

ISO/IEC JTC 1/SC 32 N 0547

Date: 2000-10-18

REPLACES: --

<p>ISO/IEC JTC 1/SC 32</p> <p>Data Management and Interchange</p> <p>Secretariat: United States of America (ANSI)</p> <p>Administered by Pacific Northwest National Laboratory on behalf of ANSI</p>
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*Pacific Northwest National Laboratory (PNL) administers the ISO/IEC JTC 1/SC 32 Secretariat on behalf of ANSI

JTC 1/SC 32 Plenary Resolutions,
2000-10-13,
Helsinki, Finland

Resolution 1: SC 32 Programme of Work and Project Editor Assignments

SC 32 approves the Programme of Work, Target Dates and Project Editor Assignments contained in SC 32 N **0544**.

Voted and Accepted

Unanimous

Resolution 2: SC 32 Internal Liaison Assignments

SC 32 approves the liaison assignments contained in SC 32 N **0545**.

Voted and Accepted

Unanimous

Resolution 3: SC 32 External Liaison Assignments

SC 32 approves the liaison assignments contained in SC 32 N **0546**.

Voted and Accepted

Unanimous

Resolution 4: SC 32 Approval of "C" Liaisons

Upon receipt of texts, SC 32 requests its Secretariat to forward these Expected Benefits and Responsibilities documents to JTC 1 for approval.

Liaison Organization	WG	SC 32/WG Person	Topics and Notes	Doc #

Voted and Accepted

Unanimous

Resolution 5: SC 32 Meeting Calendar

SC 32 approves the following Meeting Calendar and expresses its appreciation to the National Bodies that have volunteered to host future meetings. Working Groups may schedule their own interim meetings but must advise the SC 32 Secretariat of these meetings

From	To	Meeting/Purpose	Location
2001-10- 15	2001-10- 26	SC32 Plenary and WG Meetings	Victoria, BC, Canada (host in process of confirming)
2002-05		SC32 Plenary and WG Meetings	Seoul, Korea
2003		SC32 Plenary and WG Meetings	United States
2004		SC32 Plenary and WG Meetings	Germany

Voted and Accepted

Unanimous

Resolution 6: SC 32 Project Subdivisions

SC 32 approves the following subdivisions and minor enhancements to existing work:

Project Number	Title	Project Editor	Rationale Doc #
1.32.16.01.02.00	As for 1.32.16.01.00.00, replacing "Data Elements" with "XML Data Elements"	Bruce Bargmeyer	Note (1)
1.32.16.01.03.00	As for 1.32.16.01.00.00, replacing "Data Elements" with "Value Domains"	Dan Gillman	Note (2)
1.32.03.05.13.00	Routines and Types Using the Java™ Programming Language (SQL/JRT)"	Jim Melton	32N0509 Note (3)
1.32.03.05.14.00	XML- Related Specifications (SQL/XML)	Jim Melton	32N0536 Note (4)
1.32.04.02.05.00	Information technology - SQL Multimedia and Application Packages - Part 5: Still Image 2 nd ed	Mark Ashworth	Note (5)

Rationale Summary:

Note (1) To cover XML work identified in joint meeting on XML.

Note (2) To fill gap on value domains in the existing document.

Note (3) The great popularity of Java as a programming language for many environments, not the least of which are the Internet and the World-Wide Web, ensured that techniques would be developed for using SQL as the principle data sublanguage used in Java programs. In fact, a number of such techniques have emerged, one of which (embedding SQL statements in Java programs) has been standardized in [OLB].

There are tremendous benefits to be had by using ("re-using" may be even more appropriate) Java code, originally developed for use outside the database environment, in the database context — for example, invoking Java routines from SQL statements to guarantee identical semantics with routines invoked from Java code. There are possibly greater benefits available from the use of Java classes as the data types of columns in SQL tables; seamless exchange of data between the database and external environments can completely eliminate the famous "impedance mismatch" that plagues application developers who require tight integration of their database systems and their application

programs. See referenced document.

Note (4) In recent years, the success of the World-Wide Web has led to requirements for better management of data that does not lend itself as well to relational structures and operations than SQL has traditionally offered. [XML] has become one of the most important new technologies for representing much data on the Web. The World-Wide Web Consortium (W3C) has established formal processes for developing Recommendations — *de facto* standards — based on XML and related technologies. [XML-schema/primer], [XML-schema/struct], and [XML-schema/types] are the most recent public W3C documents directed at defining XML language with strong data typing. [XML-QDM] and [XML-QR] are the most recent public W3C documents associated with the work in progress to develop an XML query capability. In short, XML represents nothing short of a paradigm shift in data communications and management; like every paradigm shift, this one has the potential to greatly enhance the businesses that depend on data management and communications, as well as the ability to marginalize existing business segments and open new opportunities for new players.

One of the most intriguing and urgent requirements to arise from the appearance of XML is a well-defined relationship between XML and SQL. Vast quantities of business data are currently stored in SQL database systems and great demand exists for the ability to present that data in XML form to various client applications. By contrast, increasing amounts of less-traditional data (“documents”) are being produced in XML formats and there is tremendous pressure to allow that data to be queried concurrently with traditional (“object-relational”) data. In addition, the growing need to allow disparate systems to exchange data has caused significant attention to be paid to the use of XML as a “canonical data format” between such systems (e.g., on the Web).

In short, business, industry, and society will find ways to use XML and SQL together. Standards in this area will eventually emerge, but a focussed effort to develop such standards will have significant benefits for all parties involved. The W3C is appropriately focussing on XML-centered standards, including a Schema facility and a Query facility. It is correspondingly appropriate for the SQL standards world to address the relationship between XML and SQL, preferably in cooperation with the W3C and not in competition with it. See referenced document.

Note (5): Rationale for a continuation project of Part 5 Still Image:

A continuation project for Still Image is required to:

- 1) Add extensions taking advantage of the newly introduced features of ISO/IEC 9075 such as datalinks.
- 2) Add functionality currently not included in Part 5, e.g. scaling and rotating.
- 3) Add additional search capabilities.

SC 32 instructs its Secretariat to forward these subdivisions to JTC 1 for endorsement upon receipt of the rationale texts.

Voted and Accepted

Unanimous

Resolution 7: SC 32 Project Withdrawals

SC 32 approves the following withdrawals from existing work:

Project Number	Title	Rationale Doc #
1.32.58.01.02.00	SQL Export/Import	Note (1)
1.32.13.01.00.00	Conceptual Schema Modelling Facilities	SC32N0589
1.32.42.01.00.00	Guidelines for the Design of IRDS Content Modules	SC32N0590

Rationale Summary:

Note (1) The editor of project 21.58.2 T.W.Olle (UK), has resigned, no replacement has come forward, and no other SC32 groups has expressed interest in the continuation of the project.

SC 32 instructs its Secretariat to forward these withdrawals to JTC 1 for endorsement upon receipt of texts.

Voted and Accepted

Unanimous

Resolution 8: SC 32 New Projects

SC 32 approves the following proposals for new work:

NONE

Title	NWI Doc #

SC 32 instructs its Secretariat to forward these proposals to JTC 1 for endorsement upon receipt of texts.

Resolution 9: Study Periods

SC 32 instructs its Secretariat to submit, upon receipt of texts, the following Proposals for Study Period to JTC 1:

NONE

Title	Study Period Doc #

Resolution 10: Standards Due for Periodic Review

SC 32 approves the following:

NONE

Title	Recommendation

Title	Recommendation

SC 32 instructs its Secretariat to inform the ITTF of the above recommendations.

Resolution 11: Committee Draft (CD) Ballots (CD, PDAM, PDISP, PDTR)

Upon receipt of texts, SC 32 instructs its Secretariat to register as CDs, PDAMs, PDISPs, PDTRs and issue letter ballots on the following projects:

Project Number	CD	Title	Date Expected
1.32.03.05.01.00	ISO/IEC CD 9075-1	Framework (SQL/Framework)	2000-12-01
1.32.03.05.02.00	ISO/IEC CD 9075-2	Foundation (SQL/Foundation)	2000-12-01
1.32.03.05.03.00	ISO/IEC CD 9075-3	Call Level Interface (SQL/CLI)	2000-12-01
1.32.03.05.04.00	ISO/IEC CD 9075-4	Persistent Stored Modules (SQL/PSM)	2000-12-01
1.32.03.05.09.00	ISO/IEC CD 9075-9	Management of External Data (SQL/MED)	2000-12-01
1.32.03.05.10.00	ISO/IEC CD 9075-10	Object Language Bindings (SQL/OLB)	2000-12-01
1.32.03.05.11.00	ISO/IEC CD 9075-11	Schemata (SQL/Schemata)	2000-12-01
1.32.04.01.06.00	CD 13249-6	Information technology - SQL Multimedia and Application Packages - Part 6: Data Mining	2000-12
1.32.04.02.02.00	CD 13249-2	Information technology - SQL Multimedia and Application Packages - Part 2: Full-Text 2 nd ed	2001-06
1.32.04.02.03.00	CD 13249-3	Information technology - SQL Multimedia and Application Packages - Part 3: Spatial 2 nd ed	2001-06
1.32.04.02.05.00	CD 13249-5	Information technology - SQL Multimedia and Application Packages - Part 5: Still Image 2 nd ed	2001-06
1.32.05.03.00.01	CD 9579 Am 1	RDA for SQL, XML encoding, Amendment 1 to Edition 3	2001-07

Voted and Accepted

Unanimous

Resolution12: Final Committee Draft (FCD) Ballots

Upon receipt of texts, SC 32 instructs its Secretariat to register as FCDs and issue letter ballots on the following projects:

Project Number	FCD	Title	Date Expected
1.32.31.01.01.00	CD 15944-1	Information Technology – Business Agreement Semantic Descriptive Techniques Part 1: Business Operational Aspects of Open-edi for Implementation	2000-12-01
1.32.03.05.13.00	ISO/IEC FCD 9075-13	Routines and Types Using the Java Programming Language (SQL/JRT)	2001-04-30
1.32.03.05.14.00	ISO/IEC FCD 9075-14	XML- Related Specifications (SQL/XML)	2001-07-01
1.32.03.05.99.00	ISO/IEC DCOR 9075	Technical Corrigenda	2001-05-11
1.32.04.02.01.00	FCD 13249-1	Information technology - SQL Multimedia and Application Packages - Part 1: Framework 2nd ed.	2001-07
1.32.05.04.00.00	9579, Edition 4	RDA for SQL, Edition 4	2001-02
1.32.53.01.02.00	To be assigned	Data Management and Interchange – Authorization and Audit	2001-02
1.32.53.01.03.00	To be assigned	Data Management and Interchange – Encompassing Transaction	2001-02

Voted and Accepted

Unanimous

Resolution 13: Final Draft International Standard (FDIS) Ballots (FDIS, FDAM, DTR)
 Upon receipt of texts, SC 32 requests its SC 32 Secretariat to register as FDISs, FDAMs, DTRs and submit to ITTF for the following projects:
 NONE

Project Number	FDIS	Title	Date Expected

Resolution 14: SC 32 Approval of Working Group 1 –Open-edi Resolutions

SC 32 approves the following Working Group 1 – Open-edi Resolutions contained in SC 32 N **0551**

Voted and Accepted

Unanimous

Resolution 15: SC 32 Approval of Working Group 2 –Metadata Resolutions

SC 32 approves the following Working Group 2 – Metadata Resolutions contained in SC 32 N **0553**

Voted and Accepted

Unanimous

Resolution 16: SC 32 Approval of Working Group 3 –Database Languages Resolutions
SC 32 approves the following Working Group 3 – database Languages Resolutions contained in SC 32 N **0555 as Amended**

Voted and Accepted

6 - YES
0 - NO
4 - Abstain

Resolution 17: SC 32 Approval of Working Group 4 –SQL Multimedia & Application Packages Resolutions

SC 32 approves the following Working Group 4 – SQL Multimedia & Application Packages Resolutions contained in SC 32 N **0557**

Voted and Accepted

Unanimous

Resolution 18: SC 32 Approval of Working Group 5 – Database Access and Interchange Resolutions

SC 32 approves the following Working Group 5 –Database Access and Interchange Resolutions contained in SC 32 N **0558**

Voted and Accepted

Unanimous

Resolution 19: SC 32 Approval of Rapporteur Group 1 –Reference Model for Data Management Maintenance Resolutions

SC 32 approves the following Rapporteur Group 1 – Reference Model for Data Management Maintenance Resolutions contained in

NOT APPLICABLE

Resolution 20: SC 32 Approval of Rapporteur Group 2 –Export/Import Maintenance Resolutions

SC 32 approves the following Rapporteur Group 2 – Export/Import Maintenance Resolutions contained in SC 32 N **0585**

Voted and Accepted

Unanimous

Resolution 21: Support of work on ISO/IEC 18038

Given the need for effective, efficient and systematic interworking among ISO 3166 and ISO/IEC 18038 standards as well as with the UN Statistical Division in order to facilitate interoperability, cultural adaptability and IT-enablement in support of e-commerce (e-business, e-government, etc.),

a) ISO/IEC JTC1/SC32 mandates the Project Editor for new ISO/IEC 18038 (and ISO/IEC 18022), Dr. Jake V. Th. Knoppers to explore and develop a mutually acceptable cooperative working solution for the maintenance of ISO 3166-1, ISO/IEC 18038 and the UN Statistical Division, and failing the ability to develop such a mutually acceptable approach, be instructed to develop alternative solution(s).

b) ISO/IEC JTC1/SC32 mandates its Project Editor for new ISO/IEC 18038 (and ISO/IEC18022), Dr. Jake V. Th. Knoppers, to explore opportunities for interworking of these two new ISO/IEC standards with the World Customs Organization (WCO), the International Telecommunications Union (ITU), World Trade Organization (WTO), International Civil Aviation Association (ICAO), ICANN, and others similar organizations for whom "jurisdiction" and "e-commerce", "e-business", "e-government", etc., is deemed to be important and requires interoperability and cultural adaptability from a global perspective".

Voted and Accepted

Unanimous

Resolution 22: Request JTC1 to request ITTF for Notification on Ballot Initiation/Completion

SC32 requests JTC1 to request ITTF to provide the responsible SC secretariat (and, if possible, the project editors) with ballot initiation and completion dates for FDAM and FDIS ballots for which the SC submitted the documents under ballot. Also, SC32 requests JTC1 to request ITTF to keep the information on their Web pages current.

Voted and Accepted

Unanimous

Resolution 23: Request JTC1 to establish SC 32 membership in Joint Steering Group on Spatial Standardization and Related Interoperability

SC32 requests JTC1 to establish SC 32 membership in the Joint Steering Group. SC32 would like to appoint SC32/WG 4 to participate on behalf of SC 32 in the Joint Steering Group. SC 32 nominates Mr. Paul Scarponcini to be an appointed SC 32 representative to the Joint Steering Group.

Voted and Accepted

Unanimous

Resolution 24: JTC1 Electronic Document Distribution

SC32-Data Management and Interchange - has had very good experience with the non-restricted access to committee drafts. As a result, non-participating parties have provided comments on documents, new organizations have participated in national groups and projects, and the work of SC32 has been incorporated into new projects.

SC32 recommends that JTC1 seek ISO Council approval to make the current electronic document distribution trial for free availability of documents up to, but not including DIS/FDIS, a permanent policy of JTC1 and further recommends that this be integrated into the JTC1 directives.

Voted and Accepted

Unanimous

Resolution 25: SC 32 Approval of Ad Hoc Group –Review of Santa Fe Resolution 25 Resolutions

SC 32 approves the following Resolutions from Ad Hoc Group –Review of Santa Fe Resolution 25 contained in SC 32 N **0592**

Voted and Accepted

Unanimous

Resolution 26: Support of work on ISO/IEC 18038

Given the need for effective, efficient and systematic interworking among ISO 3166 and ISO/IEC 18038 standards as well as with the UN Statistical Division in order to facilitate interoperability, cultural adaptability and IT-enablement in support of e-commerce (e-business, e-government, etc.),

a) ISO/IEC JTC1/SC32 mandates the Project Editor for new ISO/IEC 18038 (and ISO/IEC 18022), Dr. Jake V. Th. Knoppers to explore and develop a mutually acceptable cooperative working solution for the maintenance of ISO 3166-1, ISO/IEC 18038 and the UN Statistical Division, and failing the ability to develop such a mutually acceptable approach, be instructed to develop alternative solution(s).

b) ISO/IEC JTC1/SC32 mandates its Project Editor for new ISO/IEC 18038 (and ISO/IEC18022), Dr. Jake V. Th. Knoppers, to explore opportunities for interworking of these two new ISO/IEC standards with the World Customs Organization (WCO), the International Telecommunications Union (ITU), World Trade Organization (WTO), International Civil Aviation Association (ICAO), ICANN, and others similar organizations for whom "jurisdiction" and "e-commerce", "e-

business", "e-government", etc., is deemed to be important and requires interoperability and cultural adaptability from a global perspective".

Voted and Accepted

Unanimous

Resolution 27: Direct Participation Resolution (Alternative 1: SC 32 Participation)

If and only if each of the following conditions are agreed (with formal policies and procedures to be provided by JTC 1), SC 32 resolves to participate in the Direct Participation trial if approved by JTC 1 at its November, 2000, plenary in Tromsø, Norway. SC 32 participation shall include both SC 32 itself and all of its Working Groups. After JTC 1 and SC 32 clarify the rules and procedures, the participation of SC 32 must be ratified by National Body "P" member vote.

1. A new category of membership (tentatively called "D-member", indicating direct participation) will be created in accordance with the actions taken by JTC 1. D-members are eligible to participate in the technical work of SC 32, having voting rights on that technical work.
2. If JTC 1 authorizes SC 32 participation in the trial, then SC 32 shall convene an electronic meeting within 60 days of such approval, to establish specific fees, voting criteria, and other necessary policies, thus enabling the eligibility of D-member participation by the time of the interim WG meetings if the electronic meeting concludes satisfactorily.
3. The trial period shall last a minimum of 2 years from approval by JTC 1, although 3 years is much more desirable. JTC 1 is requested to approve SC 32 participation concurrent with its approval of the Direct Participation trial; if concurrent approval is not possible, then JTC 1 is requested to initiate an immediate letter ballot to approve SC 32's participation.
4. D-members shall pay an annual participation fee to SC 32, but shall commit for some minimum period determined by SC 32. There shall be no waiver of fees during the trial period. The fees assessed of D-members shall be determined by SC 32 using a tiered structure in which large commercial organizations pay a greater sum than small commercial organizations and government agencies, which pay in turn a greater sum than other organizations such as user groups, universities, and other not-for-profit organizations.
5. The fees paid by D-members shall be paid to, and remain with, SC 32 and are required to be used to support SC 32 operations.
6. If JTC 1 cancels the trial before the minimum period of membership has expired for every D-member, then D-members shall be allowed to continue their participation until their commitment period has expired.
7. D-members shall be eligible to participate in every vote regarding development and progression, up to and including FCD ballots and Editing Meetings, of every project assigned to SC 32's Working Groups. This eligibility shall extend to approval of new work that the JTC 1 Directives allow to be approved by SC 32. D-members shall not be eligible to participate in any votes taken the JTC 1 level.
8. Even though multinational organizations comprise incorporated entities in many jurisdictions — for example, within each of several nations represented by National Bodies having membership in ISO, in JTC 1, and/or in SC 32 — no such organization shall gain two or more rights to participate as a D-member. Similarly, wholly owned, or controlled, subsidiaries of organizations shall not be eligible for D-member rights separate from those of the owning

or controlling organizations. (For example, MegaCorp USA, MegaCorp Ventures France, and MegaCorp subsidiary MiniMightyCorp USA shall not be eligible for more than one D-member right.) JTC 1 shall provide a definition of the term “organization” for this purpose.

9. Rules shall be established, either by SC 32 or by JTC 1, determining the voting rules that properly protect P-member rights and D-member rights. These rules may involve weighted votes, a “2-house” approach, or some other alternative, but almost certainly require “counted ballots” instead of “consensus”.
10. There shall be no limits placed on the number of participants that a D-member are permitted to participate in a meeting, even though that D-member has a single vote that it may cast on a given ballot.
11. No participant shall be eligible to cast votes for more than one entity (D-member or P-member) on any ballot.

Voted and Accepted

Unanimous

**Resolution 28: Direct Participation Resolution
(Alternative 2: Selected WG Participation)**

Not Considered due to the acceptance of Resolution 27 above

Resolution 29: Commitment to Possible Meeting Fee for Victoria, B.C.,Canada.

SC32 instructs its secretariat to notify Canada that the participants are prepared to pay a meeting fee of upto US\$250 for the Victoria Meeting in Canada, if necessary.

Voted and Accepted

**9 - YES
1 - NO
0 - Abstain**

Acclamations

Resolution A1: Welcoming to Meetings

JTC 1/SC 32 expresses its appreciation to Hannu Pelkonen, for his welcoming remarks and expressions of support of the work of SC 32. SC 32 offers its special thanks to Finnish Standards Association and Information Technology Development Centre, Computer Associates Finland Ltd., Progress Software Ltd., and Edimaster Ltd.

Voted and Accepted

Unanimous

Resolution A2: Hosting of Meetings

JTC 1/SC 32 expresses its appreciation to Finnish Standards Association and Information Technology Development Centre, Computer Associates Finland Ltd., Progress Software Ltd., and Edimaster Ltd. for their efforts in planning and organizing the SC 32 meeting, especially:

- Mr. Hannu Pelkonen

SC 32 appreciates all of the hard work that they put into the meeting to make it a success. SC 32 appreciates the fine effort of Hannu Pelkonen in the preparations of the hosting of the meeting.

Voted and Accepted

Unanimous

Resolution A3: Social Functions

JTC1/SC32 expresses its appreciation to Computer Associates Finland Ltd for arranging for a reception.

Voted and Accepted

Unanimous

Resolution A4: Action Item Recorder

JTC1/SC 32 thanks Mr. Baba Piprani /Canada for the Action Item Recording for the SC 32 Plenary.

Voted and Accepted

Unanimous

Resolution A5: Appreciation to SC 32 Chairman

JTC1/SC 32 thanks Mr. Bruce Bargmeyer, the SC 32 Chairman, for the leadership and support he provided at the SC 32 meetings.

Voted and Accepted

Unanimous

Resolution A6: Appreciation to Secretariat

JTC1/SC 32 thanks Mr. Douglas Mann, the Secretariat, for his support during the SC 32 Plenary and the past year.

Voted and Accepted

Unanimous

Resolution A7: Drafting Committee Appreciation

JTC1/SC 32 thanks its drafting committee, consisting of Tommie Curtis/USA, Baba Piprani /Canada, Hugh Darwen/UK, Mike Newton/UK, (WG2)Horiuchi/Japan for their diligent effort in developing the SC 32 resolutions.

Voted and Accepted

Unanimous

Final Attendance
ISO/IEC JTC 1/SC 32 Plenary Meeting
2000-10-09 and 2000-10-13
Helsinki, Finland

<u>JTC 1/SC 32 Personnel</u>	
Bruce Bargmeyer	Chairman, JTC 1/SC 32
Douglas Mann	Secretariat, JTC 1/SC 32
National Body	Delegates
<u>Australia</u>	Mr. Don Bartley Mr. Joe Christensen
<u>Austria (O)</u>	
<u>Belgium</u>	
<u>Brazil</u>	
<u>Canada</u>	Mr. Mark Ashworth Jean Bérubé Mr. Bruce Catley Mr. Ray Gates Dr. Jake Knoppers Mr. W. O'Connell Mr. C. "Baba" Piprani Mr. Robert Sunday
<u>China</u>	Prof. Dongyan Wang Ms. Liu Zhiting
<u>Czech Republic</u>	
<u>Denmark (O)</u>	
<u>Finland</u>	Mr. Hannu Pelkonen
<u>France</u>	
<u>Germany</u>	Mr. Ruediger Eisele Mr. Friedemann Schwenkreis

<u>Italy</u>	
<u>Japan</u>	Mr. Hajime Horiuchi Takashi Kotera Katsuhiro Morita Mr. Masaharu Obayashi Mr. Kohji Shibano Mr. Kenji Suzuki Mr. Shojiro Tanaka Mr. Masashi Tsuchida
<u>Korea, Republic of</u>	Miss Kyuyearn Ahn Mr. Doo Kwon Baik Mr., Youngjin Choi Mr Eungrok Lee Mr. Sung-Kong Park Mr. Minyoung Ra
<u>Netherlands</u>	Mr. Stephen Cannan
<u>Norway</u>	Ole Jørgen Anfindsen
<u>Russian Federation (O)</u>	
<u>Sweden (O)</u>	Mr. Åke Persson
<u>United Kingdom</u>	Mr. Tim Bourne Mr. Graham Brown Mr. Hugh Darwen Mr. Mark Greaves The Revd John Hadjoannou Mr. Mike Newton
<u>United States</u>	Mr. Charles Campbell Ms. Tommie Curtis Dr. Donald R. Deutsch Mr. Andrew J. Eisenberg Mr. Frank Farance Mr. Larry Fitzwater Mr. Dan Gillman Mr. Michael M. Gorman Mr. Keith Hare Mr. Krishna Kulkarni Mr. Jim Melton Ms. Judith Newton Dr. Paul Scarponcini Dr. Phil Shaw Mr. Fred Zemke

SC 32 Conveners/Rapporteurs

RG 01 Mike Newton, (also UK)

WG 01 Hannu Pelkonen (also Finland)

WG 02 Larry Fitzwater, (also US)

WG 03 Stephen Cannan, (also Netherlands)

WG 04 Kohji Shibano, (also Japan)

WG 05 J. Hadjoannou, (also UK)

Liaison

Liaison Body	Organization/Company
<u>TC 154</u>	François Vuilleumier

Other Attendees

Person	Organization/Company