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MANAGEMENT REPORT AND BUSINESS PLAN FOR
ISO / IEC JTC 1/SC7
SOFTWARE AND SYSTEMS ENGINEERING

PERIOD COVERED: October 2012 - September 2013

SUBMITTED BY: François Coallier, Chair
Witold Suryn, Secretariat
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1.0 MANAGEMENT SUMMARY

1.1 CHAIRMAN’S REMARK

The last year saw JTC 1/SC7 completing 11 projects and initiating 7 new ones. 13 projects are near completion. 34 potential additional projects and maintenance activities were under consideration by the SC7 members since the SC7 May 2013 plenary in Montréal, Québec, Canada. Exploration of new areas as well as consolidation of existing ones is done currently by its SWG 5 on architecture, and 6 study groups.

SC7 has currently 39 ‘P’ members, compared to 29 in 2003, as well as 20 ‘O’ members. The last SC7 plenary in Montréal, Québec, Canada, was a success with 203 delegates from 28 countries. 153 ISO/IEC standards are under the direct responsibility of SC7.

Noteworthy has been SC7 migration of its document infrastructure to the ISO e-Committee right after the Niigata Plenary. Several SC7 WGs have already migrated their sites to this platform.

A strategic planning session was held at the 2013 Montréal Plenary meeting the day before the Sunday AG meeting. A report was published as SC7 N5904.

While SC7 is continuing to develop and consolidate its work in software and systems engineering development standards, work to address management and operation of IT systems and services is intensifying. IT systems management and operations was already touched at in different degrees by SC7 in its software and systems life-cycle standards as well as its software maintenance, risk management, software systems assurance and products related standards. Also noteworthy is the consideration by SC7 of adapting its existing standards to a service oriented style of architecture.

Liaison and coordination of SC7 work program is done through internal liaisons and two ‘Special Liaison Groups, created to manage liaison activities with respectively JTC 1/SC27 and SC38.

1.2 JTC 1/SC7 STATEMENT OF SCOPE, VISION, PURPOSE AND CORE VALUES

Scope

The following “Terms of Reference” were approved by JTC1 at its 1997 Plenary in Paris:

“Standardization of processes, supporting tools and supporting technologies for the engineering of software products and systems.

*Note: The processes, tools and technologies are within the scope of JTC1 terms of references and exclude specific tools and technologies that have been assigned by JTC1 to other of its SC’s."

Vision

The vision of SC7, as elaborated at its 1997 Walnut Creek business planning workshop and endorsed formally by member bodies, and updated to reflect the changes in Terms of Reference since then:

A unified set of software and systems engineering standards widely accepted by the intended class of users.

These standards will be organized in a framework, which establishes the relationships among SC 7 standards and between SC 7 standards and those of other disciplines, e.g. engineering, information technology, and quality management.
Purpose

The purpose of SC7, as elaborated at its 1997 Walnut Creek business planning workshop and endorsed formally by member bodies and updated to reflect the changes in Terms of Reference and the evolution of SC7 since then, is to, for its program of work and within its terms of reference:

- Provide quality standards that cover the entire life-cycle of information systems.
- Provide quality standards that meet user needs in broad markets.
- Manage the set of standards effectively through documented framework.
- Promote the use of standards by providing supporting materials.
- Provide leadership in standardisation through:
  - A continuous technology watch process using Study Groups to explore new areas and markets.
  - The development of a comprehensive set of integrated standards with broad international and professional consensus;
  - Initiating cooperative work with international professional and standards producing organizations;
  - A framework that:
    - Facilitate the integration and sub-contracting of standards developed in other standards producing organization;
    - Facilitate cooperative development of joint standards with other international standards producing organizations;
    - Minimises the inconsistencies between our standards including those developed by other standard producing organizations.

Area of work

Systems engineering, whose origin is traceable to industrial engineering, is defined as an interdisciplinary approach governing the total technical and managerial effort required to transform a set of customer needs, expectations, and constraints into a solution and to support that solution throughout its life (ISO/IEC 24765, Systems and Software Engineering Vocabulary).

SC7, whose scope is Software and Systems Engineering, can thus be described as a horizontal committee who produce generic standards that are technology agnostics and independent of the application domain. These standards are principally focused on process models and good practices (Methods and techniques).

As system engineering standards, they cover the entire life cycle of products. In ISO and IEC, a product is defined as the output of a process (ISO 9001). Product include thus:

- Software Systems
- Services related to software systems engineering and operations
- Services provided by software systems (from an Horizontal perspective)

The SC7 market thus include the following:

- Software Systems:
  - Embedded Systems
  - Information systems
  - Interactive media systems
- Services:
  - Related to the development and operations of software systems (IT and Engineering services Outsourcing/Offshoring, IT and Engineering professional competencies)
  - Provided commercially by software systems (M2M Web Services, Software as a Service) from an ‘Horizontal’ perspective
Subcommittee 7 (SC7) is meeting its mandate and achieving its objectives by addressing certain key areas in IT services and software and systems engineering standardization:

- **Software and systems engineering processes**: in partnership with the International Council on Systems Engineering (INCOSE), the Institute of Electrical and Electronics Engineers Computer Society (IEEE-CS) and other parties, we are developing and are improving on standards which describe good software and systems engineering practices, as well as in partnership with ISACA and other parties, standards to consistently assess organisational software and system engineering practices against a given benchmark;

- **IT Service Management**: in partnership with the IT Service Management Forum (itSMF) and other parties, we are developing and are improving on standards which describe good IT service management practices.

- **IT Enabled Services and Business Process Outsourcing**: we are developing a standard covering all aspects of IT Enabled Services including the entire life-cycle of IT outsourcing.

- **Software system products**: we are developing and are improving on standards which allow purchasers and buyers to size and document software products as well as to express, measure and evaluate the quality of the software that is produced and its contribution to the final product or application system;

- **Enterprise architecture**: in partnership with the Object Management Group (OMG), we are developing and are improving on Open Distributed Processing (ODP) standards to integrate IT and business system definition and provide the software and system engineering tools to implement enterprise information systems.

- **Software engineering environment**: we are developing and are improving on standards which make it easier to use software engineering environments and to re-use and re-deploy the data contained in them.

- **Software engineering body of knowledge**: we have worked with the Institute of Electrical and Electronics Engineers Computer Society (IEEE-CS) on their guide to the Software Engineering Body of Knowledge (SWEBOK), and we published it as a ISO/IEC Technical Report. We are now working on a project on the certification of system engineers.

- **Management of IT assets**: we are developing and are improving on standards that will describe the basic requirements of a software asset management environment.

**Core Values**

SC7 core values are:

- Consensus
  - At an International level and with regards to software and system engineering best practice
- Full and open deliberation
  - Active involvement with related disciplines
- Informed participation
  - Awareness of the subject
  - Awareness of the market
  - Awareness of JTC1 procedures
  - Awareness of project background
- Equality and members/tolerance
  - At a minimum to follow JTC1 procedures
- Commitment to quality
  - Maintain awareness of best practice and user needs
  - Commitment of participants to the process
- Recognition of the importance of continuity in standards development
- Professionalism
Maintaining awareness of software and system engineering practices

1.3 PROJECT REPORT

As of 2013-09-27, there were 62 active projects/sub-projects in JTC 1/SC7 (see www.jtc1-sc7.org). These are handled by 13 active working groups and one joint working group with ISO/TC54 (see annex A). The following standards have been published between the last JTC 1 Plenary and 2013-09-27:

**ISO/IEC 15504-6:2013**
Information technology -- Process assessment -- Part 6: An exemplar system life cycle process assessment model

**ISO/IEC 15940:2013**
Systems and software engineering -- Software Engineering Environment Services

**SO/IEC 25021:2012**
Systems and software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) -- Quality measure elements

**SO/IEC 25064:2013**
Systems and software engineering -- Software product Quality Requirements and Evaluation (SQuaRE) -- Common Industry Format (CIF) for usability: User needs report

**ISO/IEC 26550:2013**
Software and systems engineering -- Reference model for product line engineering and management

**ISO/IEC 26551:2012**
Software and systems engineering -- Tools and methods for product line requirements engineering

**ISO/IEC 26555:2013**
Software and systems engineering -- Tools and methods for product line technical management

**ISO/IEC/IEEE 29119-1:2013**
Software and systems engineering -- Software testing -- Part 1: Concepts and definitions

**ISO/IEC/IEEE 29119-2:2013**
Software and systems engineering -- Software testing -- Part 2: Test processes

**ISO/IEC/IEEE 29119-3:2013**
Software and systems engineering -- Software testing -- Part 3: Test documentation

**ISO/IEC TR 29154:2013**
Software engineering -- Guide for the application of ISO/IEC 24773:2008 (Certification of software engineering professionals -- Comparison framework)
1.4 COOPERATION AND COMPETITION

Internal

JTC 1 has recognized that its SC7 is a “process focused” SC. The diagram that follows illustrates how SC7 scope interacts with other SC’s and disciplines:

![Diagram illustrating interaction between SC7 and other SCs and TCs]

All those overlaps have the potential to generate liaison challenges.

There are at least two other process focused TC’s in ISO and IEC that also had overlap with the JTC1/SC7 program of work: ISO/TC176 and IEC/TC56.

The issues of overlap between SC7 and ISO/TC 176 programs of work have been resolved through liaison and the transfer of the responsibility for the maintenance of ISO 9000-3 to JTC 1/SC7.

Liaison and coordination of SC7 work program is done through internal liaisons and two ‘Special Liaison Groups, created to manage liaison activities with JTC 1/SC27 and JTC 1/SC38.

External

SC7 has active A-liaisons with:

- IEEE Computer Society
- INCOSE
- itSMF
- ITU-T
- PMI
Documents from the IEEE Computer Society, the OMG and the ITU-T were or are moving through the standardization process either as PAS, Fast Track or through the normal process.

By regard to the IEEE Computer Society liaison, the current status of the liaison is:

- Approved vision for joint program of work: 07N2742.
- Approved procedures for common work: 07N2743.
- IEEE documents are submitted either as base documents or fast track through a National Body.
- Current joint projects include:
  - Vocabulary
  - Software Engineering Certification
  - Software and Systems Assurance
  - Software Engineering Body of Knowledge
2.0 PERIOD REVIEW

2.1 MARKET REQUIREMENTS

Overall Trend
The Information and Communication Technology (ICT) sector has been going through phases of technological changes and expansions in the last 40 years. As illustrated on the next page, 3 of these phases occurred in the past and we are now entering a fourth one.

- The first phase was when the industry was dominated with large mainframe and minicomputers based systems located in centralized data centers and operated by elite groups of people. This was the time of proprietary hardware dominated systems.

- The second phase came with the microprocessor and the personal computer. Suddenly, computing moved from the small data center elite to end-users. It also started to become mass-market phenomena. A de-facto market set of standards quickly dominated this market: the so-called Wintel (Windows operating systems and Intel processor) standard.

- The third phase became visible when, in 1993, a group of students from the University of Illinois developed the first Internet browser, Mosaic[1]. Quite suddenly, the Internet moved from a network for small elite of researchers to a mass market phenomenon. At about the same time, Microsoft introduced direct support for networking in its operating systems. PCs, as well as the data centres computers, started to evolve from islands of automations to nodes of a network. This evidently had a significant impact on the design of computer applications.

- The fourth phase will be focused on an open transactional environment dominated by, among other things, machine to machine (M2M) communications, mobile and wearable computing, virtual and assisted reality, cloud computing and a strong service focus. It will be supported by open middleware and other open standards.

From: The fortune of the commons. In Coming of Age - A Survey of the IT Industry. The Economist, May 8th 2003
The following summarize our perspective on Software and Systems Engineering trends:

- **Technology**
  - IT is getting more ubiquitous, especially with the spread of direct machine to machine (M2M) communications.
  - Software engineering is getting more mature, but still evolving.
  - An IT application is nowadays a software system whose software components can be made, bought, open-source in origin or a Web service. The Web service can be from within an Intranet, or from the Internet.
  - Cloud based services will influence significantly software application design (Mashups, SOA) and delivery (Software as a Service – SaaS)
  - Information Systems (IS) are ‘Systems of Systems’.
  - Developing software systems and IT applications is much more involved that classical programming: these systems must be engineers not only to meet functional requirements but also stringent quality attributes such as performance, reliability, availability, scalability, usability, security and security.
  - In some cases, the difference between software and data is blurring.

- **Markets**
  - A lot of software is brought, as a product or a (Web) service – not developed
  - Open source software is taking hold in many markets
  - Some Software Systems development and maintenance services are becoming commodities, other remain high value add
  - The Internet has made geography less relevant for some Software Systems engineering, maintenance and operation services
  - IT Services are a significant part of global commerce
  - The computing, telecommunications and consumer electronics market have now essentially converged and this trend is accelerating
  - Cloud computing, which is derived from technologies and service concepts that date as far as the 1960’s, is now a reality for software developers and IT services managers worldwide.
  - Interactive medias systems are proliferating and becoming a significant part of the global software system market.
  - Mobile computing platforms are becoming a significant market for software applications and IT services.

![Figure 5 - ITC Market Revenues ($US) Category By Offering – Year to Q3 2011](http://itcandor.net/2011/11/21/itc-market-q411/)
• Standards
  – A growing international consensus on software and systems engineering good practices is formalized.

**SC7 Marketplace**

The over-riding requirement is that the software and system engineering standards are focused on the needs of the users of those standards. We are targeting in our work the following types of standards user:

**Software, Systems and IT Services Houses**

Those who supply the software system and IT services needs of the consumer, commercial, industrial, defence, and public sectors, and who need to preserve their competitiveness in the face of ever changing world markets. To address international markets, they need to be able to offer services and products that will match the best available from anywhere in the world.

Software and system engineering standards from JTC 1/SC7 provide one of the means to judge what is meant by best.

**Corporate Information Systems Users**

Software and system engineering standards can directly serve the needs of using organizations by reducing costs, improving IT services, encouraging fair competition, allowing re-use of existing software and generally reduce risks and uncertainty.

ODP and associated standards provide enterprise architects and system developers tools to architect and design robust, modular enterprise applications and systems.

**Embedded software system suppliers**

This category includes a wide variety of companies supplying software embedded within systems that are themselves embedded in a product. It might be a consumer product such as a cell phone or a car, avionics, a weapons control system, or a heart pace maker. In all these cases the software is just a component of the system or final product, but it is critical that it is well engineered in the context of the overall engineering effort involved.
Methods and tools suppliers

Although this market is still formative there are already ad-hoc and proprietary standards for software and system engineering methods and tools. As the market matures it is important to remove barriers to more open use of CASE tools and methods.

Software and System engineering educators

As mentioned earlier, JTC 1/SC7 standards define a body of knowledge of good practices. These standards, including the one specifically addressing this issue currently under development, provide a sound foundation for educators in software and system engineering.

Domain specific standards developers

JTC 1/SC7 standards are, in ISO jargon, horizontal standards. This means that these standards are basically of a generic nature and can be applied in different domains such as for the development of transportation systems, space systems, security products, etc..

Organisation developing those domain specific standards will find in JTC 1/SC7 standards a foundation they can use to build on.

2.2 ACHIEVEMENTS

See sections 1.2 and 3.2. The current collection of SC7 standards is as follows:

2.3 RESOURCES

SC7 recognize that resources are an important factors for the successful the execution of the work program. At this point in time, there is sufficient support for all of the SC7 projects.
A strategy to address this is to bring in projects with documents that have been already developed by other standardizations organization. This is what was done with the OMG and the IEEE Computer Society.

### 2.4 ENVIRONMENTAL ISSUES

N/A

### 2.5 PARTICIPATION METRICS

Plenary attendance is holding in the 200-300 range as illustrated in the following graphic:

![Plenary attendance statistics](image)

Ballots participation rate are within the parameters set by JTC 1.
3.0 FOCUS NEXT WORK PERIOD

3.1 DELIVERABLES:

As of 2013-09-27, the following projects are near completion:

ISO/IEC DIS 15026-1
Systems and software engineering -- Systems and software assurance -- Part 1: Concepts and vocabulary
ISO/IEC DTR 16337
Systems Engineering -- Systems Engineering Handbook
ISO/IEC DIS 24744
Software Engineering -- Metamodel for Development Methodologies
ISO/IEC FDIS 25000
Systems and software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) -- Guide to SQuaRE
ISO/IEC FDIS 25001
Systems and software engineering -- Systems and software Quality Requirements and Evaluation (SQuaRE) -- Planning and management
ISO/IEC DTR 29110-5-6-2
Systems and software engineering -- Systems engineering lifecycle profiles for Very Small Entities (VSEs) -- Part 5-6-2: Management and engineering guide: Generic profile group: Basic profile
ISO/IEC/IEEE DIS 29119-4
Software and systems engineering -- Software testing -- Part 4: Test techniques
ISO/IEC DIS 33001
Information technology -- Process assessment -- Concepts and terminology
ISO/IEC DIS 33002
Information Technology -- Process Assessment -- Requirements for performing process assessment
ISO/IEC DIS 33003
Information technology -- Process assessment -- Requirements for process measurement frameworks
ISO/IEC DIS 33004
Information technology -- Process assessment -- Requirements for process reference, process assessment and maturity models
ISO/IEC TR 33014
Information technology -- Process assessment -- Guide for process improvement
ISO/IEC DIS 33020
Information technology -- Process assessment -- Process measurement framework for assessment of process capability

Standard production by SC7 is, as of 2013-05-23, looking as follows:
3.2 STRATEGIES

An SC7 Strategic Planning Workshop was held prior to the 1997 Walnut Creek Plenary and the results documented in SC7 07N1763, SC7 Direction Statement 1997. This document was accepted by SC7 member bodies after formal balloting. A revised and updated version of this document titled SC7 Draft Direction Statement 2003-2008 (07N2898) has been balloted.

A strategic planning session was held at the 2011 Jeju Plenary meeting the day before the Sunday AG meeting. A report was published as SC7 N5566. Another planning session was held at the 2013 Montréal Plenary meeting the day before the Sunday AG meeting. A report was published as SC7 N5889.

Business Planning activities have been going on in SC7 for the last 16 years.

To ensure proper focus and continuity, SC7 has formalized at its 1997 Walnut Creek Plenary the SC7 Business Planning Group (BPG) as a “special working group” (SWG). Its current mandate is to:

1. Support the Chair in the elaboration of directions and policies.
2. Assist the chair in the prompt resolution of issues.
3. Propose update to the JTC1/SC7 business plans and procedures.
4. Propose updates to JTC1/SC7 communications function.
5. Prepare procedures and organization responsibilities to ensure an integrated strategy planning, business planning, and management systems for JTC1/SC7.

The BPG is under the direction of the JTC1/SC7 Chair and is currently composed of:

- Dr. Annette Reilly (USA)
- Mr Anukul Tamprasirt (Thailand)
- Mr. David Welsh (USA)
- Mr Jean Bérubé (Canada)
- Dr. Yukio Tanitsu (Japan)
- Dr. Dan Lee (Korea)
- Prof. Alastair Walker (South Africa)
- Mr. Risto Nevalainen (Finland)
- D. Jenny Dugmore (UK)
- Dr. Klaudia Dussa-Zieger (Germany)
- Dr. Gargi Keeni (India)

Full day business planning activities are thus held since 1998 by the SC7 Advisory Group in each plenary meeting.

The key SC7 strategies documented in 07N2898 are:

- **S1** - Ensure that its standards are as consistent and coherent as possible.
- **S2** – Become more a systems integrator by focusing its development activities on integrations standards and adopting and integrating standards developed by other organizations.
- **S3** - Develop and manage key strategic partnerships with international professional and standardization organizations that operate in its mandated area. In 2002 these were the IEEE-CS, INCOSE and OMG.
- **S4** - Communicate efficiently to its intended customers about its program of work and market its accomplishments.
- **S5** - Proactively assess the relevance of its standards to the state of software and systems engineering technology and markets, and initiate maintenance or new development activities if required.
- **S6** - Increase its market share in the area of systems engineering
- **S7** - Ensure that its standards are as compatible and coherent as possible
A view of SC7 current products set strengths and opportunities as of its Brisbane May 2004 plenary meeting was summarised by the SC7 Chairman summarised in the following table:

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>OPPORTUNITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life-Cycle Processes</td>
<td>Systems Engineering</td>
</tr>
<tr>
<td>Product Metrics</td>
<td>Software and Systems Assurance</td>
</tr>
<tr>
<td>Process Metrics</td>
<td>Systems Architecting</td>
</tr>
<tr>
<td>Formalisms</td>
<td>IT Operations and Services</td>
</tr>
<tr>
<td>Software Engineering Body of Knowledge</td>
<td>Re-use</td>
</tr>
<tr>
<td>Tools environment</td>
<td>Agile Processes</td>
</tr>
<tr>
<td>Systems Engineering</td>
<td>Open Source Software (OSS)</td>
</tr>
<tr>
<td>Software and Systems Assurance</td>
<td>Curricula and Certification</td>
</tr>
<tr>
<td>Systems Architecting</td>
<td>Application Domains Acceptance</td>
</tr>
<tr>
<td>IT Operations and Services</td>
<td>Data</td>
</tr>
</tbody>
</table>

As a result of this analysis, SC7 has initiated a series of study periods documented in its Brisbane (Document SC7 N3062), Helsinki (SC7 N3274) and Bangkok (SC7 N3535) plenary meeting resolutions. The current study groups are listed in annex A.

Since the Brisbane plenary, new work has been initiated in the following area:

- Certifications of software engineers
- Software and Systems Architecture
- Software and Systems Assurance
- Data quality
- IT Service Management
- IT and IS Governance
- IT Enabled Services

At its 2012 Plenary, an output of the business planning exercise was the following SWOT:

<table>
<thead>
<tr>
<th>OPPORTUNITIES (Environment)</th>
<th>THREATS (Environment)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business &amp; Technologies development Needs for Methods &amp; Models Partner (Industry) needs</td>
<td>Scope § concurrence Scope evolution Availability of Resources from the environment Lack of relevance from External Partners Misunderstandings with JTC1 Partners</td>
</tr>
<tr>
<td>STRENGTHS (SC7 organisation)</td>
<td>WEAKNESSES (SC7 organisation)</td>
</tr>
<tr>
<td>The SC7 Portfolio of standards Technological Resources – knowledge &amp; expertise Management for standard development</td>
<td>Portfolio of SC7 standards quality Lack of technological resources Limited Governance Management – analyse &amp; coordination Lack of Human resources Imposed process (Constraint)</td>
</tr>
</tbody>
</table>

SC7 is currently working to address the results of its 2012 and 2013 business planning exercises.
Active Study Groups, which are exploring new areas or future work, are described in annex A. They are:

- Study Group to investigate the possibility of a new standard on "Guidelines for the Evaluation and Selection of Software and System Engineering Tools"
- Study group to prepare an NWIP for a revision project and an initial working draft for the third edition of ISO/IEC 20000-1
- Study Group on "Emerging Software Asset Management (SAM) standard requirements"
- Study Group on feasibility of preparing an Ontology for the SC7 domain and Standards
- Study Group on Architecture Guidance
- Study Group on Gamification

3.2.1 RISKS

SC7 is presently in a mode where its focus is to produce new standards.

Risks are managed through:

- Proactive business planning
- Continuous management
- Proactive liaisons

SC7 has currently three Special Working Groups (SWG) in place to contribute to the above:

- SWG1 on business planning
- SWG5 on architecture management
- SWG6 on Operations Management

See Annex A for further details.
3.2.2 OPPORTUNITIES

Plenary Attendance

SC7 has seen in the last few years its attendance at Plenary meetings has grown continuously to first reach a plateau of between 120 and 140, and then in the last 3 years a new plateau of between 200 and 300 (see figure).

Participation to the last plenary in Montréal, Québec, Canada, was 227 delegates from 24 countries.

Host for future plenary meetings have been identified for the next three years. These are:

- 2014 – Australia
- 2015 – Brazil (confirmed)
- 2016 – China (to be confirmed)
- 2017 – Malaysia (to be confirmed)

The growing importance of software based product and services in post-industrial society and developing economies should ensure that interest in SC7 should remains high in the foreseeable future as long as proper market relevance is maintained.
New projects

The following projects have been initiated in the last 12 months:

- ISO/IEC NP TR 12182: Systems and software engineering -- Categorization of systems and software products
- ISO/IEC AWI 19770-7: Information technology -- Software asset management -- Part 7: Tag management
- ISO/IEC CD 26531: Content management for product life-cycle, user and service management documentation
- ISO/IEC NP 29110-4-11: Software engineering -- Lifecycle profiles for Very Small Entities (VSEs) -- Part 4-11: Profile specifications: Generic profile group
- ISO/IEC NP 29155-4: Systems and software engineering -- Information technology project performance benchmarking framework -- Part 4: Guidance for data collection and maintenance

The following potential project proposals and maintenance activities are currently under consideration since the last Plenary in Montréal:

- NWIP, ISO/IEC 25000: Systems and software engineering - Systems and software Quality Requirements and Evaluation (SQuaRE) – Guide to SQuaRE
- NWIP, ISO/IEC 25001: Systems and software engineering - Systems and software Quality Requirements and Evaluation (SQuaRE) – Planning and management
- NWIP for System Integration Engineering.
- NWIP for a Guide to Application of ISO/IEC 12207 for SOA
- NWIP, ISO/IEC 33061 - Process assessment - Software life cycle Process Assessment Model, for combined New Work Item and CD Registration and CD ballot
- NWIP, ISO/IEC 33060 - Process assessment - Systems Life Cycle Process Assessment Model, for combined New Work Item and CD Registration and CD ballot
- NWIP, ISO/IEC 33010 - Process assessment - Guide for performing process assessment, for combined New Work Item and CD Registration and CD ballot
- NWIP, ISO/IEC 33062 - Process assessment - IT Service Management Process Assessment Model, for combined New Work Item and CD Registration and CD ballot
- NWIP, ISO/IEC 33064 - Process assessment -Safety Extensions Process Assessment Model, for combined New Work Item and CD Registration and CD ballot
- NWIP, ISO/IEC 24773, Software and Systems Engineering – Schemes for the certification of software and systems engineering professionals
- NWIP, Working Draft for a standard on "Information technology — Software asset management — Part 4: Usage tag" If and when the NP
- NWIP, ISO/IEC 19770-1:2012 "Information technology — Software asset management — Part 1: Requirements"
- NWIP, ISO/IEC 29110-3-3 Systems and Software Engineering -- Lifecycle profiles for Very Small Entities (VSEs) -- Part 3-3 Using Process Assessment for Conformity
- NWIP, ISO/IEC 29110-3-4 Systems and Software Engineering -- Lifecycle profiles for Very Small Entities (VSEs) -- Part 3-4: Autonomy-based improvement method
- NWIP, ISO/IEC 25051: Software engineering — Systems and Software product Quality Requirements and Evaluation (SQuaRE) — Requirements for quality of Commercial Off-The-Shelf (COTS) system and software product and instructions for testing"
- NWIP, ISO/IEC 25051: Software engineering - Systems and software Quality Requirements and Evaluation (SQuaRE) - Requirements for quality of Ready to Use Software Product (RUSP) and instructions for testing
- NWIP, ISO/IEC 33016 Information technology — Process assessment — Process Assessment Body of Knowledge by 24 months, due to dependencies on ISO/IEC TR 19759(Guide to the SE Body of Knowledge)
• NWIP, ISO/IEC 15414:2002, AMD 1 Information technology – Open distributed processing – Reference
• model – Enterprise language
• NWIP, ISO/IEC 19770-5 Information technology — Software asset management — Overview and vocabulary
• NWIP, ISO/IEC 19770-3, Information technology -- Software asset management -- Part 3: Software entitlement tag
• NWIP, ISO/IEC 29110 Software Life Cycles for Very Small Entities
• NWIP, ISO/IEC TR 20000-11 Information technology - Service management - Guidance on the relationship
• NWIP, ISO/IEC 20000-15: Trustworthiness
• NWIP, ISO/IEC TR 20000-11, Guidance on the relationship
• NWIP, ISO/IEC 20000-7: Information technology – Service management – Part 7: Application of ISO/IEC 20000-1 to the cloud
• ISO/IEC 30105 – Renaming of title of existing Part 4 and Combining existing Part 3 & 4

3.3 WORK PROGRAM PRIORITIES

SC7 work program strategy is to suspend or cancel any project that does not have sufficient resource. Consequently, SC7 priorities are to ensure that its present work program is executed in a timely fashion while producing quality documents. Another element of the SC7 strategies is to adopt suitable documents produced by external organizations.
ANNEX A: SC7 ORGANIZATION

Organisation Chart

The current organisation chart is:

![Organisation Chart Diagram]

Governance Special Working Groups

Two Specials Working Groups (SWG) have been created to handle Business Planning and Architecture:

<table>
<thead>
<tr>
<th>SWG1</th>
<th>Business Planning Group (Resolution 1567)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Convener</strong></td>
<td>François Coallier - SC7 Chairman</td>
</tr>
</tbody>
</table>
| **Scope:** | 1. Support the Chair in the elaboration of directions and policies.  
2. Assist the chair in the prompt resolution of issues.  
3. Propose update to the JTC1/SC7 business plans and procedures.  
4. Propose updates to JTC1/SC7 communications function.  
5. Prepare procedures and organization responsibilities to ensure an integrated strategy planning, business planning, and management systems for JTC1/SC7. |
| **Members:** | • Mr Anukul Tamprasirt (Thailand)  
• Mr. David Welsh (USA) |
### SWG5 Architecture Management (Resolution 1568)

| Chairman | François Coallier - SC7 Chairman  
| Convener | Michael Crerar – USA |

**Scope:**
1. Elaborate and Maintain JTC1/SC7 Architecture standing documents
2. Provide counsel to JTC1/SC7 Conveners and editors on standards architecture and vocabulary consistency issues
3. Recommend to JTC1/SC7 standard maintenance strategies
4. Report on its activities to the JTC1/SC7 BPG and AG
5. Include in its scope the IEEE systems and software engineering standards collection

**Members:**
- Mr. Yukio Tanitsu (Japan) (temporary)
- Garry Roedler (USA)
- Terry Rout (Australia)
- Shirley Lacy (UK)
- Terry Doran (IEEE-CS)
- Jonathan Earthy (UK)
- Padmavathy Ramesh (India)
- Tom McBride (Australia)
- Timo Varkoi (Finland)
- Alison Holt (New Zealand)
- Cheryl Jones (USA)
- Zhou Ping (China)

### SWG6 SC7 Operations Management Group (Resolution 1706)

| Chairman | François Coallier - SC7 Chairman |

**Scope:**
1. Provide inputs to the Chair and the AG on operational and strategic issues.
2. Act as an exchange forum on good practices related to the management of Working Groups and their Work Program
3. Act as an exchange forum for operational issues related to the execution of the Work Program
4. Act as an exchange forum and facilitator for issues that are relevant to multiple WG

**Members:**
WG and SWG Conveners
Three Liaison Groups are currently active:

**SLG 2: Liaison to JTC 1 SC27**

| I105, 1234, 1338, 1600 | JTC 1/SC 7 establishes a Special Liaison Group (SLG2) to support its liaison officers to JTC 1 SC27 with the mandate to:

- Advise its liaison officers on approach towards the liaison
- Assist its liaison officers in the prompt resolution of issues
- Assist in the review and of relevant SC27 WDs and balloting documents relevant to SC7 program of work
- Respond, if required, to SC27 liaison statements and reports
- Issue at least once a year liaison statement(s) and/or reports to JTC 1/SC 27
- Encourage and assist JTC 1/SC27 to maintain compatibility between their standards and JTC 1/SC7 standards

The JTC1/SC7 Special Liaison Group (SLG2) will be chaired and convened by Mr. Satoshi Fushimi (Japan).

The SLG 2 membership shall be composed of:

- Mr Jim Moore (IEEE-CS)
- Mr Alain Bonneaud (Cote d'Ivoire)
- Mr Pierre Thory (France)
- Dr Jenny Dugmore(UK)
- Mr Roger Cumming (USA)
- Mr. Keith Fuller(Canada)

**SLG 3: Liaison to JTC 1 SC38**

| I455, 1601 | JTC 1/SC 7 extends its Special Liaison Group (SLG3) to support its liaison officers to JTC1 SC38 with the mandate to:

- Advise its liaison officers on approach towards the liaison
- Assist its liaison officers in the prompt resolution of issues
- Assist in the review and of relevant SC38 WDs and balloting documents relevant to the SC7 program of work
- Respond, if required, to SC38 liaison statements and reports
- Issue at least once a year liaison statement(s) and/or reports to JTC1/SC 27
- Encourage and assist JTC 1/SC38 to maintain compatibility between their standards and JTC 1/SC7 standards

The JTC1/SC7 Special Liaison Group (SLG3) will be chaired and convened by Ms Padmavathy Ramesh (India).

The SLG 3 membership shall be composed of:

- Mr. David Bicket (UK)
- M. Jean Bérubé (Canada)
- Diego Berea (WG25)
- Mr. David Welsh (USA)
- Ms. Yuan Yuan (China)
SLG 4: Liaison to ISO/TC176

TC 1/SC 7 extends its Special Liaison Group (SLG4) to support its liaison officers to TC 176 with the mandate to:
- advise its liaison officers on approach towards the liaison
- assist its liaison officers in the prompt resolution of issues
- assist in the review and of relevant ISO/TC 176 WDs and balloting documents relevant to the SC7 program of work
- respond, if required, to ISO/TC176 liaison statements and reports
- issue at least once a year liaison statement(s) and/or reports to ISO/TC 176

The JTC1/SC7 Special Liaison Group (SLG4) will be chaired and convened by Ms Gisele Villas Boas (Brazil).

The SLG 4 membership shall be composed of:
- Lynda Cooper (UK)
- Mr. Bill Curtis (USA)
**Study Group on Emerging Software Asset Management (SAM) standard requirements**

<table>
<thead>
<tr>
<th>1687</th>
<th>JTC 1/SC 7 instructs its Secretariat to extend for one (1) year the SC 7 Study Group on &quot;Emerging Software Asset Management (SAM) standard requirements&quot;.</th>
</tr>
</thead>
</table>

The terms of reference of this study group are to:

- Document current and planned standards in SAM and their role in meeting requirements for managing software and related assets, and make this information available to interested parties for the purposes of this study group.
- Identify needs for new or improved standards in SAM and related areas to meet requirements for managing software and related assets in evolving IT architectures (such as the cloud).
- Liaise and collaborate with other SCs, relevant SDOs and consortia related to this objective.
- Hold open meetings to gather requirements as needed from a wide range of interested organizations.

The Convener of the Study Group may invite experts with specific expertise in the field.

The SC 7 Secretariat will issue a call for participation in the Study Group.

The report produced by the study group will contain the report of activities and a list of recommendations to SC 7.

The Study Group will be chaired by Mr. Peter Beruk (Business Software Alliance (BSA) - a Class C Liaison Organization) at peterb@bsa.org.

Members of the study group will include:

- Jason Keogh (Ireland)
- Krzysztof Bączkiewicz (Poland)
- Steve Klos (USA)
- David Bicket (UK)
- Ron Brill (USA)
- Heather Young (USA)

Membership and contributions are solicited from all Working Groups, National Bodies, and liaison organizations.

The SG chair shall take reasonable action to ensure that the material included in the study group report is appropriate for public release. Study group chairs are reminded that study group reports are to be treated in a similar manner to working drafts with regard to availability and distribution.
Study group to prepare an NWIP for a revision project and an initial working draft for the third edition of ISO/IEC 20000-1

JTC1/SC7 instructs its Secretariat to establish a study group to prepare an NWIP for a revision project and an initial working draft for the third edition of ISO/IEC 20000-1 Information technology – Service management – Part 1: Service management system requirements

The study group will be chaired by Erin Casteel (the convener of SC 7/WG25).

Study group membership includes

- Alastair Walker (SA)
- Mahua Mukherjee (IN)
- Mitta Rout (IN)
- Sujatha Kumaraswamy (IN)
- Takashi Yagi (JP)
- Yoshiyuki Hirano (JP)
- Yasuko Okazaki (JP)
- Steve Tremblay (CA)
- Colin Rudd (UK)
- Finbarr Callan (UK)
- Jenny Dugmore (UK)
- Lynda Cooper (UK)
- Shirley Lacy (UK)
- Yang Hee Yung (KR)
- Alain Bonnaud (CI)

Membership and contributions are solicited from all working groups, national bodies, and liaison organizations. Additional members can be added until 2013-09-30; nominations must be sent to the SC7 Secretariat. The study group will meet electronically and during the WG25 Pisa Interim November 2013. The SG chair shall take reasonable action to ensure that the material included in the study group report is appropriate for public release. Study group chairs are reminded that study group reports are to be treated in a similar manner to working drafts with regards to availability and distribution.

Upon the chair's determination that the study group's work is completed, the SC7 Secretariat is instructed to circulate the NWIP and associated documents for the revision project. If and when the NWIP is approved, JTC 1/SC 7 instructs its Secretariat to assign the project to WG25.

It is expected that this SG will need to be renewed at the next plenary.
JTC1/SC7 instructs its Secretariat to establish a study group to investigate the possibility of a new standard (or Revision of 14102) on "Guidelines for the Evaluation and Selection of Software and System Engineering Tools".

The terms of reference of this study group are:

- Literature study on software development tools
- Survey market needs on software development tools
- Identify the structure of a potential standard
- Generic components for evaluation and selection of tools
- Tool-specific components for evaluation and selection of tools
- Make recommendations on NWIP for evaluation and selection of Software and System Engineering tools

The Study Group will be chaired by Mr. Kazuo Yabuta (Japan). at yabuta.kazuo@jp.fujitsu.com

Study group membership includes:

- Yuwohan Ahn (Korea)
- Eric Gauthier (France)
- Kiyohiko Kajiwara (Japan)
- Timo Kakola (Finland)
- Vijay Krishnamoorthy (India)
- Byong Lee (Korea)
- Dan Lee (Korea)
- Hareton Leung (Hongkong)
- Eric De Pauw (Canada)
- James Moore (IEEE)
- Prof. M. Somasundaram (India)

Additional members can be added until 2013-07-31. Nominations must be sent to the SC7 Secretariat.

Proposed schedule:

- Study market changes, structure of a set of standards (Jun.2013 ~ Sep.2013)
- Review the results (2013 Interim meeting)
- Present the study period report during 2014 SC7 AG & Plenary meeting
Study Group on feasibility of preparing an Ontology for the SC7 domain and standards

1656 JTC1/SC7 instructs its Secretariat to re-establish a study group to evaluate the feasibility of preparing an ontology (a conceptual model) of the domains of interest of SC7 and its standards.

The terms of reference of this study group are to:

- Clarify the requirements on the need within SC7 for an ontology
- Clarify the nature and content of the ontology(ies) required.
- Prioritize recommendations and prepare a work plan in collaboration with relevant WGs

This document will contain:

- The rationale for the recommendations
- An example of the proposed ontology
- The relationship between
- An integrated work plan to prepare such an ontology
- The mechanism to use the recommended ontological modelling approach within SC7 and SC7 documents.

The Study Group Report will consolidate the result of the above activities. This report shall be submitted to the SC7 Secretariat no later than 2014-2-15.

Additional guidance for the study group:

- The study group should start with the SEVOCAB and address inconsistencies used in the ontologies.
- Describe how the intended ontological framework would add value to the work of SC7, including supporting the revised ISO directives concerning terminology.
- Describe how any resulting ontology(ies) could feasibly be created and maintained.
- Provide examples to show the work required to develop the details of the proposed ontological framework and the value of it.
- The study group report should demonstrate representative views of all the study group members.

Schedule:

The draft study group report should be complete by the interim meeting to enable a final report to be developed by 15th March 2014 so that any ballots or other actions necessary to launch projects or other work arising from the study group report can be initiated at the 2014 plenary meeting.

The study group will be led by Mr. Brian Henderson-Sellers (Australia). Experts wishing to participate should contact the chair of the study group before June 30, 2013, at Brian.Henderson-Sellers@uts.edu.au
The initial members are:

- Rich Hillard (IEEE)
- Cheryl Jones (SWG5/USA)
- Tom McBride (Australia)
- Celestina Bianco (Spain)
- Remek Wasilewski (Poland)
- Annette Reilly (SWG22/USA)
- Monica Barcellos (Brazil)
- Ricardo Falbo (Brazil)
- Nicola Guarino (Italy)
- Giancarlo Guizzardi (Brazil)
- Marta Indulska (Australia)
- Junzo Kato (Japan)
- Kazunori Shioya (Japan)
- Graham Low (Australia)
- Andreas Opdahl (Norway)
- Ron Weber (Australia)

Additional members can be added until 2013-07-31. Nominations must be sent to the SC7 Secretariat.
### Study Group on Architecting Guidance

JTC 1/SC7 instructs its Secretariat to establish a Study Group for the development of Architecting Guidance to investigate the possibility of additional standards or guidance in the area of software and systems engineering within SC7.

A report including, if pertinent, a draft NWIP, shall be submitted to the SC7 Secretariat no later than 2014-05-01.

The study group shall liaise closely with WG42, WG19, and WG7. The Study Group shall take into consideration:

- ISO/IEC IEEE 42010
- ISO/IEC 10646
- ISO/IEC 15288

and other relevant national developments in the area of architecture as applicable to architecting guidelines.

The study group shall provide an analysis of the requirements of the market and a status of current standardization activities. Internationally recognized architecture frameworks issued by governments and consortia may be considered. If pertinent, it shall make recommendations on changes to existing standards/guidance and/or the creation of new standards or TR.

Initial membership will consist of:

- Jean-Luc Garnier, France
- Jean Bérubé, Canada
- Mr Rich Hilliard (IEEE)

Additional members can be added until 2013-07-30. Nominations must be sent to the SC7 Secretariat.

The study group will be chaired by Jean-Luc Garnier (France), and will submit a full report on 2014-04-15 at the latest. The SC 7 Secretariat will issue a call for participation in the Study Group.

The report produced by the study group will contain the report of activities and a list of recommendations to SC 7.

The SG chair shall take reasonable action to ensure that the material included in the study group report is appropriate for public release. Study group chairs are reminded that study group reports are to be treated in a similar manner to working drafts with regard to availability and distribution.
JTC 1/SC7 instructs its Secretariat to establish a Study Group for the investigation of gamification practices and explore the possibility of additional standards or guidance in the area of software and systems engineering within SC7. A report including, if pertinent, a draft NWIP, shall be submitted to the SC7 Secretariat no later than 2014-05-01.

The study group shall liaise closely with the following SC7 work groups WG10 and WG26.

The Study Group shall take into consideration published research and guidance in the area of gamification and related disciplines.

The study group shall provide an analysis of the requirements of the market and a status of current standardization activities. If pertinent, it shall make recommendations on changes to existing standards/guidance and/or the creation of new standards or TR.

The study group will be led by Mr. Alec Dorling (United Kingdom)

Initial membership will consist of:

- Stuart Reid, United Kingdom
- Terry Rout, Australia
- Jørn Johansen, Denmark
- Marion Lepmets, Ireland
- Alison Holt, New Zealand
- Cheryl George, United Kingdom

Additional members can be added until 2013-06-30. Nominations must be sent to the SC7 Secretariat. Experts wishing to participate should contact the chair of the study group before the end of June 2013 at alec.dorling@impronova.com;

The report produced by the study group will contain the report of activities and a list of recommendations to SC 7.

The SG chair shall take reasonable action to ensure that the material included in the study group report is appropriate for public release. Study group chairs are reminded that study group reports are to be treated in a similar manner to working drafts with regard to availability and distribution.