

# ISO/IEC JTC 1/SC 32 N 0360

Date: 1999-09-29

REPLACES: --

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

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\*Pacific Northwest National Laboratory (PNL) administers the ISO/IEC JTC 1/SC 32 Secretariat on behalf of ANSI

# BUSINESS PLAN FOR ISO/IEC JTC 1/SC32, Data Management and Interchange

**PERIOD COVERED:** January 1999 to September 1999

**SUBMITTED BY:** Bruce Bargmeyer, Chairman JTC 1/SC 32

## 1. MANAGEMENT SUMMARY:

### 1a CHAIRMAN'S REMARKS

SC 32 met in late May 1999 in Matsue, Japan. All working groups were present.

#### 1.1 JTC 1 SC32 STATEMENT OF SCOPE

##### JTC 1/ SC 32

**Title:** Data Management and Interchange  
**Area of Work:** Standards for data management within and among local and distributed information systems environments. SC 32 provides enabling technologies to promote harmonization of data management facilities across sector-specific areas. Specifically, SC 32 standards include:

- 1) reference models and frameworks for the coordination of existing and emerging standards;
- 2) definition of data domains, data types and data structures, and their associated semantics;
- 3) languages, services and protocols for persistent storage, concurrent access, concurrent update and interchange of data;
- 4) methods, languages, services and protocols to structure, organize and register metadata and other information resources associated with sharing and interoperability, including electronic commerce.

##### JTC 1/ SC 32/RG 01

**Title:** Reference Model for Data Management Maintenance  
**Area of Work:** Maintenance of ISO/IEC 10032, Reference Model of Data Management, and enhancements to it as may be required by SC 32.

##### JTC 1/ SC 32/RG 02

**Title:** Export/Import Maintenance  
**Area of Work:** To develop and maintain standards that facilitate the interchange of data and metadata using stream-based media. Use of these standards will facilitate the definition of export/import services within, and the sharing of data and metadata between data management environments. These standards do not specify a transfer mechanism, and the interchange format is environment independent. The scope currently includes:

- a) a standardization framework for establishing Export/Import concepts, facilities, requirements, and components candidate for standardization;
- b) specification of Export/Import services for SQL-based data management environments, and IRDS-based metadata management environments;
- c) specification of a transfer format for the interchange of data between SQL-based data management environments;
- d) specification of a transfer format for the interchange of data between IRDS-based metadata management environments.

### **JTC 1/ SC 32/WG 01**

**Title:** Open-edi

**Area of Work:** Standardization in the field of generic information technology standards for open electronic data interchange needed to attain global interoperability among the information technology systems used by organizations. Such interoperability is viewed from both business and information technology perspectives.

Within this context the scope includes:

- 1 methodology and framework for identification and modelling of business activities through business scenarios and their components, such as roles, information bundles, and semantic components;
- 2 identification and specification of formal description techniques for describing classes of business requirements and their contextual and semantic specifications;
- 3 identification and specification of formal description techniques for developing business scenarios and their components;
- 4 identification and specification of information technology services and service interfaces for accomplishing business transactions;

identification and specification of facilities to manage business scenarios and their components.

Note: Priority is on work required to support the needs of electronic commerce, electronic administration, electronic business, etc. The basis of work is the Open-edi Reference Model (ISO/IEC 14662).

### **JTC 1/ SC 32/WG 02**

**Title:** Metadata

**Area of Work:** To develop and maintain standards that facilitate specification and management of metadata. Use of these standards will enhance the understanding and sharing of data, information and processes to support, for example, interoperability, electronic commerce and component-based development. The scope shall include:

- a) a framework for specifying and managing metadata;
- b) specification and management of data elements, structures and their associated semantics;
- c) specification and management of value domains, such as classification and code schemes;

- d) specification and management of data about processes and behavior;
- e) facilities to manage metadata, for example: data dictionaries, repositories, information resource dictionary systems, registries and glossaries;
- f) facilities to exchange metadata, including its semantics, over the Internet, intranets and other media.

### **JTC 1/ SC 32/WG 03**

**Title:** Database Languages

**Area of Work:** 1. To develop and maintain languages for the dynamic specification, maintenance and description of database structures and contents in multi-user and multi-server environments. The specifications may include the data types, behaviors and any integrity constraints on the contents of the defined structures. The specifications may include mechanisms for the creation and generation of new data types and behaviors so as to support the specification of other international standards.

2. To develop and maintain languages that provide for the storage, access and manipulation of data in database structures by multiple concurrent users. These languages may be computationally complete and may contain features for the packaging and storage of modules and procedures in database structures.

3. To provide interfaces for the languages developed to other standard programming languages.

4. To provide interfaces or access to other standards describing data types, behaviors or database content to users of the languages developed.

### **JTC 1/ SC 32/WG 04**

**Title:** SQL Multimedia & Application Packages

**Area of Work:** To specify packages of abstract data types for use in various application areas. Specify each package of abstract data type definitions using the facilities for user-defined type provided in the Database Language SQL/Foundation. This should include packages such as Full-Text, Spatial, Still Image, Still Graphic, Animation, Full Motion Video, Audio, Seismic, and Music.

### **JTC 1/ SC 32/WG 05**

**Title:** Database Access and Interchange

**Area of Work:** Standards to facilitate interworking of applications and databases that may be located on different sites. These standards relate principally to communications and management data. They are complementary to and dependent on standards for database languages. The activities include the analysis of distributed database applications and requirements, definition of system models, communication APIs and protocols for interworking between client systems and one or more server systems; the systems may be on different hardware, with software from different suppliers.

## 1.2 PROJECT REPORT

<i>SC/WG</i> <i>Project</i> <i>Project Title</i>	<i>Project Editor</i>	<i>ISO/IEC Design Document</i>			<i>Reference</i>		<i>IS</i>  <i>TARGET</i> <i>ACTUAL</i>
		<i>NP</i>	<i>CD</i>	<i>FCD</i>	<i>FDIS</i>		
		<i>TARGET</i> <i>ACTUAL</i>	<i>TARGET</i> <i>ACTUAL</i>	<i>TARGET</i> <i>ACTUAL</i>	<i>TARGET</i> <i>ACTUAL</i>		
<b>SC 32/RG 01</b>	<b>Reference Model for Data Management Maintenance</b>						
SC 32/RG 01 30.01.00.00.00	Schnarr, Rick [ 17995 / 10032	ISO/IEC 10032 : 1995 / 60.60 ]					
Information Technology - Reference Model of Data Management							1995-05
<b>SC 32/RG 02</b>	<b>Export/Import Maintenance</b>						
SC 32/RG 02 58.01.00.00.00	Berube, Jean [ 29940 / 13238-01	ISO/IEC CD 13238-1 / 30.20 ]					
Information Technology - Data Management Export/Import Facilities - Part 1: Standardization Framework		1997-09 1997-11		1999-09	2000-02		2000-08
SC 32/RG 02 58.02.00.00.00	Olle, William [ 29941 / 13238-02	ISO/IEC CD 13238-2 / 30.20 ]					
Information Technology - Data Management Export/Import Facilities - Part 2: SQL Export/Import		1997-09 1997-11		1999-09	2000-02		2000-08
SC 32/RG 02 58.03.00.00.00	Wilcox, Terry [ 21473 / 13238-03	ISO/IEC 13238-3: 1998 / 60.00 ]					
Information Technology - Data Management Export/Import Facilities - Part 3: Export/Import Facilities for IRDS (Final Text - SC 32 N 174)		1995-01 1995-03				1996-01 1997-06	1998-11 1999-03

**SC 32/WG 01    Open-edi**

<i>SC/WG Project Project Title</i>	<i>Project Editor</i>	<i>ISO/IEC Design Document</i>	<i>Reference</i>			<i>IS</i>	
			<i>NP</i>	<i>CD</i>	<i>FCD</i>		<i>FDIS</i>
			<i>TARGET ACTUAL</i>	<i>TARGET ACTUAL</i>	<i>TARGET ACTUAL</i>		<i>TARGET ACTUAL</i>
SC 32/WG 01 30.02.01.00.00 Information Technology - Business Agreement Semantic Descriptive Techniques Part 1: Business Operational Aspects of Open-edi for Implementation	Levine, Paul [ / 15944-01	ISO/IEC AWI 15944-1 / 20.00 ]		1999-09	2000-12	2001-12	2002-06
SC 32/WG 01 30.02.02.00.00 Information Technology - Business Agreement Semantic Descriptive Techniques Part 2: Registration of Scenarios and their Components	Levine, Paul [ / 15944-02	ISO/IEC AWI 15944-2 / 20.00 ]		2000-06	2001-06	2002-09	2003-03
SC 32/WG 01 30.02.03.00.00 Information Technology - Business Agreement Semantic Descriptive Techniques Part 3: Open-edi Description Techniques	Levine, Paul [ / 15944-03	ISO/IEC AWI 15944-3 / 20.00 ]		2000-12	2001-06	2002-09	2003-03
SC 32/WG 01 30.03.00.00.00 Edi Support Services	*to be defined* [ 20953 / 17414	ISO/IEC AWI 17414 / 20.00 ]		2000-12	2001-12	2002-09	2003-03
SC 32/WG 01 30.04.00.00.00 Open-Edi Reference Model Standard	Pelkonen, Hannu [ 25154 / 14662	ISO/IEC 14662 : 1997 / 60.60 ]					1997-09

**SC 32/WG 02    Metadata**

<i>SC/WG Project Project Title</i>	<i>Project Editor</i>	<i>ISO/IEC Design Document</i>	<i>Reference</i>			<i>IS</i>	
			<i>NP</i>	<i>CD</i>	<i>FCD</i>		<i>FDIS</i>
			<i>TARGET ACTUAL</i>	<i>TARGET ACTUAL</i>	<i>TARGET ACTUAL</i>		<i>TARGET ACTUAL</i>
SC 32/WG 02 01.00.00.00.00 Information Processing Systems - Concepts and Terminology for the Conceptual Schema and the Information Base	*to be defined* [ 16549 / 09007	ISO TR 9007 : 1987 / 60.60 ]					1987-07
SC 32/WG 02 06.01.00.00.00 Information Processing Systems - Information Resource Dictionary System (IRDS) Framework	Gradwell, David [ 17985 / 10027	ISO/IEC 10027 : 1990 / 90.92 ]					1990-06

SC/WG Project Project Title	Project Editor	ISO/IEC Design Document	Reference			IS	
			NP	CD	FCD		FDIS
			TARGET ACTUAL	TARGET ACTUAL	TARGET ACTUAL		TARGET ACTUAL
SC 32/WG 02 06.02.00.00.00 Information Technology - Information Resource Dictionary Systems (IRDS) Services Interface	Bourne, Tim [ 18821 / 10728	ISO/IEC 10728 : 1993 / 90.92 ]				1993-04	
SC 32/WG 02 06.02.01.00.00 Information Technology - Information Resource Dictionary System (IRDS) Service Interface - Amendment 1: C Language Binding	Gradwell, David [ 24341 / 10728	ISO/IEC 10728 :1993/Amd 1:1995 / 60.60 ]				1995-12	
SC 32/WG 02 06.02.02.00.00 Information Technology - Information Resource Dictionary System (IRDS) Service Interface - Amendment 2: Ada language binding	Colket, William [ 24342 / 10728	ISO/IEC 10728 :1993/Amd 2:1996 / 60.60 ]				1996-11	
SC 32/WG 02 06.02.03.00.00 Information Technology - Information Resource Dictionary System (IRDS) Service Interface - Amendment 3: CORBA IDL Binding	Gradwell, David [ 27123 / 10728	ISO/IEC 10728 :1993/Amd 3:1998 / 60.60 ]				1996-12	
SC 32/WG 02 06.02.04.00.00 Information Technology - Information Resource Dictionary System (IRDS) Service Interface - Amendment 4: Remote Procedure Call IDL Binding	Horiuchi, Hajini [ 28052 / 10728	ISO/IEC 10728 :1993/Amd 4:1998 / 60.60 ]		1996-05 1996-08	1998-02 1997-03	1998-08 1998-08	
SC 32/WG 02 06.06.00.00.00 Information Technology - IRDS Content Module - Design Support for SQL Applications	Bartley, Don [ 31371 / 17415	ISO/IEC NP 17415 / 10.00 ]		1999-09	2000-05	2001-03	2001-10
SC 32/WG 02 06.07.00.00.00 Information Technology - Information Resource Dictionary System (IRDS) Services Interface (Revision of ISO/IEC 10728:1993) Extensions to IRDS Services Interface	Bourne, Tim [ 25838 / 10728	ISO/IEC CD 10728 / 30.20 ]			SC 32 N0095 2001-01	2001-10	2002-01
SC 32/WG 02 06.08.00.00.00 Information Processing Systems - Information Resource Dictionary System (IRDS) Framework ( Revision of ISO/IEC 10027:1990)	Gradwell, David [ 20189 / 10027	ISO/IEC WD 10027 edition 2 / 20.20 ]		2000-02	2000-07	2001-04	2001-07

<b>SC/WG Project Project Title</b>	<b>Project Editor</b>	<b>ISO/IEC Design Document</b>		<b>Reference</b>		<b>IS TARGET ACTUAL</b>
		<b>NP</b>	<b>CD</b>	<b>FCD</b>	<b>FDIS</b>	
		<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	
SC 32/WG 02 06.09.00.00.00 Information Technology - Guidelines for the Design of IRDS Content Modules	Gradwell, David [ 21852 / 13645	ISO/IEC FDIS 13645 / 40.60 ]		SC 32 N10940 1995-01 1996-08	1998-10	1999-01
SC 32/WG 02 06.09.01.00.00 Information Technology - IRDS Content Module to Support a Naming and Thesaurus Facility	Gradwell, David [ 21472 / 13237	ISO/IEC FDIS 13237 / 40.60 ]	2000-02 1997-09	SC 32 N11032 2000-11	2001-10	2002-02
SC 32/WG 02 14.02.00.00.00 Information processing - Representation of SI and other units in systems with limited character sets (Proposed to JTC 1 for withdrawal)	*to be defined* [ 8005 / 02955	ISO 2955 : 1983 / 90.93 ]				
SC 32/WG 02 14.03.01.00.00 Information technology - General structures for the interchange of code values - Part 1: Identification of coding schemes (Recommended for withdrawal to ITTF - Five Year Review)	*to be defined* [ 14748 / 07826-01	ISO/IEC 7826-1 : 1994 / 60.60 ]				
SC 32/WG 02 14.03.02.00.00 Information technology - General structure for the interchange of code values - Part 2: Registration of coding schemes (Recommended for withdrawal to ITTF - Five Year Review)	*to be defined* [ 20686 / 07826-02	ISO/IEC 7826-2 : 1994 / 60.60 ]				
SC 32/WG 02 14.04.01.00.00 Information Technology - Structure for the identification of organizations and organization parts - Part 1: Identification of organization schemes	*to be defined* [ 25773 / 06523-01	ISO/IEC 6523-1: 1998 / 60.00 ]			1997-06	1999-06 1998-06
SC 32/WG 02 14.04.02.00.00 Information Technology - Structure for the identification of organizations and organization parts - Part 2: Registration of organization identification schemes	*to be defined* [ 25774 / 06523-02	ISO/IEC 6523-2: 1998 / 60.00 ]			1997-06	1999-06 1998-06

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		NP	CD	FCD	FDIS	
		TARGET ACTUAL	TARGET ACTUAL	TARGET ACTUAL	TARGET ACTUAL	
SC 32/WG 02 14.06.00.00.00 Standard representation of latitude and altitude for geographic point locations (Review at Matsue for moving to TC 211)	*to be defined* [ 13152 / 06709	ISO 6709 : 1983 / 90.92 ]				
SC 32/WG 02 14.06.01.00.00 Standard representation of latitude, longitude and altitude for geographic point locations (Revision of ISO 6709:1983)	*to be defined* [ 31384 / 06709	ISO/IEC AWI 6709 / 20.00 ] 1998-07	1999-05	2000-05	2000-08	2000-12
SC 32/WG 02 14.08.00.00.00 Information Technology - Specification of Data Element Concepts (propose for deletion at Matsue)	Ngo, Phong [ 28698 / 17413	ISO/IEC NP 17413 / 10.00 ]	2000-12	2001-08	2002-03	2002-07
SC 32/WG 02 14.09.00.00.00 Information technology - Specification of Data Value Domain	Newton, Judith [ 27695 / 15452	ISO/IEC DTR 15452 / 30.20 ]	1998-01	1999-05	1999-12 1998-09	2000-05
SC 32/WG 02 14.10.00.00.00 Information interchange - Representation of human sexes	Hunter, David [ 11219 / 05218	ISO 5218 : 1977 / 90.92 ]				
SC 32/WG 02 14.10.01.00.00 Information interchange - Representation of human sexes (Revision of ISO 5218:1977)	Hunter, David [ 31365 / 05218	ISO/IEC AWI 5218 / 20.00 ] 1998-07	1999-09	2000-05	2001-03	2001-08
SC 32/WG 02 14.14.02.00.00 Information technology - Guidelines for the organization and representation of data elements for data interchange - Coding methods and principles	*to be defined* [ 17651 / 09789	ISO/IEC TR 9789 : 1994 type 3 / 60.60 ]				
SC 32/WG 02 14.15.00.00.00 Data processing - Check character system (Proposed to JTC 1 for withdrawal)	*to be defined* [ 13631 / 07064	ISO 7064 : 1983 / 90.92 ]				

<b>SC/WG Project Project Title</b>	<b>Project Editor</b>	<b>ISO/IEC Design Document</b>		<b>Reference</b>		<b>IS</b>
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		<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	
SC 32/WG 02 14.16.00.00.00 Information technology - Representation of data elements values: Notation of the format	Thienot, Alain [ 2365 / 14957 ]	ISO/IEC 14957 : 1996 / 60.60 ]				
SC 32/WG 02 14.17.01.00.00 Information technology - Specification and standardization of data elements - Part 1: Framework for the specification and standardization of data elements	Gillman, Dan [ 2349 / 11179-01 ]	ISO/IEC FDIS 11179-1 / 40.20 ]		SC 32 N0243  1998-11 1999-02	1999-03	1999-06
SC 32/WG 02 14.17.02.00.00 Information Technology - Specification and standardization of data elements - Part 2: Classification for data elements	Bargmeyer, Bruce [ 2317 / 11179-02 ]	ISO/IEC FDIS 11179-2 / 40.20 ]	1997-09 1998-02	SC 32 N0245  1998-03	1999-03	1998-12
SC 32/WG 02 14.17.03.00.00 Information technology - Specification and standardization of data elements - Part 3: Basic attributes of data elements	Christensen, Joe [ 19184 / 11179-03 ]	ISO/IEC 11179-3 : 1994 / 90.92 ]				
SC 32/WG 02 14.17.04.00.00 Information Technology - Specification and standardization of data elements - Part 3: Basic attributes of data elements (Revision of ISO/IEC 11179-3:1994)	Christensen, Joe [ 31367 / 11179-03 ]	ISO/IEC AWI 11179-3 / 20.00 ]	1998-07 1999-07		2000-05 2000-09	2000-12
SC 32/WG 02 14.17.05.00.00 Information technology - Specification and standardization of data elements - Part 4: Rules and guidelines for the formulation of data definitions	Bargmeyer, Bruce [ 23788 / 11179-04 ]	ISO/IEC 11179-4 : 1995 / 60.60 ]				1995-06
SC 32/WG 02 14.17.06.00.00 Information Technology - Specification and standardization of data elements - Part 5: Naming and identification principles for data elements	Newton, Judith [ 1758 / 11179-05 ]	ISO/IEC 11179-5 : 1995 / 60.60 ]				1995-06

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		<b>NP</b>	<b>CD</b>	<b>FCD</b>	<b>FDIS</b>	
		<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	
SC 32/WG 02 14.17.07.00.00	Ngo, Phong [ 1677 / 11179-06	ISO/IEC 11179-6 : 1997 / 60.60 ]				1995-06
Information technology - Specification and standardization of data elements - Part 6: Registration of data elements						
SC 32/WG 02 63.00.00.00.00	King, Martin [ 22785 / 14481	ISO/IEC FDIS 14481 / 40.20 ]		SC 32 N0171		
Information Technology - Conceptual Schema Modelling Facilities						
			1996-11 1997-01	1999-09 1998-12	1999-12	2000-04

### SC 32/WG 03 Database Languages

<b>SC/WG Project Project Title</b>	<b>Project Editor</b>	<b>ISO/IEC Design Document</b>		<b>Reference</b>		<b>IS TARGET ACTUAL</b>
		<b>NP</b>	<b>CD</b>	<b>FCD</b>	<b>FDIS</b>	
		<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	
SC 32/WG 03 03.03.00.00.00	Cannan, Stephen [ 16663 / 09075	ISO/IEC 9075 : 1992 edition 3 / 90.93 ]				1992-11
Information Processing Systems - Database Language SQL 2 (to be withdrawn upon publication of 9075-1, 9075-2 and 9075-5, SQL3)						
SC 32/WG 03 03.03.01.00.00	Cannan, Stephen [ 24357 / 09075-03	ISO/IEC 9075-3 : 1995 / 90.92 ]				1995-12
Information Technology - Database Language SQL - Part 3: Call-Level Interface (for SQL2) (to be withdrawn upon publication of 9075-3, SQL3)						
SC 32/WG 03 03.03.01.01.00	*to be defined* [ 30673 / 09075	ISO/IEC 9075 : 1992/Cor 3 / 30.99 ]			1999-11	2000-08
Information technology- Database languages - SQL - Technical Corrigendum 3 (to be withdrawn upon publication of 9075-1, 9075-2 and 9075-5, SQL:1999)						
SC 32/WG 03 03.03.02.00.00	Cannan, Stephen [ 24358 / 09075-04	ISO/IEC 9075-4 : 1996 / 90.92 ]				1996-12
Information Technology - Database Language SQL - Part 4: Persistent Stored Modules (for SQL2) (to be withdrawn upon publication of 9075-4, SQL3)						
SC 32/WG 03 03.04.00.00.00	*to be defined* [ / 09075	ISO/IEC 9075 : 1999/Cor 1 / ]				2000-02
Information technology- Database languages - SQL - Technical Corrigendum 1 for SQL:1999						
					2000-02	2000-07

<b>SC/WG Project Project Title</b>	<b>Project Editor</b>	<b>ISO/IEC Design Document</b>	<b>Reference</b>			<b>IS</b>	
			<b>NP</b>	<b>CD</b>	<b>FCD</b>		<b>FDIS</b>
			<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>		<b>TARGET ACTUAL</b>
SC 32/WG 03 03.04.01.00.00 Information Technology - Database Language SQL - Part 1: Framework (for SQL:1999)	Melton, Jim [ 26196 / 09075-01	ISO/IEC 9075-1 / 40.20 ]			SC 32 N0222 1996-06 1997-09	1999-03 1999-03 1999-07 1999-08	
SC 32/WG 03 03.04.01.01.00 Information technology- Database languages SQL - Amendment 1: SQL/OLAP (for SQL:1999)	Melton, Jim [ / 09075-04	ISO/IEC WD 9075 : Amd 1 / ]			1999-11	2000-08 2000-12	
SC 32/WG 03 03.04.01.02.00 Information Technology - Database Language SQL - Part 3: Call-Level Interface (SQL/CLI) Technical Corrigendum 1 (to be withdrawn upon publication of 9075-3, SQL:1999)	Cannan, Stephen [ 31022 / 09075-03	ISO/IEC 9075-3 : 1995/Cor 1 / 60.00 ]					
SC 32/WG 03 03.04.01.03.00 Information Technology - Database Language SQL - Part 4: Persistent Stored Modules (SQL/PSM) Technical Corrigendum 1 (to be withdrawn upon publication of 9075-4, SQL:1999)	Cannan, Stephen [ 31023 / 09075-04	ISO/IEC 9075-4 : 1996/Cor 1 / 60.00 ]					
SC 32/WG 03 03.04.02.00.00 Information Technology - Database Language SQL - Part 2: Foundation (SQL:1999)	Melton, Jim [ 26197 / 09075-02	ISO/IEC 9075-2 / 40.20 ]			SC 32 N0223 1996-06 1997-09	1999-03 1999-03 1999-07	
SC 32/WG 03 03.04.03.00.00 Information Technology - Database Language SQL - Part 3: Call-Level Interface (for SQL:1999)	Melton, Jim [ 30609 / 09075-03	ISO/IEC FDIS 9075-3 / 40.20 ]			SC 32 N0176 1998-09 1998-08	1999-08 1999-05 1999-09	
SC 32/WG 03 03.04.04.00.00 Information Technology - Database Language SQL - Part 4: Persistent Stored Modules (for SQL:1999)	Melton, Jim [ 29864 / 09075-04	ISO/IEC 9075-4 / 40.20 ]			SC 32 N0224 1997-10 1997-10	1999-03 1999-03 1999-07 1999-08	
SC 32/WG 03 03.04.05.00.00 Information Technology - Database Language SQL - Part 5: Language Bindings (for SQL:1999)	Melton, Jim [ 26198 / 09075-05	ISO/IEC 9075-5 / 40.60 ]			SC 32 N0225 1996-06 1997-09	1999-03 1999-03 1999-07 1999-08	

<b>SC/WG Project Project Title</b>	<b>Project Editor</b>	<b>ISO/IEC Design Document</b>	<b>Reference</b>				
			<b>NP</b>	<b>CD</b>	<b>FCD</b>	<b>FDIS</b>	<b>IS</b>
			<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>
SC 32/WG 03 03.04.06.00.00 Information Technology - Database Language SQL - Part 6: XA Specialization (for SQL:1999) "Subdivision withdrawn subject to JTC1 endorsement"	Melton, Jim [ 26199 / 09075-06	ISO/IEC WD 9075-6 / 20.20 ]			SC 21 N9467 1999-10	2000-06	2000-10
SC 32/WG 03 03.04.07.00.00 Information Technology - Database Language SQL - Part 7: Temporal (for SQL:1999)	Melton, Jim [ 30611 / 09075-07	ISO/IEC AWI 9075-7 / 20.00 ]			2000-06	2001-01	2001-05
SC 32/WG 03 03.04.09.00.00 Information Technology - Database Language SQL - Part 9: Management of External Data	Melton, Jim [ 31370 / 09075-09	ISO/IEC CD 9075-9 / 20.00 ]			32N0197 1999-09	2000-07	2000-12
SC 32/WG 03 03.04.10.00.00 Information technology --Database Language SQL - Part 10: Object language bindings (for SQL:1999)	Melton, Jim [ 30613 / 09075-10	ISO/IEC FCD 9075-10 / 20.00 ]			32N0198 1998-10	2000-01	2000-08
SC 32/WG 03 32.03.05.01.00 Information Technology - Database Language SQL - Part 1: Framework (for SQL:200n)	Melton, Jim [ / 09075-01	ISO/IECAWI 9075-1 / ]		2001-10	2002-08	2003-08	2003-12
SC 32/WG 03 32.03.05.02.00 Information Technology - Database Language SQL - Part 2: Foundation (SQL:200n)	Melton, Jim [ / 09075-02	ISO/IEC AWI 9075-2 / ]		2001-10	2002-08	2003-08	2003-12
SC 32/WG 03 32.03.05.03.00 Information Technology - Database Language SQL - Part 3: Call-Level Interface (for SQL:200n)	Melton, Jim [ / 09075-03	ISO/IEC AWI 9075-3 / ]		2001-10	2002-08	2003-08	2003-12
SC 32/WG 03 32.03.05.04.00 Information Technology - Database Language SQL - Part 4: Persistent Stored Modules (for SQL:200n)	Melton, Jim [ / 09075-04	ISO/IEC AWI 9075-4 / ]		2001-10	2002-08	2003-08	2003-12

<b>SC/WG Project Project Title</b>	<b>Project Editor</b>	<b>ISO/IEC Design Document</b>	<b>Reference</b>			<b>IS</b>	
			<b>NP</b>	<b>CD</b>	<b>FCD</b>		<b>FDIS</b>
			<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>		<b>TARGET ACTUAL</b>
SC 32/WG 03 32.03.05.07.00 Information Technology - Database Language SQL - Part 7: Temporal (for SQL:200n)	Melton, Jim [ / 09075-07 ]	ISO/IEC AWI 9075-7 / ]		2001-10	2002-08	2003-08	2003-12
SC 32/WG 03 32.03.05.09.00 Information Technology - Database Language SQL - Part 9: Management of External Data (SQL:200n)	Melton, Jim [ / 09075-09 ]	ISO/IEC AWI 9075-9 / ]		2001-10	2002-08	2003-08	2003-12
SC 32/WG 03 32.03.05.10.00 Information technology --Database Language SQL - Part 10: Object language bindings (for SQL:200n)	Melton, Jim [ / 09075-10 ]	ISO/IEC AWI 9075-10 / ]		2001-10	2002-08	2003-08	2003-12
SC 32/WG 03 32.03.05.11.00 Information technology --Database Language SQL - Part 11: Schemata (for SQL:200n)	Melton, Jim [ / 09075-11 ]	ISO/IEC AWI 9075-11 / ]		2001-10	2002-08	2003-08	2003-12

#### **SC 32/WG 04 SQL Multimedia & Application Packages**

			<b>NP</b>	<b>CD</b>	<b>FCD</b>	<b>FDIS</b>	<b>IS</b>
SC 32/WG 04 64.01.00.00.00 Information Technology - SQL Multimedia and Application Packages - Part 1: Framework	Newton, Mike [ 21484 / 13249-01 ]	ISO/IEC FDIS 13249-1 / 40.20 ]			SC 32 N0188 1998-10 1998-10	1999-09	2000-01
SC 32/WG 04 64.02.00.00.00 Information Technology - SQL Multimedia and Application Packages - Part 2: Full -Text	Cotton, Paul [ 28053 / 13249-02 ]	ISO/IEC FDIS 13249-2 / 40.20 ]			SC 32 N0014 1996-08 1997-11	1999-09	1999-12
SC 32/WG 04 64.02.01.00.00 Information Technology - SQL Multimedia and Application Packages - Part 2: Full-Text (Revision of ISO/IEC DIS 13249-2) (Later Progression)	Cotton, Paul [ 31368 / 13249-02 ]	ISO/IEC AWI 13249-2 / 20.00 ]			2000-12	2001-12	2002-06

<b>SC/WG Project Project Title</b>	<b>Project Editor</b>	<b>ISO/IEC Design Document</b>		<b>Reference</b>		<b>IS</b>
		<b>NP</b>	<b>CD</b>	<b>FCD</b>	<b>FDIS</b>	
		<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	
SC 32/WG 04 64.03.00.00.00	Ashworth, Mark [ 28054 / 13249-03	ISO/IEC FDIS 13249-3 / 40.20 ]		SC 32 N0229		
Information Technology - SQL Multimedia and Application Packages - Part 3: Spatial			1996-08 1997-11	1996-08 1997-11	1998-09 1999-03	1999-09
SC 32/WG 04 64.03.01.00.00	Cotton, Paul [ 31369 / 13249-03	ISO/IEC WD 13249-3 / 20.00 ]				
Information Technology - SQL Multimedia and Application Packages - Part 3: Spatial (Revision of ISO/IEC DIS 13249-3) (Later Progression)				2000-12	2001-12	2002-06
SC 32/WG 04 64.05.00.00.00	Cotton, Paul [ 30617 / 13249-05	ISO/IEC FCD 13249-5 / 30.20 ]		SC 32 N0342		
Information Technology - SQL Multimedia and Application Packages - Part 5: Still Image			1997-07 1998-01	1999-06 1999-08	2000-03	2000-10

### **SC 32/WG 05 Database Access and Interchange**

		<b>ISO/IEC Design Document</b>		<b>Reference</b>		<b>IS</b>
		<b>NP</b>	<b>CD</b>	<b>FCD</b>	<b>FDIS</b>	
		<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	<b>TARGET ACTUAL</b>	
SC 32/WG 05 31.04.00.00.00	Hadjioannou, John [ 29799 / 09579	ISO/IEC FDIS 9579 edition 1 / 50.00 ]		SC 32 N0145		
Information Technology - Remote Database Access for SQL (Proceed as 9579, Ed. 1, new edition of RDA consolidating all parts. To be withdrawn upon publication of ISO/IEC 9579, Ed. 2)				1997-09 1997-09	1998-05 1998-06	1998-10
SC 32/WG 05 31.04.01.00.00	Hadjioannou, John [ 30688 / 09579	ISO/IEC 9579/Damd 1 / 40.60 ]		SC 32 N0339		
Information technology - Remote database access for SQL (RDA/SQL). Amendment 1. Secure RDA.			1998-05 1998-04	1998-05 1998-04	1999-06	1999-12
SC 32/WG 05 31.04.02.00.00	Hadjioannou, John [ 31373 / 09579	ISO/IEC 9579/AWI Amd 2 / 20.00 ]		32 N 0339		
Information Technology - Remote Database Access for SQL (RDA/SQL) - Amendment 2: Distribution Schema for RDA				1999-08	2000-06	2000-10
SC 32/WG 05 31.04.03.00.00	Hadjioannou, John [ 31372 / 09079	ISO/IEC 9579/AWI Amd 3 / 20.00 ]				
Information Technology - Remote Database Access for SQL (RDA/SQL) - Amendment 3: Encompassing Transaction (Subdivision subject to JTC 1 endorsement)				2000-02	2000-06	2000-10

<i>SC/WG Project Project Title</i>	<i>Project Editor</i>	<i>ISO/IEC Design Document</i>		<i>Reference</i>		<i>IS TARGET ACTUAL</i>
		<i>NP</i>	<i>CD</i>	<i>FCD</i>	<i>FDIS</i>	
		<i>TARGET ACTUAL</i>	<i>TARGET ACTUAL</i>	<i>TARGET ACTUAL</i>	<i>TARGET ACTUAL</i>	
SC 32/WG 05 31.05.00.00.00 Information technology - Remote database access for SQL (RDA/SQL) - Support for SQL 3	Hadjoannou, John [ 30615 / 09579	ISO/IEC CD 9579 edition 2 / 20.00 ]		1998-09	1999-10 1999-07	2000-06
SC 32/WG 05 31.05.01.00.00 Remote Database Access for SQL: XML Encoding	Hadjoannou, John [ 0 /	ISO/IEC CD 9579 ed 2 amd 1 / ]		2000-02	2000-10	2001-06
SC 32/WG 05 31.05.02.00.00 Remote Database Access for SQL: Extended Security	Hadjoannou, John [ 0 /	ISO/IEC CD 9579 ed 2 amd 2 / ]		2000-02	2000-10	2001-06
SC 32/WG 05 31.05.03.00.00 Remote Database Access for SQL: Support for SQL/MED	Hadjoannou, John [ 0 /	ISO/IEC CD 9579 ed 2 amd 3 / ]		2000-02	2000-10	2001-06

### 1.3 COOPERATION AND COMPETITION

A complete listing of SC 32 liaisons is listed in the following tables. SC 32 is continually reevaluating its liaisons and assessing areas of internal and external cooperation and competition. SC 32 has requested JTC 1 to remove the liaisons that have not expressed an interest in the work of SC 32.

#### Internal Liaison Membership

ISO/IEC or CEN Group	Organization
ISO/TC 12	Quantities, units, symbols, conversion factors
ISO/TC 23/SC 19	Tractors and Machinery for agriculture and forestry/Agricultural electronics
ISO/TC 37	Terminology (principles and coordination)
ISO/TC 37/SC 3	Terminology/Computer Applications
ISO/TC 46	Information and documentation
ISO/TC 46/WG 2	Information and documentation/Coding of country names and related entities
ISO/TC 46/SC 3	Information and documentation/ Terminology
ISO/TC 46/SC 4	Information and documentation/Computer applications
ISO/TC 68	Banking, securities and other financial services
ISO/TC 68/SC 2	Banking, securities and other financial services/ Security management
ISO/TC 154	Documents and data elements in administration, commerce and industry
ISO/TC 184	Industrial automation systems and integration
ISO/TC 184/SC 4	Industrial automation systems and integration/ Industrial data
ISO/TC 204	Transport Information and Control Systems

ISO/TC 211	Geographic information/Geomatics
ISO/TC 215	Healthcare Informatics
ISO/IEC JTC 1/SC 2	Coded character sets
ISO/IEC JTC 1/SC 6	Telecommunications and information exchange between systems
ISO/IEC JTC 1/SC 7	Software Engineering
ISO/IEC JTC 1/SC 7/WG 11	Software engineering/Life cycle management
ISO/IEC JTC 1/SC 22	
ISO/IEC JTC 1/SC 22/WG 20	Programming languages/Internationalization
ISO/IEC JTC 1/SC 22/JSG	Programming languages/Java Study Group
ISO/IEC JTC 1/SC 24	Computer Graphics and Image Processing
ISO/IEC JTC 1/SC 27	IT Security Techniques
ISO/IEC JTC 1/SC 29	Coding of audio, picture, multimedia and hypermedia information
ISO/IEC JTC 1/SC 31 Verified 990121	Automatic identification and data capture techniques
ISO/IEC JTC 1/SC 34	Document Description and Processing Languages
IEC 93	Design Automation
CEN/ISSS EC	Information Society Standardization System – Electronic Commerce XML-EDI
CEN/ISSS MM	Information Society Standardization System – Multimedia Metadata
CEN/TC 310 AMT	Advanced Manufacturing Technologies

### Category A Liaison Membership

Acronym	Organization
INTELSAT	International Telecommunications Satellite Organization
ISBT	International Society of Blood Transfusion
ITU-T	International Telecommunications Union – Telecommunication Standardization Sector
SITA	Societe Internationale de Telecommunications (Airline Telecommunications & Information Services)
UNCTAD	UN Conference on Trade and Development
UN/ECE/CEFACT	UN Economic Commission for Europe/CEFACT

### Category B Liaison Membership

Acronym	Organization
CEPT	European Conference of Postal and Telecommunications Administrations
CERN	European Organization for Nuclear Research
CISAC	Confederation internationale des societes d'auteurs et compositeurs
ECMA	European Computer Manufacturers Association
ESA	European Space Association
ETDE	Energy Technology Data Exchange

EWICS	European Workshop on Industrial Computer Systems
IFIP	International Federation for Information Processing
IPTC	International Press Telecommunications Council
SWIFT	Society for Worldwide Interbank Financial Telecommunication
UNESA	UN-Under-Secretary for Economic and Social Affairs
UPU	Universal Postal Union
WIPO	World Intellectual Property Organization
WMO	World Metrological Organization

### Category C Liaison Membership

Acronym	Organization
ExpertnetSA	ExpertnetSA MEDSEC (Health Care Security and Privacy in the Information Society)
IETF Security Group	
OMG	Object Management Group
Open Group	Open Group
OGC	Open GIS Consortium
ODB	Statistical Open Source Consortium for Output Databases (ODB)
W3C	World Wide Web Consortium

SC 32 is working with the MoU Management Group, UN/ECE/CFACT, and Intelsat, as well as other ISO groups involved in EDI, data representation and database activity. Cooperation exists with the World Wide Web Consortium (W3C), and CEN/TC 310 AMT.

Cooperation has been established with TC 211 on SQL/MM and Meta-data, JTC 1 SC 2 on coded character sets, SC 7 on Data Definition and Representation, SC 22 on Internationalization, SC 33.

## 2.0 PERIOD REVIEW

Excellent progress has been made in developing SQL, SQL MM, RDA, IRDS, and Data Representation, and Conceptual Schema standards, and we expect that progress to continue in the future. Open-Edi and Data Representation projects are also proceeding well. Most of the SQL-99 standards have progressed to international standard.

### 2.1 MARKET REQUIREMENTS

Market requirements for SC 32 standards are driven by the rapid pace of hardware and software advancement as well as by the explosive growth of Internet/Intranet/Extranet applications. These drive a stream of market requirements that are addressed by SC 32 standards for data management and interchange, including metadata management. The data management market continues to grow rapidly line with the geometric increase in the volume of data stored and served. Technologies such as XML provide some

competition to SC 32 standards, but also offer large opportunities to reach new markets by accommodating the new technologies or by taking a lead in collaborative development of the new technologies. SC 32 members are deeply involved in development of W3C XML recommendations (e.g., XML-Schema and XML-Query) and it would be desirable to position SC 32 as the appropriate JTC 1 committee for progressing these W3C recommendations to become ISO standards.

An SC 32 study period is an finding an increasing market demand for semantics management. This is needed for data in databases, EDI messages, text in documents (which may be stored in databases), etc. While there are several ISO standards for various terminology content and structure, there is little connection between those standards and their potential use for data management and interchange. SC 32 is exploring the market requirements for semantics management and the existing standards in order to articulate and then fill the unmet need.

Users are driving the market demand for metadata registries that describe the structure and meaning data. Major organizations are implementing metadata registries according to SC 32 standards and in the process are creating demand for extensions and broader coverage. This work is especially driven by the public access requirements of users and by market forces requiring the capability to share metadata between organizations.

Market demand for SQL database products is strong, with a clear market need for advanced SQL multimedia standards and products. The work of SC 32 in these areas is particularly importing in defining the standards that industry will implement to satisfy rapid growth in data content that must be captured, stored, managed, and accessed by an ever broadening range of users. The new SQL standard responds to market demands for broader capabilities and new data management techniques. The marketplace for database access and interchange technologies continue to evolve with the Internet providing new demand for sharing data among heterogeneous systems.

Market demand of EDI and electronic commerce products grows as firms struggle to move into the electronic marketplace. Standards for EDI functions are necessary to facilitate this demand. The SC 32 work related to Open edi work and metadata registries is supporting JTC 1 involvement with the ISO IEC UN/ECE MoU Management Group.

## 2.2 ACHIEVEMENTS

The following projects have completed or are in Stage 5 – Publication

58.03.00.00.00	Information Technology - Data Management Export/Import Facilities - Part 3: Export/Import Facilities for IRDS (Final Text - SC 32 N 174)
[ISO-id 21473 ]	ISO/IEC 13238-3: 1998
06.02.04.00.00	Information Technology - Information Resource Dictionary System (IRDS) Service Interface - Amendment 4: Remote Procedure Call

## IDL Binding

[ISO-id 28052 ]	ISO/IEC 10728 :1993/Amd 4:1998
14.04.01.00.00	Information Technology - Structure for the identification of organizations and organization parts - Part 1: Identification of organization schemes
[ISO-id 25773 ]	ISO/IEC 6523-1: 1998
14.04.02.00.00	Information Technology - Structure for the identification of organizations and organization parts - Part 2: Registration of organization identification schemes
[ISO-id 25774 ]	ISO/IEC 6523-2: 1998
03.04.01.00.00	Information Technology - Database Language SQL - Part 1: Framework (for SQL3)
[ISO-id 26196 ]	ISO/IEC 9075-1
03.04.02.00.00	Information Technology - Database Language SQL - Part 2: Foundation (SQL 3)
[ISO-id 26197 ]	ISO/IEC 9075-2
03.04.04.00.00	Information Technology - Database Language SQL - Part 4: Persistent Stored Modules (for SQL 3)
[ISO-id 29864 ]	ISO/IEC 9075-4
03.04.05.00.00	Information Technology - Database Language SQL - Part 5: Language Bindings (for SQL 3)
[ISO-id 26198 ]	ISO/IEC 9075-5

The following projects are completing Stage 4 – Approval Stage by being submitted to ITTF for final vote.

14.17.01.00.00	Information technology - Specification and standardization of data elements - Part 1: Framework for the specification and standardization of data elements
[ISO-id 2349 ]	ISO/IEC FDIS 11179-1
14.17.02.00.00	Information Technology - Specification and standardization of data elements - Part 2: Classification for data elements
[ISO-id 2317 ]	ISO/IEC FDIS 11179-2
14.09.00.00.00	Information technology - Specification of Data Value Domain
[ISO-id 27695 ]	ISO/IEC DTR 15452

31.05.00.00.00	Information Technology – Remote database access for SQL (RDA/SQL) – Support for SQL-3
[ISO-id 30615 ]	ISO/IEC FDIS 9579 edition 2
64.02.00.00.00	Information Technology - SQL Multimedia and Application Packages - Part 2: Full -Text
[ISO-id 28053 ]	ISO/IEC FDIS 13249-2
64.03.00.00.00	Information Technology - SQL Multimedia and Application Packages - Part 3: Spatial
[ISO-id 28054 ]	ISO/IEC FDIS 13249-3

The following project completed Stage 3 – Committee Stage with FCD ballot

03.04.10.00.00	Information technology --Database Language SQL - Part 10: Object language bindings
[ISO-id 30613 ]	ISO/IEC CD 9075-10

The following project progressing Stage 3 – Committee Stage with FCD ballot

64.05.00.00.00	Information technology –SQL Multimedia and Application Packages – Part 5: Still Image
[ISO-id 30617 ]	ISO/IEC FCD 13249-5

The following project is progressing in Stage 3 – Committee Stage

03.04.09.00.00	Information Technology - Database Language SQL - Part 9: Management of External Data (Subdivision subject to JTC 1 endorsement)
[ISO-id 31370 ]	ISO/IEC CD 9075-9

## 2.3 RESOURCES

Adequate resources are available for all projects. Conveners are in place for all WGs although the Convener for WG 2 will change. The SC Secretariat is the Pacific Northwest National Laboratory who operates SC 32 on behalf of ANSI. The committee chairman, Mr. Bruce Bargmeyer is in mid-term.

### **3.0 FOCUS NEXT WORK PERIOD**

SC 32 has refined its program of work to ensure that it is focusing on those standards that will meet market requirements. SC 32 plans to continue to focus on developing standards for SQL, SQL/MM, Open edi and data semantics. SQL work is expected to be particularly active. During the next period, four parts of ISO/IEC 9075 (SQL 3) are expected to be completed through the IS stage with publication, another part of ISO/IEC 9075 will progress to FCD and significant progress on other parts is also expected. In addition a new project for another part of 9075 is anticipated to be initiated. The metadata registry market is becoming active with implementations of ISO/IEC 11179. The January 2000 SC 32/WG 2 meeting will include an Open Forum on Metadata Registries to describe the current ISO/IEC 11179 standards and implementations while gathering information and requirements for the study period.

#### **3.1 DELIVERABLES:**

See section 1.2 for those projects with upcoming target dates.

#### **3.2 STRATEGIES:**

SC 32 will focus on progressing its program of work as quickly and efficiently as possible. It is important that the committee keep its focus on meeting market requirements, and emphasize new projects that have well-defined, concrete objectives that are market driven.

##### **3.2.1 RISKS**

SC 32 is the result of JTC 1 creating a new Technical Direction on Data Management and Interchange, and is a combination of three committees with different traditions, work programs and personalities. Each of these three groups had their own priorities, and different strategies for achieving their objectives. During the first two meetings, SC 32 successfully formulated a new working structure, scope and title. Considerable progress was made in identifying and establishing critical inter- and intra-group understanding and liaisons. While the first priority of the participants was to progress the standards proposals that came into the re-engineered SC 32, some attention is now turning to developing new standards that cut across the original organizational lines. Considerable effort is being given to avoid isolated work within the WGs. Each subcommittee gave a tutorial on its work to the full committee at the last SC 32 meeting. It was agreed to set aside a period of time at the future meetings for each working group to provide tutorials on their activities for the other working groups.

There is always the risk that new project could be initiated that do not have clear objectives and concrete specifications. If this occurs, SC 32 will dilute its focus and create incentive to produce important standards outside of SC 32 and JTC 1.

If SC 32 does not pursue its work aggressively, risks exist that essential capabilities will not be available in the marketplace to support important functions, or that the marketplace will produce multiple incompatible solutions in areas that common approaches and interoperability are essential to users.

### **3.2.2 OPPORTUNITIES**

The Internet, electronic commerce, semantics management, object technologies, and XML represent major areas of opportunity where market forces are creating demand for SC 32 standards. We will continue to work with the others involved to identify the specific standardization needs and to respond with current and newly proposed standards.

### **3.3 WORK PROGRAMME PRIORITIES**

In order to specify precisely data semantics, users need many aspects of data or information. As various aspects of data are provided, users can narrow down the semantics or meaning of the data gradually. That naturally leads to standardization, which covers a very wide range of information processing. High priority, therefore, should be given to the standardization of integrated information processing environment. The committee has established a priority of educating each working group of the work and ideas of the other work groups. The Brisbane and Matsue meetings have shown that there is considerable interest in the synergy that can be developed within the committee. The next SC 32 meeting will include tutorials from each work group.