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Address reply to: ISO/IEC JTC1/SC7 Secretariat
École de technologie supérieure – Département de Software and IT Engineering
1100 Notre Dame Ouest, Montréal, Québec Canada H3C 1K3
secretariat@jtc1-sc7.org

www.jtc1-sc7.org

SC7 Chairman Presentation

to the

ISO/IEC JTC 1

PLENARY

South Africa, 2006-11-14

François Coallier

SC7 Chairman

École de technologie supérieure

francois.coallier @etsmtl.ca

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- Status on Banff Tech Watch
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SC7 Terms of Reference

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

Why are standards important in IT?

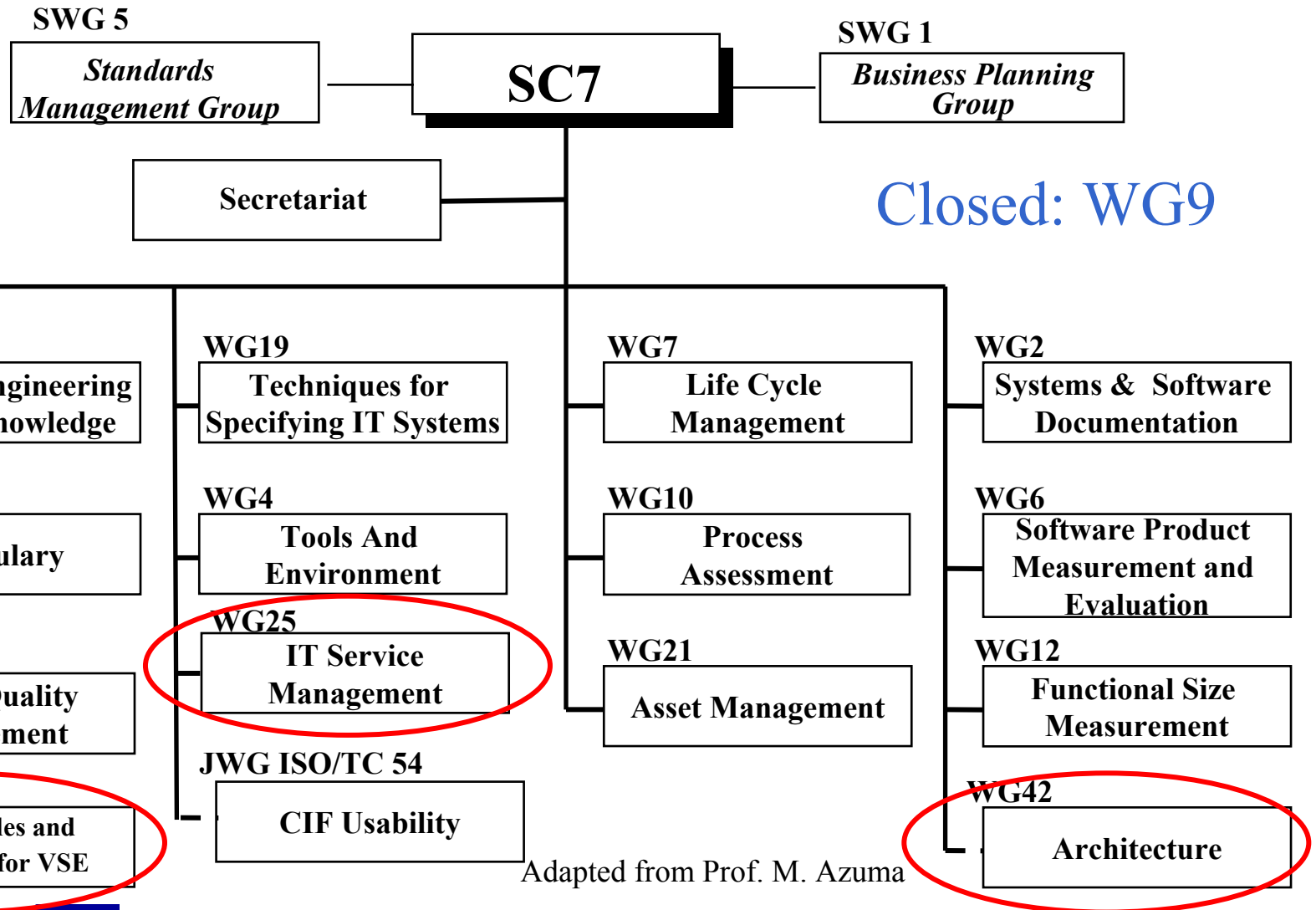
One perspective – Global interoperability:

- Between machines/components
- Between people
- Between organizations

SC7 Contributions

- > Enable the creation of markets
- > Enable commercial activities
- > Enable functional products
- > Enable functional infrastructures
- > Enable the perinity of digital information
- >

SC7 Structure



Adapted from Prof. M. Azuma

SC7 Governance Support: SWG 1 & 5

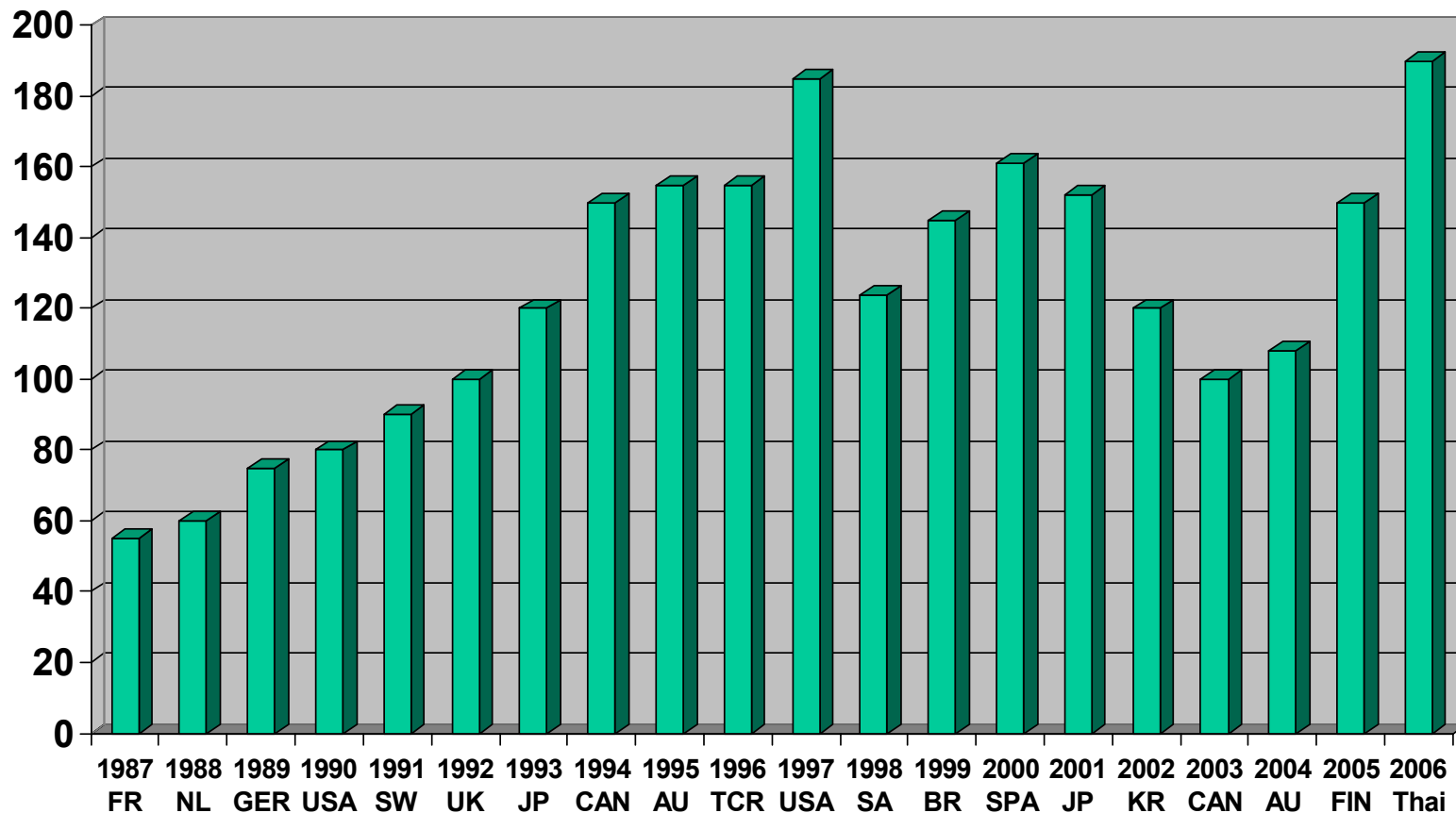
SWG1 – Business Planning

- **Conveners:**
 - *François Coallier – SC7 Chairman*
- Doug Thiele (Australia)
- Michael Gayle (USA)
- Jean Bérubé (Canada)
- Yoshikazu Yamamoto (Japan)
- Dan Lee (Korea)
- Alastair Walker (South Africa)
- Risto Nevalainen (Finland)
- Antonio Coletta (Italy)

SWG5 – Standards Management

- **Conveners:**
 - *Cheryl Jones - USA*
 - *Mike Gayle - USA*
- Kiyoshi Ogawa (Japan)
- David Kitson (USA)
- Bud Lawson (Sweden, INCOSE)
- Terry Rout (Australia)
- James Moore (IEEE-CS)
- Peter Fagg (UK)
- Serge Oligny (Canada, QuEST Forum)

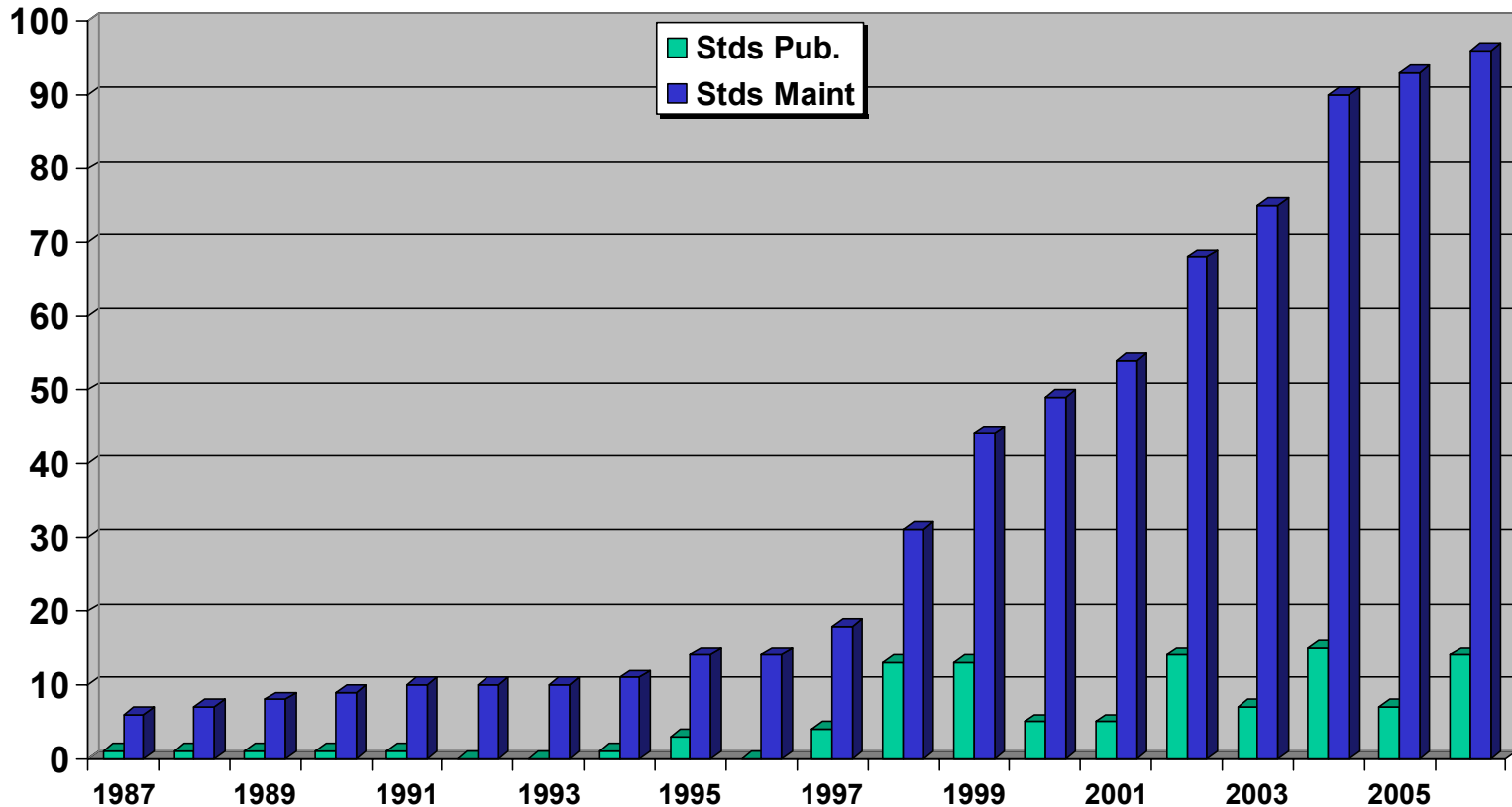
Plenary attendance statistics



Ballot Participation

- Up to the May 2006 Plenary in Bangkok, the 50% participation to voting has been met in all ballots, although with difficulty in many cases.
- At its last plenary in Bangkok, JTC 1/SC7 adopted the following resolution on SC7 internal balloting:
JTC1/SC7 instructs its Secretariat to take whatever action necessary to convert to the ISO electronic balloting system as of the 1st of June 2006. The NBs of P members should use their Livelink accounts to cast ballots. The instruction document on electronic balloting will be available on SC7 Web site.
- Implementation of this resolution has resulted up to now in a ballot participation rate of 63 to 90%

Standards Produced and Maintained by SC7



Some Key Accomplishments

- Publication of ISO/IEC 20000-1 & 2 IT Service Management
- Publication of ISO/IEC 197701:2006 Information technology - Software asset management - Part 1: Processes
- Publication of ISO/IEC 23026:2006 Software Engineering - Recommended Practice for the Internet - Web Site Engineering, Web Site Management, and Web Site Life Cycle

New Projects

- ISO/IEC NP 10746-2 Information technology -- Open Distributed Processing - Reference Model: Foundations
- ISO/IEC NP 10746-3 Information technology -- Open Distributed Processing - Reference Model: Architecture
- ISO/IEC NP 12207 Systems and Software Engineering -- Software Life Cycle Processes
- ISO/IEC NP 15288 Systems engineering - System life cycle processes
- ISO/IEC NP TR 15504-6 Information technology -- Process assessment -- Part 6: An exemplar system life cycle process assessment mod
- ISO/IEC NP 15939 Software engineering - Software measurement process
- ISO/IEC NP TR 24774 System and Software Engineering -- Life Cycle Management - Guidelines for Process Definition

New Projects (2)

- ISO/IEC NP 25062 Software engineering -- Software product Quality Requirements and Evaluation (SQuaRE) -- Common Industry Format (CIF) for usability test reports
- ISO/IEC NP 20000-1 Information technology -- Service management -- Part 1: Specification
- ISO/IEC NP 20000-2 Information technology -- Service management -- Part 2: Code of practice
- ISO/IEC NP 25961 Recommended Practice for Architectural Description of Software-Intensive Systems
- ISO/IEC NP xxxxx Information Technology — Tools and Methods of requirements engineering and management for product lines
- ISO/IEC NP 19761 Software engineering -- COSMIC-FFP -- A functional size measurement method
- ISO/IEC NP xxxxx Software and Systems Engineering - Life Cycle Processes - Requirements Engineering

Projects under consideration

- INCOSE Systems Engineering Handbook
- Software Testing
- Software and Systems Assurance

Actives SC7 Study Groups

- Study Group on IT Governance
- Study Group on Software and Systems Benchmarking and Measurement
- Study Group on Software Product Quality Evaluation Module
- Study Group on Review of TR 14143-5 – Functional Size Measurement

Key Strategic Directions

- Respond to the evolution of the global IT market and of IT technologies
 - Increase globalization of IT Services
 - Growing importance of IT operations services
 - Growing importance of Systems Integration
 - Continual increase in IT ubiquity
 - Continual increase in the importance of the global IT infrastructure to the global economy

Key Strategic Directions (2)

- Continue:
 - Increase integration and harmonization of SC7 standards
 - Increase coverage of Systems Engineering
 - Increase harmonization of Software and Systems Engineering Standards
 - Integration of SC7 standards with IEEE's
 - Work closely with strategic partners:
 - IEEE, INCOSE, OMG, ITU-T, itSMF.

SC7 Standards Coverage (2004)

STRENGTHS

- Life-Cycle Processes
- Product Metrics
- Process Metrics
- Formalisms
- Software Engineering Body of Knowledge
- Tools environment

OPPORTUNITIES

- Systems Engineering
- Software and Systems Assurance
- Systems Architecting
- IT Operations and Services
- Re-use
- Agile Processes
- Open Source Software (OSS)
- Curricula and Certification
- Application Domains Acceptance
- Data ?

Markets Size (10⁹ US \$)

ICT Vendor 2002

**Reference: R.Fulton,
COM-15-1667, Predicts
2002 – What's Ahead for
the IT Industry, Gartner
Research, Research Note,
2002-01-08**

http://www.adabasnatural4ever.com/industry_news/media/predicts_2002_what_s_ahead_for_the_it_industry.pdf

Telecommunications equipment	380
Computer Systems Hardware	240
Software Licenses	70
Project Oriented IT Services	250
Semiconductors	150
Support/Management IT Services	350
TOTAL	1 440

Outputs from the 2004 Brisbane Plenary

Opportunities

- Systems Engineering
- Software and Systems Assurance
- Systems Architecting
- IT Operations and Services
- Re-use
- Agile Processes
- Open Source Software (OSS)
- Curricula and Certification
- Application Domains Acceptance
- Data ?

OUTPUTS -> status

- NWI and Fast Track
- Study Group → Future project
- Study Group -> WG42
- ISO/IEC 20 000 -> WG25
- Study Group

- Study Group
- Study Group -> Project

- NWI -> Project

What is Enterprise IS?

Enterprise IS is a Systems of Systems [1] :

*Multiple, heterogeneous, distributed systems
that are embedded in networks at multiple
levels.*

http://en.wikipedia.org/wiki/System_of_systems

*...and have been developed independently
through time*

[1] D. Smith and L. O'Brian, "Second International Workshop on System Integration and Interoperability," presented at 3th IEEE International Workshop on Software Technology and Engineering Practice (STEP'05), 2005.

Embedded vs Enterprise

(Traditional) Embedded

- Control the 'real' world
- Hard or soft real time
- May impact Health and Safety

- Independent or interrelated systems

- May be mass manufactured

- Enter maintenance once delivered.
Many types of updates possible.

Enterprise

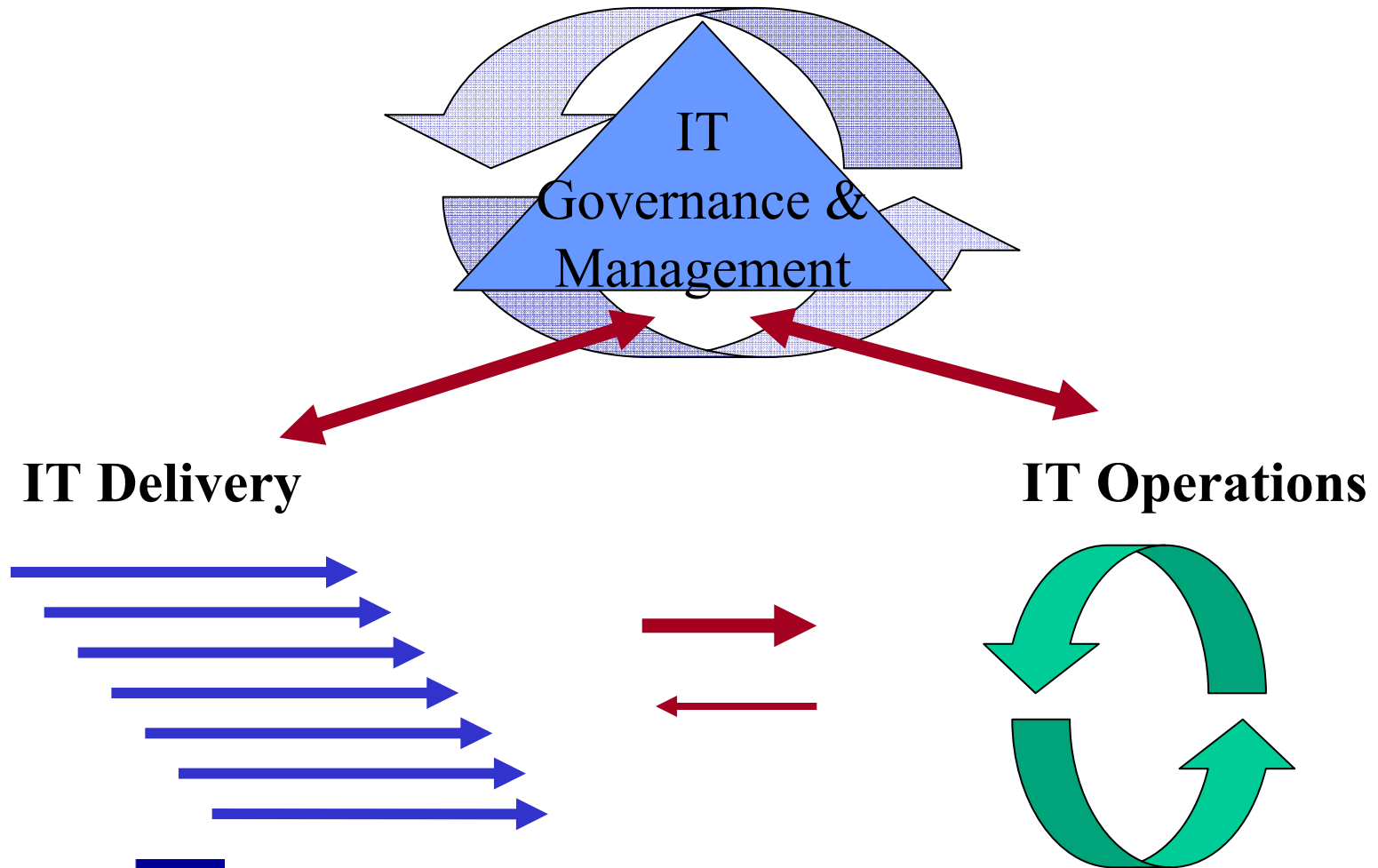
- Process information
- Soft real time
- Financial/Economic impacts. May impact Health and Safety in some cases

- Set of distributed heterogynous systems integrated into an organization.

- Include processes, business rules, data/information

- Continuous addition, modifications or retirements of components/subsystems/systems. Configuration changes.

Enterprise IT Processes



A Total Life-cycle Approach is Required to Ensure Appropriate Service Levels

IT Service Level

=

IT Governance & Management

+

IT Engineering

+

IT Operation

Examples of SC7 Work Pertinent to IT Operations

- Software And Systems Life-cycle Standards (also have governance components)
- Software Maintenance
- Software Asset Management
- Software And Systems Risk Management
- Software Systems Assurance
- Software And Systems Products Related Standards

SC7 History

- **1987 - Formation of JTC1/ SC7**
- **1990 - First Business Plan published**
- **1991:**
 - **Name changed to Software Engineering**
 - **Publication of ISO/IEC 9126**
- **1995 - Publication of ISO/IEC 12207**
- **1997:**
 - **Terms of references broadened to Software Systems**
 - **First Business Planning Workshop**
 - **Vocabulary and BPG SWG established**
- **1998:**
 - **Transfer of ODP and E-LOTOS projects from SC33**
 - **Process architecture**
- **2000 - Name changed to *Software and System Engineering***

Need to Retouch SC7 Terms of References

- To correct some legacy wordings
- To better reflect the total life-cycle coverage of SC7 standardization activities

Proposed new terms of reference

*Standardization of processes, **methods** and supporting technologies for the engineering and management of software and systems throughout their life cycles.*

Note: The processes and technologies are within the scope of JTC1 terms of reference and exclude specific technologies that have been assigned by JTC1 to other of its SCs.”

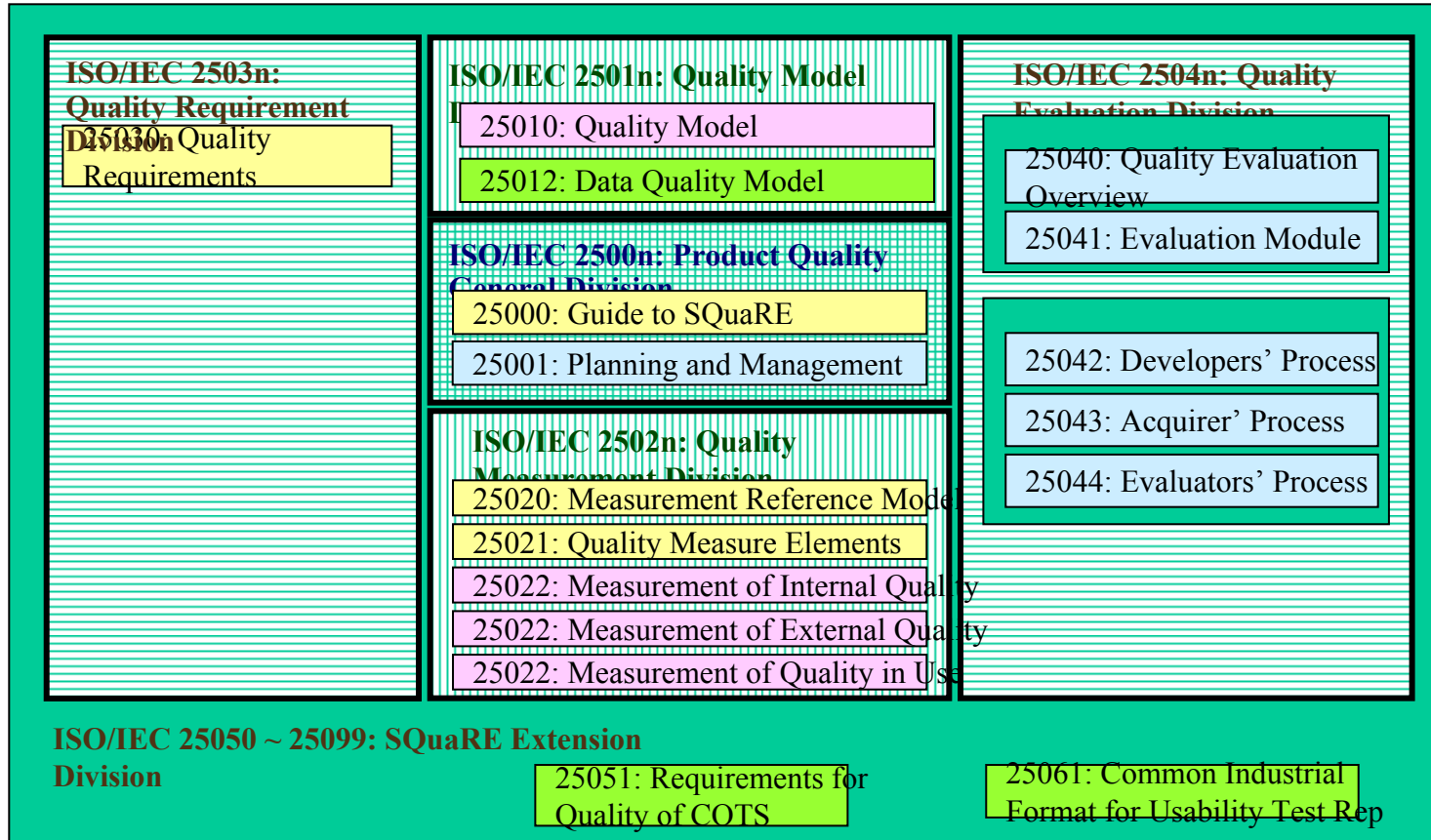
Proposed Correction to Title

Software and Systems Engineering

Intelligent Systems

- Banff Tech Watch Recommendations for JTC 1:
 - SC7 to assess if standardizations activities are required.
 - SC7 to assess IEEE activities in this area.
- Action taken:
 - Added to SWG5 workload
 - Discussions initiated
 - Study Group to be set up at next plenary

Freely Available Standards: SQuaRE Architecture



From WG6 2006 Closing PlenaryReport

For further details..

- SC7 Web Site

<http://www.jtc1-sc7.org/>

- Planning Documents

‘Planning’ tab on SC7 Web site

http://142.137.17.56/Labo_Recherche/Lrg1/sc7/bpg.html