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Software & System Engineering  
Secretariat: CANADA (SCC)

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Nagoya, Japan, May 14-18, 2001.

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**Project**

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ISO/IEC JTC1/SC7: INFORMATION TECHNOLOGY-SOFTWARE ENGINEERING  
Working Group 9: System Integrity

**Report of SC7/WG9 Nagoya Meeting**

The SC7/WG9, System Integrity, meeting was held during the week May 14-18, 2001 in conjunction with the SC7 Plenary in Nagoya, Japan.

**1. Participation**

Paul Croll apologized for not being able to be in Nagoya in person (due to a family medical crisis) but communicated via teleconference with the working group. David Kiang acted on behalf of the Interim Convener on site. The following participants were present at the WG9 Nagoya meeting (Note: not all participants were present for all discussions).

Paul Croll	USA	Interim Convener (Teleconference)
David Kiang	Canada	TC56/WG4-SC7/WG9, Acting Convener
Takeshi Natsume	Japan	TC56/WG4
Tohru Matsuodani	Japan	SC7/WG9
Hans Daniel	Germany	TC56/WG4-SC7/WG9
Michiyuki Kawauchi	Japan	TC56/WG4
Tomoo Matsubara	Japan	SC7/WG9
Toshiaki Ochiai	Japan	SC7/WG9
Kazuo Kera	Japan	SC7/WG9
Hideo Nakamura	Japan	SC7/WG9

**2. Future of SC7/WG9**

WG9 recommended to the SC7 Advisory Group that WG9 activities be continued, with potential work items identified focusing on System Integrity:

- a) Revision of ISO/IEC 15026 (1998) for maintenance, updated to meet new scope.
- b) IEC/CD 61720 transferred from TC56 due to JWG dissolution and integrated in WG9 work program to support software integrity tools and techniques.
- c) Fast track adoption of IEEE 1540 Risk Management to complement WG9 Integrity Process framework.
- d) Study project on Integrity Concepts and Applications to lay foundation and principles to guide integrity technology evolution.

At the closing Advisory Group meeting prior to finalizing the SC7 resolutions, WG9 was given the opportunity to present the proposed WG9 work program outlining the benefits for continuation of WG9. The presentation highlighted the next generation System Integrity standards to meet the current and future needs of the IT industry. Paul Croll was confirmed as WG9 Convener by SC7 resolution (see Attachment 1). David Kiang acting on behalf of the WG9 Convener delivered the WG9 report at the AG meeting and at the SC7 closing plenary.

SC7 resolution WG9.1 is shown in Attachment 1. The future of WG9 is subject to successful NP ballot on any one of the potential work items identified. A successful NP requires at least five member bodies committed to participate and work on the WG9 project. At the Nagoya meeting, informal solicitation with the heads of member body delegations indicated four member bodies with firm support and three pending confirmation. Member bodies supporting continuation of WG9 with dedicated expert participation include

USA, Germany, Japan and Canada. Support from Australia, UK, France and other member bodies still need follow up.

### **3. Proposed New WG9 Document Framework**

WG9 discussed a proposal from Japan on a new framework to support continuation of WG9 activities reflecting the new scope and System Integrity mandate. The proposed framework is documented in the SC7/WG9 Nagoya 1 per Attachment 2. If accepted by WG9 this new document framework will update the current framework in the WG9 Business Plan formulated at the Madrid meeting in 2000. The benefits of this new framework are summarized:

- a) Visionary approach to achieve comprehensive coverage of System Integrity standards to meet current and future IT industry needs.
- b) Timely adoption and use of existing compatible standards to expedite WG9 effort on delivery of essential System Integrity standards within a practical timeline.
- c) Expansion of common Integrity tools and technologies for broader applications in Dependability, Safety and Security of IT systems.
- d) Challenging projects to attract more expert participation to revitalize WG9 and sustain core contributing expert memberships.

### **4. Summary of Action Items**

- a) WG9 to submit NP on fast track adoption of IEEE std 1540. (Paul Croll)
- b) Initiate maintenance cycle for ISO/IEC 15026. (Paul Croll)
- c) Japan to prepare NP on new Parts to complement ISO/IEC 15026 on System Integrity. (Tohru Matsuodani)
- d) WG9 to advise TC56/WG4 on transfer of IEC Project 61720 to SC7/WG9. (Paul Croll and Dominique Taillifet to follow up formal transfer with TC56 and SC7 Secretariats)
- e) Draft Integrity principles and concepts working paper for discussion at the next WG9 meeting. (David Kiang)

### **5. Acknowledgements**

- a) WG9 thanks Mr. Tohru Matsuodani and our Japanese hosts for arranging the teleconference and making the meeting facilities available for our meeting in Nagoya.
- b) The Convener thanks Mr. David Kiang for preparing the draft WG9 Nagoya report.

### **6. Next Meetings**

The next WG9 meetings are noted as follows:

- a) Interim meeting (suggested venue in London, UK at BSI) in September-October 2001. Note TC56 Plenary meeting in Oslo, Norway, October 1-5, 2001.
- b) WG9 plans to meet concurrently with the SC7 Plenary in Gyeongju, Korea, May 13-17, 2002. Detailed information on the SC7 Plenary can be found at the website <http://www.ats.go.kr> of the host country sponsored by the Korean Agency for Technology and Standards.

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Attachment 1

**WORK ITEMS**

WG9.1	<p>JTC1/SC7 instructs its secretariat to</p> <ol style="list-style-type: none"> <li>a) Contact TC56 to formalize the transfer of IEC/TC56 Project 61720 to SC7/WG9. Transfer of IEC/TC56 Project 61720: Guide to techniques and tools for achieving confidence in software. This will be circulated as a NP ballot to JTC1/SC7.</li> <li>b) Contact IEEE to formalize the transfer of IEEE std 1540-2001 for JTC1/SC7 accelerated processing. This will be circulated as a NP ballot to JTC1/SC7.</li> <li>c) Initiate a NP for the maintenance of “ISO/IEC15026: 1998 System and software integrity levels” to provide extended scope and application linkage to safety and security standards (Project leader: Japan).</li> <li>d) Establish a Study project to explore Integrity concepts and applications and relationship with dependability.</li> </ol> <p>If any NP ballot is successful it will be assigned to WG9 for progress. If all NP ballots are unsuccessful JTC1/SC7 instructs its Secretariat to disband its WG9.</p>
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**Appointment of Conveners**

GEN.1	<p>JTC1/SC7 confirms the following as Conveners for a period of 3 years</p> <ul style="list-style-type: none"> <li>• Mr. Paul Croll USA as Convener of WG9</li> </ul>
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ISO/IEC JTC1/SC7: INFORMATION TECHNOLOGY-SOFTWARE ENGINEERING  
Working Group 9: Systems and Software Integrity

**Document Framework**

The following presents an overview of the updated document framework to reflect the current WG9 work status and potential new work item proposals (NPs).

<b>Element Standards</b>	IEEE Std 1540 S/W Life Cycle Processes - Risk Management (Fast Track Adoption)	ISO/IEC 15026 System and S/W Integrity Levels (Maintenance Cycle)				
		NP-System Integrity - Part 2: Performance Requirements for Mitigation				
<b>Guides &amp; Supplements</b>	NP-System Integrity - Part 3: Assessment		IEC/CD 61720 Guidance for Tools and Techniques to Achieve Confidence in Software (Transfer from TC56)		NP-System Integrity - Part 5: Knowledge Base	
			NP System Integrity - Part 4: Tools and Techniques			

SC7/WG9 existing standards  
New work item proposals

Current WG9 work status

- a) TC56 is transferring a Project to WG9 - IEC 61720: Techniques And Tools To Achieve Confidence In Software. This Project was under development by the JWG before its dissolution. Current document status is a CD version with NC comments pending resolution. Formal transfer will go through the Secretariats of TC56 and SC7.
- b) Possible SC7 fast track adoption of IEEE std 1540-2001 Software life cycle processes – Risk management. This standard complements the WG9 overall document framework in addressing the essential risk management process. Integrity principles embrace a risk base concept. Formalization for IEEE release of this standard is needed prior to SC7 adoption. (Project leader USA)

- c) ISO/IEC15026 (1998): System and software integrity levels is ready for the routine maintenance cycle.

#### Potential new work item proposals

Japan is proposing a new standards structure for the WG9 document framework. The objective is to better reflect the System Integrity scope of the WG9 Business Plan. This provides a comprehensive work program and standards structure to meet the current and future industry needs for System Integrity standards. The restructuring effort will incorporate the timely update of ISO/IEC 15026 during its maintenance cycle and the integration of the transferred project IEC 61720 as supporting tools, plus key new work items to cover the WG9 scope and terms of reference.

The following presents an outline of the scope and application of the proposed new work items in 5 parts under the generic title of Information Technology – System Integrity.

- Part 1: System Integrity – Principles and Integrity Levels
  - Scope: Describe the principles of the underlying System Integrity framework and integrity levels concept, the usage of System Integrity standards and associated integrity terms and definitions.
  - Application: Present a generic framework applicable to a broad range of IT systems for risk mitigating.
  - Benefits: Facilitate communications and use of common standard terms for acquirers, suppliers, and users in IT systems contracts, assessment, services and operation.
  - Reference: Use established common terms and definitions for interpretation of System Integrity principles and related industry best practices.
  
- Part 2: System Integrity – Performance Requirements for Mitigation
  - Scope: Requirements to achieve desirable system integrity level.
  - Application: Specification of the required integrity level for mitigation of architectural design to achieve confidence in use.
  - Benefits: Provide assurance in integrity level determination.
  - Reference: Revision of ISO/IEC 15026 to update current practice.
  
- Part 3: System Integrity – Assessment
  - Scope: Process guidance for Integrity Levels assurance of IT systems.
  - Application: Provide Integrity Level assessment methodology for independent assessment and assurance of IT systems.
  - Benefits: Improvement of assurance performance. Consistent process for Integrity Level assessment and certification of IT systems.
  
- Part 4: System Integrity – Tools and Techniques
  - Scope: Provide guidance in the selection and use of applicable tools and techniques for Integrity Level assessment and assurance.
  - Application: Applicable to the various stages of systems and software life cycle processes.
  - Benefits: Present best practices of applicable tools and techniques. Extension of common tools and techniques for dependability, safety and security IT applications.
  - Reference: Use IEC/CD 61720 as basis for development of Part 4.
  
- Part 5: System Integrity – Knowledge Base
  - Scope: Collection of relevant data related to integrity experience on specific IT systems.
  - Application: Relevant Integrity data to support investigation of risk events.
  - Benefits: Timing and cost avoidance in investigation effort.