze business needs for electronic commerce and to translate these needs into requirements for standardization. The BT-EC Report is written in a manner and has a use of terminology from this business needs perspective.

This detailed response serves to provide a perspective on the BT-EC Report from that of SC32 related standardization work which now incorporates the work of former SC14, SC21/WG3 and SC30.

This Detailed Reesponse benefits from an in-depth analysis of the BT-EC Report undertaken by SC32/WG1 at its 21-25 September, 1998 meeting. {See further below Part III "Open-edi Comments}

II.2   Summary of Relevance of BT-EC Report Recommendations to Work of SC32

The BT-EC Report in its Executive Summary, contains a *Table 1: Summary of High priority Work Items* containing twenty (20) recommendations. In addition, a Table 2 in Section 11 of the BT-EC Report contains another fourteen(14) "Additional work items for standardization". The SC32 Detailed Response to the BT-EC Report is structured in the same manner containing the text of these two sets of recommendations extracted from the BT-EC Report as well as the introductory text to each.

SC32 decided that its detailed response should contain a reply to each of the BT-EC recommendations. This includes stating which recommendations are not within its scope or of interest to SC32 as well as indicating which proposed standardization work item may already be covered by other standardization committees.

The BT-EC recommendations of work items requiring standardization do not map directly, i.e. one to one, to existing scopes of standardization committees and division of standardization work. This is to be expected since the recommendations are made from a business needs perspective. This having been stated, the SC32 in its review of the recommendations of the BT-EC Report has identified,

 (1)   one (1) proposed high priority work item, i.e. C.3, which is within its scope and for which SC32/WG1 has resolved to prepare of New Work Item proposal in support of this recommendation;

 (2)   six (6) proposed work items which fall within the scope of one or more WGs of SC32 including WG1 and should be assigned to SC32, namely, C1, C.2, C.4, C.5, C.7 and C.8;

 (3)   seven (7) proposed work items which are pertinent to the scope and work of SC32 and its WGs and likely other JTC1/SCs, as well as other ISO TCs, namely, B.1, B.6, B.7, C.2, C.6, A.7 and B.13;

 (4)   two (2) proposed work items in which SC32/WG1 has a liaison interest if the proposed work item proceeds, i.e. B.2 and B.3; and,

(5)   six (6) proposed work items in which SC32/WG1 has a <u>potential</u> liaison interest depending on (1) how the proposed work item is further defined; and (2) if it proceeds. These are A.2, A.3, A.4, A.5, A.6, and C.7.

In conclusion, SC32 observed that many of the recommendations of the BT-EC for standardization work are already covered by existing standardization work. The appropriate response may be a shift in focus and priority as well as more intensive coordination of existing work.

II.3   Extract from "1.0 EXECUTIVE SUMMARY" BT-EC Report

[Note: The text in italics which follows is extracted from clause "1.0 Executive Summary" of the BT-EC Report. It serves as the context for the BT-EC Recommendations for standardization work to be initiated].

Due to time constraints, BT-EC focused mainly on Electronic Commerce of the category "Individual-to-Business", but, as broader input was available, also took a look beyond. BT-EC reviewed several sources for standardization requirements. As a conclusion, it identified the following key areas where standardization needs exist:

(A)   User Interfaces, including:
- *Icons,*
- *Dialogue design principles,*
- *Customer profiles;*

(B)   Basic functions, including:
- *Trading protocols,*
- *Payment methods,*
- *Security mechanisms,*
- *Identification and authentication,*
- *Auditing and record keeping;*

(C)   Definition and encoding of data and other objects, including:
- *IT-enablement of existing standards,*
- *Techniques for defining message semantics,*
- *Localization,*
- *Registration authorities,*
- *Value domains needed in Electronic Commerce.*

Work items needed in these areas are given. BT-EC undertook to assign priorities to these, but no full consensus could be established. However, table 1 below gives an initial orientation about those items deemed most urgent.

The Terms of Reference of BT-EC request that the Team, among others, delivers a set of formal proposals for new work in JTC 1 and other organizations, inside and outside of ISO/IEC. Due to time and resource constraints, BT-EC was not able to meet this request. Instead, only short statements are provided describing the work needed.

Therefore, BT-EC recommends that appropriate steps are taken by JTC 1 to explore such work items further. Also, BT-EC recommends to JTC 1 that steps are taken to improve cooperation with organizations inside and outside of ISO/IEC, who are active in drafting Electronic Commerce related specifications and take proper account of the multi-disciplinary nature of Electronic Commerce.

Finally, BT-EC recognizes that this report does address only a few of the many aspects of Electronic Commerce, but time and resource constraints did not permit to go further. It is, however, hoped that this report will help removing some of the roadblocks which prevent the implementation of global Electronic Commerce.

II.4   SC32 Response to BT-EC Recommended High Priority Work Items

[Note: Italized text represents the recommendations as found in the BT-EC Report].

Table 1: Summary of High Priority Work Items

#	Work item
A.1	*Review existing and emerging standards regarding user interfaces, formal and de facto, to establish the status of work in this area and their interworking. Establish their relevance from a consumer/user interface perspective in a home environment, using also delivery mechanisms other than a PC. (see 7.2.1)* -------------- SC32 Response: Not within scope of SC32
A.2	*Develop a set of metaphors that are relevant for different domains within Electronic Commerce (e.g. shopping, travelling , ordering, searching, etc.). Existing desktop metaphors (office environment) may not be relevant for the consumer (home) environment, nor for other delivery mechanisms (smartphone, WebTV) (see 7.2.2.2.1).* -------------- SC32 Response: Potential liaison interest if work item proceeds and is further defined (e.g.. development of set of metaphors may benefit from WG1 work on roles, information bundles, etc (and possibly WG2 in value domains)) {See response to A.6}
A.3	*Develop a list of functions to be represented by each of the three (3) categories of icons; namely: (1) facilitating interaction; (2) representing certifications; and, (3) facilitating navigational aspects. Provide a functional description of these icons and provide design examples, both for visually represented icons and auditory ones (earcons). Define the grammatical rules for how these icons can be opened, closed, moved, emptied, etc. Icons to be developed in accordance with existing relevant standards. Relevant standards include not only office system standards, but also standards related to the design of information for the public (see 7.2.2.2.1).* -------------- SC32 Response: Potential liaison interest to SC32/WG1 if work item proceeds and is further defined (e.g. for mapping and management of icons which represent legal or business requirements as rules sets, commitments/responsibilities, roles, etc.)
A.4	*Review existing dialogue design principles for office systems (ISO 9241-10) and self-service card-based systems (prEN 1332-1). Adapt these and others to consumers in a home environment. Determine which navigational aids are needed and standardize their representation (e.g. icons) and functionality (see 7.2.2.3.1).* -------------- SC32 Response: Potential liaison interest similar in nature to A.2 and A.3.
A.5	*Develop an approach to defining customer class profiles and individual customer profiles (see 7.2.3.1).* -------------- SC32 Response: Potential liaison interest similar in nature to A.2 and A.3
A.6	*Develop a starter set of customer class profiles using the approach defined in work item A.2.(see 7.2.3.1)* -------------- SC32 Response: Potential liaison interest similar in nature to A.2 and A.3. In addition, JTC1/SC32/WG1 notes that its present work on identification and specification of classes of business requirements should include/be able to support those which are customer-based.

#	Table 1: Summary of High Priority Work Items
	Work item
	This proposed work item is more likely related to the specification of role attributes rather than to human interface aspects.
B.1	*Develop a trading protocol satisfying the above requirements. The trading protocol to be developed should try to reach the three sub-goals above, wherever possible. (see 7.3.1)* -------------- SC32 Response: Trading Protocol and its three sub-goals as described in BT-EC Report section 7.3.1 are part of current work on the development of the requirements for the identification and specification of business scenarios and their components, (e.g., roles, information bundles, semantic components, etc.). Here SC32/WG1 notes that ISO/IEC 14662 contains the term/definition "business transaction". Standards development work which led to this definition and present work of SC32/WG1 is addressing needs for electronic commerce as identified in Section 7.3.1 of the BT-EC Report. With respect to aspects of "Trading Protocols" pertaining to security SC32/WG1 will ensure active liaisons with JTC1/SC27 which has this domain responsibility and with respect to "financial events" with TC68/SC6 which has this domain responsibility, as already noted in the BT-EC Report.
B.2	*Develop a limited set of standard payment methods, including standard payment objects. (see 7.3.2)* -------------- SC32/WG1 Response: Liaison interest of SC32/WG1 on this with TC68/SC6 where this would be of benefit. SC32/WG1 will endeavour to ensure that "a limited set of standard payment methods, including standard payment objects" when and as developed by TC68/SC6 can be incorporated/referenced as part of the business operational view (BOV) and captured through formal description techniques.
B.3	*Harmonize digital signature methods. (see 7.3.3.1)* -------------- SC32 Response: SC32 defers to JTC1/SC27 on this recommendation. SC32 will endeavour to maintain an active liaison with JTC1/SC27 which has the primary responsibility in this area as well as with the work of JTC1/SC17, JTC1/SC31 and TC68 which likely will have interests here also.
B.4	*Develop standards for key management infrastructure. (see 7.3.3.1)* -------------- SC32 Response: SC32 defers to JTC1/SC27 on this recommendation.
B.5	*Develop standards for customer's means to sign Electronic Commerce documents including multimedia documents in an inherently untrustworthy environment. (see 7.3.3.1)* -------------- SC32 Response: With respect to this recommendation, SC32 concurs with BT-EC Report text in Section 7.3..3.2 "Therefore it is recommended that JTC1 invites its SC27 to further study this time, and that any standardization work necessary be conducted by SC27"
B.6	*Investigate which entities or items need EC- specific globally unique identification. Define different procedures for generating and attributing globally unique identifiers. For certain categories of such identifiers, the one-to-one correspondence to other identifiers (from other identification schemes) may need trustworthy certification. (see 7.3.4)* --------------

Table 1: Summary of High Priority Work Items	
#	**Work item**
	SC32 Response: SC32 notes that standards already exist for the unambiguous identifications of organizations as well as their roles in relation to specific communities of which they are part, i.e. ISO/IEC 6523. Utilization of this standard provides for globally unique and verifiable identifiers (GUIDs). SC32 recognizes that this standard, which is the domain of SC32/WG2 may require a revisit from an electronic commerce perspective, i.e. maximize utilization of IT in its use (IT-Enablement). SC32 also notes that with respect to the global unique and verifiable identification of buyers and sellers in commerce, including electronic commerce, ISO/IEC JTC1/SC17 already provides key base/building block standards such as ISO/IEC 7812 or ISO/IEC 7501 which although developed to support "e-finance (electronic funds transfer/EFT) and "e-travel " (machine-readable travel documentation)) have general applicability in other areas of electronic commerce. Finally, here SC32/WG1 in its work on Open-edi noted that the same/single real-world entity does have multiple personae in its participation in different classes of business transactions and related roles and therefore will have and does use associated different GUIDs. SC32 appreciates the BT-EC Report referencing work of ISO/TC68, JTC1/SC31 and JTC1/SC32 as well as Section 14.1 which references ISO/IEC 7501 and other JTC1/SC17 standards but not SC17 itself and conversely notes JTC1/SC32 but not the ISO/IEC standard 6523. On trustworthy certification, SC32 defers to SC27. Consequently, a first level response to this BT-EC recommendation would be of enhanced co-ordination of existing standardization work.
B.7	*Develop a common specification for verifying and validating the source of a data object and/or the identity of a communication partner in the Electronic Commerce context (authentication; see also Work item B.6) (see 7.3.5)* -------------- SC32 Response: SC32 is not quite clear about this recommendation. The BT-EC Report in Section 14.2 provides a list of relevant standards. SC32/WG1 notes that ability to support accountability, traceability, commitments, etc. are a key components in its current work on the identification and specification of business operational view (BOV). See further the response to B.6.
C.1	*Standardize an approach for the identification and mapping of encodable value domains (see 7.4.2).* -------------- SC32 Response: SC32 concurs 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 this falls. There will likely be active participation of WG4 also. SC32/WG1 notes that the C series of recommendations suppose the availability of (generic) methods/tools for the identification and specification of classes of business requirements including jurisdictional domains (see below C.4). Currently, such standardization work is incorporated in its present work item on the Business Operational View (BOV). SC32/WG1 recognizes the potential need to split its existing Work Item 2 as inherited from SC30/WG1 into several more discrete work items.
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)* -------------- SC32 Response: SC32 recognizes that: ➤ ISO 4217 Currency Codes) of ISO TC68 ➤ ISO 3166 (Country Codes) of ISO/TC46 ➤ ISO 639 (Language Codes) of ISO/TC37

	Table 1: Summary of High Priority Work Items
#	**Work item**
	are the domains of the referenced standards committees especially and specifically their contents. SC32 also notes that this BT-EC recommended work item not only includes standards for encodable value domains, i.e., the scope of SC32/WG2, but also the identification and specifications of business rules and conditions and agreement on the same for establishing the boundaries and use of domains, i.e. contextual specification, which is part of the scope of SC32/WG1.
C.3	*Standardize the identification and mapping of the various categories of jurisdictional domains (With priority on those impacting several sectors of Electronic Commerce) (see 7.4.3).* -------------- SC32/WG1 Response: SC32/WG1 considers this recommendation of the BT-EC Report to be a key component of the identification and specification of classes of business requirements and thus within the scope of its existing standardization activities. SC32/WG1 has resolved to prepare a New Work Item to support this BT-EC recommendation.
C.4	*Develop a standard facility for use in defining the kinds of messages used in Electronic Commerce (see 7.4.4).* -------------- SC32 Response: SC32 has difficulty in responding to this BT-EC recommendation. With respect to "data semantics", this is part of the scope of SC32 and will require interworking among WG1, WG5 and RG1. However, multiple concepts/definitions currently exist within ISO and ISO/IEC JTC 1 standards as well as ongoing standardization work for the character string "messages". This is one reason why "EDI message" is not a concept/term found in ISO/IEC 14662. Instead there is "role", "information bundle", "semantic component", etc. Unless there is a certain type of IT-implementation in mind, the use of the term "message" is confusing. Within batch oriented information flow, like traditional EDI, the term "message" makes sense. However, for instance, within object oriented IT-implementation, "message" is not a suitable term for describing the exchange of information. (See SC32/WG1 N093) Method call, including attributes, is a better description on how object systems interwork and exchange information. To cover both concepts the use of "information bundle" is a better term. Defining messages is necessarily not of interest within distributed object systems. Again it is the interworking and exchange of information which is of interest. When an "information bundle" is described and there is an actual use of the information bundle, the receiver of the information bundle must act upon the information bundle according to the intentions of the sender. If there is no such thing as a model or a specification of the activities to be done by the receiver, there is no guarantee that she/he will act according to the senders' intention. This leads us to the need for a specification of the activities of both the sender and receiver. Further, by being active in such a set of activities, sender and receiver also must commit to the applicable regulations, if any, concerning the set of activities. (A similar problem exists for the concept/term "transactions" which is why ISO/IEC 14662 utilized the unique concept term "business transaction"). This being said SC32 is of the opinion that this recommendation falls within the domain of JTC1/SC32 and recommends that (1) SC32 at its next Plenary, i.e., when all its WGs are present, set aside a time slot focused on this proposed BT-EC work item; and (2) invite other interested parties to participate in such deliberations.
C.5	*Develop a set of message definition standards using the facility defined in work item C.4 (see 7.4.4).* -------------- SC32 Response: See response to C.4
C.6	*Define an approach for defining localization factors for the local use of Electronic Commerce (see 7.4.5).* --------------

Table 1: Summary of High Priority Work Items	
#	**Work item**
	SC32 Response: SC32 supports this BT-EC recommendation for high priority of standardization work and notes that it is already doing work in this area. SC32/WG1 considers "localization factors" to be closely linked to the need for the ability to formally specify classes of business requirements. From an electronic commerce perspective, SC32/WG1 considers this BT-EC proposed work item to be within its scope recognizing that SC34 and SC35 also have a mandate in this area. Work in this area requires very active liaison/coordination among SC32, SC34, SC35. Proposed work item C.6 and its resolution requires work on C.4 to be well advanced.
C.7	*Define how to register and maintain various aspects of the value domains defined in the customer profile standards and in standards for localization factors (see 7.4.6).* ------------- SC32 Response: See response to A.6, C3 and C.6.

II.5   BT-EC Report, Section "11.   ADDITIONAL STANDARDIZATION WORK NEEDED IN SUPPORT OF ELECTRONIC COMMERCE"

"This clause contains additional proposal for standardization work which were identified by the Team. Though they were not regarded as of high priority (see 7.1.1.), they are strongly recommended to JTC1 for further consideration and action".

Table 2: Additional Work Items for Standardization	
#	**Work item**
A.7	*Develop a standard for the unique, unambiguous and linguistically neutral identification and referencing of all icons, navigational aids and product labelling in an IT-enablement manner including the ability to support computational integrity. Such a standard or standards must also include the ability/facility to support the assignment of multi-lingual language equivalents appropriate to localization requirements. (see 10.1.1)* ------------- SC32 Response: SC32/WG1 has already incorporated these functional requirement in its work on business operational view for Open-edi. Work in this area requires an integrated approach involving other JTC1 SCs such as SC1, SC2, SC34, and SC35.
A.8	*Standardize plug compatibility for different input/output devices (from keyboards, joysticks to braille readers/printers, speakers) and different delivery mechanisms (TV, PC, telephone).* *Develop appropriate software standards to facilitate plug compatibility. (see 10.1.1)* ------------- SC32 Response: Not within the scope of SC32.
A.9	*Review existing standards and industry practice regarding usability. Identify the right measures for objective measurement of usability (error rate, failure of transaction, time etc.). Adapt and/or develop tools for the objective and subjective measurement of usability for Electronic Commerce. (see 10.1.4)* ------------- SC32 Response: Not within the scope of SC32. It is considered a general property of information systems which is not unique to Open-edi and thus standardization work of SC32/WG1. Potential liaison interest if this proposed work item proceeds but only if such tools require computer

Table 2: Additional Work Items for Standardization	
#	Work item
	processable rules (WG1), encodable value domains, (WG2) and interchange of data, etc.
B.8	*Develop encryption algorithms that satisfy cross-sectorial and sector-specific needs (see 10.1.2)* ------------- SC32 Response: It is SC32's understanding that SC27 has already considered this matter and that the development of encryption algorithms is outside the scope of standardization work. SC32 defers to SC27.
B.9	*Develop recovery methods necessary for recovering from errors, network outage, etc., for encrypted blocks and streams (see 10.2.1.1).* ------------- SC32 Response: On recovery of encrypted blocks and streams SC32 defers to SC27. Recovery of an instantiated business transaction is a key Open-edi requirement, (as is traceability, error handling, accountability, roll-back, reconstitution of a (previous) state for legal/evidentiary purposes, recovery condition, etc.). SC32/WG1 will reference/incorporate SC27 solutions for this"B.9" requirement in its work.
B.10	*Develop a common specification for validating which operations can be performed by and on components, e.g., users, systems, events, transactions (see 10.2.2).* ------------- SC32/WG1 Response: A strong (liaison) interest of SC32/WG1 should this work item proceed. Some work in this area is already proceeding by SC32/WG1.
B.11	*Develop a standardized method for selecting the security algorithm and security attributes, e.g., key size (security quality of service) (see 10.2.3).* ------------- SC32 Response: SC32 notes that JTC1/SC27 is already addressing this.
B.12	*Develop standards for digital media that may be written only once that meets the security requirements of EC, such as tamper-proof, tamper-evident media (see 10.2.4.1).* ------------- SC32 Response: Not within the scope of SC32. SC32 is involved only in the semantic requirements/specification but not for the physical media itself. TC46/WG11 may have work item(s) pertaining to record-keeping and evidentiary issues. SC27 standards on security requirements should be utilized. With respect to devices, there is a link to SC17 work. For multimedia aspects of digital media, these fall within the scope of SC29 and here SC32/WG5 may also have an interest in relation to its SQL Multimedia standardization work.
B.13	*Develop common auditing and tracing standards that support common analysis of EC components in the past (e.g., forensic analysis), present (e.g., monitoring and alarms), and future (e.g., thresholds and problem anticipation) (see 10.2.4.2).* ------------- SC32/WG1 Response: Likely related to business requirements of Open-edi particularly jurisdictional aspects. Linked to B.12, C.3, and C.6 proposed work items. There are both global as well as local auditing and tracing requirements.

Table 2: Additional Work Items for Standardization	
#	**Work item**
C.8	*Standardize an approach to defining sets of values for unbounded domains and for defining the format of the sets of values for unbounded value domains (see 10.3.1).* -------------- SC32 Response: Within the scope of SC32. This is important and of interest to WG1, WG2, and WG4. Requires the development of a methodology(ies) for differentiating "domains", i.e. contextual specification. One category of domains is data (value) domains. There are many others. This proposed work item is closely related to the specification of contexts/domains (of objects) which SC32/WG1 is working on from an Open-edi perspective.
C.9	*Define bounded value domains used in two or more sectors of Electronic Commerce (see 10.3.1).* -------------- SC32 Response: Requires completion of work on recommendations C.1 and C.2. Here SC32 notes that the three standards identified in C.2 are standards developed in and for a particular sector which are used by many other sectors. Any standard developed by any JTC1/SC or TC is meant to be as widely used as possible, i.e., by other sectors. Completion of standardization work in support of recommendations C.1, C.2, and C.3 should assist in clarification of this BT-EC recommendation.
C.10	*Identify requirements for the handling of unbounded value domains used in two or more sectors of Electronic Commerce (see 10.3.1).* -------------- SC32 Response: This is outside of scope of SC32, and possibly even JTC1. Likely more in the area of TC46 and multi-lingual thesauri. Requires resolution of work on C.1, C.2 and C.3 requirements to be well advanced. To be revisited then.
C.11	*Define bounded value domains for use in a specific sector of Electronic Commerce (see 10.3.1).* -------------- SC32 Response: Requires resolution of work on C.1. To be revisited then.
C.12	*Identify requirements for the handling of unbounded domains for use in a specific sector of Electronic Commerce (see 10.3.1).* -------------- SC32 Response: See comment C.11 above.

III   OPEN-EDI COMMENTS

III.1   Introductory Comments

SC30 Open-edi merged into SC32 Data Management and Interchange by the JTC1 restructuring of 1997. The former SC30 work is now being progressed by SC32/WG1 also having the title Open-edi.

The Part II: Detailed Response, presented above, benefits from a significant effort by SC32/WG1 at its 21-25 September, 1998, meeting in undertaking an in-depth analysis of the BT-EC Report and each of its recommendations. {See further SC32/WG1 N097 "SC32/WG1 Response to the BT-EC Report Recommendations"}

SC32 WG1 Open-edi has been responsible for the preparation of IS 14662:1997 Open-edi Reference Model. While this reference model does not address one or two of the broad issues raised in the BT-EC report (for example human factors), it does address many important issues. In its review of the BT-EC Report, SC32/WG1 was guided by the methodology for reviewing the BT-EC Report suggested in the Canadian contribution on the BT-EC Report to JTC1 (ISO/IEC JTC1 N5411).

III.2   Link to ISO/IEC IS 14662 - Open-edi Reference Model

In reviewing the list of registered BT-EC documents (found in Section 13), SC32/WG1 noted that BT-EC N021 "Report on the JTC1/BT-EC Meeting in Brussels, September 29-30, 1997 contains the following statement "*As an immediate conclusion, it was agreed that the BT should take into consideration the results of JTC1/SC30 in general and of WG1 in particular (document ISO/IEC 14662".* JTC1/SC32/WG1 notes that the BT-EC Report and its recommendations would have benefited from following up on this "conclusion" in the rest of its work, i.e. more extensive use of ISO/IEC IS 14662:1997 Information Technology - Open-edi Reference Model.

III.3   Scope/Definition of "Electronic Commerce" and Priority of Work of SC32/WG1

The BT-EC states that there are many definitions of "electronic commerce" and recognizes this. SC32/WG1 standardization work supports common generic requirements of electronic commerce, electronic administration, electronic business, etc. insofar as such uses of information technology involve:

➢   "*business*" as "*a series of processes, each having a clearly understood purpose, involving more than one organization, realized through the exchange of information and directed towards some mutually agreed upon goal, extending over time";*

➢   *"business transaction" as " a predefined set of activities and/or processes of organizations which is initiated by an organization to accomplish an explicitly shared business goal and terminated upon recognition of one of the agreed conclusions by all the involved organizations although some of the recognition may be implicit";*

➢   *"Electronic Data Interchange(EDI)" as "the automated exchange of predefined and structured data for business purposes among information systems among two or more organizations";*

   and,

➢   the application and use in e-commerce, e-administration , e-business, etc. of "*Formal Description Technique(s) (FDTs), i.e. "specification method based on a description language using rigorous and unambiguous rules both with respect to developing expressions in the language (formal syntax) and interpreting the meaning of these expressions (formal semantics)*

[Note: The above are definitions found in ISO/IEC IS 14662]

Interpretations, definitions , perceptions, etc. of the concepts/terms "*electronic commerce, electronic administration, electronic business,"* etc., which do NOT require,

  (1)   a clearly understood purpose, mutually agreed upon goal, explicitness and unambiguity;

(2)   pre-definable set(s) of activities and/or processes, pre-definable and structured data, as well as electronic interchange;

(3)   computational integrity and related characteristics;

(4)   the above to be specifiable through FDTs and executable through information technology systems for use in real world actualizations/instantiations

are <u>deemed not to be a priority for standardization work of SC32/WG1</u> and likely to be outside its scope of work as well.

III.4   BT-EC Report and Horizontal Issues

At its 21-25 September, 1998 meeting, SC32/WG1 also reviewed the four horizontal issues identified in the BT-EC Report. As a result of this review, SC32/WG1 unanimously approved "Resolution WG1 98/17 - Horizontal Issues". The text of Resolution WG1 98/17 reads as follows:

"SC32/WG1, in reviewing the BT-EC Report (JTC1 N5296), noted in Clause 6 of the report that *"BT-EC identified four horizontal issues as of being of general relevance for all scenarios involving Electronic Commerce for all scenarios and gave these horizontal issues some prominent attention in its work. These issues are:*

. *information technology(IT)-enablement*
. *localization including multilingualism*
. *cross-sectorial aspects*
. *cultural adaptability"*

and the BT-EC concludes by stating,
"From an Electronic Commerce perspective, standardization work addressing the three horizontal issues associated with,

. *"IT-enablement"*
. *"Localization and Multilingualism"*
. *"Cross-Sectorialization"*

should resolve some of the requirements for "cultural adaptability". It then remains to be seen what other "cultural adaptability" requirements remain, i.e. those of a societal nature"

SC32/WG1 resolves to address the first three horizontal issues in its standardization work wherever relevant and appropriate".

The following text extracted from Clause 6.1 "Overview" of the BT-EC Report on this matter needs to be noted.

"These horizontal issues are ordered on the basis of:

1.   *the need to go from the simpler to more complex challenges,*
2.   *placing priority on the "do-able" and immediately most useful in the context of increasing resource constraints in standardization work; and,*
3.   *promotion and visibility of ISO/IEC JTC1 work within the ISO, IEC, and ITU and especially outside of these standardization communities.*

From a user perspective, these four horizontal issues need to be addressed in a harmonized manner".