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SC 32 Business Plan 2021

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Description

This document is circulated for review and consideration at the November 2021 JTC 1 Plenary.

Business Plan for JTC 1/SC 32: 2020-2021

Period covered:

August 2020 through September 2021, with Chair's remarks and achievements to September 2021.

Submitted by:

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Executive Summary

SC 32 progresses its program of work via four (currently) active Working Groups. Each WG establishes its work priorities as part of its project plan, which is approved at the SC 32 Plenary. The active areas of work can be broadly summarized as Business Operational View (WG 1, E-Business); metadata ontologies and registries (WG 2, Metadata); SQL and GQL (WG 3, Database Languages); and data usage definitions and use cases (WG 6, Data Usage).

The SC has placed an emphasis on knowledge sharing and cooperation among its WG's, as well as liaisons with other SC's and TC's involved in related areas. Our cross-WG education efforts have been somewhat hampered by the lack of face-to-face Plenary meetings during the pandemic; this is an area which we look forward to progressing once less time constrained, face-to-face or hybrid meetings resume.

The need to operate in a fully virtual meeting environment during the pandemic has hampered progress to some degree. The WG Convenors and experts have risen to the challenge and have maintained a high level of participation and enthusiasm.

1. Chair's remarks

SC 32 participants continue to progress a wide range of projects, as shown below. These projects range from revisions of standards for relatively mature technologies to new standards for emerging technologies. Participants include major vendors, academics, experts from joint initiatives such as the LDBC (Linked Data Benchmark Council), and users, including government agencies. Contributions are received from North America, Asia, Australia, and Europe—a resource that is beneficial to the quantity and quality of the standards. These strengths stand against substantial risks of shifting priorities and support within participating organizations, as well as competition from other standards development organizations.

SC 32/WG 1 continues to advance its e-Business standards development work, and its focus remains the Business Operational View (BOV) aspects of ISO/IEC 14662, Open-edi Reference Model. The BOV standards development work of SC 32/WG 1 (specified in the multiple parts of ISO/IEC 15944) addresses operational aspects of Open-edi for

implementation, registration of scenarios and scenario components as business objects, accounting and economic ontology, identification of external constraints of jurisdictional domains on business transactions (including privacy protection requirements), coded domains, and traceability framework. The BOV standards not only address the legal requirements for e-Business, but also facilitate the IT-enablement of business standards.

These BOV standards also serve as the basis for the high-level Memorandum of Understanding (MOU) concerning standardization in the field of electronic business signed between ISO, IEC, ITU, and UN/ECE, with full participation of international user groups.

The WG is still preparing an introduction to its standards and projects for consumption by other standardizers.

SC 32/WG 2 has a very full work schedule. WG 2 is making good progress on its program to refactor, clarify, and extend its existing metadata standards (ISO/IEC 11179, Metadata registries), including multiple parts of ISO/IEC TR 19583, Concepts and usage of metadata. Plans for 2021–2022 include the continuation and extension of that work, as well as the finalization of a reference SQL implementation of ISO/IEC 11179-3. WG 2 also will continue delivering parts of the ISO/IEC 21838 series, Top-level ontologies, and a revision of ISO/IEC 5394, Criteria for concept systems.

WG 2 will monitor the ongoing work in WG 6 (Data Usage), which may benefit from metadata extensions describing allowable data usage by data consumers. The Working Group will also continue to watch developments in the areas of data security and data privacy to determine if metadata describing security and privacy settings for Big Data are needed.

SC 32/WG 3 continues to work on the anticipated next generation of the multipart SQL standard ISO/IEC 9075, which has entered the CD and comment resolution stage. A major new Part in this next generation specifies SQL support for property graph data. The property graph work continues to receive lively contributions from a broad spectrum of experts. The Working Group expects to progress the new version of 9075 to DIS stage during 2021-2022.

Related to the SQL property graph feature is a new standalone Graph Query Language (GQL) standard, ISO/IEC 39075. Work on GQL is moving well; the Working Group expects to see an initial CD ballot on GQL in 2021-2022.

WG 3 has received SC approval to initiate two new projects for 2021-2022. One will be a new part of the Guidance series, ISO/IEC 19075-10, describing the SQL Model; and the other is a new preliminary work item ISO/IEC 29075, specifying function libraries for advanced statistical and analytic capabilities.

WG 3 continues to monitor the ever-changing state of the database industry to identify additional capabilities suitable for standardization. One such area is SQL for streaming data; WG 3 is closely monitoring ongoing discussions taking place at a national body level. If consensus is reached that there is a desirable way forward, WG 3 is prepared to take ownership.

SC 32/WG 6 is newly formed as of September 2020; its program of work includes two standards in the area of Data Usage. ISO/IEC 5207 will address definitions and use cases, while ISO/IEC 5212 will address guidance for data usage. The Working Group has come up to speed in a commendably short time. The plan for 2021-2022 is to progress the two existing documents to at least CD stage. WG 6 believes that these two projects merely scratch the surface of possible and relevant standards in its scope of work. The SC has directed WG 2 (metadata) and WG 3 (database languages) to be alert to opportunities in their respective areas that would support the concepts being developed by WG 6.

JTC 1/SC 32 Statement of scope

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:

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

2. Existing work and achievements

Achievements since the last report:

The following projects have completed and been published or are in Stage 60 – Publication Stage:

ISO/IEC 21838-1:2021	Information technology — Top-level ontologies (TLO) — Part 1: Requirements

ISO/IEC 19763-3:2020	Information technology — Metamodel framework for interoperability (MFI) — Part 3: Metamodel for ontology registration
ISO/IEC 19763-16:2021	Information technology — Metamodel framework for interoperability (MFI) — Part 16: Metamodel for document model registration
ISO/IEC 19075-1:2021	Information technology — Guidance for the use of database language SQL — Part 1: XQuery regular expressions
ISO/IEC 19075-2:2021	Information technology — Guidance for the use of database language SQL — Part 2: Time-related information
ISO/IEC 19075-3:2021	Information technology — Guidance for the use of database language SQL — Part 3: SQL embedded in programs using the JavaTM programming language
ISO/IEC 19075-4:2021	Information technology — Guidance for the use of database language SQL — Part 4: Routines and types using the Java™ programming language
ISO/IEC 19075-5:2021	Information technology — Guidance for the use of database language SQL — Part 5: Row pattern recognition
ISO/IEC 19075-6:2021	Information technology — Guidance for the use of database language SQL — Part 6: Support for JSON
ISO/IEC 19075-7:2021	Information technology — Guidance for the use of database language SQL — Part 7: Polymorphic table functions
ISO/IEC 19075-8:2021	Information technology — Guidance for the use of database language SQL — Part 8: Multidimensional arrays
ISO/IEC TR 15944-14:2020	Information technology — Business operational view — Part 14: Open-edi reference model and cloud computing architecture
ISO/IEC 21838-2 †	Information technology — Top-level ontologies (TLO) — Part 2: Basic Formal Ontology (BFO)

† Pending publication by ISO/CS

The following projects are progressing in Stage 40 - Enquiry stage (DIS):

ISO/IEC DIS 15944-8	Information technology — Business operational view — Part 8: Identification of privacy protection requirements as external constraints on business transactions
ISO/IEC DIS 15944-9	Information technology — Business operational view — Part 9: Business transaction traceability framework for commitment exchange
ISO/IEC DIS 15944-10	Information technology — Business operational view — Part 10: IT-enabled coded domains as semantic components in business transactions
ISO/IEC DIS 5218	Information technology — Codes for the representation of human sexes
ISO/IEC DIS 15944-1	Information technology — Business operational view — Part 1: Operational aspects of open-edi for implementation

ISO/IEC DIS 15944-12	Information technology — Business operational view — Part 12: Privacy protection requirements (PPR) on information life cycle management (ILCM) and EDI of personal information (PI)
ISO/IEC DIS 15944-16	Information technology — Business operational view — Part 16: Consolidated set of the rules and guidelines identified in ISO/IEC 15944 Business Operational View standards and their IT-enablement
ISO/IEC DIS 15944-21	Information technology — Business operational view — Part 21: Application of Open-edi business transaction ontology in distributed business transaction repositories

The following projects are progressing in stage 30 - Committee stage (CD/DTR/DTS):

ISO/IEC CD 15944-17	Information technology — Business operational view — Part 17: Fundamental principles and rules governing Privacy-by-Design (PbD) requirements in EDI and collaboration space context
ISO/IEC CD 15944-18	Information technology — Business operational view — Part 18: Common principles for identification and rules for use of identifiers in business transaction
ISO/IEC CD 15944-19	Information technology — Business operational view — Part 19: Guidelines on cross-border data flows (CBDF): requirements for business transactions (including personal information)
ISO/IEC CD 11179-30	Information technology — Metadata registries (MDR) — Part 30: Basic attributes of metadata
ISO/IEC DTR 19583-21.2	Information technology — Concepts and usage of metadata — Part 21: 11179-3 Data model in SQL
ISO/IEC CD 11179-1	Information technology — Metadata registries (MDR) — Part 1: Framework
ISO/IEC CD 11179-3.4	Information technology — Metadata registries (MDR) — Part 3: Metamodel for registry common facilities
ISO/IEC CD 11179-6	Information technology — Metadata registries (MDR) — Part 6: Registration
ISO/IEC CD 11179-32.3	Information technology — Metadata registries (MDR) — Part 32: Metamodel for concept system registration
ISO/IEC CD 11179-35.2	Information technology — Metadata registries (MDR) — Part 35: Metamodel for model registration
ISO/IEC CD 9075-1	Information technology — Database languages — SQL — Part 1: Framework (SQL/Framework)
ISO/IEC CD 9075-2	Information technology — Database languages — SQL — Part 2: Foundation (SQL/Foundation)
ISO/IEC CD 9075-4	Information technology — Database languages — SQL — Part 4: Persistent stored modules (SQL/PSM)

ISO/IEC CD 9075-11	Information technology — Database languages — SQL — Part 11: Information and definition schemas (SQL/Schemata)
ISO/IEC CD 9075-14	Information technology — Database languages — SQL — Part 14: XML-Related Specifications (SQL/XML)
ISO/IEC CD 9075-16	Information technology — Database languages SQL — Part 16: SQL Property Graph Queries (SQL/PGQ)
ISO/IEC CD 5394	Information technology — Criteria for concept systems
ISO/IEC DTR 19583-24	Information technology — Concepts and usage of metadata — Part 24: 11179-3:2013 Metamodel in RDF
ISO/IEC CD 11179-33	Information technology — Metadata registries (MDR) — Part 33: Metamodel for data set registration
ISO/IEC CD 21838-3.2	Information technology — Top-level ontologies — Part 3: Descriptive ontology for linguistic and cognitive engineering (DOLCE)
ISO/IEC CD 21838-4.2	Information technology — Top-level ontologies — Part 4: TUpper
ISO/IEC CD 11179-31.3	Information technology — Metadata registries (MDR) — Part 31: Metamodel for data specification registration

The following projects have entered stages 00 or 10 (Preliminary / Proposal) since the last report:

ISO/IEC AWI TR 19583-25	Information technology — Concepts and usage of metadata — Part 25: 11179-3:2013 Metamodel in XML
ISO/IEC AWI 11179-34	Information technology — Metadata registries (MDR) — Part 34: Metamodel for computable object registration
ISO/IEC AWI 39075	Information Technology — Database Languages — GQL
ISO/IEC AWI 6523-1	Information technology — Structure for the identification of organizations and organization parts — Part 1: Identification of organization identification schemes
ISO/IEC AWI 6523-2	Information technology — Structure for the identification of organizations and organization parts — Part 2: Registration of organization identification schemes
ISO/IEC AWI 5212	Information technology — Data usage — Guidance for data usage
ISO/IEC AWI 5207	Information technology — Data usage — Terminology and use cases
ISO/IEC NP 19075-9	Information technology — Guidance for the use of database language SQL — Part 9: Online analytic processing (OLAP) capabilities
ISO/IEC PWI 29075	Information technology — Function libraries for advanced analytics in data management

3. Future work and deliverables

See the tables in Section 2.

4. Risks and issues

Each of the Working Groups within SC 32 sets its own priorities and strategies for achieving objectives. The delegation of authority and responsibility to the WGs stands in contrast to the working of some other JTC 1 Subcommittees. This management style allows considerable freedom for WGs to adjust agendas and schedules dynamically, in response to varying resource availability and WG expert contributions. It does however place a considerable reliance on WG Convenors to ensure that projects are advanced and timelines are met. SC 32 has been very fortunate that its WG Convenors have been up to the challenge.

The need to operate in a fully virtual meeting environment during the pandemic has hampered progress to some degree. Given the ongoing uncertainty surrounding the pandemic situation, it is impossible to predict when it might be possible to return to face-to-face or hybrid meeting styles. For 2021-2022, SC 32 and its WGs expect to remain in a largely virtual meeting mode, augmented (if possible) by face-to-face or hybrid meetings when they are again permitted.

Many of the standards being actively maintained by SC 32 are very old (decades), very large (thousands of pages), or both. There has been some tension caused by the changing requirements of past and present ISO house styles, which in some cases has had the effect of turning what was meant to be a minor revision, into a major editing project for which resources do not exist. Case by case cooperation with ISO/CS has alleviated much, but not yet all, of this risk.

There is always some risk that major vendors may wish to re-focus their efforts within national bodies or other standards groups, with the intention to progress the resulting standards through JTC 1 as Fast Track or PAS submissions. Happily, we have not seen any efforts to do so recently. There exists some risk that proponents of particular technologies may prefer that they be developed in an open source community and eschew formal standardization. To minimize this risk, SC 32's WGs have been working more closely with open source communities. There is a possibility that major standards such as SQL could be declared as mature and not require substantial additional effort within SC 32. There is also a possibility that major participant groups within any of the WGs may drop participation for financial, programmatic, product, or other reasons, thus damaging the viability of the WG and/or SC 32.

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 where common approaches and interoperability are essential to users. SC 32 must maintain a balance

between the focus needed to complete existing projects, and nimbleness / responsiveness to changing market requirements.

Many new and interesting areas for standardization, such as Big Data, Internet of Things, data privacy and usage, and cloud computing span a wide range of SC and TC scope. SC 32 must be diligent in taking ownership of those aspects that match its expertise and scope, while not interfering with (and indeed, supporting) those aspects that are more appropriate to other TCs/SCs or to joint working efforts.

5. Opportunities

The Internet of Things (IoT), cloud computing, Big Data, data usage and privacy, advanced analytics, approximate querying, streaming data, and semi- or un-structured data use all represent major areas of opportunity where market forces are creating demand for SC 32 standards. Some, such as streaming data, fall squarely within the SC 32 scope of work; while others, such as IoT, represent areas where SC 32 can implement standards that support architectural or reference work taking place in other SC's or TC's. SC 32 continues to work with others involved to identify specific standardization needs and respond with current and newly proposed projects.