

5 May 1998

## **BUSINESS PLAN FOR JTC 1/SC 32, DATA MANAGEMENT SERVICES**

**PERIOD COVERED:** September 1997 to July 1998

**SUBMITTED BY:** Joel Urman, acting chairman JTC 1/SC 32

### **1. MANAGEMENT SUMMARY**

SC 32 was formed in September 1997 at the JTC 1 Plenary in Ottawa, Canada. SC 32 is composed of what had been SC 14 -- Data Engineering, SC 30 – Open EDI and SC 21/ WG 3 – Database. These three groups formed a single subcommittee under the technical direction, Data Management Services.

#### **1.1 JTC 1/SC 32 STATEMENT OF SCOPE**

When JTC 1 established SC 32, it gave the subcommittee the title of "Data Management Services" and the defined its draft scope to include the scopes for SCs 14 and 30, and SC 21/WG 3 as follows:

*Enabling technologies for use in all information systems environments (both local and distributed) covering:*

*Data Management Services for the Definition of data structures and semantics for a complete range of data types, together with services for storage, access and update of such data and meta-data.*

*Specification of data content and semantics of messages used in electronic commerce.*

#### JTC 1/SC 14

*Title: Data Engineering*

*Area of Work: To develop standards for the specification of the semantic content of data and representation independent of interfaces of information systems and organizations. SC 14's work programme shall include projects relating to structure, organization, registration, interoperability, sharability and portability of data and meta-data.*

#### JTC 1/SC 30

*Title: Open edi*

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

*Included in the standardization work are:*

- *Development of a framework for the co-ordination of the integration of existing and emerging standards and for the identification of future standards;*
- *Liaison, on behalf of ISO/IEC JTC 1, with other groups working on EDI within and outside ISO and IEC.*

JTC 1/SC 21/WG 3

*Title: Database*

*Terms of Reference:*

*Development and maintenance of a reference model for database organization*

*Development of standards for Database Management Systems (DMS), including Information Resource Dictionary System (IRDS)*

*Data and schema definition and manipulation languages*

*Data storage definition languages*

*User interfaces, including query languages and programming language bindings*

*Distributed database and information resource dictionary systems*

*Standardization of services and protocols for OSI Distributed Transaction Processing*

At its February 1998 meeting, SC 32 asked JTC 1 to approve a new title and scope, which is currently out for JTC 1 approval:

Proposed Title: Data Management and Interchange

Proposed Scope:

*The scope of ISO/IEC JTC 1/SC 32 is: 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 meta-data and other information resources associated with sharing and interoperability, including electronic commerce.*

## **1.2 PROJECT REPORT**

- 03.03.00.00.00 Information Processing Systems – Database Language SQL 2  
ISO/IEC 9075: 1992  
*This project will be withdrawn upon publication of SQL3 (9075-1, 9075-2 and 9075-5)*
- 03.03.01.00.00 Information Technology – Database Language SQL Part 3:  
Call-level Interface (for SQL 2)  
ISO/IEC 9075-3: 1995  
*This project will be withdrawn upon publication of SQL 3 (9075-3)*
- 03.03.02.00.00 Information Technology – Database Language SQL – Part 4: Persistent Stored  
Modules (for SQL 2)  
ISO/IEC 9075-4: 1996  
*This project will be withdrawn upon publication of SQL 3 (9075-4)*
- 03.04.01.00.00 Information Technology – Database Language SQL – Part 1: SQL Framework  
ISO/IEC FCD 9075-1  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*
- 03.04.02.00.00 Information Technology – Database Language SQL – Part 2: Foundation (SQL/Foundation)  
ISO/IEC FCD 9075-2  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*
- 03.04.03.00.00 Information Technology – Database Language SQL – Part 3: Call Level Interface (SQL/CLI)  
ISO/IEC WD 9075-3  
*Target dates:*  
*CD 98.10*  
*DIS 99.06*  
*IS 99.12*
- 03.04.04.00.00 Information Technology – Database Language SQL – Part 4: Persistent Stored Modules  
(SQL/PSM)  
ISO/IEC FCD 9075-4  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*
- 03.04.05.00.00 Information Technology – Database Language SQL – Part 5: Language Bindings (SQL/Bindings)  
ISO/IEC FCD 9075-5  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*
- 03.04.06.00.00 Information Technology – Database Language SQL – Part 6: XA Specialization  
(SQL/Transaction)  
ISO/IEC WD 9075-6  
*Target dates:*  
*CD 98.10*  
*DIS 99.09*  
*IS 00.01*
- 03.04.07.00.00 Information Technology – Database Language SQL – Part 7: Temporal  
(SQL/Temporal)

ISO/IEC WD 9075-7

*Target dates:*

*CD 99.01*

*DIS 99.12*

*IS 00.09*

03.04.10.00.00 Information Technology – Database Language SQL – Part 10: Object Language Bindings (SQL/OLB)

ISO/IEC NP 9075-10

*Target dates:*

*WD 98.07*

*CD 99.01*

*DIS 99.08*

*IS 99.12*

06.02.04.00.00 Information Technology – Information Resource Dictionary System (IRDS) Service Interface – Amendment 4: -Remote Procedure Call IDL Binding

ISO/IEC 10728: 1993/DAM 4

*Target dates:*

*DIS 98.02*

*IS 98.07*

06.06.00.00.00 Information Technology – IRDS Content Module – Design Support for SQL Applications

*Target dates:*

*DIS 99.07*

*IS 00.02*

06.07.00.00.00 Information Technology – Extensions to IRDS Services Interface

ISO/IEC WD 10728

*Target dates:*

*CD 98.06*

*DIS 99.07*

*IS 00.02*

06.08.00.00.00 Information Technology – Revision of the IRDS Framework

ISO/IEC WD 10027

*Target dates:*

*CD 97.09*

*DIS 99.09*

*IS 00.02*

06.09.00.00.00 Information Technology – Guidelines for the Design of IRDS Content Modules

ISO/IEC DIS 13645.2

*Target date:*

*IS 98.07*

06.09.01.00.00 IRDS Content Module to Support a Naming and Thesaurus Facility

ISO/IEC FCD 13237.2

*Target dates*

*DIS 97.07*

*IS 99.12*

14.09.00.00.00 Information Technology – Specification of Data Value Domain

ISO/IEC CD 15452

- 14.17.01.00.00 Information Technology – Specification and Standardization of Data Elements – Part 1: Framework for the Generation and Standardization of Data Elements  
*Target dates:*  
*DIS 97.08*  
*IS 98.02*
- 14.17.02.00.00 ISO/IEC 11179-2, Information technology - Specification and standardization of data elements -  
-  
Part 2: Classification of Concepts for the Identification of Domains.  
*Target date: CD ballot closed 1997-07-25*  
*FCD 1997-09*  
*DIS 1998-03*  
*IS 1998-05*
- 14.17.03.00.00 ISO/IEC 11179-3:1994, Information technology - Specification and standardization of data elements - Part 3: Basic attributes of data elements.
- 14.17.05.00.00 ISO/IEC 11179-4:1995, Information technology - Specification and standardization of data elements - Part 4: Rules and guidelines for the formulation of data definitions.
- 14.17.06.00.00 ISO/IEC 11179-5:1995, Information technology - Specification and standardization of data elements - Part 5: Naming and identification principles for data elements.
- 14.17.07.00.00 ISO/IEC 11179-6:1997, Information technology - Specification and standardization of data elements - Part 6: Registration of data elements.
- 14.?? Proposal for a New Work Item on Information Technology - Specification of Data Element Concepts  
*Approved for SC 14 Work Program.*
- 14.?? Proposal for a New Work Item on Information technology - Specification of Data Value Domain  
*Approved for SC 14 Work Program.*
- 30.02.00.00.00 Information Technology – Business Agreement Semantic Descriptive Techniques  
ISO/IEC NP 15944
- 30.03.00.00.00 Edi Support Services
- 30.04.00.00.00 Open-Edi Reference Model Standard  
ISO/IEC 14662:1997
- 31.01.00.00.00 Information Technology – Remote Database Access – Part 1: Generic Model, Service and Protocol  
*To be withdrawn upon publication of ISO/IEC 9579*
- 31.01.02.00.00 Information Technology – Remote Database Access – Part 1: Generic Model, Service and Market Requirements  
*(Proposed for cancellation to JTC 1)*
- 31.02.01.00.00 Information Technology – Remote Database Access – Part 2: SQL Specialization 2<sup>nd</sup> Edition  
*Final text previously balloted as 9579-2/DAM 1.*  
*To be withdrawn upon publication of ISO/IEC 9579.*
- 31.03.00.00.00 Information Technology – Remote Database Access – Part 3: SQL Protocol Implementation Conformance Statement Proforma

*To be withdrawn upon publication of ISO/IEC 9579.*

- 31.03.01.00.00 Information Technology – Remote Database Access – Part 3: SQL Protocol Implementation Conformance Statement Proforma – Amendment 1: Support for SQL 92  
*(Proposed for cancellation to JTC 1)*
- 31.03.02.00.00 Information Technology – Remote Database Access – Part 3: Protocol Implementation Conformance Statement Proforma – Amendment 2: Extensions to Support New Market Requirements.  
*(Proposed for cancellation to JTC 1)*
- 31.04.00.00.00 Information Technology – Remote Database Access for SQL  
ISO/IEC FCD 9579  
*Proceed as 9579, Ed 1, new edition of RDA consolidating all parts. To be withdrawn upon publication of 9579, Ed 2.*
- 31.04.01.00.00 Information Technology – Remote Database Access for SQL (RDA/SQL). Amendment 1, Secure RDA (subdivision of a project awaiting JTC 1 approval)  
ISO/IEC 9579: 199X/NP 1  
*Target dates:*  
*DIS 98.10*  
*IS 99.03*
- 31.05.00.00.00 Information Technology – Remote Database Access for SQL – Support for SQL 3  
ISO/IEC NP 9579  
*Target dates:*  
*WD 98.04*  
*CD 98.10*  
*DIS 99.04*  
*IS 99.09*
- 58.01.00.00.00 Information Technology – Data Management Export/Import Facilities – Part 1: Standardization Framework  
ISO/IEC CD 13238-1  
*Target dates:*  
*DIS 99.09*  
*IS 00.02*
- 58.02.00.00.00 Information Technology – Data Management Export/Import Facilities – Part 2: SQL Export Import  
ISO/IEC CD 13238-2  
*Target dates:*  
*DIS 99.09*  
*IS 00.02*
- 58.03.00.00.00 Information Technology – Data Management Export/Import Facilities – Part 3: Export/Import Facilities for IRDS  
ISO/IEC DIS 13238-3.2  
*Target date: IS 98.07*
- 63.00.00.00.00 Information Technology – Conceptual Schema Modeling Facilities  
ISO/IEC CD 14481  
*Target dates:*  
*DIS 98.12*  
*IS 99.07*

- 64.01.00.00.00 Information Technology – SQL Multimedia and Application Packages – Part 1: Framework  
ISO/IEC WD 13249-1  
*Target dates:*  
*CD 98.07*  
*DIS 99.02*  
*IS 99.07*
- 64.02.00.00.00 Information Technology – SQL Multimedia and Application Packages – Part 2: Full Text  
ISO/IEC FCD 13249-2  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*
- 64.03.00.00.00 Information Technology – SQL Multimedia and Application Packages – Part 3: Spatial  
ISO/IEC FCD 13249-3  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*
- 64.04.00.00.00 Information Technology – SQL Multimedia and Application Packages – Part 4: General Purpose  
Facilities  
ISO/IEC CD 13249-4  
*Target dates:*  
*DIS 99.07*  
*IS 99.12*
- 64.05.00.00.00 Information Technology – SQL Multimedia and Application Packages – Part 5: Still Image  
ISO/IEC CD 13249-5  
*Target dates:*  
*DIS 99.07*  
*IS 99.12*

### **1.3 COOPERATION AND COMPETITION**

A complete listing of SC 32 liaisons is contained in the SC 32 Secretariat Report. SC 32 is currently reevaluating its liaisons and assessing areas of internal and external cooperation and competition.

SC 32 is working with the UN/ECE/CFAC 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.

SC 32 was represented at the Memorandum of Understanding Coordinating Committee, and the Workshop on Guidelines for Accessing Data and Meta-data Represented in SGML from Databases, Knowledge Bases and Search Tools.

## **2.0 PERIODIC REVIEW**

Excellent progress has been made in developing SQL, SQL MM, RDA and IRDS standards, and we expect that progress to continue in the future. Open-Edi and Data Representation projects are also proceeding well. The IRDS Export/Import Standard will be ready for publication shortly.

### **2.1 MARKET REQUIREMENTS**

With the advent of the internet, electronic information interchange, and other global computing facilities, the interconnection and data interchange problems have been addressed and, to a certain extent, resolved. The semantic content and the representation of data, however, have not been adequately addressed to facilitate the transformation of interchanged data into intelligible and useful information.

Implementation of many meta-data registries based upon ISO/IEC 11179 is providing requirements for current projects and anticipated projects to extend the support facilities. This work provides a capability to facilitate cross-sector meta-data sharing.

Frustrating progress in many search standardization efforts is the lack of a process for handling multiple overlapping semantic domains. Such domains range from low-level programming constructs, through structured meta-data elements, and into linguistic regimes such as thesauri and semantic networks. There have been many efforts over the years to address these problems, and efforts are ongoing still. The IRDS Naming and Thesaurus project provides a standard meta-data repository structure for naming objects and recording, the structure of their names.

Although the current state of understanding and technology may not be adequate to address all of these problem areas, it should be possible to improve the situation within a sufficiently constrained problem space such as Global Information Locator Service (GILS). The GILS semantic problem is focused specifically on the search service interface at the server side of a client/server interface. The relevant semantic domains are only those that are commonly used in locating information resources, which is a tiny subset of the full array of possible resource characteristics. Thus, a key goal of SC 32 should be to provide interoperability for tools that manipulate meta-data and repositories.

Market demand for SQL database products remains strong, with a clear market need for advanced SQL multimedia standards and products. The work of SC 32 in these areas are particularly important in defining the standards that industry will implement to satisfy the strong market demand.

Market demand of EDI products remains strong, and standards for EDI functions are necessary to facilitate this demand. The SC 32 work related to Open edi work is an integral part of the international EDI standardization activity.

### **2.2 ACHIEVEMENTS**

Completion of Parts 1 and 2 of ISO/IEC 11179 is near



14.17.01.00.00 ISO/IEC 11179-1, Information technology - Specification and standardization of data elements  
-  
Part 1: Framework for the Specification and Standardization of Data Elements  
*Project editor: Mr. Daniel W. Gillman*  
*Target date:*  
*FCD 07.98*

14.17.02.00.00 ISO/IEC 11179-2, Information technology - Specification and standardization of data elements  
-  
Part 2: Classification of Concepts for the Identification of Domains.  
*Project editor: Mr. Bruce Bargmeyer*  
*Target date: CD ballot closed 1997-07-25*  
*FCD 1997-09*  
*DIS 1998-03*  
*IS 1998-05*

Completion of Part 3 of ISO/IEC 13238 is near:

58.03.00.00.00 Information Technology – Data Management Export/Import Facilities – Part 3: Export/Import  
Facilities for IRDS  
ISO/IEC DIS 13238-3.2  
*Target date: IS 98.07*

The following four projects completed FCD balloting:

03.04.01.00.00 Information Technology – Database Language SQL – Part 1: SQL Framework  
ISO/IEC FCD 9075-1  
*Project editor: Mr. Jim Melton*  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*

03.04.02.00.00 Information Technology – Database Language SQL – Part 2: Foundation (SQL/Foundation)  
ISO/IEC FCD 9075-2  
*Project editor: Mr. Jim Melton*  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*

03.04.04.00.00 Information Technology – Database Language SQL – Part 4: Persistent Stored Modules  
(SQL/PSM)  
ISO/IEC FCD 9075-4  
*Project editor: Mr. Jim Melton*  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*

03.04.05.00.00 Information Technology – Database Language SQL – Part 5: Language Bindings (SQL/Bindings)  
ISO/IEC FCD 9075-5  
*Project editor: Mr. Jim Melton*  
*Target dates:*  
*DIS 98.09*  
*IS 98.12*

## **2.3 RESOURCES**

Adequate resources are available for all projects. We are confident that conveners will come forward for each of the newly formed WGs. A candidate to be the SC Secretariat has been identified, the necessary paperwork and authorizations currently in process but have not yet been completed. The committee is waiting for a permanent chairman to come forward. If a secretariat and convener are not found, JTC 1 will have to decide what to do with SC 32 and its projects.

## **3.0 FOCUS ON 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/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, another part of ISO/IEC 9075 will initiate 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.

## **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 Services, 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. A risk exists that this new group will not be able to work effectively together, and thus will not be effective in advancing the SC 32 program of work. The first meeting for SC 32 in February 1998, however, was able to make considerable progress in creating a new working structure, scope and title, as well as identify and begin establishing critical liaisons. At the February meeting, the group worked cooperatively, and was able to satisfy all the constituent interests.

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, a risk exists that consortia and other groups could come forward to develop standards to meet the market demands.

### **3.2.1 OPPORTUNITIES**

The new Technical Direction has the opportunity to utilize the resources of its three constituent bodies to develop standards and advance its program of work more effectively that they could have by working independently. One area where SC 32 standards could have a major impact is electronic commerce. SC 32 looks forward to the JTC 1 Business Team on Electronic Commerce report to better understand which SC 32 standards meet identified e-commerce requirements, and where additional work within the scope of SC 32 may be needed.

### **3.3 WORK PROGRAM 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, such as ERP, SQL/MM and the Open edi projects. A key step will be the standardization of meta-data management and repository facilities to support these areas, and the development of a strategy for integrating the data and process models from the wide range of resources.