



ISO/IEC JTC 1 Standing Document N 24

JTC 1 Systems Integration
Standardization Guidelines

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1 Purpose

The purpose of this document is to provide background on Systems Integration Standardization and guidance to JTC 1 in using a Systems Integration approach for the development and the management of its work program.

2 Terms and Definitions

Foundational standards

standards that provide an essential basis for a topic and upon which other standards can build.

Note to entry: Examples of foundational standards are reference architecture and vocabulary.

Facilitator

a person or group that facilitates communication between a Systems Integration entity, JTC 1 and external entities.

Note 1 to entry: The actions of the Facilitator in this document are referred to as Facilitation.

Note 2 to entry: The Facilitator is categorized into liaison representative in ISO/IEC Directives Part 1 for administration purposes.

System

combination of interacting elements organized to achieve one or more stated purposes (ISO/IEC 15288:2008 Systems and software engineering – System life cycle processes, 4.31)

Systems Integration

the progressive assembling of system components into the whole system (ISO/IEC 2382-20:2015 Information technology—Vocabulary—Part 20: System development)

Systems Integration entity

a JTC 1 subgroup that has the authority to develop International Standards and that, in addition to the responsibilities as defined for the type of the subgroup in the Consolidated JTC 1 Supplement, has Systems Integrated responsibilities.

Note to entry: Systems Integration responsibilities are described in clause 4.1.

3 Description of Systems Integration Standardization

3.1 Background

The evolution of IT in the last fifteen years has been restless. For instance, Moore's law has shrunk the computing power of its world chess champion beating machine, 'Deep Blue', to the size of the processor powering a third generation Plays Station in less than ten years. The ubiquity of IT, already important at the turn of the century, has not only increased, but is also on the verge of going through another major expansion. For instance, we are now on the verge of the deployment of the Internet of things, which will enable devices, buildings and entire cities to become 'smart'.

This is posing a challenge for JTC 1. When JTC 1 did a major re-engineering exercise in 2000-2002, it viewed its subgroups as a series of divisions, each with its own expertise and deserving its own IT market and community, this is illustrated in Figure 1. We can see that this corresponds to a 'stovepipe' organization with very definite interfaces that can be handled with a classical liaison process.

| Technical Area | JTC 1 Subcommittees and Working Groups |
|--|--|
| Application Technologies | SC 36 – Information technology for learning, education and training |
| Cultural and Linguistic Adaptability and User Interfaces | SC 02 - Coded Character Sets SC 35 - User Interfaces |
| Data Capture and Identification Systems | SC 17 - Cards and security devices for personal identification SC 31 - Automatic Identification and Data Capture Techniques |
| Data Management Services | SC 32 - Data Management and Interchange |

| | |
|---|--|
| Document Description Languages | SC 34 - Document description and processing languages |
| Information Interchange Media | SC 23 – Digitally Recorded Media for Information Interchange and Storage |
| Multimedia and Representation | SC 24 - Computer Graphics, image processing and environmental data representation SC 29 - Coding of Audio, Picture, and Multimedia and Hypermedia Information |
| Networking and Middleware | SC 06 - Telecommunications and Information Exchange Between Systems SC 25 - Interconnection of Information Technology Equipment |
| Cloud Computing and Distributed Platforms | SC 38 - Cloud Computing and Distributed Platforms |
| Office Equipment | SC 28 - Office Equipment |
| Green IT | SC 39 – Sustainability, IT & Data Centres |
| Programming Languages and Software Interfaces | SC 22 - Programming languages, their environments and systems software interfaces |
| Security | SC 27 – Information security, cybersecurity and privacy protection SC 37 - Biometrics |
| Software, Processes and Systems | SC 07 - Software and Systems Engineering SC40 – IT Service Management and IT Governance |
| Internet of Things | SC41 – Internet of Things and related technologies |
| Artificial Intelligence and Big Data | SC42 – Artificial Intelligence |
| Smart Cities | WG11 - Smart Cities |
| 3D scanning and Printing | WG12 – 3D Printing and Scanning |

Figure 1 - Classification of JTC 1 subgroups by technical areas

As we can see, for instance, in Figure 2, the new areas that JTC 1 has started to address (on the right columns of the table, shaded) are much more complex, and definitively point toward a more matrix type relationship between the JTC 1 subgroups. In Figure 2 the rows represent JTC 1 subgroups, the columns are the technical areas and the 'x' stands for being relevant. For example, in the technology area of Application technologies only SC 7 and SC 36 have relevant work. In the new areas like Cloud Computing there are 10 JTC 1 subgroups that potentially have relevant work. Standards from many existing JTC 1 subgroups, and very probably new ones, are required to enable global markets in these areas. For instance, many Information Communication technologies are required to build a Smart City, which makes this a Systems Integration exercise.

| JTC 1 Systems Integration Matrix | | | | | | | | | | | | | | | | | | | | |
|----------------------------------|--------------------------|--|---|--------------------------|--------------------------------|-------------------------------|-------------------------------|---------------------------|------------------|----------|---|----------|---------------------------------|---------------|----------|--------------------|-----------------|--------------|------------------------|----------------|
| Version 1.2, 2017-10-08 | | | | | | | | | | | | | | | | | | | | |
| | Application technologies | Cultural and Linguistic Adaptability and User Interfaces | Data Capture and Identification Systems | Data Management Services | Document Description Languages | Information Interchange Media | Multimedia and Representation | Networking and Middleware | Office Equipment | Green IT | Programming Languages and Software Interfaces | Security | Software, Processes and Systems | Accessibility | Big data | Internet of Things | Cloud Computing | Smart Cities | 3D Scanning & Printing | Smart Machines |
| SC 02 Coding | | X | | | | | | | | | | | | | | | | | | |
| SC 06 Network | | | | | | | | X | | | | | | X | X | X | X | | | X |
| SC 07 SoftSys | X | | | | | | | | | | | | X | | X | X | X | X | | X |
| SC 17 Cards ID | | | X | | | | | | | | | | | | X | X | X | X | | X |
| SC 22 Prog. Lang | | x | | | | | | | | X | | | | | | | | | | X |
| SC 23 Desk | | | | | | X | | | | | | | | | | | | | | |
| SC 24 Graphic | | | | | | | X | | | | | | | | | | X | X | | |
| SC 25 Interc. | | | | | | | | X | | | | | | | | X | | | | |
| SC 27 Security | | | | | | | | | | | | | X | X | X | X | X | | | X |
| SC 28 Office Eq. | | | | | | | | | X | | | | | | | | | | X | |
| SC 29 Multimed. | | | | | | | X | | | X | | | | X | X | X | | | X | |
| SC 31 Data Cap. | | | X | | | | | | | | | | | X | X | X | X | X | | X |
| SC 32 Data int. | | | | X | | | | | | | | | | | X | | | X | | |
| SC 34 Doc. | | | | | X | | | | | | | | | | | | X | X | | |
| SC 35 User Int. | | X | | | | | | | | | | | | | | | | | | |
| SC 36 Learn | X | | | | | | | | | | | | | | | | | | | |
| SC 37 Bio | | | | | | | | | | | | | | | | | | | | |
| SC 38 Medictl | | | | | | | | X | | | | | | X | X | X | X | | | X |
| SC 39 IT Sust. | | | | | | | | | X | | | | | | X | | | X | | |
| SC 40 Gov & M | | | | | | | | | | | | | X | | | | X | X | | X |
| SC 41 IoT | | | X | | | | | X | | | | X | X | | X | X | X | X | | X |
| SC 42 AI | X | | | | | | | | | | | X | X | | X | X | X | X | | X |
| WG11 Smart Cities | | | | | | | | X | | | | X | X | | X | X | X | X | | X |
| WG12 3D Sc. & Pr. | | | X | | | X | X | | X | | | | | | | | | | X | |

Figure 2 - A matrix view of JTC 1 subgroups and technical areas, as of November 2018¹

JTC 1 should leverage from its expertise and take advantage of Systems Integration Standardization to approach complex market needs.

3.2 Systems Integration Standardization Challenges in JTC 1

The JTC 1 challenge can thus be how to approach Systems Integration projects:

- Where cross-functional expertise is required;
- Where the deliverables need to be coordinated in a first step across many of JTC 1 entities, and also with external entities.

More specifically, JTC 1 needs a process that addresses the following:

- How to address the challenges on:
 - Clarification of Systems Integration scope
 - Limited number of experts in JTC 1
 - Defining terminology for common use across JTC 1 subgroups
- How to identify the partners?
- How to improve partners to sit together with JTC 1 to define
 - Structure
 - Strategy
 - Tracking / Progression
- How JTC 1 interacts with other systems groups in IEC, ISO, ITU-T
- Finding good ways for JTC 1 experts to work together without interference from organizational issues.

This process needs to satisfy the following constraints:

- Operate within the existing directives and be coherent with our parent organization (ISO and IEC) process;
- Be 'lean' and maximise 'agility' to efficiently respond to market needs
- Make it easy to work together – while doing it officially;
- Evidently enable system work.

Some of the cultural challenges also need to be considered. JTC 1 needs for instance to overcome the 'I started first attitude' that can complicate any rational governance and management of the work.

3.3 JTC 1 Systems Integration Approach

JTC 1 Systems Integration approach is, basically, evolutionary in nature. It is reusing as much as possible existing

¹ Latest, up to date version of table available at <https://jtc1info.org/matrix/>

frameworks.

Taking any task and project that covers aspects and solutions of other SCs and/or WGs within JTC 1 is the work of systems in systems. The paradigm shift relates to the fact that new projects/topics like Smart Cities and Smart manufacturing can be identified as applications that are based on standards which have been already developed by established JTC 1 subgroups (e.g. SC 27, SC 38, WG 9, WG 10, WG 11 and others). It is the goal of the Systems Integration entity that is responsible for such a *Systems Integration topic* like Smart Cities to identify gaps and describe specific requirements to enhance or amend existing standards or submit New Work Item Proposals for the dedicated SCs and/or WGs. It is the responsibility of the Systems Integration entity to orchestrate the existing or newly developed standards. But these Systems Integration entities are not empowered to instruct other JTC1 subgroups. As a result, Systems Integration Standardization leads to a matrix organization.

An example of how this matrix organization is viewed in JTC 1 is shown in Figure 2.

4 Practical guidelines for implementing Systems Integration in JTC 1

4.1 JTC 1 responsibilities for Systems Integration Standardization

The primary Systems Integration role of JTC 1 is to meet the demand of a top-down approach to standardization to accommodate the multiplicity of technologies and their convergence in many new and emerging markets.

With regard to Systems Integration Standardization, JTC 1 should incorporate the following responsibilities:

1. Manage projects in the *Systems Integration topic* by:
 - a. Noting approved NPs in the *Systems Integration topic*
 - b. Facilitating the initiation of NPs considering recommendations prepared by the JTC 1 Systems Integration entity.
 - c. Understanding the *Systems Integration topic* related projects that are ongoing and proposed within JTC 1 subgroups.
2. Address and coordinate the areas of possible conflict including such things as NPs and project splits relating to the *Systems Integration topic* when a concern is brought forward.
3. Collaborate with the JTC 1 Systems Integration entity efforts to grow the awareness and involvement of those outside JTC 1 in the *Systems Integration topic* within JTC 1 and especially interact in Systems Integration activities in SDOs such as ISO, IEC and ITU-T.
4. Provide JTC 1 strategy for Systems Integration efforts.
5. Continuously monitor potential new work using inputs from SCs, JTC 1 National Bodies and directly from the market, to assess in more detail a particular market need driven by new technologies;
6. Provide JTC1 governance policy on Systems Integration efforts;
7. Provide JTC 1 Systems Integration guidelines;
8. Establish or disband of JTC 1 Systems Integration entities;
9. Assign qualified facilitators to Systems Integration efforts in JTC 1.

4.2 Systems Integration Entity (see definition 2)

A JTC 1 subgroup with Systems Integration responsibilities could develop standards and/or suggest work for other existing JTC 1 subgroups. A Systems Integration entity makes a recommendation to JTC 1 to suggest delegation of work to other existing JTC 1 subgroups. It may also lead or coordinate JTC 1 liaisons with ISO, IEC and ITU-T and external organizations working on projects in the *Systems Integration topic*.

Systems Integration responsibilities:

- Serve as the focus of and proponent for JTC 1's *Systems Integration topic* standardization program.
- Develop standards for the *Systems Integration topic*, including foundational standards such as reference architecture and vocabulary standards for guiding *Systems Integration topic* efforts throughout JTC 1 and upon which other standards can be developed, and standards that build on the foundational standards when relevant JTC 1 subgroups that could address these standards do not exist or are unable to develop them.
- Identify gaps in the *Systems Integration topic* standardization for consideration in proposing potential new work for the relevant JTC 1 subgroup(s).
- Identify JTC 1, ISO, IEC and external organization entities that are developing standards and related material that contribute to the *Systems Integration topic*, and for each entity investigate ongoing and potential new work.
- Engage the community outside of JTC 1 to grow the awareness of and encourage engagement in the *Systems Integration topic* standardization efforts within JTC 1, forming liaisons as is needed.

- Develop and maintain liaisons with other ISO and IEC entities and external organizations, such as ITU-T, working on the *Systems Integration topic* as well as with any other JTC 1 subgroups that may propose work related to the *Systems Integration topic* in the future.
- Develop and maintain a list of existing *Systems Integration topic* standards produced and standards development projects underway in JTC 1.

4.3 Implementation guidelines for Systems Integration entity

Work that is initiated by any JTC 1 subgroup in the area of the *Systems Integration topic* should be reviewed for the level of collaboration between JTC 1 subgroups for that project. The following are possible ways for collaboration among JTC 1 subgroups on the *Systems Integration topic*:

- A project editor(s) of the project participate(s) in the meetings of all the JTC 1 subgroups when there is collaboration on a *Systems Integration topic* project;
- Liaisons between the JTC 1 subgroups collaborating on the *Systems Integration topic* project are created;
- Joint working group are created when there are multiple JTC 1 subgroups, ISO TCs or IEC TCs collaborating on a *Systems Integration topic* project.

A liaison between the various entities that need to collaborate on *Systems Integration topic* standardization needs to be an actively engaging liaison to communicate efficiently. When using the liaison collaboration method, JTC 1 subgroups should consider creating ad hoc groups of members to create comments and contributions between scheduled meetings so that no JTC 1 subgroup slows the progress of the project.

When using the project editor(s) collaboration method, participation for relevant experts should be considered leveraging both face-to-face and electronic meetings based on the amount of work identified and that will be covered during that meeting.

A Joint working group (JWG) may be used when a *Systems Integration topic* project requires subject matter experts from multiple JTC 1 subgroups, ISO TCs or IEC TCs. The creation of the JWG would follow the ISO/IEC Directives Part 1 clause 1.12.6. When a JWG is formed for a *Systems Integration topic* project meeting schedules for the JWG can be either aligned with the meeting schedule of one of the parent committees, or all in turn, or scheduled independently of either parent committee if circumstances warrant.

4.4 Facilitation Description

The objective of Facilitation is to make JTC 1 Systems Integration more efficient by identifying facilitation topics from the system integration entities through attending the activities of system integration entity SCs/WGs.

A Facilitator should represent JTC 1 at the JTC 1 Systems Integration entity meetings of the *Systems Integration topic*. The Facilitator should provide a report to the JTC 1 Systems Integration entity. The report should include at least the following:

- Any suggested recommendations from JTC 1 related to the specific *Systems Integration topic*;
- High-level status of on-going projects in the *Systems Integration topic* in JTC 1 Working Groups, SCs and elsewhere in the International Standards community, especially ISO, IEC and ITU-T.

In order to ensure that the facilitation tasks, described above can take place, a slot for the SIF Facilitator report should always be included in the JTC 1 Systems Integration entity's agenda template.

The Facilitator should report to JTC 1 on the status of work on the *Systems Integration topic*. The report to JTC 1 should include at least the following:

- Note any conflicts across the *Systems Integration topic*;
- Report best practices, if any;
- Recommendations to JTC 1 of any actions with respect to the *Systems Integration topic*.

The Systems Integration entity should create and maintain a roadmap of completed, ongoing and proposed projects in the *Systems Integration topic* within JTC 1 to be maintained as an annex to the convenor/chair's *Systems Integration topic* report (or facilitation on *Systems Integration topic*). This annex should be available to both the Systems Integration entity and JTC 1.

The convenor/chair of the Systems Integration entity should create a *Systems Integration topic* report to be submitted for information to the identified JTC 1 subgroups for the *Systems Integration topic* in Figure 2. The report should include at the least the following:

- NPs proposed on the *Systems Integration topic*;
- Status of ongoing projects in the *Systems Integration topic*;
- An annex of the roadmap of completed, ongoing and proposed projects in the *Systems Integration topic* within JTC 1.

4.5 JTC 1 Participation in ISO and IEC Systems activities

JTC 1 should, as a matter of good practice, consider participating in any ISO and IEC Systems activities in *Systems Integration topics* that include ICT aspects. It may do so by either using:

- SIF
- A Systems Integration entity that has been created in the *Systems Integration topic*;
- Liaison officers from any interested JTC 1 subgroup.

Specifically with regard to the IEC Systems activities process, JTC 1 may participate in an IEC systems activity formed and led from within IEC.

The JTC 1 Chair nominates experts as the JTC 1 representatives to ISO or IEC Systems activities. ISO and IEC Systems activities and progress should be reported to JTC 1 Plenary

ANNEX SP: IEC Process

(This is duplicated from the IEC Directives Supplement, Edition 10.0)
https://www.iec.ch/members_experts/redocs/iec/isoiecdir-iecsp%7Bed10.0%7Den.pdf

SP.1 Introduction

The multiplicity of technologies and their convergence in many new and emerging markets, particularly those involving large scale infrastructure, now demand a top down approach to standardization, starting at the system or system architecture rather than at the product level. System standards are also increasingly required in sectors such as environment, energy efficiency, safety and health.

In this context, a system is formally defined as:

A group of interacting, interrelated, or interdependent elements forming a purposeful whole of a complexity that requires specific structures and work methods in order to support applications and services relevant to IEC stakeholders.

The structures and procedures needed in IEC to accommodate the systems approach are, as far as possible, the same as those already in place for more traditional standardization activity. However, some further provisions are required in order to ensure that a particular systems standardization programme

- is fully market relevant;
- can be managed within clearly defined boundaries;
- engages all the appropriate interests, both within and beyond the traditional IEC community;
- does not duplicate, overlap or conflict with other work being undertaken in the same area.

Systems Standardization in the IEC includes a process with the following two stages of systems activity and an additional group to serve as a resource for all groups undertaking this systems activity:

- Systems Evaluation Group (SEG): an open, potentially large group drawn from within and beyond the IEC community, used in the first stage of systems development. Its role is to engage the community of experts, identify the relevant stakeholders, define the general architecture and boundaries of the subject to be addressed and propose a possible programme of work and a relevant roadmap for the implementation of the standardization activities.
- Systems Committee (SyC): a specialized type of committee working at the systems instead of the product level to develop reference architectures, use cases and appropriate standards and guidance on the interfaces, functionality and interaction of a system within its agreed terms of reference. A SyC can draft international standards, as well as other IEC deliverables. It functions generally in the same manner as a conventional technical committee, although special attention might need to be given to ensuring effective liaison and cooperation with members representing stakeholders beyond the IEC community.
- Systems Resource Group (SRG): a group populated by systems experts whose purpose is to guide the development and use of specialized tools and software applications for Systems, and encourage the use of these tools and sharing of best practices within the Systems Committees.

SP.2 Establishment of a Systems Evaluation Group (SEG)

SP.2.1 Systems Evaluation Groups are established and dissolved by the Standardization Management Board. They have a limited life, normally of 18 to 24 months and shall not have on-going tasks. They are not entitled to develop standards or other IEC deliverables.

A proposal for the establishment of a SEG can be made by

- a National Committee;
- the Standardization Management Board;
- the Chief Executive Officer.

A proposal for the creation of a SEG should include information on as many of the following as relevant:

- Market needs, market relevance and business drivers;
- Regulatory demands or other restrictions in countries or regions;
- Related work or other valuable information from other organizations or Industries;

- List of already identified stakeholders, including IEC technical committees, ISO technical committees and ITU SGs, fora and consortia outside of IEC which should be engaged in the work;
- Recommendation of needed expertise and administrative structure of the SEG;
- Proposal for an appropriate name of the SEG;
- Proposal for a convenor.

SP.2.2 Membership

The SEG membership should have a strong competence in all the issues within the scope of the SEG. This may require participation of experts outside the normal IEC community.

There shall be an open call for participation of experts from both within and outside IEC, but there is no definitive limitation on numbers.

There is a need for representation from the TC/SCs concerned, as well as a representation from interested SMB members and National Committees. Where appropriate, participation from conformity assessment bodies, external organizations, such as ISO, ITU and fora / consortia, is encouraged.

It is expected that all interested experts be present and contribute constructively to the work.

A nomination for a Convenor of a SEG should be suggested by the proposer and shall be approved by the SMB. The Secretary is provided by the IEC Central Office.

SP.2.3 Tasks

The principal task of a SEG is to evaluate whether or not there is a need for a new Systems Committee or other technical activity within the IEC. This entails the examination of the following factors:

- market needs, market relevance and business drivers;
- potential participants in the work from inside and outside IEC, including IEC and ISO technical bodies, ITU/SGs, fora, consortia and other groups outside of IEC;
- related work or other valuable information from other organizations or industries;
- environmental, energy and safety conditions considerations for the System work;
- regulatory demands or other restrictions in countries or regions;
- a relevant/suitable model or reference architecture, based on the methods provided by the System Resource Group, which actively supports this process;
- an initial set of use-cases⁷ which can be mapped to the reference architecture or model in order to prove its validity;
- a gap analysis of existing work and activities.

If the need for a SyC is identified, the SEG should make a proposal supported by:

1. a justification for the proposal;
2. an appropriate title and scope;
3. the structure with subgroups and a Chair's Advisory Group;
4. if applicable, a survey of similar work undertaken in other bodies;
5. any liaisons deemed necessary with other bodies;
6. a possible work programme and a roadmap to be further detailed and updated by the SyC.

The roadmap shall identify any closely related systems activities to clearly position the expected new systems work with the active participation of the existing SyCs.

Such a mapping shall get the full support of these respective SyCs.

Progress reports to SMB shall be presented regularly. SMB will carry out a review on the SEG activity and results between 18 and 24 months after setting-up.

SP.3 Establishment of Systems Committees

⁷ use case: specification of a set of actions performed by a system, which yields an observable result that is, typically, of value for one or more actors or other stakeholders of the system (definition taken from IEC TC 8).

SP.3.1 System committees are established and dissolved by the Standardization Management Board.

SP.3.2 A proposal for the establishment of a new systems committee is normally made by a Systems Evaluation Group.

SP.3.3 The proposal shall be made using the appropriate form.

The form shall be submitted to the office of the CEO who shall ensure that the proposal is properly developed in accordance with IEC requirements and provides sufficient information to support informed decision making by National Committees.

If it is questionable whether proposal documentation provides sufficient information, the proposal shall be returned to the proposer for further development before circulation for voting. This is intended as a quality control process only, and shall not reflect any value judgment about the market relevance or need for the proposed standard(s).

If a proposal is returned to the proposer for further development, the proposer has the right to request that its proposal be circulated for voting as originally presented and without further development.

SP.3.4 The Chief Executive Officer shall assess the relationship of the proposal to existing work, and may consult interested parties, including the Chair of the Standardization Management Board or Chairs of committees conducting related existing work, immediately after such a proposal is received. If necessary, an ad hoc group may be established to examine the proposal.

Any comments and recommendations by the Chief Executive Officer resulting from the consultations shall be added to the proposal form. These comments and recommendations shall not include value judgments about the market relevance or need for the proposed standard(s).

SP.3.5 The proposal shall be circulated by the office of the CEO to all National Committees of the IEC, asking whether or not they

- a) support the establishment of a new systems committee providing a statement justifying their decision, and
- b) intend to participate actively in the work of the new systems committee.

The proposal shall also be submitted to ISO for comment and for agreement.

The replies to the proposal shall be made using the appropriate form within 3 months after circulation. Regarding SP.3.5

a) above, if no such statement is provided, the positive or negative vote of a National Committee will not be registered and considered.

SP.3.6 The Standardization Management Board evaluates the replies and either

- decides the establishment of a new SyC, provided that
- a 2/3 majority of the National Committees voting are in favour of the proposal, and
- at least 5 National Committees voting in favour have expressed their intention to participate actively, and allocates the secretariat, or
- assigns the work to an existing committee, subject to the same criteria of acceptance.

SP.3.7 SyCs shall have a labelling assignment distinctive from the TC numbering systems (e.g. SyC-AAL, SyC-EE, etc.).

SP.3.8 As soon as possible after the decision to establish a new SyC, the necessary liaisons shall be arranged.

SP.3.9 A new SyC shall agree on its title and scope as soon as possible after its establishment, preferably by correspondence.

The scope is a statement precisely defining the limits of the work of a SyC. The definition of the scope of a SyC shall begin with the words "Standardization of ..." or "Standardization in the field of ..." and shall be drafted as concisely as possible.

For recommendations on scopes, see Directives Part 1, Annex J.

The agreed title and scope shall be submitted by the Chief Executive Officer to the Standardization Management Board for approval. SyCs shall prepare a strategic business plan for its own specific field of activity (see 2.1.2 of ISO/IEC Directives, Part 1).

SP.3.10 The Standardization Management Board or a systems committee may propose a modification of the latter's title and/or scope. The modified wording shall be established by the system committee for approval by the Standardization Management Board.

SP.3.11 The secretariat is allocated to the IEC Central Office. For appointment of the Chair, the Central Office will issue a call for nominations to the P-members of the new SyC.

All valid nominations will be submitted to SMB members who will vote on designating a Chair. If one of the candidates obtains a 2/3 majority vote in favour, then he/she will be appointed as Chair of the SyC.

If none of the candidates obtains a 2/3 majority vote, all but the two candidates obtaining the most votes are eliminated. If there is a tie for the second place, all the candidates in second place will be retained.

The candidates remaining are then again submitted for vote to SMB. If one of the candidates obtains a 2/3 majority vote in favour, then he/she will be appointed as Chair of the SyC.

If none of the candidates obtains a 2/3 majority vote in favour, the candidate obtaining the most votes will be submitted for approval to SMB. If the candidate obtains a 2/3 majority vote in favour, he/she will be appointed as Chair of the SyC.

If at this stage it is not possible to designate a Chair, the decision will be deferred to the next SMB meeting.

SP.4 Systems Resource Group (SRG)

SP.4.1 A Systems Resource Group is a group formed by the SMB to accomplish the following:

- Serve as a support and consulting Resource to SyCs and SEGs;
- Collect and share best practices between SyCs and SEGs;
- Specify, have built and perform acceptance tests for tools and guidance for specialized functions such as:
 - Architecture Models
 - Road mapping
 - Use Cases
- Serve as a repository of tools and methods to be used by SyCs and SEGs

SP.4.2 The SRG is principally focused on the science of systems standardization and development of supporting infrastructure, and shall not engage in technical work of the systems groups themselves.

SP.4.3 The members of the SRG are experts nominated by the NCs and approved by SMB. They must have strong systems proficiency.

The SRG works with all SyCs, but is intended to be different from SMB advisory committees. The members of the SRG are mostly systems experts, whereas the normal composition of technical advisory committees includes representatives of product TCs.

SP.4.4 A report to SMB shall be presented regularly. SMB will carry out a review on the SRG activity and results when felt necessary.