

ISO eServices Guide

NOTE This document has been prepared by the ITSIG. It has been designed as a resource for all people who have a role in the development of consensus standards within the community of international, regional and national standardization organizations. As such, although it remains under the copyright of ISO, it is freely available in a revisable format to enable organizations or groups to tailor its contents to a specific audience.

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ISO eServices Guide

1 Introduction

1.1 General objectives

ISO (International Organization for Standardization) is a nongovernmental federation of the national standards institutes of more than 140 countries. ISO standards are developed through a highly decentralized network of entities including: national standards bodies; technical committees; subcommittees and Working groups; governance bodies; policy development committees, and many others.

For the purposes of this document, it is particularly important to note that the key constituents of the international standardization process, i.e. the national standards institutes and the technical committees, while bound to follow a certain set of codified procedures (such as the “ISO/IEC Directives”, or other prescriptive rules established by the ISO Council and Technical Management Board), *are fully independent entities, following autonomous strategies and organization of business processes.*

In the mid 1990's, a group of forward-looking leaders among the top managers of ISO realized the enormous potential that Internet could bring to support and improve ISO's processes. Dr. L.D. Eicher, ISO's late Secretary-General, introduced the catch phrase “the Internet imperative” to convey the urgent need to transform the organization to take full advantage of this unprecedented opportunity.

The Information Technology Strategies Implementation Group (ITSIG), since its creation in 1996, has been working to help translate the Internet Imperative into reality. First and foremost, ITSIG has been substantially responsible for promoting a common understanding and a stronger coordination of IT developments among the ISO members – and between them and the ISO Central Secretariat (hereafter ISO/CS). Secondly, within the framework of ITSIG's plans and with the essential contributions of the ITSIG members, new IT services have been developed, with substantial impact on ISO's work processes.

Over the past few years, it has become evident that what we know today as *the Enterprise Portal* approach is the optimal one for offering to the composite community of ISO's stakeholders a unified, consistent view of the organization's IT services. The goal of the portal is to simplify the access to these services by the various categories of users, while hiding the underlying complexity (in particular, links to the various operational IT systems and applications).

The objective of this document is to provide an updated description of the various systems, services and tools that ISO's Enterprise Portal offers to the ISO community and which constitute, together with a specific set of conventions and procedures, the technical infrastructure that supports the international standardization activities.

The document is intended to help all involved in the standards process (e.g. standards writers, technical committee secretariats, ISO member bodies, etc.) to take advantage of the **ISO's eServices**, i.e. the available IT services and tools to help in the development, approval, national adoption and distribution of ISO's publications.

For the sake of clarity and completeness, the following approach has been taken throughout the document:

- to present a summary of the main features of the various systems in place, providing hyperlinks to all the relevant source documents (user manuals and others) where detailed and *continuously updated* information can be found;

- to provide detailed descriptions of the prescriptive rules and conventions, along with the essential recommendations, that users need to follow to participate effectively in ISO’s IT-supported processes.

The document offers an overview of *ISO’s Enterprise Portal* systems architecture, along with a description of the IT systems and services supporting the ISO work in the following fields:

- Standards development (including document submission)
- Electronic balloting (eBalloting)
- Standards production and publishing
- Standards distribution
- Information delivery
- Purchase of ISO standards

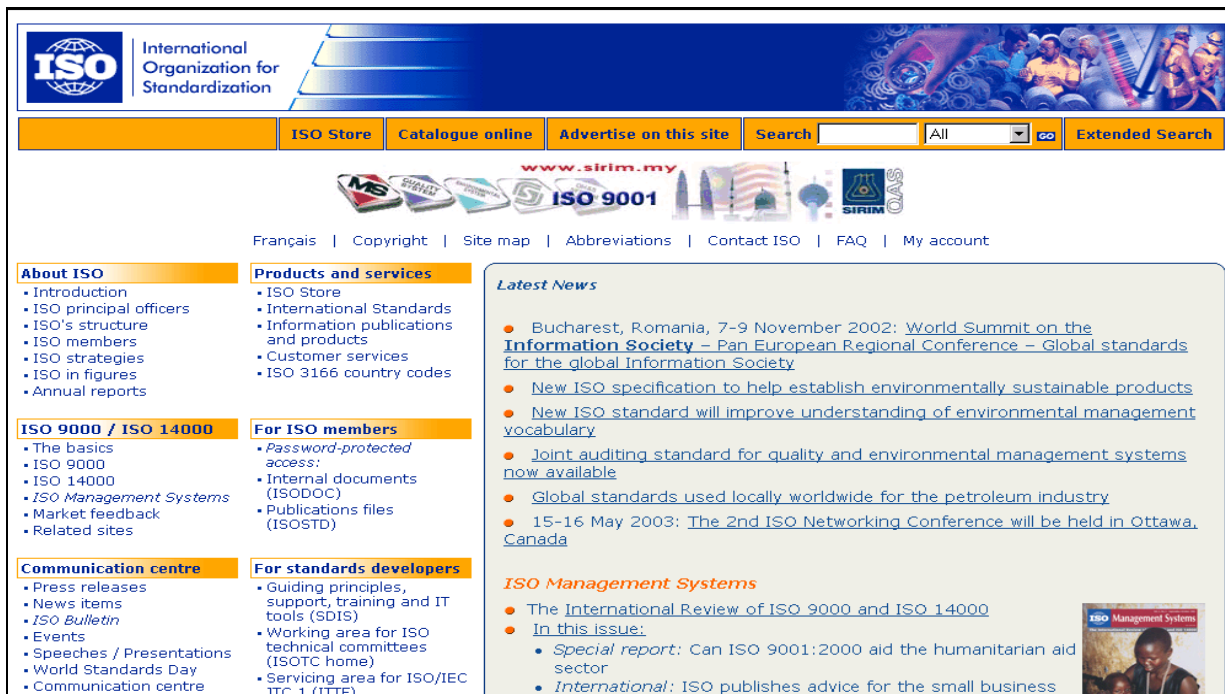


Figure 1 — ISO Online homepage (gateway to the ISO's Enterprise portal)

In Figure 1 is presented the homepage of ISO Online, gateway to the ISO Enterprise portal. All **ISO's eServices**, i.e. the IT services designed and operated to support various groups of stakeholders on activities concerning standardization, are indeed accessible through ISO Online.

A detailed description of the ISO Online sections is presented later in clause 4. What is important to underline in this introductory note is that ISO Online is intended to provide a unified, intuitive, portal-like interface to access all information and **eServices** offered by ISO.

All users, including standards developers and implementors of standards, national standards bodies staff, employees of international organizations and government agencies, inspectors, engineers, managers, business consultants, journalists and the general public will find on **ISO Online** information concerning ISO, its standards and a variety of issues related with standardization, conformity assessment, testing and metrology matters.

Standards developers (such as technical committee members, chairpersons and secretaries) will find through the "standards development" section of ISO Online a great deal of information needed for their work, along with access to all the services (such as TC folders and workspaces, or eBalloting) and tools (such as the ISO templates) available to support their standards development work.

Members of the ISO governance bodies will get all information and documents needed for their activity through the "For ISO members" section of ISO Online. National standards bodies staff persons dealing with standards production or distribution will find the tools and services they need (such as access to the repository of ISO standards in various electronic formats) through the same "For ISO members" section, following hyperlinks to the systems designed for them.

Last but not least, prospects and customers of ISO standards will find how to search, select, purchase and download ISO's publications through the "Products and services" section of ISO Online.

1.2 ISO/CS IT architecture

1.2.1 Internet as application platform: the magic and the challenge

Adopting Internet as the reference "application platform" upon which to base mission-critical applications supporting the business processes of the organization is an extraordinary opportunity but, at the same time, a challenge.

On the one hand, Internet, with its unprecedented rate of development and global reach, has created a *universal first layer* of computer interconnection disseminating basic, but very powerful mechanisms (including protocols, formats, services) that allow worldwide access and exchange of information. E-mail services and Internet or Web browsers conceived to navigate through html pages have been, from the large-scale user perspective, the cornerstone of this development.

For ISO, this has worked like magic: within a few years, a large part of its members (and soon, all of them) was sharing a basic Internet IT infrastructure that could enable the introduction of computerized services on a global scale. ISO could not ask for more: Internet is to be *he* " for the organization – and the *Internet Imperative* is going to be fulfilled.

On the other hand, Internet is inherently an "uncontrollable", information-sharing environment, not designed for business applications. This aspect, particularly when combined with "normal" user expectations in the Internet environment (the typical asynchronous usage, and implicit requirement of 24/7 availability and service level) gives rise to a number of difficult issues that need to be adequately addressed and resolved.

First of all, there are implications for systems design: systems have to be designed to meet the user requirements for basic, universally available tools (essentially, Web browsers and e-mail functions). Preferably, systems are also to be designed as asynchronous and "stateless".

Secondly, there are important implications for the infrastructure's requirements: avoidance of service breaks, impact planning and testing, as well as means to guarantee data integrity (online back-ups, etc.).

Thirdly, end-to-end monitoring and control needs to be implemented, along with structured helpdesk services.

1.2.2 Specialization and Modularity

The requirements outlined above, combined with general systems design, good practices, and analysis of needs and attitudes of the various categories of users within the ISO system, have led to the identification of some additional architectural principles:

- a) Systems services have to be structured as loosely coupled components (or modules) supporting specific business processes and functions;
- b) Well-defined interfaces have to be specified between these components, other IT services and external IT resources;

- c) Maintainable and re-usable business process methods have to be encapsulated in components, making use of business APIs (Application Programming Interfaces) that can be consistently invoked within the framework.

Some practical and immediately obvious implications of the above principles can be seen when one examines how systems services provided by ISO/CS have been structured, involving the introduction of a number of specialized servers dedicated to different categories of users.

In Figure 2 are highlighted the three primary business processes of the organization (governance and policy development; standards development; standards and information delivery), along with the main categories of participants involved.

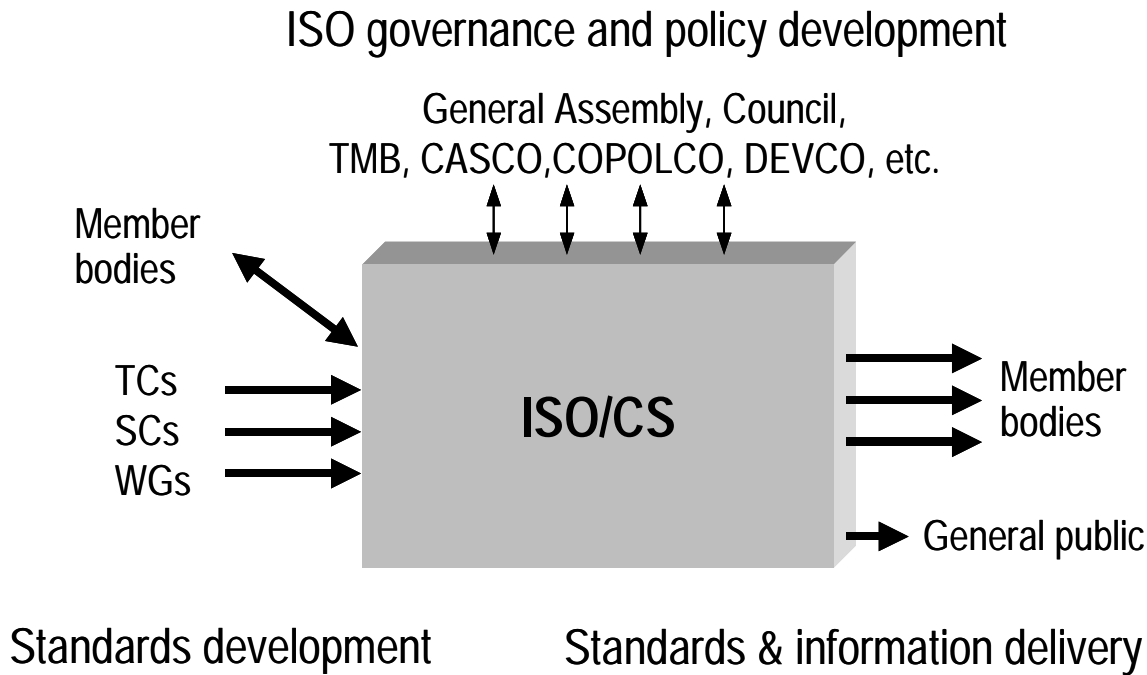


Figure 2 — Interfaces with the ISO/CS

In Figure 3 is presented the architecture of the specialized ISO services designed and operated to support the various business processes and the related categories of users, including ISO/CS internal units.

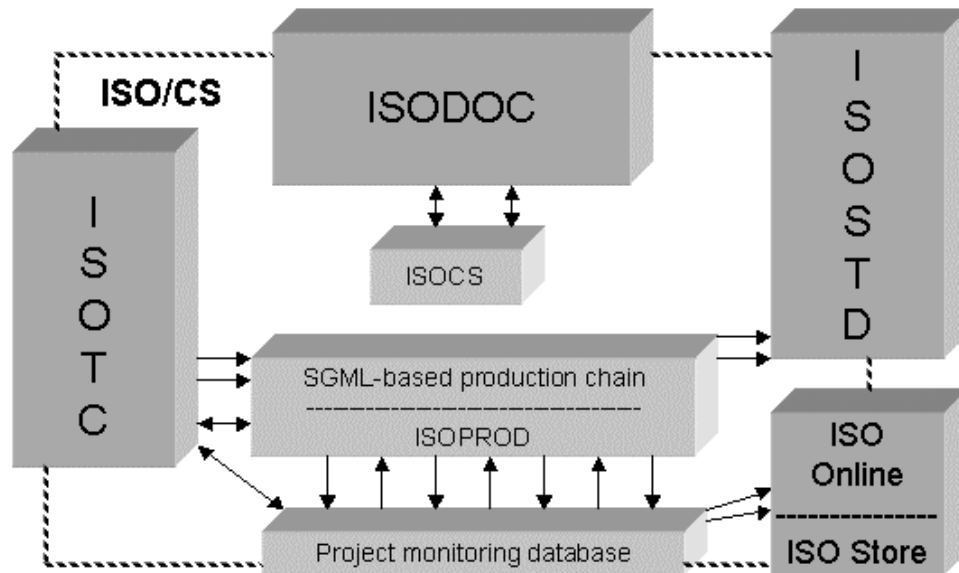


Figure 3 — The ISO/CS eServices architecture

Many people in the ISO community are today familiar with the applications and services offered by the specialized ISO eServices, supporting different groups of stakeholders:

ISO Online, providing Information services to the general public and playing the role of ISO's Enterprise Portal;

ISODOC, supporting ISO's governance bodies and policy development committees;

ISOTC, supporting standards development;

ISOSTD, supporting the distribution of ISO standards;

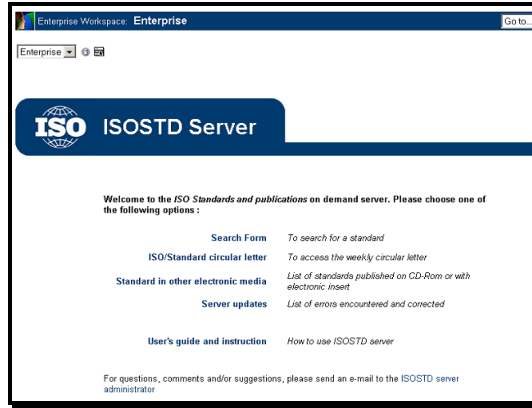
ISO Store, offering eCommerce services for the ISO publications.

Figure 4 presents the Enterprise Portal view, highlighting the hyperlinks between the ISO Online homepage and the principal, specialized ISO eServices described on previous page.

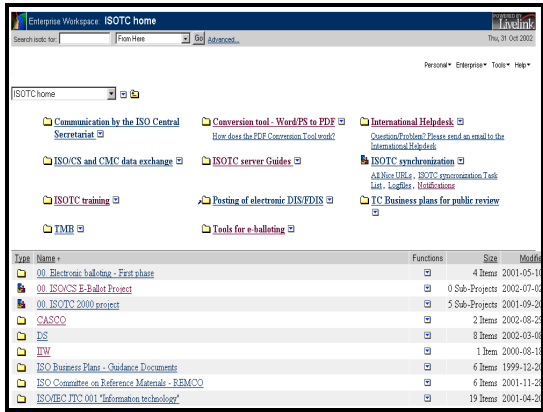
ISO Store



ISOSTD



ISOTC



ISODOC

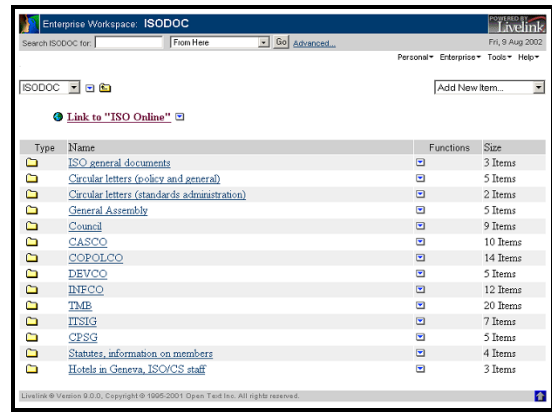


Figure 4 — The Enterprise Portal

Experience in the past few years has shown that the approach of having specialized ISO services has also paid off in terms of benefits perceived by users and administrators. The main advantages experienced so far can be summarized as follows:

- Adherence to specific business process requirements;
- Sense of familiarity and “ownership” by users and administrators;
- Increased manageability (possibility of upgrading services at a relatively independent pace);
- Faster delivery.

1.3 ISO policies on the protection of personal data and intellectual property rights

1.3.1 Overview

Before completing this introduction it is important to present briefly some general ISO policies, which are especially relevant in electronic working environments.

1.3.2 Protection of personal data

The ISO privacy policy (approved by Council resolution 12/2001) requires that access to contact details of persons participating in ISO work shall only be granted, on a need-to-know basis, to individuals (such as ISO committee secretariats) holding positions which require that they provide communications to the individual concerned.

Other provisions concerning all committees working in an Internet-based environment address the use of personal contact information which is needed for the work of electronic committees. These provisions define conditions for the use and the dissemination of such information which has been received through the participation in an ISO electronic committee. Details can be found in TMB resolution 71/2001 and in the "Declaration relating to the handling of documents and data, including authorization to use participants' personal data in the "Electronic Committees", which can be found in the annexes to the [Administrator's Guide to the ISOTC Server](#) (guide available at ISOTC homepage at www.iso.org/tc in the folder *ISOTC server Guides*).

1.3.3 ISO's intellectual property rights

All ISO publications are protected by copyright. Therefore and unless otherwise specified, no part of an ISO publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, microfilm, scanning, without permission in writing from the publisher.

Participants in ISO's electronic committees are required to explicitly approve a data protection declaration which contains *inter alia* the provision that they respect ISO's copyright rules and regulations (the "Declaration relating to the handling of documents and data, including authorization to use participants' personal data in the "Electronic Committees" referred to in 1.3.2).

A detailed description of the ISO's Intellectual property rights is available in the document [Guidelines and policies for the protection of ISO's intellectual property](#) and its annexes.

2 Standards development

2.1 List of services covered in clause Standards development

- ISOTC: Electronic collaboration and decentralized administration of committee sites
- ISOTC: Folder structure and access permissions to folders
- ISOTC: Collaborative features
- ISOTC User Guides
- ISO/IEC Directives (main and supporting documents)
- Rules for drafting of standards
- File preparation using word processors and the ISO templates
- Requirements for provision of text and graphics in electronic form
- ISO templates and related FAQs
- ITTF template
- ITSIG Document Type Definition (DTD)
- AutoCAD templates

2.2 ISOTC: Electronic collaboration

With the spread of the World Wide Web an increasing number of ISO committees decided to establish their own websites, which were hosted by member bodies or other organizations involved in standardization. In 1998 ISO/CS established the ISOTC Service with the intention of providing a uniform working environment for all types of ISO groups involved in the development of standards or other types of normative or policy documents, such as

- technical committees (TCs) and subcommittees (SCs)
- working groups (WGs) and technical advisory groups
- policy development committees
- other groups.

In the year 2000, a special ITSIG project (the ISOTC 2000 project) was launched to address in a systematic manner requirements for the work in committees. Decisions concerning the structuring of working environments resulting from the work of the ISOTC 2000 project team have been implemented on the [ISOTC Service site](#) (see Figure 5).

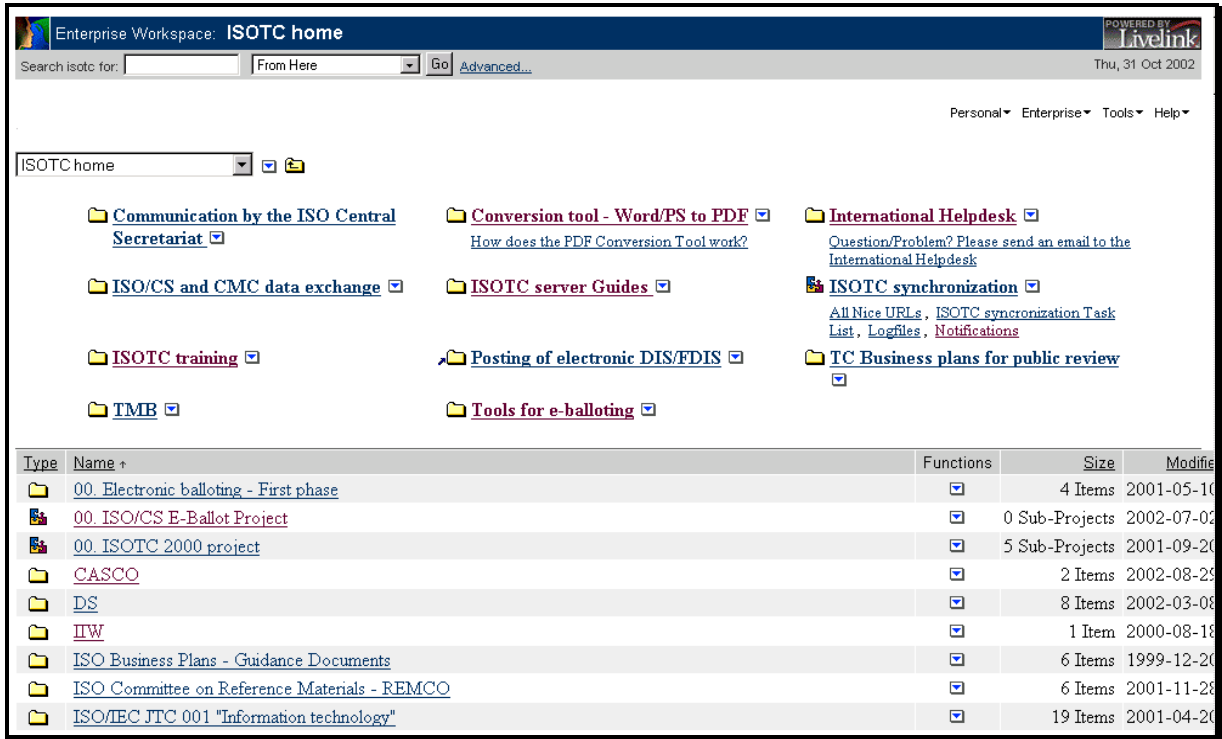


Figure 5 — ISOTC Service site

2.2.1 Management principle of the ISOTC Service

The principle on which the ISOTC Service is based is that a committee administrator (normally the committee secretary) and their support staff administer the site of a committee decentrally, i.e. from wherever they are located around the world. What users on the ISOTC can do, depends on the role to which they are registered. Currently, there are two basic roles defined which is the administrator of a group (i.e. of a committee or working group) and that of a member of a group. The former role is associated with management rights for documents and – to a certain extent – users. The latter basically grants access to documents (without the option to modify them). A user can have more than one role in the different groups to which the user is registered (e.g. secretary in one committee and member in another, or balloter in another).

2.2.2 Folder structure and access permissions to folders

The structure of the working environment is composed of a set of basic folders (see Figure 6), which are described below.

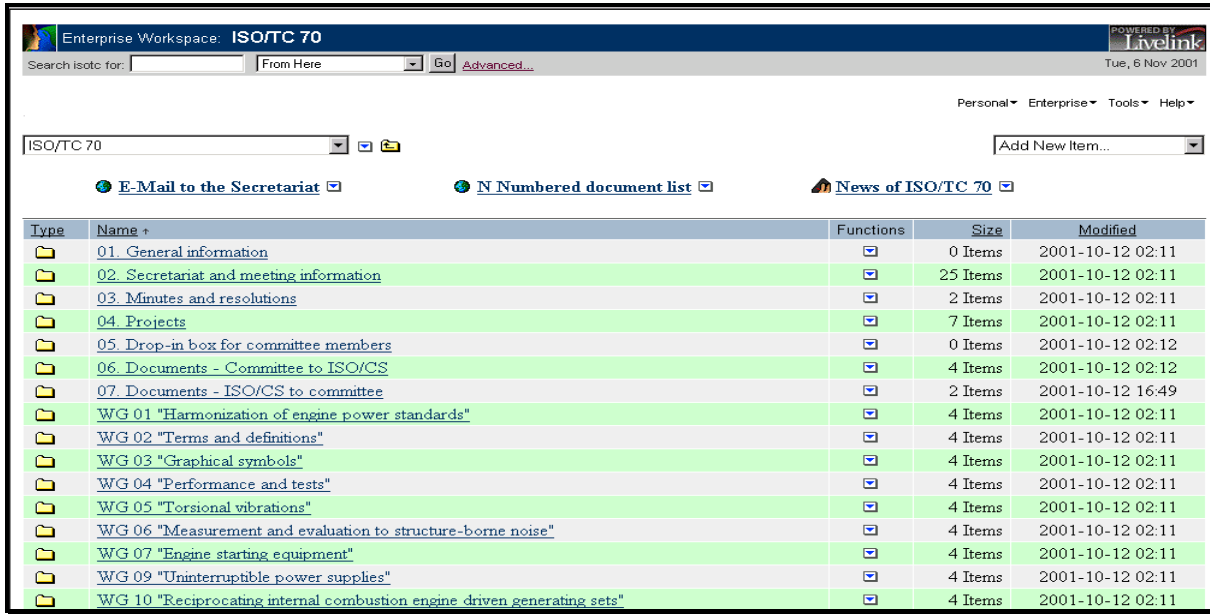


Figure 6 — Example of a TC structure in ISOTC

The main function of folders is to store documents of a certain type and provide functions for the interaction between the committee members, the committee secretariat and the ISO/CS. A set of default folders providing the working environment of TCs, SCs and working groups has been defined, which is given below:

Default subfolder structure for all committee types (international, regional, national):

Folder name	Function	Access right
01. Public information	Public information, presentation of work	Committee-admin: All rights Public: Read
02. General (committee) documents	Documents that do not fit in other folders	Committee-admin: All rights Committee-members: Read
03. Meetings and resolutions	Invitations, agendas, minutes, resolutions	Committee-admin: All rights Committee-members: Read
04. Projects	Project-related documents, working drafts	Committee-admin: All rights Committee-members: Read
05. Drop in box for members	Submission of docs. by committee members to Secretary	Committee-admin: All rights Committee-members: Read, add item
06. Documents - Committee to ISO/CS	Submission of docs. by Secretary to ISO/CS	Committee-admin: Read, add item ISO/CS: All rights
07. Documents - ISO/CS to committee	Submission by ISO/CS to Secretary	Committee-admin: Read ISO/CS: All rights
08. Balloting and commenting	DIS/FDIS ballots and committee-internal ballots	Committee-admin: Read ISO/CS: All rights
E-mail to the secretariat		Committee-admin: All rights Public: Read
List of documents		Public: Read
News		Committee-admin: All rights Public: Read

2.2.3 Collaborative features

Collaborative features include mainly

- discussion fora for the open exchange of opinions between members of committees and working groups (see Figure 7)
- project management tools, such as tools for the assignment of tasks and the monitoring of their implementation status
- automated e-mail notification services (mostly about the availability of new documents) and mailing list services (e.g. for an administrator to advise a whole group of something)
- meeting registration and meeting management
- balloting and commenting (on drafts of standards or other types of documents) [also see clause 3 of this Guide]

Some of these features are currently already available, whereas others are still under development.

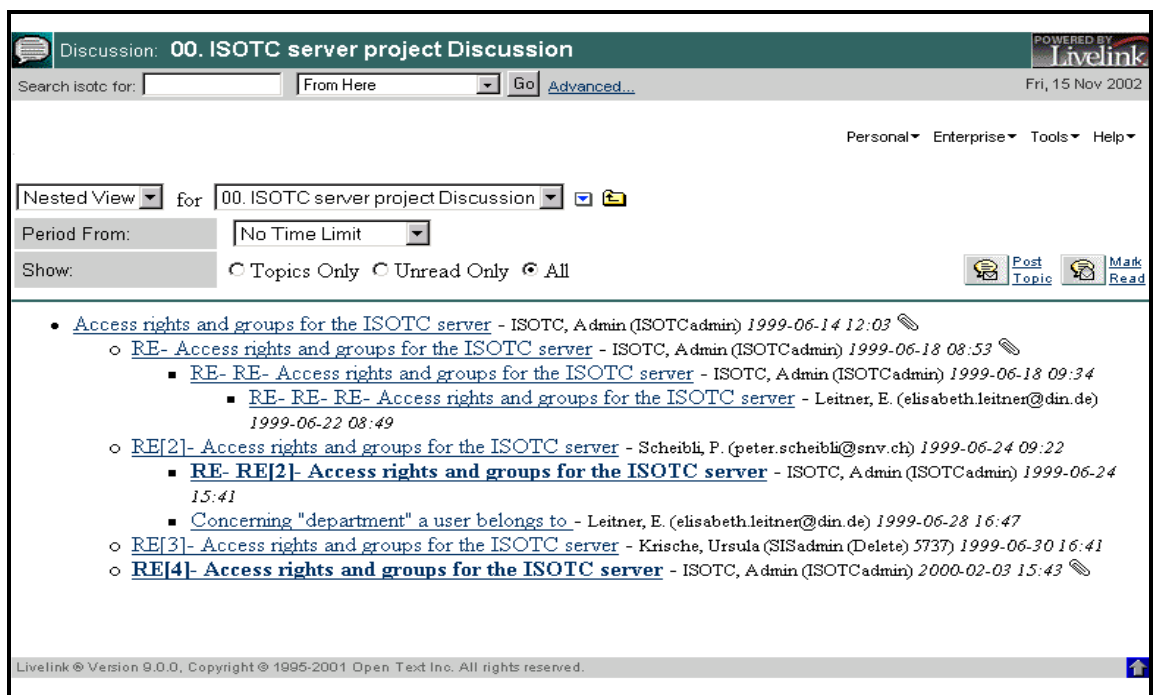


Figure 7 — Example of a discussion fora

2.2.4 Documentation of the electronic committee working environment

There are two guides to the ISOTC Service with further details on the committee working environment, i.e.

- the *User Guide to the ISOTC server* (for members in committees without functions as an administrator of a committee site)
- the *Administrator's Guide to the ISOTC server* (for administrators, i.e. secretaries and their staff of committee sites)

The two guides and additional information about collaborative work in electronic environments in ISO can be found on the ISOTC Service at: www.iso.org/tc in the folder *ISOTC server Guides*.

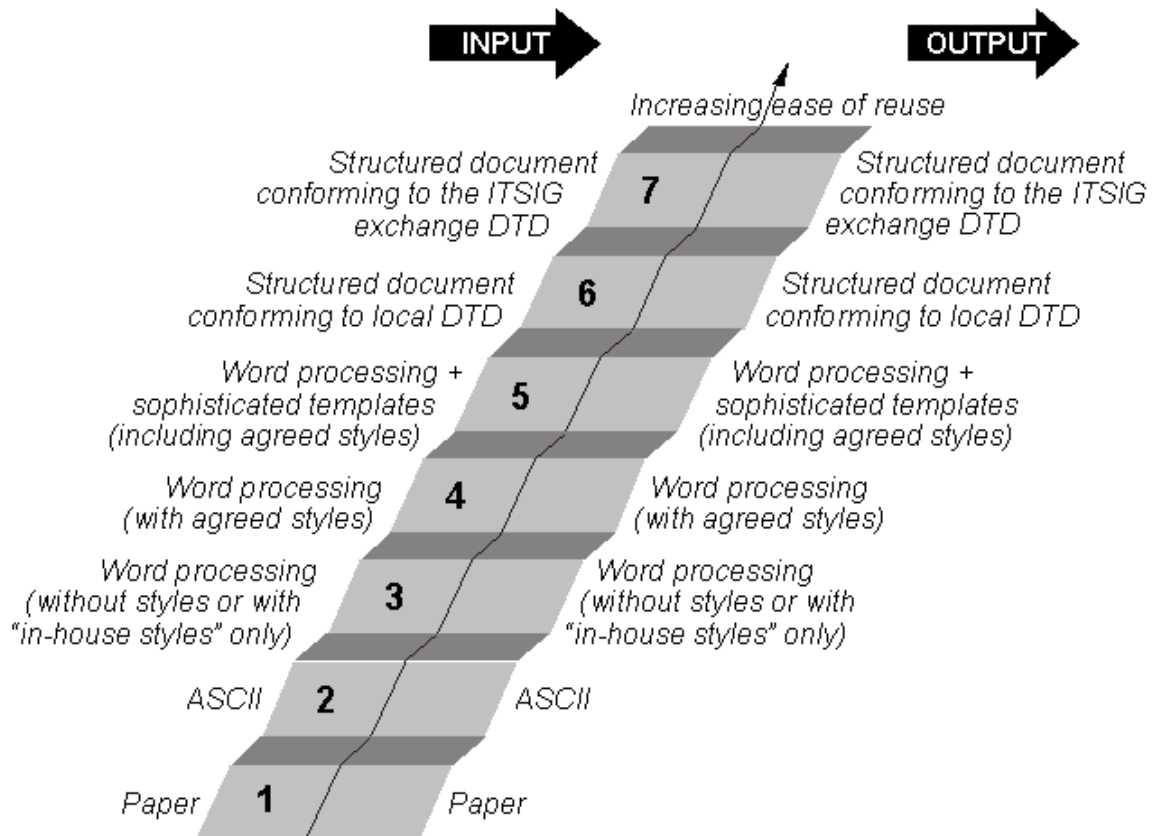
2.3 Authoring standards documents

2.3.1 Introduction — Ladder of computerization

One of the tools developed by the ISO/IEC/ITU Information Technology Strategies Coordination Group (ITSCG) as an aid in the process of planning and implementing a computerization strategy within a standards organization was the concept of a *ladder of computerization* (see Figure 8). The ladder was designed to provide guidance on the ways in which IT can be applied to the document preparation steps forming part of the overall development/delivery process of standards and standards-related information.

The computerization ladder represents the capability of an organization to process "data", and illustrates the progression from the least complex, and most-limiting, option (1) to the currently most sophisticated and least-limiting solution (7). "Data" in this context includes the description of the structure and other attributes of the document in addition to the actual text (or document content). The left-hand side of the ladder represents the form (or level) of the input "data" to the process and the right-hand side represents the output form of the "data". From a specific point on the input side one can relatively effortlessly generate output at the same or lower level (e.g. using automated processes) but considerable effort, usually requiring human intervention, is required to output information at a higher level on the ladder.

As a strategy aid in planning the implementation of IT tools for document preparation, the ladder helps to identify on which level an organization is currently and on which level it needs to be to meet the needs of its clients (e.g. supply of standards in various formats) and of the ISO system (e.g. to reduce overheads in document exchange, to maximize reuse).



ITSIG exchange DTD Information Technology Strategies Implementation Group exchange Document Type Definition

Figure 8 — Document preparation ladder of computerization

2.3.2 Rules governing the development and drafting of International Standards and other ISO deliverables

The rules governing the development and drafting of International Standards and other ISO deliverables are provided in

- the [ISO/IEC Directives, Part 1, Procedures for the technical work](#)
- the [ISO/IEC Directives, Part 2, Rules for the structure and drafting of International Standards](#)
- the [ISO Supplement to the ISO/IEC Directives](#)

A number of supporting documents are also available on the Directives main page www.iso.org/sdis/directives. The implementation of these rules is supported by a number of other services described in 2.3.3 and 2.3.4. We strongly recommend that any committee having difficulty in applying a particular rule discuss the issue with the ISO/CS as soon as possible. This will avoid the ISO/CS having to modify the documents at the FDIS stage and the publication getting delayed while the issue is being negotiated.

2.3.3 Text editing

2.3.3.1 Recommended tools

ISO and ISO/IEC documents shall be prepared using word processing tools, or simple text editors with no special formatting features. Documents shall be based on one of the ISO templates (see 2.3.3.2) or, for SGML documents, on the ITSIG exchange DTD (see 2.3.3.4).

2.3.3.2 The ISO templates (for word processing tools)

ISO has prepared templates for drafting standards and other ISO deliverables. The ISO templates are aligned with the requirements of the ISO/IEC Directives, Part 2, and incorporate the styles defined by ITSIG. Documents prepared using word processing tools shall be based on one of the ISO templates.

The templates, together with instructions on how to install and use them, are freely available and can be downloaded from www.iso.org/sdis/templates. A list of frequently asked questions (FAQ), and their answers, is also available for each version of the automated templates. Problems not dealt with by the FAQ can be submitted to the ISO template helpdesk (template@iso.org) for treatment.

JTC 1 and ITU-T have also prepared a common template for drafting standards/recommendations that are released jointly by both organizations. It is available from the ITTF Web site (www.iso.org/ittf).

2.3.3.3 File preparation using word processing tools and the ISO templates

Respect the following basic requirements.

DO	<p>Keep the file structure as simple as possible</p> <p>Use the character and paragraph styles predefined in the ISO templates, in order to avoid their reformatting at later stages</p> <p>Use standard fonts such as Helvetica (PostScript font) or Arial (TrueType font)</p> <p>Use Arial for non-Latin alphabets (in recent word processing tools Arial usually contains a rich set of characters known as "Unicode")</p> <p>Use the following language/dictionary settings:</p> <ul style="list-style-type: none"> English — UK English or English (United Kingdom) [not English (United States) or any other type] French — French (France) or French (Standard) [not French (Belgian) or any other type] <p>Use spell checkers</p> <p>Use an equation editor set to the values given in Figure 9</p>
DO NOT	<p>Employ sophisticated formatting options except where they really add value to the comprehension of the text</p> <p>Try and produce the final page layout: the final formatting of publications is carried out by the ISO/CS unless there is a prior agreement to supply documents as PDF files destined for POD</p> <p>Insert blank pages</p> <p>Insert unnecessary section breaks</p> <p>Try to align typographically English and French versions</p> <p>Use special fonts</p> <p>Create your own fonts</p> <p>Use colour unless necessary</p> <p>Use shading unless necessary</p> <p>Use dashed, dotted or dashed-dotted borders (especially those with a very small pattern); instead use borders with a solid (continuous) line</p> <p>Nest a table within another table</p> <p>Embed the figures in the word processing file</p> <p>Place graphical elements in mathematical expressions</p> <p>Use fields to insert equations or special symbols</p> <p>Use the drawing capabilities of your word processor to produce graphical elements</p> <p>Edit or format [i.e. crop, stretch, scale (enlarge/reduce), patch with text frames in order to correct or translate particular portions of text] figures (images) using word processing tools or other image processing programs. Figures shall only be edited using the graphics tool with which they were produced (see 2.3.4.2)</p> <p>Protect the file with a password</p>

Details concerning these requirements as well as further information is contained in the document [Document preparation rules — What makes the rule?](#)

Line spacing	150 %
Matrix row spacing	120 %
Matrix column spacing	100 %
Superscript height	45 %
Subscript depth	25 %
Limit height	25 %
Limit depth	100 %
Limit line spacing	100 %
Numerator height	35 %
Denominator depth	100 %
Fraction bar overhang	1 pt
Fraction bar thickness	0,5 pt
Sub-fraction bar thickness	0,25 pt
Fence overhang	1 pt
Spacing adjustment	100 %
Minimum gap	8 %
Radical gap	2 pt
Embellishment gap	1,5 pt
Prime height	45 %

a) Setting 1: Format / Spacing...

Style	Font		Character format	
	Type 1 Base 13	TrueType	Bold	Italic
Text	Helvetica	Arial	<input type="checkbox"/>	<input type="checkbox"/>
Function	Helvetica	Arial	<input type="checkbox"/>	<input type="checkbox"/>
Variable	Times	Times New Roman	<input type="checkbox"/>	<input checked="" type="checkbox"/>
L.C. Greek	Symbol	Symbol	<input type="checkbox"/>	<input checked="" type="checkbox"/>
U.C. Greek	Symbol	Symbol	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Symbol	Symbol	Symbol	<input type="checkbox"/>	<input type="checkbox"/>
Matrix-Vector	Times	Times New Roman	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Number	Helvetica	Arial	<input type="checkbox"/>	<input type="checkbox"/>

b) Setting 2: Style / Define...

Full	10 pt
Subscript/Superscript	80 %
Sub- Subscript/Superscript	70 %
Symbol	170 %
Sub-Symbol	120 %

c) Setting 3: Size / Define...

Figure 9 — Recommended equation editor settings

2.3.3.4 The ITSIG exchange Document Type Definition (DTD)

Through ITSIG, ISO has prepared a DTD for standards and other ISO deliverables. The ITSIG exchange DTD is compliant with the requirements of the ISO/IEC Directives, Part 2. Documents prepared in SGML format shall be conformant with the [ITSIG exchange DTD](#).

2.3.3.5 File exchange

2.3.3.5.1 Formats

Even though Word 97, Word 2000 and Word 2002 (XP) share a common file format, certain functions of the newest versions of the software are not supported in the previous ones. It is therefore recommended to avoid using these functions or to disable features not supported by the previous versions of the software if files are to be shared with users of the previous versions.

Details regarding the formats used by the ISO/CS are provided in the document [ISO Central Secretariat requirements for provision of text and graphics in electronic form](#).

To share files with the users of the previous versions, one possibility is to use the dual file save option which allows the information of the Word 97, Word 2000 and Word 2002 (XP) versions and that of the previous version to be saved in one file. For example, if a Word 2002 (XP) user chooses to save the file in the Microsoft Word 97-2002 & 6.0/95-RTF format, two data streams are created for the document file: one for version 97-2002 and one for version 6.0/95. However, document file size and save time increase due to the additional information. If a Word 6.0 or 95 user saves the file, features specific to Word 97-2002 may be lost. Similarly, if a Word 97-2002 user saves the file in Word 97-2002 format only, the Word 6.0 or 95 data stream will be lost but can be regenerated if saved as a dual file at a later time.

For transmitting text files to the ISO/CS, it is necessary to conform to the [ISO Central Secretariat requirements for provision of text and graphics in electronic form](#). [For background information, see Publishing of standards (5.2.2).] Exceptions will only be granted where prior agreement has been reached with the ISO/CS.

2.3.3.5.2 Filenames

Specify filenames to be as meaningful as possible, e.g. iso-dis-3456-e. [The automated (wizard) ISO template attributes a meaningful filename based on the administrative data entered in the STD manager of the template.] To differentiate between different versions of a draft, add extra information, e.g. add a version number.

As a practical limit for filenames use a maximum of 32 characters:

- permissible characters: the numbers 0 to 9, the upper case letters A to Z and the lower case letters a to z without diacritical marks, and the symbols - (hyphen) . (period);
- non-permissible characters: \ / : * ? " < > | ! + % _ and nor should the name include white space.

The period (.) shall only be used once per filename, to separate the actual filename from the file extension. The extensions are usually proposed by the application programs and should not normally be modified.

Some file systems are case sensitive and some are not, and therefore it may be necessary to use only upper case or only lower case letters — this is necessary for example where file exchange occurs between Windows and Unix file systems. Lower case letters tend to be easier to type and read.

Ensure that the full path name is less than approximately 128 characters.

In accordance with ISO/IEC 9660, the rules for CD-ROMs are stricter (for example filenames are restricted to 8 characters, and folder names to 8 characters): see ISO/IEC 9660 for details.

Add any useful information to the document summary information, e.g. title, subject, author and any comments considered to be helpful.

2.3.4 Figures

2.3.4.1 General

Generally the exchange results are reliable if standardized formats (TIFF CCITT G4, CGM binary 1.50) or publicly specified formats (GIF, PS, EPS) rather than proprietary or Windows-specific file formats (BMP, Paint, PCX, WMF, etc.) are used.

Three kinds of encoding schemes have to be distinguished: raster formats, vector formats and page description languages.

Raster files can be easily created, but are limited to the output resolution of the output device, whether this be a monitor, printer, etc. Raster files tend to be large, and so it is often necessary to compress them for efficient storage or exchange.

Vector files can be scaled to the resolution of the output device (e.g. monitor, printer, etc.). They can be re-edited provided that they have been created in accordance with harmonized semantical conventions (especially those for line and font information).

Page description languages (PS, EPS and PDF) may contain raster data as well as unstructured vector information, and so no general statement regarding their quality can be made. There may be an unexpected loss in quality. This would occur, for example, when a PS file containing embedded raster information is used on an output device with a higher resolution than that of the embedded raster information. The possibility to edit files in this format is limited (typically to a few characters or words) and it is generally not possible to carry out major alterations such as rewriting large portions of text, inserting graphics, or reformatting pages. Non-standard Adobe Type 1 fonts (except Base 13 fonts) should be included and a preview raster file generated; more detailed information is provided in the [ITSIG specification for the preparation and exchange of graphics](#).

2.3.4.2 Recommended tools and template

For optimizing the ability to exchange figures, a Computer Aided Design (CAD) software package should be used in drawing offices. This type of software package allows the user to add structural information needed for exchange (such as layers, line types and weights, etc.).

The [AutoCAD template](#) used by the ISO/CS, together with instructions on how to install and use it, is freely available and can be downloaded from www.iso.org/sdis/templates. This template incorporates the specifications defined by ITSIG (see the [ITSIG specification for the preparation and exchange of graphics](#)).

2.3.4.3 Preparation and drafting of figures

Basic rules concerning the usage, form, designation, layout and presentation (including subdivision) and content (choice of letter symbols, style of lettering and labelling, notes, footnotes) of figures, and in particular the drafting of mechanical engineering drawings and diagrams, are provided in the [ISO/IEC Directives, Part 2](#).

Figures in standards documents typically comprise mechanical engineering drawings and diagrams, although they may also comprise graphs, flow charts, forms and similar types of diagram as well as photographs, and they typically include textual elements in addition to the graphical elements. Rules for the preparation and drafting of figures need to take into consideration the conversion problems inherent in exporting and importing graphics files, and the fact that the figures often need to be edited and translated.

Full details concerning the preparation and drafting requirements for figures are given in the [ITSIG specification for the preparation and exchange of graphics](#).

2.3.4.4 File exchange

For the purpose of transmitting figures to the ISO/CS, it is recommended to submit separate graphics files [these may be linked to (but not embedded in) the word processing file containing the document] and a reference copy of the drawing (either separately or within the PDF file of the complete text).

It is recommended to store the pictures (graphics files) in the same folder as the associated document file and to link them using relative links as described in the template reference manual available at www.iso.org/sdis/templates.

See also the section on data formats in the [ITSIG specification for the preparation and exchange of graphics](#), 2.2.

The [ISO Central Secretariat requirements for provision of text and graphics in electronic form](#) are further explained in Publishing of standards (5.3.2).

Filenames shall be as meaningful as possible (see also 2.3.3.5.2 and the [ITSIG specification for the preparation and exchange of graphics](#), 2.1.2).

3 ISOTC: Electronic balloting in ISO

3.1 List of services covered in clause ISOTC: Electronic balloting in ISO

- Different ballot types in ISO
- Access to the electronic balloting application
- Different stages of balloting

3.2 Different ballots and access to the electronic balloting application

Electronic balloting (hereafter eBalloting) takes place at various instances in ISO. Most typically ballots are on drafts of standards, whereas other ballots may relate to the proposed establishment of a new technical committee or subcommittee, the draft of a business plan, new project proposals, etc.

ISO has transitioned from paper-based to eBalloting. Many ballots are already fully electronic. It is the intention in the near future to support all types of ballots in the ISO system through electronic means. In Figure 10 is presented the access to the eBalloting application.

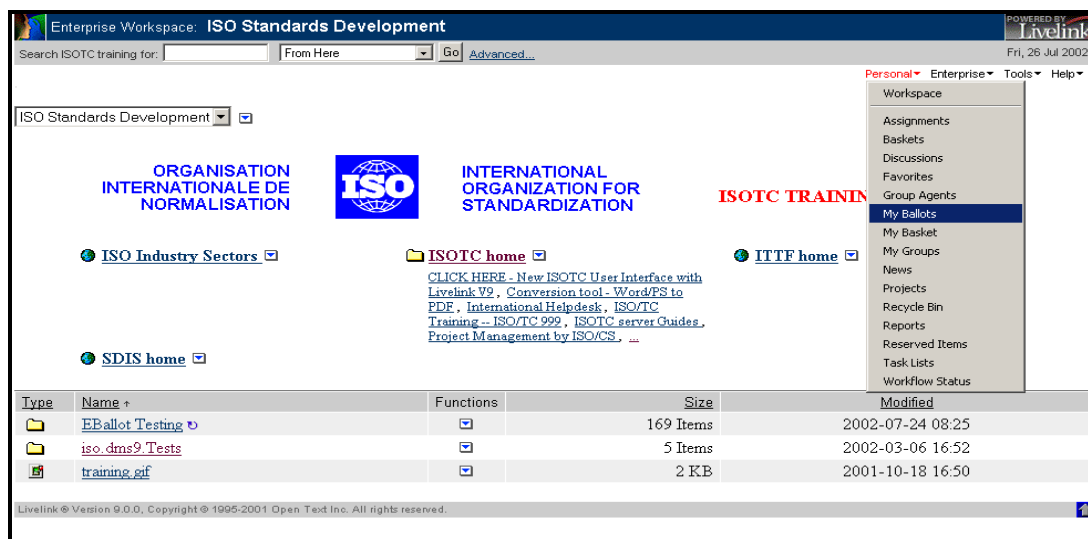


Figure 10 — Access to the eBalloting application

Regarding the standards development process the main stages of balloting are ballots on

- new work item proposals,
- working drafts,
- committee drafts,
- Draft and Final Draft International Standards (DIS and FDIS),
- whether an existing standard shall be confirmed, revised or withdrawn (the systematic review).

eBalloting takes place at various levels in the institutional structure of ISO, such as

- inside working groups,

- inside committees, and
- amongst the full membership of ISO.

Often ballots are preceded by or combined with commenting processes to ensure that a document or any other proposal subject to balloting is stable and mature enough for a vote.

Ballots are cast by authorized individuals who, depending on the type of ballot, represent either their own views as experts in a subject field, or the consolidated view of the organization they represent. Individuals representing liaison organizations or other committees of ISO or IEC in liaison are allowed to submit comments (not votes) in the framework of a balloting process.

A balloting process is normally organized as follows:

- A ballot is initiated by an authorized body (normally a committee secretary, working group convener or the ISO/CS). The initiation is accompanied by a notification by e-mail to the authorized balloters and commenters.
- The ballot is open for a pre-defined period of time during which votes/comments can be cast and existing votes/comments can be modified. During the balloting process, votes and comments of one balloting organization are visible only to that organization and the ballot initiator. They are not visible, however, to other balloters and/or commenters.
- If a balloter with an obligation to cast a vote misses certain deadlines prior to the closure of the ballot, e-mail reminders are sent to request the submission of a vote.
- The ballot is closed at the predefined closing date. The balloters are notified by e-mail of the closure and can access the overall ballot result, the individual votes by member bodies, and any comments.

3.3 Main stages of balloting

The following describes in more detail the main stages in the balloting process.

Stage 1: Notification on newly opened ballots

A balloter, who has been authorized by his/her member body, receives a notification by e-mail about all ballots, to which a balloter as a representative of a member body is registered, opened on a particular day. This notification lists all new ballots irrespective of whether the member body is a P- or O-member, or not a member of the ISO committee which has developed the draft standard.

Stage 2: Access to the ballots and downloading

The balloter accesses the ballots via the eBalloting application via the [ISOTC](#) Service (see Figure 10) and downloads the files under ballot for which the member body has an obligation to vote or wishes to cast a vote (see Figure 11) (on DIS and FDIS level all members of ISO have a right to vote; all P-members have a duty (obligation) to vote).

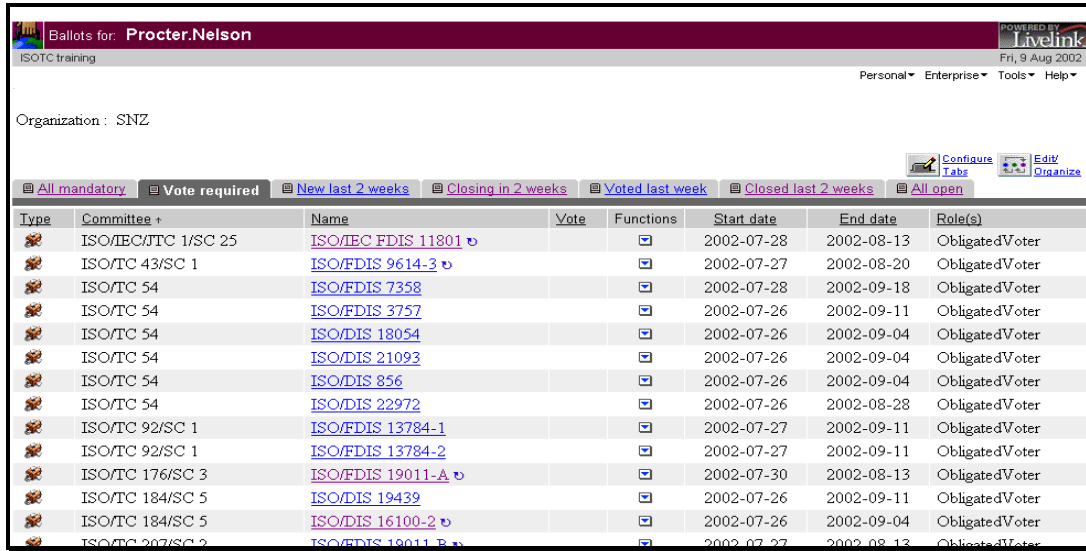


Figure 11 — The ballot selection screen

Stage 3: Organization of national consultation

The document under ballot is distributed by the member body to the national stakeholders. The positions and comments received from the national stakeholders are consolidated into a national position using ISO's template for the submission of comments (can be downloaded from www.iso.org/sdis/forms). It should be noted that the organization of the national consultation process is the responsibility of the member body and falls outside the scope of the eBalloting application.

Stage 4: Vote and submission of comments

The vote of the member body is cast via the eBalloting application (see Figure 12). Any comments accompanying the vote are submitted using ISO's template for the submission of comments (available at www.iso.org/e-balloting).

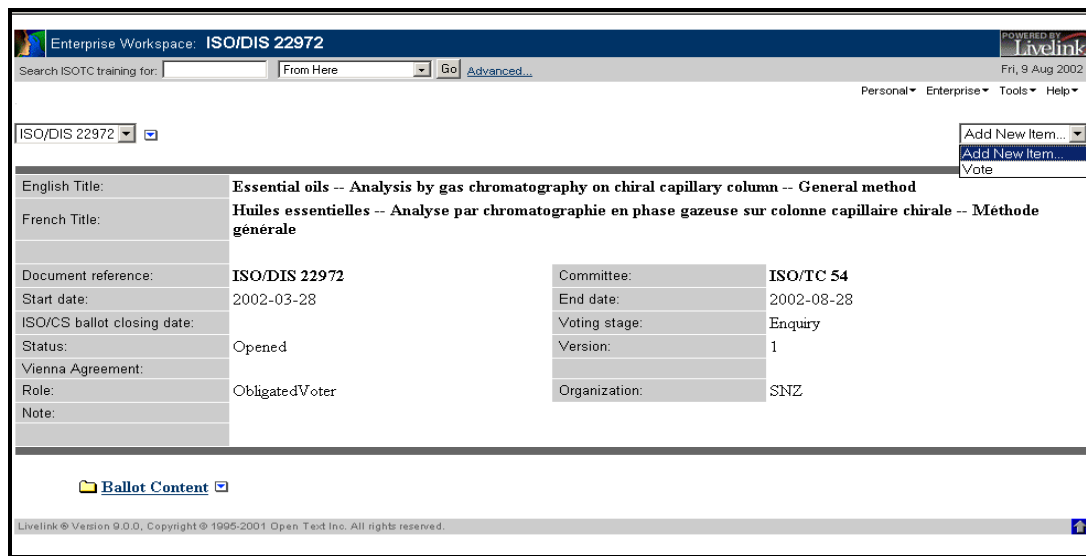


Figure 12 — Vote and submission of comments via the eBalloting application

Stage 5: Reminders

If a member body holding P-membership in a committee has not cast a vote four weeks prior to the closure of the vote, a reminder is sent by e-mail to the authorized balloter(s) of this member body. This applies to both DIS and FDIS ballots. If no vote has been cast by a P-member one week prior to the closure, a second reminder is sent out.

Stage 6: Closure of the ballot

The ballot is closed when the closure date of the ballot has been reached and after the ISO/CS has finalized the internal processing of the ballot. A notification about all closed ballots is sent via e-mail to the authorized balloter(s). The chair and secretary of the responsible committee receive a notification via e-mail that the ballot is closed and that they can access the vote results and the comments on the [ISOTC Service](#).

Stage 7: Access to the vote results (table of replies) and comments

The vote result, including table of replies with all the votes cast and the comments submitted, can be accessed by the authorized balloters, the chairperson and the secretary of the committee (see Figures 13, 14 and 15).

Type	Committee +	Name	Vote	Functions	Start date	End date	Role(s)
	ISO/TC 44/SC 3	ISO/DIS 17632	Disapproval	<input type="checkbox"/>	2002-07-27	2002-08-07	Voter
	ISO/TC 44/SC 3	ISO/DIS 636-1		<input type="checkbox"/>	2002-07-27	2002-08-07	Voter
	ISO/TC 44/SC 3	ISO/DIS 18276		<input type="checkbox"/>	2002-07-27	2002-08-07	Voter
	ISO/TC 44/SC 3	ISO/DIS 17634		<input type="checkbox"/>	2002-07-27	2002-08-07	Voter
	ISO/TC 45/SC 3	ISO/DIS 125		<input type="checkbox"/>	2002-07-26	2002-08-07	Voter
	ISO/TC 61/SC 5	ISO/DIS 11443		<input type="checkbox"/>	2002-07-26	2002-08-07	Voter
	ISO/TC 67/SC 3	ISO/DIS 13503-1		<input type="checkbox"/>	2002-07-26	2002-08-07	Voter
	ISO/TC 69/SC 5	ISO/DIS 3951-1		<input type="checkbox"/>	2002-07-26	2002-08-07	Voter
	ISO/TC 85/SC 5	ISO/DIS 7195		<input type="checkbox"/>	2002-07-26	2002-08-07	Voter
	ISO/TC 147/SC 2	ISO/DIS 18856		<input type="checkbox"/>	2002-07-26	2002-08-07	Voter
	ISO/TC 190/SC 3	ISO/DIS 14256-2		<input type="checkbox"/>	2002-07-26	2002-08-07	Voter

Figure 13 — Access to closed ballots, vote results and comments

English Title:	Welding consumables -- Tubular cored electrodes for gas shielded and non-gas shielded metal arc welding of non-alloy and fine grain steels -- Classification		
French Title:	Produits consommables pour le soudage -- Fils-électrodes fourrés pour le soudage à l'arc avec ou sans gaz de protection des aciers non alliés et des aciers à grain fin -- Classification		
Document reference:	ISO/DIS 17632	Committee:	ISO/TC 44/SC 3
Start date:	2002-03-07	End date:	2002-08-07
ISO/CS ballot closing date:	2002-08-07	Voting stage:	Enquiry
Status:	Closed	Version:	1
Vienna Agreement:		Organization:	SNZ
Role:	Voter		
Note:			

Result of voting	
P-Members voting: 5 in favour out of 10 = 50% (requirement >= 66.66%)	
<i>(P-Members having abstained are not counted in this vote.)</i>	
Member bodies voting: 9 negative votes out of 17 = 52.94% (requirement <= 25%)	
Disapproved	

Figure 14 — Result of voting: The upper part of the screen with the overall ballot result

Disapproved

Ballot Content [] []

Type	Country	Member	Participation	Voted	Functions	Modified
	Armenia	SARM		Abstention	[]	2002-08-07 17:48
	Australia	SAI	P Member	Disapproval	[]	2002-08-07 17:48
	Belgium	IBN	P Member	Approval	[]	2002-08-07 17:48
	Canada	SCC	P Member	Disapproval	[]	2002-08-07 17:48
	Colombia	ICONTEC		Approval with comments	[]	2002-08-07 17:48
	Denmark	DS		Disapproval	[]	2002-08-07 17:48
	Finland	SFS	P Member	Disapproval	[]	2002-08-07 17:48
	France	AFNOR	P Member	Approval with comments	[]	2002-08-07 17:48
	Germany	DIN	P Member	Approval	[]	2002-08-07 17:48
	Malaysia	DSM		Disapproval	[]	2002-08-07 17:48
	Mexico	DGN		Disapproval	[]	2002-08-07 17:48
	Mongolia	MNCMS		Approval	[]	2002-08-07 17:48
	New Zealand	SNZ		Disapproval	[]	2002-08-07 17:48
	Saudi Arabia	SASO		Approval	[]	2002-08-07 17:48
	Sweden	SIS	Secretariat	Approval with comments	[]	2002-08-07 17:48
	Switzerland	SNV	P Member	Approval	[]	2002-08-07 17:48
	Ukraine	DSTU	P Member	Disapproval	[]	2002-08-07 17:48
	United Kingdom	BSI	P Member	Disapproval	[]	2002-08-07 17:48

Figure 15 — Result of voting: The lower part of the screen with information on the votes by individual member bodies

Stage 8: Follow-up by the committee on the comments received

The committee secretariat is expected to download the comment template files and merge the various comment tables received from the member bodies into one table in one file (the Comments table). This Comments table can be sorted on a particular column (e.g. the clause number). The secretariat/editing committee is expected to indicate its observations/decisions on each comment in a specific column of the Comments table. The ISO/CS has developed a tool which assists in automating the collation and sorting of comments from multiple comment files (the tool is available at www.iso.org/e-balloting).

Stage 9: Preparation of the Report of voting

ISO Form 13, together with the Comments table, which now includes the observations/decisions by the secretariat/editing committee on each comment received, are submitted to the ISO/CS as the Report of voting. ISO Form 13 (and all other forms and model documents) is available on [the Standards Developers' Information Site \(SDIS\)](http://www.iso.org/sdis/forms) at: www.iso.org/sdis/forms.

More details about eBalloting in ISO as well as user guidance material can be found on the [ISOTC Service](http://www.iso.org/e-balloting) at: www.iso.org/e-balloting.

4 Access to information of general interest

4.1 List of services covered in clause Access to information of general interest

- The ISO Online Catalogue
- Access to ISO 3166 Maintenance Agency for country codes site
- ISO Online: Press releases and news items
- ISO Online FAQ
- ISODOC: Access to ISO documents related to the activities of ISO governing bodies, policy development committees and advisory groups
- ISODOC: Access to ISO general documents, circular letters
- SDIS: Access to information of the rules and procedures of standards development
- SDIS: Access to information for the drafting of standards
- SDIS: Access to ISO authoring templates and ISO forms
- SDIS helpdesk

4.2 ISO Online

[ISO Online](#) is ISO's homepage (see Figure 16). ISO Online's mission is to be the main focal point of access to all ISO information and activities accessible via the World Wide Web, by providing comprehensive public information about ISO and its activities, and by acting as a gateway to all ISO/CS information accessible in electronic form. Access to ISO Online is free. The site exists in English and French versions.



Figure 16 — ISO Online site

ISO

ISO Online's main sections and their contents are as follows:

About ISO

- Introduction to ISO - giving an overview on standardization, ISO standards, what they are and the benefits which the application of ISO standards can bring
- Short biographies of ISO's principal officers
- ISO's organizational structure
- lists of ISO members and their contact details
- ISO's strategies
- Statistics relating to ISO activities
- ISO's annual reports

Products and services

- The *ISO Online* Catalogue of ISO standards with bibliographic information, arranged by subject order in accordance with the International Classification for Standards (ICS). Updated daily. Includes both quick and extended search functions.
- The online ISO Store provides mechanisms for purchasing ISO standards in both hardcopy and electronic forms and for downloading standards available online.
- List of ISO information publications and products. Some of these are free of charge and can be downloaded online.
- Customer services - giving guidelines on the use of the Catalogue, the ISO Store and other useful information.
- Access to the Web area of the ISO 3166 Maintenance Agency for country codes

ISO 9000 / ISO14000 provides a wealth of information on ISO's two well-known families of management system standards, from basic descriptions, to free documents designed to assist in understanding and implementing the standards, as well as information on *ISO Management Systems – The International Review of ISO 9000 and ISO 14000*, which is available in English, French and Spanish.

For ISO members gives access to the ISODOC and ISOSTD services (see clauses 4.3 and 6.2).

For standards developers gives access to the ISOTC home, SDIS and ITTF sites (see clause 2.2).

Communication centre

- ISO press releases and news items
- News items
- A selection of articles and comments from the ISO Bulletin
- Speeches and presentations made by ISO Presidents and the ISO Secretary-General, and by participants at the opening sessions of the ISO General Assembly, ISO conferences, seminars and workshops

- Information on forthcoming and past international standards-related events, including World Standards Day.
- A mechanism for searching across the section.

Communities and markets

- Access to industry forums on specific areas of standardization. Current industry forums include Intelligent Transport Systems, Oil and Gas, Services, Corporate Social Responsibility
- Access to the SGM Forum (Standards Actions in the Global Market)
- Information about the activities of ISO's committees on Conformity assessment (CASCO), Consumer issues (COPOLCO), Developing country matters DEVCO).
- Information on the partnership between the WTO (World Trade Organization) and ISO.
- Access to the World Standards Services Network (WSSN).

Standards development

- General explanation as to who does what, when and how, including link to the ISO/IEC Directives
- List of ISO technical committees, giving their scopes, organizational structure, list of standards under their responsibility, participation and liaison information, technical programme, meeting calendar, links to their business plan and work area. Updated daily.
- Access to TC business plans
- ISO technical programme, structured by committee. giving titles and stages of development of all standards projects. Updated daily. Includes search function.
- The complete ISO meeting calendar
- Participation in ISO technical committees or subcommittees, listings by ISO member and by country

ISO Online also maintains a *FAQ* (Frequently Asked Questions) section which provides simple answers to the sometimes complex questions most often received by the ISO/CS. A list of abbreviations, site map, information on ISO's name and logo, copyright, privacy policy, contact details are also given on this site.

4.3 ISODOC: Service to ISO's governance bodies and policy development committees

The [ISODOC](#) Service (see Figure 17) provides access to ISO documents related to the activities of ISO governing bodies (the ISO General Assembly, Council, TMB - Technical Management Board), policy development committees (CASCO - Committee on conformity assessment, COPOLCO - Committee on consumer policy, DEVCO - Committee on developing country matters) and advisory groups (ITSIG - Information Technology Strategies Implementation Group, CPSG - Commercial Policy Steering Group), as well as to ISO general documents, ISO circular letters and other useful information for ISO members.

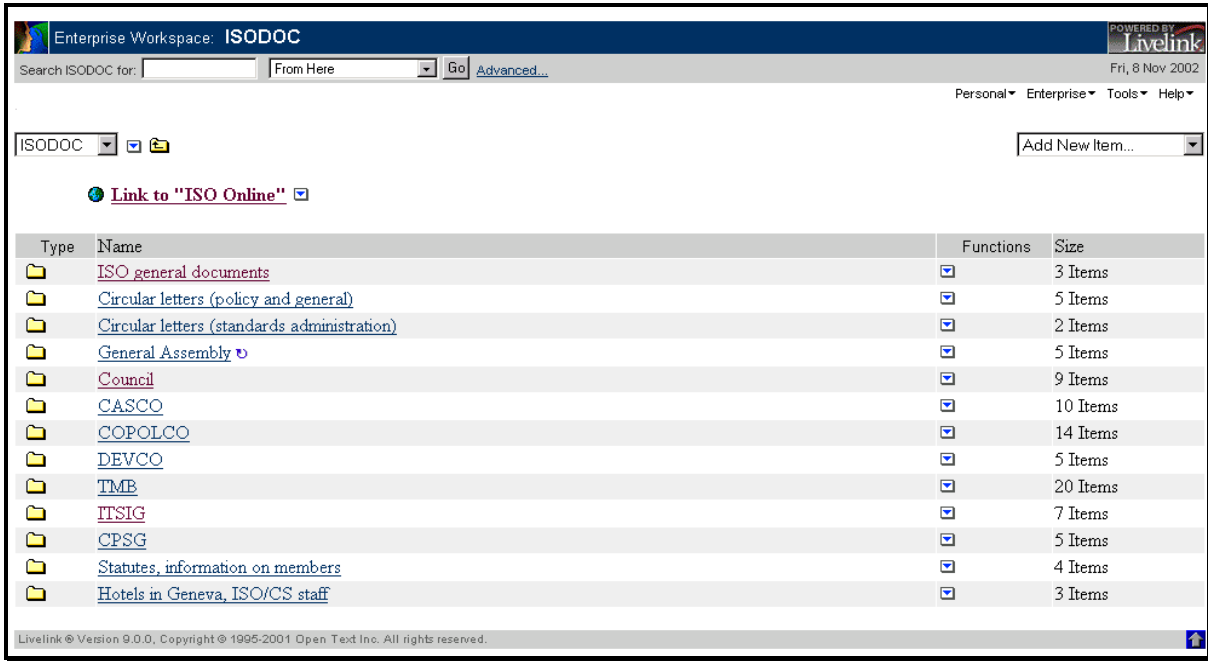


Figure 17 — ISODOC Service site

Access to ISODOC is password-protected¹⁾ and is provided only to ISO members and the representatives of international organizations cooperating with the above-mentioned ISO bodies. The ISODOC Service can be accessed at www.iso.org/isodoc or through a link from the section For ISO members of ISO Online.

ISODOC is a repository of files mainly in PDF format. ISODOC is composed of directories, which are divided into folders. The folders are further divided into subfolders when needed. ISODOC contains the following directories:

- ISO general documents²⁾
- Circular letters (policy and general)
- Circular letters (standards administration)
- General Assembly
- Council
- CASCO
- COPOLCO
- DEVCO

1) The ISO/CS is responsible for allocating user-names and passwords and access permission to ISO members as appropriate. The ISO members, in turn, are responsible for ensuring that their relevant staff, including, if applicable, new staff who join their organization, receive the appropriate user-names and passwords.

2) ISO general documents are documents endorsed/approved by the General Assembly, Council, one of the policy development committees or a group reporting to one of the governing bodies, which are developed to serve as guidelines, recommendations, information, etc. to ISO members (e.g. ISO/GEN 9:1997 *Guidelines and policies for the protection of ISO's intellectual property*, ISO/GEN 15:2001 *ISO Strategies 2002-2004*, ISO/GEN 20:2000 *ISO policies and procedures for copyright, copyright exploitation rights and sales of ISO publications (ISO POCOSA 2000)*).

- TMB
- ITSIG
- CPSG
- Statutes, information on members
- Hotels in Geneva, ISO/CS staff

4.4 SDIS: Standards Developers' Information Site

The Standards Developers' Information Site, [SDIS](#) is maintained by ISO/CS as a comprehensive source for all material originated by ISO that is linked to the development of International Standards, and related publications. Thus, the core goal of the SDIS (see Figure 18) is

- to be the one-stop access point to information on the rules and procedures for standards development and for the drafting of standards, etc., and to the tools used for the preparation of standards, e.g. the ISO authoring templates.



Figure 18 — SDIS site

The envisaged users of the SDIS are the key participants in the ISO standards development process in particular, but not exclusively, chairmen and secretariats to committees, convenors of working groups, and project leaders.

By providing such single-point access supplementary goals for the SDIS are:

- to improve knowledge of what information and support is available;
- to improve knowledge of the responsibilities of the managers of ISO's committees in relation to ISO's technical work programme;
- to improve the quality of project management relating to the standards development process, including the quality of submissions to ISO/CS

With few exceptions, access to the information presented via the SDIS is open, without need for prior authorization.

All the forms and model letters used by committee secretariats and ISO members, and which are included in the ISO Supplement to the ISO/IEC Directives, are available in electronic form. A number of supporting documents are also available.

To facilitate access to information or tools, certain areas of the SDIS have their own direct URL:

- ISO/IEC Directives & ISO Supplement www.iso.org/sdis/directives
- Authoring templates www.iso.org/sdis/templates
- ISO Forms (models) www.iso.org/sdis/forms
- Guidelines on PDF www.iso.org/sdis/pdf

Overall management and coordination of the SDIS, including the SDIS Helpdesk, is the responsibility of the SDIS Site Manager (sdis@iso.org).

5 Publishing of standards

5.1 List of services covered in clause Publishing of standards

- ISO templates and related FAQs
- Standards drafting tools (the Rice model, boilerplate texts)
- Documents uploaded to the ISOSTD Service
- ISO/IEC Directives (main and supporting documents)
- Contact details for technical editors
- AutoCAD templates
- Drafts: Submission to ISO/CS; acceptance criteria
- ITSIG Document Type Definiton (DTD)
- FAQ for graphics

5.2 Introduction

5.2.1 Role of the standards production department at the ISO/CS

The standards production department at the ISO/CS processes all DIS, FDIS, and final publications. Copies of the DIS and FDIS are transferred both to the eBalloting application and the publications service ([ISOSTD](#)) (see Figure 19). Copies of the text and graphics files of published documents (in the electronic formats corresponding to the needs of the member bodies for adoption and those of the TCs for revision) are also transferred to the publications service ([ISOSTD](#)) [non-revisable formats (character-based PDF for the text and EPS or TIFF for the drawings) and revisable formats (Word, RTF, FrameMaker or SGML for the text and DXF for the drawings)]. Abstracts are produced for final drafts and published documents for use in ISO Online and the ISO Store. The production department also creates and maintains standards drafting tools including various [templates](#), the [rice model](#), a set of [boilerplate texts](#), etc. which are all available on the SDIS (www.iso.org/sdis).

The composition unit is responsible for the maintenance and use of the typographic models for the various types of DIS, FDIS and standards, and for ensuring document integrity of the standard produced. They produce the publication-quality documents (comprising the text and graphics) for FDIS, standards and standards-related documents.

5.2.2 Production stages

Different criteria are applied by the ISO/CS for the preparation of drafts (DIS etc.), final drafts (FDIS etc.) and final publications of standards.

At the DIS stage, it is important to circulate the document as quickly as possible. The [acceptance criteria](#) are based on legibility, completeness, editorial acceptability (at this stage complete compliance with the [ISO/IEC Directives, Part 2](#), is not required) and comprehensibility — i.e. the document should be fit to be voted on at enquiry stage. The ISO/CS therefore needs PDF (obligatory) and revisable (optional but preferable) formats and other items listed in the document [Elements to be provided when submitting drafts to the ISO Central Secretariat](#).

At the FDIS stage, it is important to prepare the document in such a way that it is suitable for publication, since in the majority of cases it will be approved and will proceed with no changes, or only minor changes, to publication. Accordingly the ISO/CS needs PDF and revisable formats and other items listed in the document [Elements to be provided when submitting drafts to the ISO Central Secretariat](#); more detailed information is provided in documents providing the registration requirements for [final draft International Standards](#) and [TR, TS and PAS](#). It is at this stage, therefore, that the bulk of the input takes place. The text and drawings are evaluated and feedback is provided as necessary through the Technical Programme Manager. Once a document has been accepted for processing, it is fully edited and prepared for publication, and therefore it is essential that the ISO/CS has both text and drawings in revisable format to allow it to carry out its work, together with reference copies in PDF. The document is created in the electronic formats corresponding to the needs of the member bodies for adoption, etc.

At the end of the approval vote, the editors review the proof or any comments returned by the TC/SC secretary and incorporate into the final publication any modifications necessary. Technical comments are not taken into consideration but are referred back to the TC/SC.

5.3 Production chains at the ISO/CS

5.3.1 Document processing

5.3.1.1 Word

The ISO/CS currently uses Word 2000. Word production is based on the use of the STD template (for further information see www.iso.org/sdis/templates). Documents prepared on the Word production system are published in two formats: Word and character-based PDF. The Word files may be reused for subsequent revisions of the standard.

5.3.1.2 SGML

The ISO/CS currently uses FrameMaker+SGML 6.0 for SGML production. The SGML production chain uses an ISO/CS DTD which maps on to the [ITSIG exchange DTD](#). The ISO/CS SGML production system is one part of the ISO SGML production chain as set up under the Council-approved project of 1997 (various member bodies constitute the other parts of the ISO SGML production chain).

Text processing files received based on the STD template are imported automatically into the SGML system; the importation process includes markup enrichment (both text and mathematics), clean-up and error processing. ISO and ISO/IEC reference information is extracted from and verified against the project management database. TC-related information is extracted from and verified against the standards administration database. Documents prepared on the SGML system are published in four formats: FrameMaker, SGML, RTF, character-based PDF. The RTF, FrameMaker and SGML files may be reused for subsequent revisions of the standard.

See Figure 20 which illustrates the ISO SGML production chain.

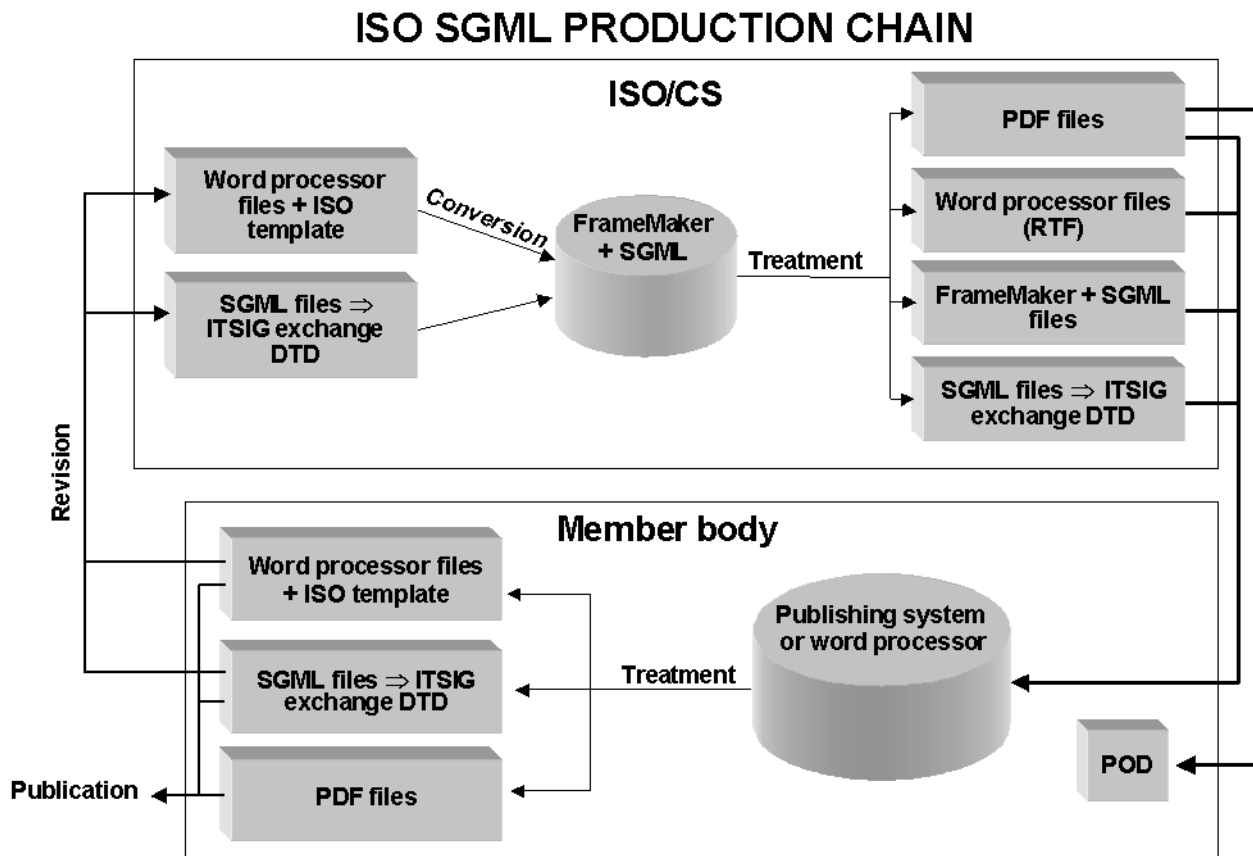


Figure 20 — ISO SGML production chain

5.3.1.3 PDF

PDF (the *Portable Document Format* created by Adobe®) is used for the production of DIS and *by prior agreement* for the publication of FDIS and of certain final publications. Further information about PDF is available in the document [Information on Adobe Portable Document Format](#).

The ISO/CS currently uses Adobe Acrobat 4, together with the plugins Compose and Enfocus PitStop Professional.

Compose is a product used to carry out certain transformations to PDF files received, e.g. addition of overlays, addition of navigation features such as bookmarks, hypertext links, tables of contents. Enfocus PitStop Professional is used for editing of PDF. ISO/CS uses an Enfocus PitStop Server for generating reports on incoming PDF files (as part of our quality check).

5.3.1.4 HTML

When considered to be the most appropriate format for a particular DIS, FDIS or final publication, HTML is used rather than Word, SGML or PDF. Alterations to HTML files are carried out at the ISO/CS via Microsoft Word 2000. An HTML model is under development.

5.3.2 Graphics processing

ISO/CS treats the majority of graphics files in a CAD system which has been set up to produce drawings compliant with the draughting rules of ISO/TC 10 and of ITSIG. (ISO/CS, DIN and AFNOR use the same CAD

system.) The rules followed by the ISO/CS drawing office are provided in the document [DRG working instructions and directives](#).

The CAD system currently used is AutoCad 2000i, a computer-aided design product available from AutoDesk Inc., the internal format of which is DWG.

(History — may be useful if you are requesting graphics files: ISO/CS introduced its first graphics software "PC-Draft" in 1991; AutoCad14 was introduced at the end of 1998, together with a conversion tool from PC-Draft to AutoCad14; AutoCad 2000i was introduced in May 2001.)

In terms of formats, the ISO/CS prefers to receive DWG (the native format of AutoCAD) or DXF (Data Exchange Format), both of which are fully revisable and which the ISO/CS can import easily into its system. Other revisable formats and non-revisable formats are non-preferred but are acceptable under certain conditions; see the document [ISO Central Secretariat requirements for provision of text and graphics in electronic form](#). For more background information as to the choice of formats please see the [ITSIG specification for the preparation and exchange of graphics](#).

Graphics files will be refused if non-revisable files are provided with no justification, if the files cannot be opened, if the drawings are not compliant with the draughting rules, and for various other reasons. Scanned (TIFF) files may be refused either because they cannot be opened or because the files are of insufficient quality. The quality rejection criteria are listed in the [FAQ for graphics](#).

Regarding photographs, the ISO/CS needs to receive either original photographs (which will be returned after publication upon request) or TIFF files of an appropriate quality (for guidance see the [ITSIG specification for the preparation and exchange of graphics](#)). The ISO/CS also needs to know whether the reproduction required is colour or black-and-white. Colour reproduction should be avoided unless absolutely necessary, owing to the related costs. Where colour reproduction is considered justified the ISO/CS needs to be informed of the reasons. Where, in addition, the colour trueness is important, the ISO/CS needs to receive the RGB, CMYK, Pantone or similar codes to permit correct reproduction.

The drawing office thus works with the majority of graphics files in DWG format and converts them into EPS format (which is easily made non-revisable) for embedding into Word and FrameMaker+SGML documents. In other words, the EPS format is the interface between the drawing office and the production chain. The advantage of such an approach is that the drawings cannot be changed during the subsequent processing of the document. Of course, the ISO/CS has to use PostScript printers. A common disadvantage is that EPS files cannot be displayed in the current versions of Word without a special TIFF preview being added to the EPS files.

5.4 Production automation

The standards production systems are connected via a server which acts as the platform for the automation of the business processes related to standards production (extraction of project-related data from the various databases, production workflows within the ISO/CS and to upload/download files to and from the Internet, etc.) and the repository for the products and by-products of this production.

5.5 Future

5.5.1 XML

XML is extensively used by the ISO/CS as the format for data exchange (the ITSIG STADIST project and the ISONET Distribution Service are examples of use).

To build on the current investment already made in SGML, and with the maturing of XML tools for document and Web publishing, ISO/CS is examining the possibility for supporting the complete lifecycle of large and complex technical documents in XML structural format. In other words we are looking to go beyond the internal use of SGML/XML production to the development and dissemination of documents and their related objects. The areas under consideration include

- structured authoring (ITSIG has set up an XML project with a view to experimenting with the use of XML as an authoring tool; a possible line of development could be the launch of a pilot project, involving a selected group of TC/SCs; experience gained through this pilot project could be very valuable to extend the use of XML in a second phase), commenting and approval of documents in the various working groups,
- an XML-fragments-based portal as a standards knowledge base with multichannel access (paper, Web, PDA, WAP, eBooks, OEB, etc.), including classes of objects (e.g. name spaces, taxonomies, application definition frameworks, etc.) that could become an integral component of the standards and be dynamically called by application software,
- availability of documents with and without incorporated amendments and corrigenda, and
- incremental development (and subsequent publication) of standards: a generic Internet-based application which comprises many independent and cross-referenced entities, e.g. terminology, nomenclature, ISO 7000, vocabularies, semantic repositories, ontologies, API, and standards maintained via registration authorities.

5.5.2 Standards portals

The ISO/CS is currently working towards providing a small portal dedicated to each International Standard. Each standard should have at least one proper (persistent) URL which may ultimately replace the *Reference number* currently used to identify the document (both on the document itself and in cross-references to it). The portal should contain all publicly available elements of the standard and supplementary information such as abstracts, and possibly some fragments of the document (e.g. table of contents, introduction, list of normative references, etc.). It should also provide access to any modifications (amendments and technical corrigenda) and possibly to related promotional and product information.

6 Distribution of standards

6.1 List of services covered in clause Distribution of standards

- ISOSTD: Access to DIS, FDIS and ISO standards (current and withdrawn)
- ISOSTD: Access to electronic graphic files in newly published ISO standards
- ISOSTD User's guide and instructions
- ISONET Distribution Service
- ISO Store: eCommerce services for the ISO publications
- ISO Store Customer Services

6.2 ISOSTD: Access to currently valid ISO publications

The [ISOSTD](#) Service (see Figure 21) provides ISO members with DIS, FDIS and ISO standards (current and withdrawn) for their printing on demand systems (POD). Access to ISOSTD is password-protected and is provided only to ISO members upon request.

ISOSTD presents a repository of files containing full texts of DIS, FDIS and ISO standards. ISO standards which were published before 1998 (when the service was launched) are available only in image-based PDF format (scanned at 600 dpi resolution). With a few exceptions, electronic files of all ISO standards which were produced in 1998 and afterwards, including DIS and FDIS, are available in character-based PDF format. The original source files are also available in Word or SGML from ISOSTD upon request. The files of DIS, FDIS and standards in *ISOSTD* are accessible via a search form.

ISOSTD also provides access to the electronic files of any graphic appearing in newly published ISO standards. The files which are available in both EPS and TIFF formats (non-revisable formats are ideal for use in national adoptions), are split into chunks and compressed (.zip files). The graphic files are stored with the text files of the corresponding ISO standards.

A list of standards published on CD-ROM, DVD or diskette and standards with inserts on this electronic media is also given on the ISOSTD for the information of users.

Files containing information on ISO standards and their development, on ICS (International Classification for Standards) and TCs (Technical committees), are also available to ISO members from ISOSTD upon request. The data extraction is presented in the data exchange format "SGML representation" as defined in the ISONET Manual.

[User's guide and instructions](#) to the ISOSTD service site are available from the [ISOSTD homepage](#).

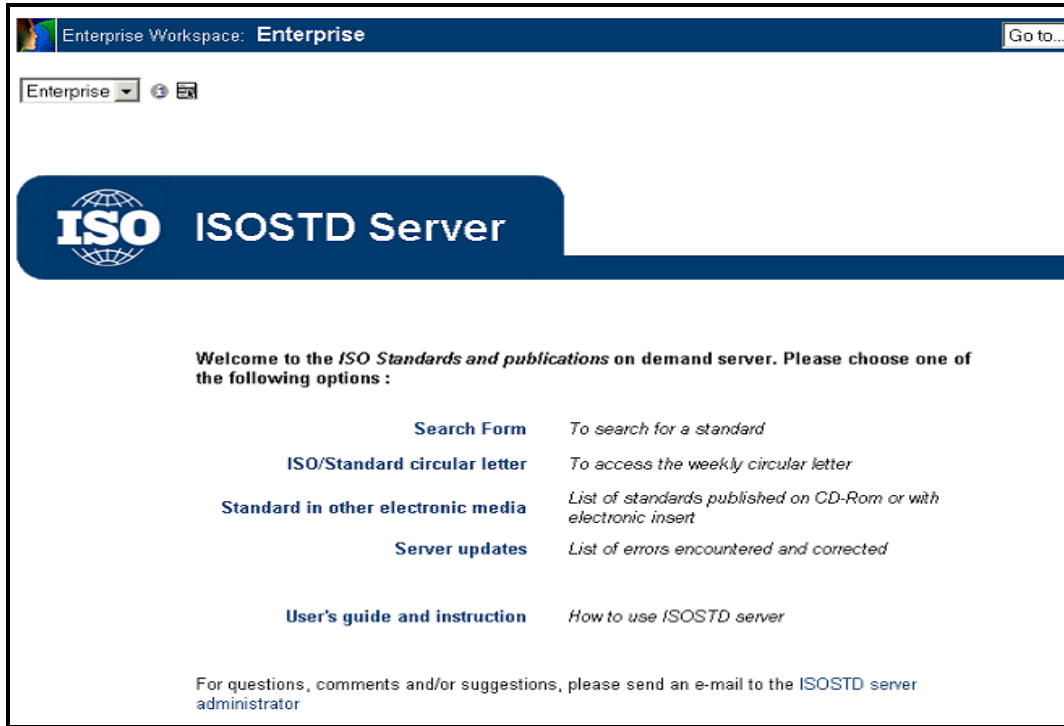


Figure 21 — ISOSTD Service site

6.3 ISONET Distribution Service

The ISONET Distribution Service aims to better support the standards delivery process regarding the exchange of bibliographic data and the management of document updates.

It mainly includes a data extraction from the ISO/CS project monitoring database, containing information about projects, products, ICS and related committees. The data elements within the extraction are formatted according to the ISONET Manual (SGML presentation), adjusted to be compliant with the XML standard.

In order to help processing these data, a utility has been made available by ISO/CS, which can filter and convert the data from XML into any other format, e.g. comma separated or fixed length values. For maximum platform support, the utility has been developed as a Java program using Java. ISO/CS is also prepared to tailor it to the individual organizations need as a paid service.

The extraction and all related components are made available for download on the [ISOSTD](#) Service. The access to this service is password protected.

Using this service as a basis for a metadata exchange with ISO/CS will guarantee a high quality set of ISO/CS data and a reliable mechanism for exchange.

The technology used to implement this service is now proved and standard technology in the field of data exchange in distributed environments. The combination of Internet for distribution, XML for data formatting and Java for application development brings the following advantages:

- simple distribution using an existing infrastructure
- platform independent data formatting
- platform independent software components and utilities

- fast developing software market for XML and Java (products may become available to replace developed components and make this exchange easier to implement).

After logging in to the [ISOSTD](#) Service, the link **ISONET distribution** should be visible at the bottom of the page. Figure 22 shows the ISONET Distribution Service site.

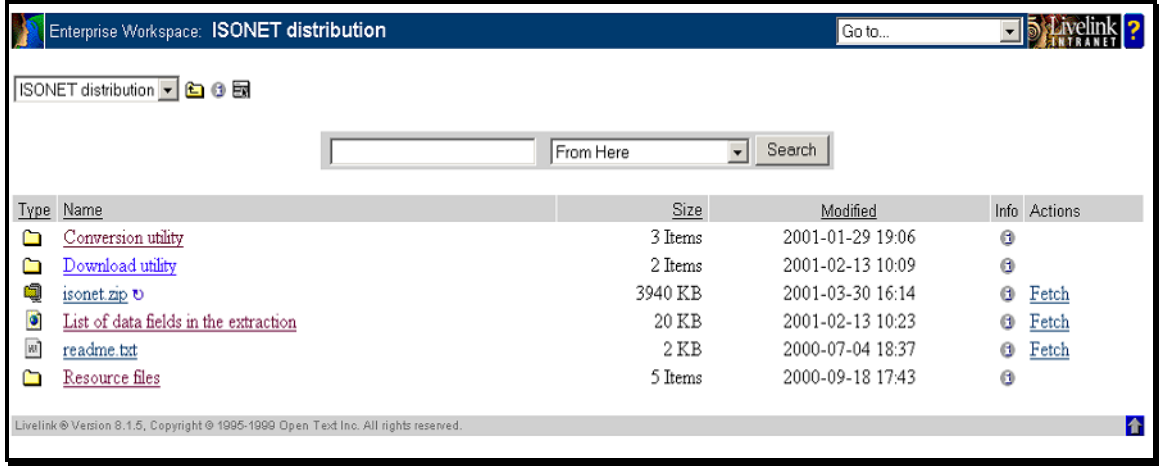


Figure 22 — ISONET Distribution Service site

Figure 23 shows how the ISONET Distribution Service can be used to exchange ISO/CS metadata and update local repositories. ISO/CS provides all components on its server, but it is the responsibility of those using this service to download and process the data. A format transformation and filter utility as well as a download file utility are made available by ISO/CS to automate this process.

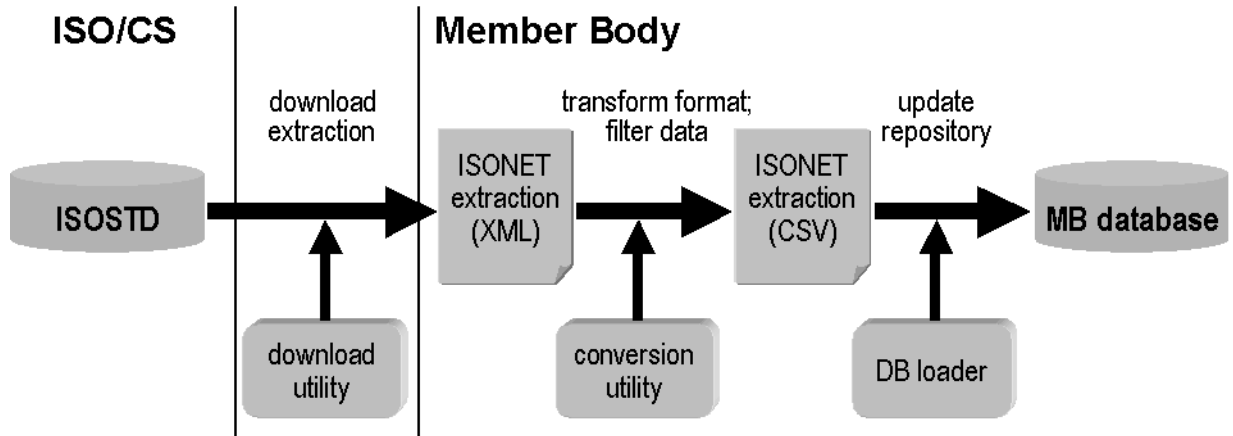


Figure 23 — Scenario of how to use the ISONET Distribution Service

The transformation utility supports the data extraction from any valid XML data source. It can be used to transform a selection of data into a user-defined format. The format and the selection criteria will be defined in a pattern file. To make the format definition as flexible as possible the pattern file acts as an example of the transformation output, where placeholders are used to include data from the XML file.

Access to this service is maintained by the ISO/CS sales department (sales@iso.org). A more detailed description about how to use the utility can be found on the [ISOSTD](#) Service.

6.4 ISO Store: eCommerce services for the ISO publications

The [ISO Store](#) (see Figure 24) provides a means for ordering and paying for ISO standards online, in both hardcopy and electronic form, and for downloading standards in electronic form. The section also includes a list of ISO publications and information products available in hardcopy or on CD-ROM. Some of these are free of charge and can be downloaded online. Guidelines on the use of the Catalogue, the ISO Store and other useful information are grouped under [Customer Services](#) at ISO Online (www.iso.org).

ISO Store can be accessed through ISO Online homepage (www.iso.org) under a section [Products and services, ISO Store](#). It contains the following:

[ISO/CS shopping information and policies](#) - Information covering how to buy a standard or other publication from the [ISO members](#) or from the ISO/CS, delivery, payment, security, etc.

[Search and buy standards](#) - The online ISO catalogue of International Standards, guides, etc. Browse or search through the catalogue; use the shopping basket to order the standards you need.

[Find other publications](#) - Browse through the listings, by subject, to see the many other publications, which ISO publishes.



Figure 24 — ISO Store site

7 Helpdesk services

7.1 List of services covered in clause Helpdesk services

- ISO/CS IT tools helpdesk (FAQ, Online Viewlets, User Guides and Documentation)
- ISOTC training site
- ISO Public Relations helpdesk
- ISO/IEC Directives helpdesk
- SDIS helpdesk
- Authoring templates helpdesk
- Training helpdesk
- Vienna Agreement helpdesk
- Industry Forums helpdesk

7.2 ISO/CS IT tools helpdesk

The objective of the Helpdesk services is to create the conditions to enable the optimal use of the existing and new IT solutions by a fast growing population of users belonging to the standardization community. The International Helpdesk provides assistance (helpdesk and training services) to national member bodies and committee secretariats and chairs in the use of the ISO/CS IT tools (e.g. the use of the ISOTC service and the eBalloting application).

The International Helpdesk can be contacted at:

helpdesk@iso.org

[International Helpdesk](#) site (see Figure 25) with Frequently Asked Questions (FAQs), Online Viewlets, User Guides and Documentation has been set up under the ISOTC homepage (www.iso.org/tc). The International Helpdesk site also gives a link to the [ISOTC training](#) site.

Enterprise Workspace: **International Helpdesk** POWERED BY Livelink

Search isotc for: From Here [Advanced...](#) Thu, 9 Jan 2003

International Helpdesk NEWS: [Problem/Question/Feedback? Please contact the International Helpdesk](#) Personal ▾ Enterprise ▾ Tools ▾ Help ▾

International Helpdesk

[Problem/Question/Feedback? Please send an email to the International Helpdesk](#)

Type	Name +	Functions	Size	Modified
	FAQs	<input type="checkbox"/>	4 Items	2002-11-19 11:12
	International Helpdesk NEWS	<input type="checkbox"/>	4 Items	2002-12-17 15:58
	ISOTC training	<input type="checkbox"/>		2002-02-19 17:04
	Online Viewlets	<input type="checkbox"/>	6 Items	2002-12-17 15:50
	User Guides / Documentation	<input type="checkbox"/>	5 Items	2002-05-30 09:29

Livelink © Version 9.0.0, Copyright © 1995-2001 Open Text Inc. All rights reserved.

Figure 25 — International Helpdesk site

7.3 Helpdesks on specific business issues

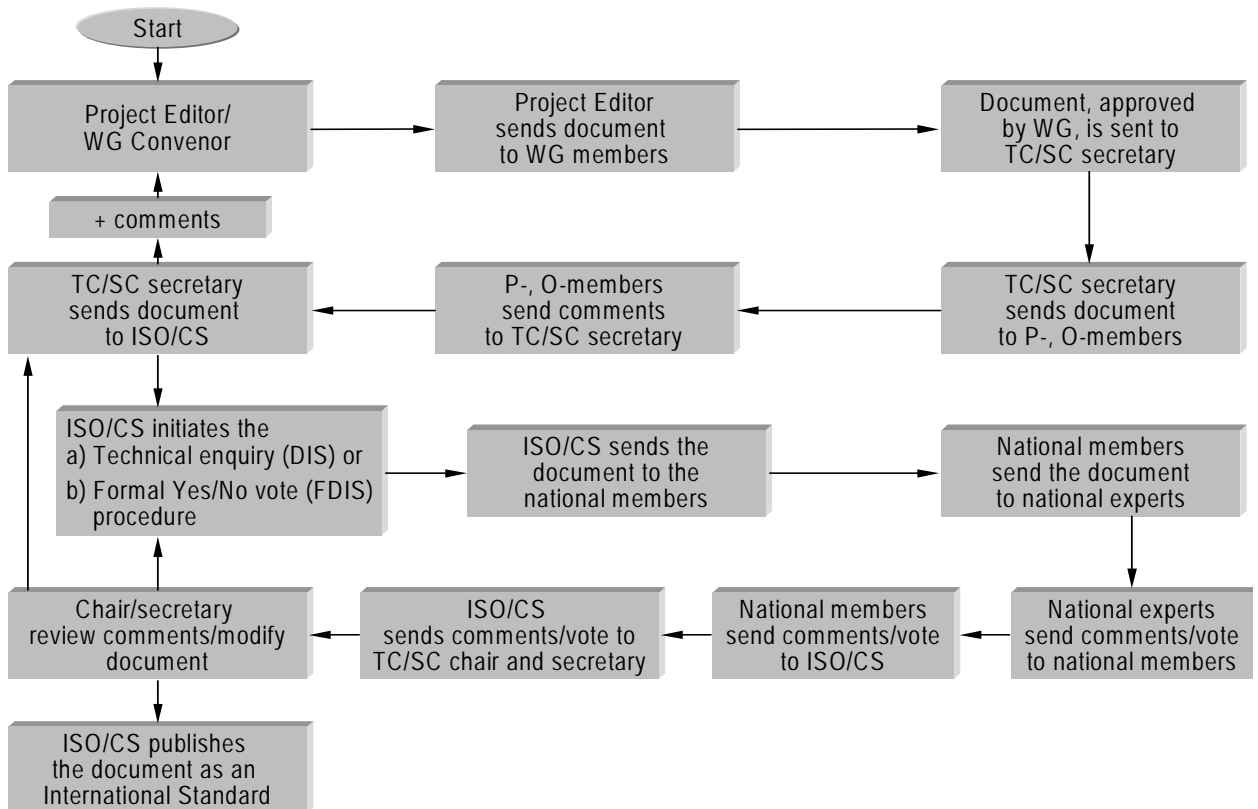
The following other Helpdesks provide assistance on specific business issues:

- ISO Public Relations: info@iso.org
- ISO/IEC Directives: directives@iso.org
- SDIS: sdis@iso.org
- Authoring templates: template@iso.org
- Training: training@iso.org
- Vienna Agreement: va@iso.org
- Industry Forums: forums@iso.org

Annex A

Document flows within ISO

The documents that circulate within ISO can be classified as policy documents, administrative documents, general correspondence and technical documents. Figure A.1 gives an overview of the technical document flow within the ISO system. It is based on the rules given in the [ISO/IEC Directives](#), which should be referred to for further details.



Copies of all documents, including documents in the early stages of the standards development process, are required to be sent to the ISO/CS.

Figure A.1 — Technical document flows in ISO

A working draft is submitted by the project leader (who could be the project editor, the WG convenor or secretary) to the working group (WG). The WG, after having reached agreement on the working draft amongst its members, submits it as a committee draft to the parent committee, i.e. the technical committee (TC), if the WG is established directly under the TC, or a subcommittee (SC), if the WG is established under the SC. The committee secretariat distributes the document to the P- and O-members, who submit their comments. The secretariat compiles the comments and evaluates whether consensus to progress the committee draft has been achieved. The committee draft, if not acceptable, is returned to the project leader with the comments from the P- and O-members, or, if acceptable, is submitted to the ISO/CS for preparation for member body vote as a DIS. The ISO/CS circulates the document to the ISO member bodies for technical enquiry. The member bodies, in accordance with their national rules, conduct a national enquiry by inviting national experts and/or the interested public to comment on the document. The comments are compiled to form a single national view and are forwarded with their vote to the ISO/CS. The ISO/CS collates the member body

comments and sends them to the committee secretariat. The chairman and secretary review the comments and decide on the appropriate way of handling them. This can result in the following actions:

- a) the DIS is approved, may be slightly amended on the basis of the comments received, and is submitted as an approved DIS to the ISO/CS for preparation for the approval stage (in case of 100% approval the document may be progressed directly to publication), i.e. formal Yes/No vote on the FDIS;
- b) the DIS is approved or not approved, but in either case needs substantial amendment in the light of the technical comments received, and is resubmitted for preparation by the originating committee secretariat in view of a second, third, etc. DIS (enquiry) vote;
- c) the DIS is not approved, and is returned to the originating committee secretariat for revision or other action.

If the DIS is accepted [i.e. a) above], it is submitted together with a report of the voting results and of the actions taken to the ISO/CS for preparation as an FDIS for approval (Yes/No) vote. If the acceptance criteria are met, the FDIS is published by the ISO/CS as an International Standard.

Unless otherwise agreed for a specific case and purpose, all technical documents sent to the ISO/CS should be in two formats:

- revisable format (i.e. Word, WordPerfect, or SGML conforming to the ITSIG exchange DTD);
- PDF for reference purposes.

Annex B

Recommendations for the creation of PDF files

IMPORTANT — Since not all ISO member bodies are ready to migrate to the use of Acrobat 5 (PDF version 1.4), the highest version of Adobe Acrobat currently approved for use in the ISO system is Acrobat 4 (PDF version 1.3). The situation is under review by the ITSIG Task Force on Acrobat 5; a further recommendation will be provided in June 2003.

B.1 List of services covered in Annex B

- Recommended use of Adobe Acrobat 4
- JobOptions files

B.2 General recommendations

The aim of these recommendations is to enable the user to create PDF documents with the following characteristics: high-quality; portability; small-size; fully-indexable; searchable.

At present the use of Adobe Acrobat 4.0 (PDF version 1.3) is recommended since not all ISO member bodies are ready to move to PDF version 1.4. The information contained in this annex will be updated when it is permitted to use another version of Adobe Acrobat.

As a general rule, for simple documents such as small reports, letters, faxes, and working documents, the file size should be optimized at the expense of print quality. For highly structured documents, such as an International Standard, the print quality should be given the highest priority.

To facilitate the use of PostScript Type 1 (T1) fonts together with TrueType (TT) fonts, it is recommended to install the latest version of the Adobe Type Manager software (ATM 3.02 provided with the Acrobat software or ATM Deluxe 4.0: licensed - USD 100).

B.3 Adobe Acrobat 4.0 recommended configuration

Install, if possible, Adobe PostScript printer drivers which are provided as companion software together with Adobe Acrobat.

Install the "typical" configuration of Adobe Acrobat 4.0 which includes (on Windows NT 4.0) the following components:

- Adobe Acrobat 4.0
- Acrobat Catalog 4.0 (not covered here)
- Acrobat Distiller 4.0
- Acrobat Reader 4.0
- Adobe PDFMaker 4.0 for Word, Excel and PowerPoint

ISO

- PDFwriter as a printer
- Distiller as a printer

The following post-installation modifications are recommended.

- d) Copy the files specifying the Distiller job options, “ISOADMIN.joboptions” and “ISOPROD.joboptions”, from the folder “Adobe Acrobat 4.0 recommended configuration – Distiller job options for ISO” on the SDIS (www.iso.org/sdis/pdf) to the Distiller setting folder of your installation (e.g. c:\Programs files\Adobe\Acrobat 4.0\Distlfr\Settings).
- e) In the default document properties for the “Acrobat Distiller” printer (Start → Printers → Acrobat Distiller → Document defaults...) set:

Paper size: <A4>

PostScript Output Option: <Optimize for Portability>
- f) In the default document properties for “Acrobat PDFwriter” printer (Start → Printers → Acrobat PDFwriter → Document defaults...) set:

Paper size: A4

Graphic resolution: 300dpi
- g) PDFMaker 4.0 should be configured to use Acrobat Distiller and to print via the Distiller printer. In this case PDFMaker 4.0 has many configuration options which allow the production of very sophisticated and hyperlinked PDF files from a Word source file. Current experience shows that some options may not be correctly processed for some documents.

For simple documents, PDFwriter or Distiller set up using “ISOADMIN.joboptions”, the file specifying the Distiller job options available from the ITSIG Guide folder “Adobe Distiller job options for ISO” on the SDIS (www.iso.org/sdis/pdf), could be used. For complex documents Distiller set up using “ISOPROD.joboptions”, the file specifying the Distiller job options available from the folder “Adobe Acrobat 4.0 recommended configuration – Distiller job options for ISO” on the SDIS (www.iso.org/sdis/pdf), is recommended. It is always recommendable to print your PDF document in another computer environment or platform to test its reproducibility.

It is recommended to create ‘Optimized’ PDF files in ASCII format (see definition G.1).

B.4 Licensing conditions concerning Acrobat Distiller

Important — You cannot set up watched folders [for Acrobat Distiller] as a network service for other users. Every user who creates PDF files must have his or her own Acrobat license. Use watched folders only for converting your own files.

B.5 Recommendations concerning Acrobat Capture

For simple documents, configure Capture to create PDF files that contain the OCR-recognized text plus bitmap images for unrecognized words (small-size PDF files).

For complex documents, configure Capture to create files that contain the original image of the page (300 dpi) plus hidden text for search facilities (large-size PDF files).

As a word of warning, note that OCR products can and will use words that the software deems to have recognized. Hence it is possible that wrongly recognized words will be placed into the PDF file.

B.6 Recommendations concerning the use of fonts

Table B.1 lists recommended Type 1 and TrueType fonts for document creation. These fonts are available in any Acrobat 4.0 installation.

Table B.1 — Recommended fonts for PDF file creation

Type 1 Base 13 fonts in ATM environment	TrueType (MS Windows 3.11)
Times (Regular, Italic, Bold, Bold Italic)	Times New Roman (Regular, Italic, Bold, Bold Italic)
Helvetica (Regular, Oblique, Bold, BoldOblique)	Arial (Regular, Italic, Bold, Bold Italic)
Courier (Regular, Oblique, Bold, BoldOblique)	Courier New (Regular, Italic, Bold, Bold Italic)
Symbol	Symbol

Avoid the use of any other fonts. If additional fonts are needed then try to obtain them from widely used resources, e.g. products like WordPerfect 8, CorelDraw 7, Adobe Illustrator 7, and Adobe Type on call. Be sure to check the license on the fonts and the conditions under which such fonts may be distributed.

Some fonts may be protected for embedding into PDF. An attempt to distil a PostScript file which contains such fonts will cause the following error message :

```
%%[ Error: <fontname> cannot be embedded due to licensing restrictions.]%%
```

Annex C

Guidance regarding the size of email attachments to ISO/CS

Exchange of files should always take place following the rules explained in this guide, e.g. through the folder 06. of each committee site at the ISOTC Service (see also clause 2.2 of this guide for details).

However, in case of exchange of files to ISO/CS is necessary via email the total size of email attachments should be kept to a minimum. The recommended size limit of email attachments to the ISO/CS for overall size of text and text encoded attachments is 5 MB. The maximum size limit is 10 MB.

Annex D

Abbreviations and definitions

List of the abbreviations and definitions used in this guide:

- **CASCO** Committee on Conformity Assessment
- **CEN** European Committee for Standardization
- **COPOLCO** Committee on Consumer Policy
- **CPSG** Commercial Policy Steering Group
- **DEVCO** Committee on Developing Country Matters
- **DIS** Draft International Standard
- **FDIS** Final Draft International Standard
- **ICS** International Classification for Standards
- **IEC** International Electrotechnical Commission
- **ISO** International Organization for Standardization
- **ISO Online** ISO's homepage, providing information services to the general public and playing the role of ISO's Enterprise Portal
- **ISO Store** eCommerce services for the ISO publications
- **ISO/CS** ISO Central Secretariat
- **ISODOC** Service to ISO's governance bodies and policy development committees
- **ISOSTD** Access to currently valid ISO publications
- **ISOTC** Supports the collaborative work within ISO technical committees, subcommittees and working groups. It hosts the day-to-day working sites of the various ISO technical committees and provides the interface for the ISO committees to the internal standards production chain in the ISO/CS
- **IT** Information Technology
- **ITSCG** ISO/IEC/ITU Information Technology Strategies Coordination Group
- **ITSIG** Information Technology Strategies Implementation Group
- **ITTF** Information Technology Task Force
- **ITU** International Telecommunication Union
- **JTC** Joint Technical Committee
- **O-member** Observer member

ISO

- **P-member** Participating member
- **SC** Sub Committee
- **SDIS** Standards Developers' Information Site
- **SGM Forum** Standards Actions in the Global Market
- **TC** Technical Committee
- **TMB** Technical Management Board
- **WG** Working Group
- **WSSN** World Standards Services Network
- **WTO** World Trade Organization