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## **0 Executive summary**

ISO/IEC JTC 1 (JTC 1) is the standards development environment where experts come together to develop worldwide ICT standards for business and consumer applications. Additionally, JTC 1 provides the standards approval environment for integrating diverse and complex ICT technologies. These standards rely upon the core infrastructure technologies developed by JTC 1 centers of expertise complemented by specifications developed in other organizations.

This document establishes a long-term business plan (LTBP) for JTC 1 for a planning period of three to five years. It also addresses the topic of monitoring the implementation of the plan and measuring the success of actions taken.

The objective of this plan is to elaborate, communicate and gain support for the vision of JTC 1 and for new key areas of work with associated actions. This ensures the vibrancy, relevance and ongoing expansion of JTC 1.

The long-term business plan

- positions JTC 1 in its operating environment (includes vision, benefits, value proposition)
- analyzes strengths and weaknesses of JTC 1
- identifies new areas of work that JTC 1 wants to become increasingly active in, i.e.
  1. Green ICT (including the aspect of sustainability relating to ICT)
  2. Web Collaboration and Social Networking
- lists strategic topics (scanning process for the identification of new work, development time lines, cooperation with consortia, marketing and branding, testing and trialling of standards, involvement of JTC 1 subgroups in overall business planning)
- identifies actions needed for achieving these goals (and points out risks and dependencies that might prove to be obstacles)
- gives criteria for evaluating success or failure of measures taken

## **1 Purpose of the document**

This clause discusses the audience for the LTBP, the time lines as they relate to the LTBP, its relationship to, and difference from, regular Business Plans and the Environmental Scan initiative (see [Annex 2](#)), and the review cycle for the LTBP. The intent is to address topics that have not yet entered the programme of work of SCs nor their study periods, but to anticipate topics that might well do so.

### **1.1 LTBP Audience**

The LTBP is written for the consumption of a specific set of audiences. These audiences include the National Bodies of ISO/IEC JTC 1, the Sub-Committees of JTC 1, Liaison organizations of JTC 1 (both at the JTC 1 level and at the SC level), and stakeholders of JTC 1 such as Publicly Available Specification Submitters and the user of JTC 1 standards. In addition, the LTBP is also written with external stakeholders in mind, including those who have not yet established a relationship with JTC 1, such as fora and consortia.

## **1.2 LTBP Time Horizons**

The LTBP is written to cover the period from three years from its date of publication to a period of five years from its date of publication. The LTBP will be updated yearly.

## **1.3 LTBP Distinction from Regular Business Plans**

JTC 1's regular Business Plan<sup>1</sup> addresses current activities, standards development projects and study periods for topics that might well result in standards development projects. As the average development cycle for a project is three years, the regular Business Plan has a time horizon of approximately three years in the future. The previous observations also hold true for the SC Business Plans. Thus, it is the intent of the LTBP to project beyond that period into the immediate future and to anticipate the work that might be required and topics to be considered. The LTBP will not cover aspects that are included in the regular Business Plans. In addition, it is the intent of the LTBP to identify topics that fall outside the current specific work areas of existing SCs that might be covered by existing or perhaps by new SCs.

## **1.4 LTBP Relationship Environmental Scan**

The SWG-Planning Environmental Scan activity<sup>2</sup> will provide the source of many of the “Strategy Items” that form the core of the LTBP Strategies and Actions. Thus these activities will support the development of the content for the LTBP. The time horizon for these activities is beyond the normal planning cycle of JTC 1 and its SCs, proposed standards work resulting from these activities should start within two years from the recommendation, standards delivery should be within a five year time frame, which is also the time horizon of the LTBP.

## **1.5 LTBP Review Cycle**

The LTBP will be reviewed and maintained on an annual basis. This task will be performed by the JTC 1 SWG-Planning. The result and any related recommendations will be sent to the JTC 1 Plenary for approval.

## **2 Overall Positioning of JTC 1**

Using different approaches to properly respond to the needs of the market place, JTC 1 will position itself so that it can address new areas in an efficient and value-added way while also maintaining the required standards activities in traditional areas that are necessary for the global ICT market.

### **2.1 JTC 1's Scope and Vision Statements**

As specified in point 2.1.1 of JTC1 Directives document, the title of JTC 1 is “Information Technology” and its scope is “International standardization in the field of Information Technology”.

Information Technology includes the specification, design and development of systems and tools dealing with the capture, representation, processing, security, transfer, interchange, presentation, management, organization, storage and retrieval of information.

JTC 1 has endorsed the following vision statement:

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- 1 The JTC 1 Business Plan and the Business Plans of its Sub-Committees can be found at <http://isotc.iso.org/livelink/livelink?func=ll&objId=2787945&objAction=browse&sort=name>
  - 2 A detailed description of the 'environmental scanning' activity can be found in [Annex 2](#).

*JTC 1 is the standards development environment where experts come together to develop worldwide Information and Communication Technology (ICT) standards for business and consumer applications.*

*Additionally, JTC 1 provides the standards approval environment for integrating diverse and complex ICT technologies. These standards rely upon the core infrastructure technologies developed by JTC 1 centers of expertise complemented by specifications developed in other organizations.*

JTC 1 centers of expertise are defined by the JTC 1 work program and by participation in JTC 1 working structures such as Special Working Groups (SWGs), Rapporteur Groups (RGs), Sub-Committees (SCs) and their Advisory Groups (AGs), Working Groups (WGs), Other Working Groups (OWGs) and Joint Working Groups (JWGs).

The concept of ICT takes into account the impact of digital techniques towards the convergence of various domains and technologies into a more global domain called ICT. Convergence is occurring in two dimensions:

- The three basic technologies – information technology, consumer electronics and telecommunications - converge in the sense that the same fundamental technologies are applied in all three areas. This can be termed horizontal convergence; the resulting technology is often called ICT. The advent of ICT demands a closer overall cooperation, in the standardization arena, among the 3 key international standards organizations: ISO, IEC and ITU.
- Simultaneously, ICT progresses into all aspects of life (business, industry, home, administration, education, charity, etc.), with conventional processes and applications now exploiting the capabilities offered by ICT. This may be termed vertical convergence. New ICT applications are characterized by the involvement of different technologies and high complexity; in general, they cannot be covered by a single standard, but are of an interdisciplinary nature. This demands a closer cooperation between technology-oriented and application-oriented experts, both in product and in standards development.

ICT includes the specification, design and development, integration and interoperability of systems, tools and applications dealing with the capture, representation, accessibility, processing, security, transfer, interchange, presentation, management, organization, storage and retrieval of information, and their related cultural, linguistic adaptability and societal aspects. JTC 1 standardization activities naturally contribute to the overall ICT field and take into account the additional elements included in the ICT definition (vs. IT definition).

In development of ICT standards, JTC 1 recognizes the importance of addressing environmental concerns including climate change, energy conservation and impact on the environment. JTC 1 further recognizes that the ICT sector has a responsibility to minimize impact on the environment, but the ICT sector also has an opportunity to encourage application of ICT technology to other sectors to encourage reduction in environmental impact by those sectors.

Societal Aspects include a broad range of topics for standardization in which society in general has an interest and input; for example, implications and impacts of security, privacy, accessibility, identity, monitoring, and may include digital divide, computing in emerging markets, eCrime prevention, etc.

JTC 1 will work towards eliminating barriers from accessing or participating in JTC 1 activities and its body of work, especially for people with disabilities and older users.

As part of its efforts to make 'Green ICT' a reality, JTC 1 will develop a best practices guide for the development of 'green standards'.

JTC 1's current strength lies in core technologies, providing the foundation for ICT applications and services: coded character sets, cultural and linguistic adaptability, biometrics, IC cards, security, multimedia, databases interface, etc. The work of JTC 1 in these fields also includes proper maintenance of its previous existing standards to secure the investment in products, processes and applications implementing those specifications.

JTC 1 is the place where basic building blocks of new technologies are defined and where the foundations of important ICT infrastructures are laid. JTC 1, in a number of technology areas, has been a source of innovation.

In addition to this well-established focus of work, JTC 1 positions itself as a system integrator to complement its current program of work, especially in areas of standardization where many consortia/fora are active. JTC 1 recognizes and appreciates the diversity and range of standards setting organizations in the ICT sector.

In fulfilling its role as system integrator, JTC 1 seeks to:

- Reach out to other standards setting organizations, including referencing of relevant standards
- Share information with relevant standards setting organizations, for example about market requirements and inventories of relevant standards.
- Establish relationships that facilitate collaboration with external organizations.
- Encourage development of international standards that respond to market needs.
- Provide a mechanism for standards developed outside JTC 1 to be quickly approved as international standards (Fast Track and PAS processes).
- Develop profiles as appropriate to cope with the needs of specific applications

Examples where JTC 1 has fulfilled its role as a system integrator include the following:

- The Web Services Study Group (sharing information on web services standards)
- SWG-Accessibility, which has examined accessibility issues and raised topics for consideration in several bodies.
- SC37 activity in support of International Labour Organization's requirement for worldwide interoperability of "Biometric Based Verification and Identification of Seafarers" (ISO/IEC 24713-3), which is based on SC17, SC27 and SC37 standards.
- Following the work of an SG on Privacy Management new work items (NWI) were initiated in three SCs.

Integrating technology components from various sources provides significant added value to the work of such sources.

## **2.2 Benefits of Formal Standardization**

As a joint technical committee of ISO and IEC, JTC 1 has the qualities and strengths of ISO and IEC standardization (see [http://www.iso.org/iso/discover-iso\\_meet-iso](http://www.iso.org/iso/discover-iso_meet-iso) for ISO and <http://www.iec.ch/about/mission-e.htm> for IEC).

As stated in the ISO Brand page ([http://www.iso.org/iso/about/discover-iso\\_the-iso-brand.htm](http://www.iso.org/iso/about/discover-iso_the-iso-brand.htm)), JTC 1 work is organized in a democratic way to develop voluntary, market-driven and globally relevant standards which reflect an agreed consensus of all contributing parties. JTC 1 has developed and successfully implemented additional processes and methodologies to address the specific needs of the ICT community.

JTC 1 standards:

- are globally recognized;
- provide global interoperability; and
- provide sustained development and retention of investment.

JTC 1 National Body participation includes representatives from producers, governmental and public agencies, academia, businesses and other users, ensuring broad-based, open and balanced representation in the standards development process, thus taking into account the relevant societal aspects.

### ***2.3 JTC 1 Value Proposition***

The ICT domain relates to a fast moving market. The market that JTC 1 addresses is no longer as homogeneous as it used to be. Hence, JTC 1 has had to take stronger account of the needs of the various market segments and offer tailored solutions for each of the segments.

JTC 1 is the standards development environment where experts come together to define basic building blocks of new technologies and to build the foundations of important ICT infrastructures.

JTC 1's strength comes from its scope, which allows for synergy among diverse areas of ICT standardization. This synergy leads to better and more consistent standards, less overlap and less duplication. JTC 1 provides consortia/fora with an effective vehicle to progress their specifications into international standards. JTC 1 has been and will continue to be a leader in identifying and developing significant ICT standards.

A more detailed description of JTC 1 value proposition is found in document JTC1 N 6921.

### ***2.4 Business Environments in which JTC 1 Operates***

JTC 1 has to deal with a number of challenging trends:

- trends in technology
- trends in the global IT market
- trends in the IT 'standards environment' (fora, consortia, etc...)

In its efforts to contribute significantly to the formation of the information society, JTC 1 proactively seeks areas of new work. Therefore, in the continuity of the technology watch activities it initiated in 2002, JTC 1 established in 2008 an ongoing environmental scan program, the purpose of which is to identify, at an early stage, technological trends and the impact standardization may have on those trends. This function will also take into account relevant societal aspects as they may be affected by future technologies.

In addition, JTC1 will continue its effective working relationship with ITU-T, coordination/cooperation with relevant ISO or IEC TCs, and support to consortia/fora interested in obtaining a formal international standard status for their technical specifications.

In this context, JTC 1, acting as a system integrator, appears to be of the utmost importance in providing value added services to all parties using ICT standards.

### **3 Analysis**

JTC 1 is unique in the world of standardization activities from several viewpoints.

The approval of JTC 1 International Standards by considerable numbers of national bodies gives these documents a significant, world-wide advantage over standards created in local or smaller standards setting organizations.

In addition, though National Bodies are the principal members carrying out JTC 1 activities, through strong liaison activities and technical expert cross memberships with de-facto standards setting organizations and consortia, JTC 1 benefits from the rapid, market-driven work of these groups. This is amplified by having many technical experts participate not only in local national standardization bodies but also in key de-facto standards setting bodies and industrial fora.

As the only joint subgroup, JTC 1 activities can relate to and take advantage of the focus of both ISO and IEC technical scopes – and through an active relationship with ITU, creatively work with that key organization. Few other organizations have this wide scope.

JTC 1 has developed a strong history of consensus building across a wide variety of technical topics, and has a strong reputation of quality standards that are widely implemented. Further, JTC 1 develops standards using a process that is neutral with respect to any particular region, business sector or technical area, and this process does not favor any particular culture or jurisdiction.

JTC 1 standards are usually supported by stable implementations, which reduce the possibility that the standard will change in any significant way over time. This increases the value of JTC 1 standards.

As a worldwide standardization body representing many interests, JTC 1 has the ability to address societal aspects when they truly represent global and not parochial interests.

National body interests that wish to ensure that globally relevant standards are used in local procurement activities can easily and confidently cite JTC 1 standards.

On the other hand, some aspects of JTC 1 have caused concern and JTC 1 should examine these topics for improvement during the 3-5 year planning horizon:

- JTC 1 is challenged to accelerate its processes to match the speed of market-driven product cycles, and to be viewed as competitive with other standardization organizations in the ICT Sector.
- The need to establish national body consensus before achieving JTC 1 approvals can also cause standards development delays, even though it will often be seen as an advantage to have such local support before seeking international standardization.
- The business models for ISO and IEC still rely significantly on the sale of International Standards (and the protection of copyright interests), which is a challenge for JTC 1 in the face of freely-distributed standards from other groups.



- Although the use of teleconferencing techniques is rising, the travel costs required to participate in international standards development can be burdensome to some participants. Improved participation and development models are needed.
- The use of testing environments and similar proofing practices, particularly for low-level protocol standards, is a valuable element of successful standards development; although some JTC 1 groups have such activities, this is not a common practice across all applicable groups, nor is it fully recognized as part of the Directives process.

## 4 Strategies

Strategies are the broad, theme-based activities that show how JTC 1 will achieve its goals outlined for the 3-5 year planning horizon. They fall into two areas: those related to the technical work areas undertaken by JTC 1, and those that relate to improving both the JTC 1 processes and the usefulness/acceptance of JTC 1 work products.

1. As a result of structured evaluations of opportunity areas, a number of recommendations for new work will be brought to the plenary in 2009 for consideration by JTC 1:
  - a. The Study Group on Sensor Networks is expected to recommend formation of a new WG
  - b. The Web Services Study Group is expected to recommend formation of a new WG
  - c. The Digital Content and Management Protection Study Group has made progress in evaluating the opportunities in this space and is expected to recommend formation of a more targeted Study Group
  - d. SWG-Planning has evaluated the Cloud Computing area and is bringing forward a recommendation for JTC 1 to form a Cloud Computing Study Group.
  - e. Following initial evaluation of the Green ICT area, SWG-Planning is recommending that JTC 1 form a Data Center Energy Efficiency Study Group, a SWG on Smart Grid and an ad hoc to develop a best practices guide for the development of green ICT standards.
2. Exploration of New Work Areas. The annual Environmental Scan process (further described in [Annex 2](#)) culminates in recommendations to JTC 1 to propose NPs in new technical areas – which would either be added to existing subcommittee plans or result in the creation of a new JTC 1 subcommittee. For this 2009 LTBP, the SWG-Planning has identified the following technical areas, and invites JTC 1 members to consider them for future work:
  - a. Green ICT (including aspects of sustainability relating to ICT)
  - b. Web Collaboration and Social Networking
3. Liaising and cooperating with other SDOs extends the expertise of JTC 1's SCs and provides feedback on how JTC 1 standards are being used. It also helps identify any gaps or inconsistencies that need to be addressed. By working with other SDOs, JTC 1's ability to serve an integration function is enhanced.

To ensure that global ICT requirements can be met, related works from National Bodies or Category A liaisons as well as publicly available specifications from ISO/IEC JTC 1 Publicly Available Specification Submitters are held to the same thorough technical review and national body approval process. These coordinated efforts result in additional international standards that contribute to a total ICT framework for implementation.

4. Marketing and Branding. The appropriate JTC 1 subgroups should consider how to evolve further the valuable market brand associated with JTC 1 developed standards and externally developed specifications. This will require further discussions with ISO and IEC on their overall brand improvement program and the unique role JTC 1 can play. Sharing the value of each SC's program of work with National Bodies and the ICT community will further demonstrate the broad interests that are met through JTC 1 standardization. SC outreach to the general public will be presented in a coordinated way through the use of integrated websites and up-to-date wikis.
5. Testing. The appropriate JTC 1 subgroups should examine the introduction of testing or trialling mechanisms as a common practice in improving the quality/acceptability of JTC 1 standards.
6. Active Involvement of JTC 1/SCs in a bottom-up planning process. In order to make the decision making process at JTC 1 level relevant to all participants, the JTC 1/SCs are to be encouraged to contribute more actively in the overall planning and working process of JTC1 at the TC level.

## 5 Actions

Actions in the context of the JTC 1 Long Term Business Plan are concrete activities assigned to a specific owner, who is responsible to conclude the activity before or at the 'due date'. A specific tactic could potentially relate to one or more of the strategies listed in the previous chapter. Any strategy must have at least one, but can have multiple, associated actions.

As an example, a strategy to increase the visibility of JTC 1 could result in the following activities or actions: develop a 'glossy brochure' to advertise JTC 1, develop a more marketing oriented web site, prepare PR news articles on a regular basis, present JTC 1 at fairs related to the work of JTC 1's sub-committees, etc.

The ownership and status of all activities is listed in Annex 1.

SWG-Planning proposes the following activities related to the Strategies defined in [Chapter 4](#) above:

1. Collect necessary information (see [Annex 2](#)) as input for the yearly environmental scanning activity by March 31. Based on the results of the 2009 questionnaire, SWG-Planning will, for the 2010 information collection, identify upcoming technology areas based on ICT analyst studies, results from IT specific literature and academia contacts, and will ask SC chairs if these technology areas are considered in the current or new work of the SC.  
Owner: SWG-Planning, relates to Strategy 2 (S2).
2. Identify leaders for the technology areas listed above in S1, establish Study Groups to investigate the situation and find standardization opportunities for JTC 1. Prepare a report for decision to the next JTC 1 plenary in 2010.  
Owner: SWG-Planning, relates to S2.
3. Some other SDO's require the development of test specifications or the development of (independent) reference specifications as part of their approval processes. Other alternatives could be for SCs to organise - as part of the development process - events to verify that specs are easily implementable and foster interoperability. JTC 1 should investigate if such

practices should become part of its development and approval processes. An assessment of the impact of such measures needs to be performed. In addition, guidance should be given to SCs for which types of standards such test specifications or reference implementations are required. This guidance should be integrated into the NP process and the current Annex G3. Owner: Ad-hoc group to investigate and make proposals, relates to S5.

4. In order to achieve coordinated JTC 1/SC business plans, SC officers need to participate in the SWG-Planning work and analysis process.

Owner: JTC 1 Chair, relates to S6

## ***6 Risks/Dependencies***

JTC 1, like any other organization, is dependent on multiple factors that inter alia arise from the external environment such as the global economic and political situation. The influence of such factors on the performance of JTC 1 are not covered in this LTBP. This chapter will list those actions from chapter 5, which cannot be handled/solved by JTC 1 alone, without the active support of organisations outside of JTC 1 or which require e.g. a decision from JTC 1's parent organisations ISO and/or IEC.

Such activities that depend on external support or decision making are always associated with the risk that JTC 1 may not be able to finish the activity. Such actions need therefore specific attention to resolve the dependencies.

## ***7 Success Factors and Measurements***

In order to evaluate the effectiveness of the long term planning activity of JTC 1, the following criteria will be used to measure success or failure:

- an individual strategy is successful if it leads to a new work item taken up by existing SCs/WGs, a new SC/WG is being created to work on the proposed strategy or the strategy influenced existing standards
- an individual strategy has failed if no SC/WG shows any interest or no progress has been made after a maximum of 3 planning cycles;
- the quality of the planning process itself is successful if 2/3 of the of strategies proposed are successful using the above criteria.
- the JTC 1 planning process has failed if no sufficient active participation by SCs can be achieved.

## Annex 1: List of Actions

Activity	Refers To Strategy	Owner	Due date	Result and Date
Collect information from SCs and NBs as input for the environmental scanning	Environmental Scanning	SWG Planning	Each year by March 31	
Identify leaders for Intelligent Systems, Robotics (including Sensor Technologies),	S1	SWG Planning	JTC 1 Plenary 2008	SWG-P decided not to deal with this, because of overlaps with the work of SG SN
Identify leaders for “Design for All”/Assistive Technologies,	S1	SWG Planning	JTC 1 Plenary 2008	SWG-P concluded that 'Accessibility' is part of the 'normal business'; therefore not pursued further by SWG-P.
Identify leaders for Cloud Computing,	S1	SWG Planning	JTC 1 Plenary 2008	Done. See document on Cloud Computing-SWG-P N 47.
Identify leaders for Content Format, Management & Interoperability at the Semantic Level,	S1	SWG Planning	JTC 1 Plenary 2008	SWG-P decided not deal with this, because of overlaps with the work of SG DCMP
Identify leaders for Sustainability (technical aspects which address societal aspects)	S1	SWG Planning	JTC 1 Plenary 2008	Included in activities on Green ICT. See document SWG-P N 46.
Balance of 'own' work and Fast-Track/PAS proposals	S2	SWG Directives	JTC 1 Plenary 2009	Closed. Part of revision of JTC 1 Directives as defined in Delft 2009-02.
Uniform presentation of SC content	S4	SWG Planning	JTC 1 Plenary 2009	Work in Progress. JTC 1 AHG on Website improvement

<b>Activity</b>	<b>Refers To Strategy</b>	<b>Owner</b>	<b>Due date</b>	<b>Result and Date</b>
Investigate impact of and need to develop test specifications	S5	Ad-hoc	JTC 1 Plenary 2009	Open. No progress.
Improve content of JTC 1 Patent Database information	S4	SC secretariats	JTC 1 Plenary 2009	Closed. Part of normal business.
Active participation of SC in planning process	S6	JTC 1Chair		Insufficient.
Identify leaders for Web Collaboration and Social Networking,	S2	SWG Planning	JTC 1 Plenary 2010	
Work on Green ICT, esp. those aspects which deal with 'Green by ICT'	S2	SWG Planning	JTC 1Plenary 2010	

## **Annex 2: Environmental Scanning Activity**

As an essential part of annual business planning, JTC 1 will conduct an environmental scan to identify trends, challenges and opportunities that deserve consideration by JTC 1 and its SCs. The environmental scan should include:

Input from each JTC 1 SC:

- Indicators of approved standards and initiation of new work in the SC
- Comments on trends and areas of increased and decreased interest for the SC.
- Plans by the SC for pursuing new areas of standardization

Inputs from National Bodies, liaison organizations and PAS submitters (by response to an annual call for contribution):

- Comments regarding trends, areas of increased/decreased interest for JTC 1
- Recommendations for JTC 1 action or further study

Inputs from JTC 1 Study Groups:

- Reports on progress and possible recommendations they may make to JTC 1 to reflect these recommendations in the LTBP

Analysis and summary conducted by the SWG-Planning

- Seek inputs on key technology trends from industry analysts, academics and other experts
- Review indicators of JTC 1 operational performance
- Review environmental scan input from SCs, SGs, national bodies, liaison organizations and PAS submitters
- Seek inputs from other consortia and SDOs that are active in areas that fall within the JTC 1 programme of work
- As needed, seek additional inputs to identify new trends, opportunities
- Provide a mechanism on the JTC 1 website for collecting input from the public
- Draw conclusions and make recommendations for further study or action

The SWG on Planning shall request inputs during the first half of the year and shall hold a face to face meeting during the third quarter to review and analyze the inputs and to prepare a summary report. At each plenary, beginning in 2009, the SWG on Planning shall present a report that summarizes the above information and makes recommendations for consideration by JTC 1.

Presentations at the plenary to emphasize all or parts of the proposed recommendations may complement the report and recommendations of the Environmental Scanning activity.