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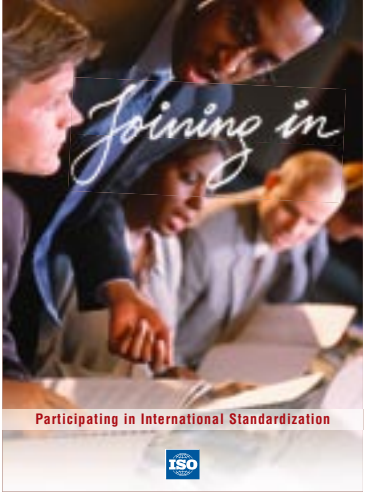
Participating in International Standardization

ISO



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Introduction

This publication has been prepared for national delegates to ISO meetings and experts in ISO working groups. It is one of a series of new ISO reference documents which serve to

- welcome delegates and experts to their new ISO jobs,
- provide them with concise and relevant information,
- draw their attention to topical challenges in today's standardization world, and
- offer them tools and guidance for increased efficiency and effectiveness in standardization performance.

This publication describes active and effective participation in international standardization. It is intended as a primer to the Enhanced Participation Course, and expands on the basic information given in the booklet ***My ISO job – guidance for delegates and experts***, available on ISO's web site (**www.iso.org**).

Among the seven key objectives that ISO has formulated in its Strategic Plan 2005 – 2010 are: "Developing a consistent and multi-sector collection of globally relevant international standards" and "Ensuring the involvement of stakeholders". These two objectives are closely linked: global relevance of international standards can only be achieved through the effective mobilization and involvement of stakeholders. The challenges facing those involved in the standardization process begin at the national level, as ISO's overall performance and success depend on full participation of its national members and other stakeholders.

Direct participation in technical committees, subcommittees and working groups offers the best opportunity to influence ISO's technical work in accordance with the economic and social priorities of a national member. In addition, experts and delegates will benefit from being active participants in the international standardization process. Committees are a good forum for the identification of trends and offer early insider knowledge which provides a competitive edge. Also, the insights obtained can reduce the risk of investing in inappropriate technology.

Standards decrease costs caused by undesirable technical diversity, facilitate international trade by providing specifications between contracting parties, and assist countries to develop their emerging economies.

1. What is ISO?

A mature organization

ISO, the International Organization for Standardization, was founded in 1946 by delegates from 25 countries and started operations in 1947. At the end of 2006, the number of national ISO members had risen to 158. The organization is a vast network of national standards bodies from all regions of the world, served and supported by a Central Secretariat in Geneva with approximately 150 staff.

ISO's declared mission is to be the leading value-adding platform and partner for the production of globally and market-relevant international standards, covering product specifications, services, test methods, conformity assessment, management and organizational practices. In order to reach its goals, ISO needs a clear and comprehensive set of rules for the technical work, guaranteeing harmonized and efficient operations. These rules are given in the *ISO/IEC Directives* **(URL: www.iso.org/directives)**.

ISO Statutes and Rules of Procedure

ISO/IEC Directives – Part 1
Procedures for the technical work

ISO/IEC Directives – Part 2
Rules for the structure and drafting of International Standards

ISO/IEC JTC 1 Directives
Procedures for the technical work of ISO/IEC JTC 1 on *Information Technology*

ISO/IEC Directives – Supplement
Procedures specific to ISO

Truly international and regional

For strategic purposes and optimal coordination of their activities, ISO, the IEC (International Electrotechnical Commission) and the ITU (International Telecommunication Union), all based in Geneva, have established the World Standards Cooperation (WSC). All standards developed with the ITU-T (Telecommunication Standardization Sector), as well as all information technology standards, are developed under the *ISO/IEC JTC 1 Directives*.

Now that globalization has become an economic and social reality, ISO has established itself as a major partner with WTO in matters concerning the role of international standards in trade and the avoidance of unnecessary technical (i.e. non-tariff) barriers to trade.

There are many regional standardization organizations:

- **ACCSQ** (ASEAN Consultative Committee for Standards and Quality)
- **AIDMO** (Arab Industrial Development and Mining Organization)
- **ARSO** (African Organization for Standardization)
- **CEN** (European Committee for Standardization)

- **COPANT** (Panamerican Standards Commission)
- **EASC** (Euro-Asian Council for Standardization, Metrology and Certification)
- **PASC** (Pacific Area Standards Congress)

The European Committee for Standardization (CEN) has a special agreement with ISO. The so-called "Vienna Agreement" was signed by ISO and CEN in 1991. Its aim is to avoid the development of parallel or conflicting standards and to assist each other's work. Either a CEN or an ISO committee can prepare the document, with the collaboration of the other partner. Both ISO and CEN members vote on such documents.

You will find more information about ISO's collaboration and partnerships with a large number of international and regional organizations on ISO's website **(www.iso.org)**.

ISO's management structure

The strategic management of ISO is in the hands of its members and ISO's principal officers, i.e. ISO's President, Vice-President (policy), Vice-President (technical management), Treasurer and Secretary-General.

Proposals put to the members during the General Assembly (GA) are prepared by the ISO Council, which governs the operations of ISO just as a Board of Directors governs the operations of a business organization. The Council, chaired by ISO's President, appoints the Treasurer, the 12 members of the Technical Management Board (TMB) and the Chairmen of the policy development committees: ISO/DEVCO, Committee for developing country matters, ISO/COPOLCO, Committee on consumer policy, and ISO/CASCO, Committee on conformity assessment.

The TMB is responsible for the overall management of the technical work, and also reports to the Council. TMB decides, among other things, on the establishment of technical committees and appoints their Chairs. ISO's day-to-day operations are managed by the Secretary-General, who is appointed on a permanent basis and heads the Central Secretariat (ISO/CS) in Geneva, Switzerland.

New building into which the Central Secretariat moved in February 2007.

Committee structures

ISO produces international standards – and some other documents similar to standards – through its committee structure. Technical work is the responsibility of technical committees. New technical committees must agree on a title and define their scope as soon as possible after their establishment. The title and scope of the new technical committee must then be submitted to the Technical Management Board for approval.

Example
ISO/TC 36, ***Cinematography***, has the following scope:

Standardization of definitions, dimensions, methods of measurement and test, and performance characteristics relating to materials and apparatus used in silent and sound motion picture photography; in sound recording and reproduction related thereto; in the installation and characteristics of projection and sound reproduction equipment; in laboratory work; and in standards relating to sound and picture films used in television.

Some technical committees have many members and a vast work programme. For efficiency they may therefore establish subcommittees, whose members concentrate on a specific area of interest and manage the corresponding part of the technical committee's work programme. The scope of a subcommittee (SC) must be within the scope of the parent technical committee (TC).

Since 1999, all ISO technical committees must develop detailed business plans as a management tool in order to make sure that their work is fully aligned with market requirements. "Market", in this context, is used as a generic term to cover all stakeholders and organizations associated with a given subject. This includes manufacturers, service providers, consumers, governments and associations representing the social or economic groups that may have a direct interest in the specific sector addressed by an ISO work programme.

Business plans, which also cover the activities of subcommittees, analyse conditions and trends in the market sector served by the technical committee and explicitly link work programmes and sector needs. This generates clear priorities about which standards are needed, and when, and shows what resources are required to advance a project through all the development stages.

A fundamental aim of business plans is to demonstrate the specific benefits which the work undertaken by each technical committee will bring to the

business sector it serves. Such benefits can be economic (cost savings, shorter time to market, easier market access, lower sales prices), social (improved safety for workers), or societal (reduced environmental pollution, less waste of finite resources). Business plans make it possible to obtain a more strategic view of market requirements before entering into the details of preparation of individual standards.

Business plans are public information so all stakeholders have access to them. **(URL: www.iso.org/bp)**

Composition of ISO committees

ISO committees are made up of ISO member bodies. These may choose to be participating (P) members or observer (O) members, the latter also being open to ISO correspondent members. In the case of participating members, the member body facilitates the process of negotiation and consensus-building across stakeholders in national mirror committees, and contributes to the international negotiation and consensus-building process. Details of the various types of membership are given in Chapter 4, in the section "Opportunities to influence ISO's work".

At meetings of ISO committees, the members are represented by delegations drawn from the national mirror committees. National representatives are expected to represent their members' views in the overall work of a committee and participate in reviews of the committee's work. Where necessary and possible, this participation will take the form of attendance at committee meetings.
A delegate to a committee meeting may be the same individual who has been nominated by an ISO member body to be an expert in a working group.
With regard to their day-to-day operation, there are no really important differences between technical committees and subcommittees. However, they differ significantly from working groups, which both of them can establish. Working groups are set up to take care of specific tasks and are disbanded after the fulfilment of these tasks. Members of working groups are experts who are expected to input their individual know-how and experience in the context of the particular standardization project to which they are contributing.

Experts are nominated by the members that have agreed to actively participate in the project concerned (P-members and category A and D liaison members), but they do not formally represent these members. They act in a personal capacity.

Heads of delegations are designated by the member body which they represent. It is their task to indicate a national position on all items during a TC or SC meeting, and to ensure that the delegation presents a homogeneous view on these items. They are responsible for the sustained effectiveness of participation by their delegation, for instance by means of adequate feedback to the organization they represent.

The ISO roles that have been discussed so far – national representative, Head of delegation, expert – can be described as "predominantly contributory". Further examples of this type of ISO role are liaison representatives and editing committee members (including project editor). Other basic ISO roles concern those of a leadership and management character. These include

- Project Leader,
- Convenor (of a working group),
- Chair (of a TC or SC),
- Secretary.

For a description of these leadership roles, see Chapter 3: "How are International Standards developed?"

2. What can standards do for us ?

Added value

Standards are an integral part of daily life. There are few things in our offices and households, in shops and in the street, which are not covered by standards. We want appliances and tools to function, to be safe and to fit together with other appliances. As consumers, we want to know what we buy. We want our food to be safe and our water to be pure. In our jobs, we don't want to reinvent the wheel, or lose unnecessary time in business transactions. When we are ill, we want effective treatment and tried and tested medication on the basis of reliable examinations and analyses. In short, we want standards.

Standards contribute to the protection of human beings, animals, property and the environment against hazards of all kinds, ensure inter-changeability and interoperability, facilitate communication by means of a common terminology, and provide a basis for the achievement, assessment and demonstration of quality.

Standards in international trade

The international language of commerce is standards. Adherence to agreed specifications for products, services and test methods underpins international commerce. The common acceptance of standards is fundamental to the success of robust, fair and free trade. Without standards, it would be difficult to imagine the complexity of international trade. While standardization provides important domestic benefits, it is becoming more and more important internationally.

The application of international standards greatly contributes to the avoidance and elimination of unnecessary technical barriers to trade. That, in the real world, is what trade facilitation is all about.

The World Trade Organization's Agreement on Technical Barriers to Trade (TBT) includes the Code of Good Practice for the Preparation, Adoption and Application of Standards. The WTO strongly recommends the use of international standards as a basis for technical regulations, and all signatories to the Code of Good Practice give the highest priority to the use of international standards as a basis for their national standards – wherever this is effective and appropriate. In order for international standards to do justice to the key role that is thus allotted to them, both the standards and the standardization

process must meet certain criteria and follow recognized principles. ISO fully implements the following principles.

Transparency
All essential information shall be accessible to all interested parties.

Openness
Membership – at policy level and at any stage of standards development – shall be open on a non-discriminatory basis to relevant bodies of all WTO countries.

Impartiality and consensus
The standards development process will not favour the interests of a particular supplier, country or region. The procedures should grant equal rights and opportunities in the development and dissemination phases to all interested parties.

Effectiveness and relevance
International standards need to be relevant and effectively respond to regulatory and market needs, scientific and technological development.

Coherence
Cooperation and coordination with the work of other relevant standardizing bodies is essential to avoid duplication and conflict.

Development dimension
Tangible ways of facilitating developing countries' participation in international standards development should be sought.

The TBT Agreement includes the following definitions.

Technical regulation

Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

Standard

Document approved by a recognized body, that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, with which compliance is not mandatory. It may also include or deal exclusively with terminology, symbols, packaging, marking or labelling requirements as they apply to a product, process or production method.

ISO, through its decentralized global system of standardization, produces voluntary consensus standards.

National adoptions are discussed in ISO/IEC Guide 21, Chapter 4.

Everybody's a consumer

In the formal language of ISO's and IEC's statement on consumer participation, in standardization a consumer is "an individual member of the general public, purchasing or using goods, property or services, for private purposes". International standardization results in the products and services that we purchase or use being safer, healthier, more environmentally sound and more reliable. In addition, standards create compatibility within and between related products and contribute to better product and service information.

Several of these benefits to consumers are intrinsic to the standardization process and arise through similar interests on the part of the largest group of stakeholders in standardization, the producers. Other benefits, such as those related to product information and labelling, may require active consumer participation to express consumer needs and influence the standardization process accordingly.

As early as 1978, ISO established a specialized committee on consumer policy (ISO/COPOLCO), through which it undertakes to

- study how consumers can benefit from standardization,
- promote consumers' input to the development of standards, both nationally and internationally,
- encourage the exchange of experience on standards work of interest to consumers, and
- channel consolidated views from consumers both on current projects and on proposals for new work in areas of interest to them.

Membership of ISO/COPOLCO is open to all ISO member bodies and correspondent members and currently comprises almost 100 member countries. It also includes the IEC, which is responsible for developing international standards in the fields of electrical and electronic engineering.

Two other international organizations have an official liaison with ISO/COPOLCO : Consumers International (CI) and the Organisation for Economic Co-operation and Development (OECD).

Despite the existence and work of ISO/COPOLCO, consumer representation on technical committees remains a challenge, especially for developing countries.

For more information :

ISO Online: **www.iso.org** (sub-section "Consumers")

ISO/IEC statement: Consumer participation in standardization work

ISO brochure : *ISO and the consumer*

3. How are International Standards developed?

The role of project management

A project, in ISO, is any work leading to the development, revision or amendment of a standard or any other deliverable produced by an ISO committee. A project is also called a "work item". Activities follow a planned approach using specifically allocated resources. Each discrete project has time restraints – a defined beginning and end and, typically, intermediate milestones – and will normally involve a team of people (working group).

Project management is the discipline of defining and achieving project targets, while optimizing the use of the available or allocated resources (including time) over the course of a project. For ISO, the effective and efficient management of projects is essential because

- standards have to be on time in order to retain their value, and
- the resources managed are the stakeholders' resources.

Effective project management is "proactive" management, which is essentially about looking ahead and staying out of trouble. It implies the skill of anticipating unproductive questions, actions and problems and requires a planned and systematic approach, including certain routines with regard to timely and adequate corrective action.

The persons within the ISO system who are central to project management are the TC and SC Secretaries. They are responsible for the management of all projects in the work programme of their committee, including the monitoring of project progress against the agreed target dates. In the decentralized ISO system, the committee secretariat function is assigned to an ISO member body by the Technical Management Board on behalf of ISO.

In the role of project manager, a Committee Secretary is assisted by a Chair, Project Leaders (if appointed), Working Group Convenors and the responsible ISO/CS Technical Programme Manager (TPM). A major task for both the Chair and the Secretary of a committee is to ensure that the ISO/IEC Directives on the procedures for the technical work and the rules for drafting standards, and other products, are followed at all times. The responsibilities of a Chair and Secretary are detailed in ***My ISO job***.

The Chair of a technical committee is responsible for the overall management of that committee, including any subcommittees and working groups. Chairs are required to advise the Technical Management Board on all important matters relating to that committee via the technical committee secretariat. For this purpose, they need to receive reports from the Chairs of any subcommittees and the Convenors of working groups. Other tasks include the management of the work programme and the maintenance of the business plan. However,

the core responsibility of a TC or SC Chair concerns the neutral, efficient and effective conduct of meetings. The Chair should ensure that all points of view have received adequate attention, that consensus is reached, and that all resolutions are worded in a clear and precise manner and are made available – by the Secretary – for confirmation.

Project Leaders are expected to be the driving force behind the progress of a project, inviting expert assistance and acting as "work item consultants" themselves if so required, investing time and personal commitment. They are nominated by the originator of a new work item and/or appointed by the relevant TC or SC. Project Leaders are responsible for reconciling comments on draft standards and they are a member of the editing committee for their project(s). A Project Leader may also be a Working Group (WG) Convenor.

WG Convenors are responsible for the overall management of a working group. This includes all tasks related to the organization of meetings and the distribution of documents. Their crucial role is to guide the group of experts and enable them to reach consensus. In addition, they also initiate and monitor action in-between meetings. Finally, they submit reports and recommendations to the parent committee (TC or SC). The interface between WGs and TCs or SCs is the channel through which expert opinions, best practices and state-of-the-art solutions are input into the negotiation process between member body delegations. Thus, Convenors' reports need to adequately describe the WG results and reflect the discussions that led to these results.

Each ISO committee is assigned a Technical Programme Manager, located at the ISO Central Secretariat, who provides advice on ISO policies, procedures and all work programme matters and constitutes the primary contact point between committees and the ISO/CS staff. The TPM will attend committee meetings when there are policy or procedural issues which need to be addressed.

The procedures for ISO's technical work as contained in the ISO/IEC Directives are based on the following concepts:

- application of modern technology and programme management;
- consensus;
- discipline;
- cost-effectiveness.

Consensus requires the resolution of substantial objections. Unanimity is not a requirement, however, and projects may be advanced to the next stage without 100 % acceptance.

Discipline is required with respect to deadlines, and the adequate establishment and presentation of national positions. It is the responsibility of each national body to ensure that the technical standpoint presented at committee level – at the earliest possible stage – reflects all national interests. Substantial new comments need to be discussed, for

example, at national mirror committees, before the delegations state their national opinions.

For more information on the roles and responsibilities of the different actors (Chair, Committee Secretary, Programme Manager, Project Leader and others) in ISO's standards development process, see *ISO/ IEC Directives,* Part 1, and the *ISO Supplement to the Directives*.

ISO's project stages

ISO's deliverables are developed through a sequence of project stages. Each stage has its name, but very often the stages are identified by using the acronyms that are associated with each stage. For example, the enquiry stage, during which a Draft International Standard is produced, may be identified by using the acronym for this document, namely DIS.

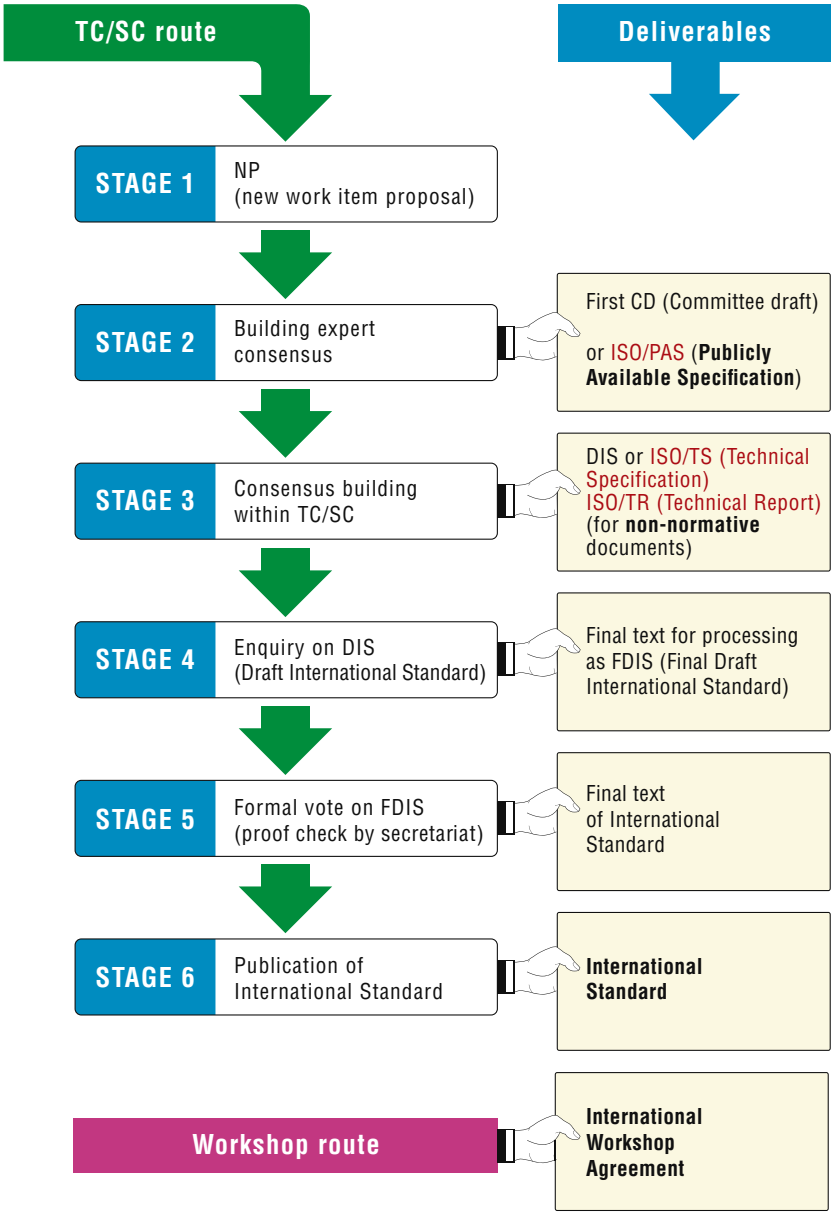
Stage name	Product name (document)	Acronym
Preliminary stage	Preliminary work item (project)	**PWI**
Proposal stage	New proposal for a work item	**NP**
Preparatory stage	Working draft(s)	**WD**
Committee stage	Committee draft(s)	**CD**
Enquiry stage	Draft International Standard	**DIS**
Approval stage	Final Draft International Standard	**FDIS**
Publication stage	International Standard	**IS**

For information on the nature and elaboration of deliverables other than standards, i.e.

- Technical Specifications (TS)
- Technical Reports (TR)
- Publicly Available Specifications (PAS)
- International Workshop Agreements (IWA).

see the *ISO/IEC Directives*, Part 1, and the *ISO Supplement*.

Standards development processes and deliverables



– The preliminary stage (00)

Technical committees or subcommittees may introduce into their work programmes, by a simple majority vote of their participating (P) members, preliminary work items (for example, subjects dealing with emerging technologies), which are not yet sufficiently mature for processing to further stages.

Preliminary work items are not considered active and may remain at stage 0 for any length of time. However, they must be reviewed by the responsible committee on a regular basis.

The preliminary stage is often used to advise committee members of future work items, such as further parts of a standard. It can be used during the preparation of a new work item proposal (NP, see description of proposal stage below) while an initial draft is being prepared.

– The proposal stage (10)

This starts with the submission of a proposal for a new project. It is an assessment phase that all proposals for new projects must pass through to ensure that only projects for which there is a confirmed need, and for which appropriate resources are available, will be added to the work programme.

New work items can be proposed by any member body of ISO, the secretariat of a technical committee or subcommittee, an organization in liaison, the Technical Management Board or one of the advisory groups, or the ISO Secretary-General.

New work item proposals are also used to propose amendments to existing documents or changes in the type of existing documents – for instance, the conversion of a Technical Specification into an International Standard.

The proposer of a new project needs to provide an accurate description of the project and its feasibility, including subject and scope, project purpose and justification, a target date and the estimated time needed for development, and the nomination of a project leader. If possible, the proposal should be accompanied by a complete working draft. The TC or SC Secretary completes the corresponding ISO form (Form 4) and circulates it to all members of the committee for a three-month vote.

All P-members are under an obligation to vote. Those P-members who are prepared to actively participate in the development work of the project nominate experts, submitting their names and addresses. At least five P-members must declare their active support and nominate experts. If this criterion is fulfilled, the new project will be adopted if it gains acceptance by a simple majority of P-members.

The proposal stage ends with the registration of the approved work item (AWI) on the committee work programme, together with the development track chosen (see below).

– The preparatory stage (20)

This stage comprises the preparation and consideration of one or more working drafts until consensus has been reached in a working group. Typically, a project is allocated to an existing working group, or a new working group is established by the technical committee or subcommittee, including the experts named by the P-members. Working group members act as independent experts, not as national delegates. This preparatory phase may be skipped if an appropriate document was available with the new work item proposal, and the P-members agreed to adopt it as a committee draft (CD) in the course of the proposal stage ballot.

Once the working group has developed what it considers to be the best technical solution to the problem, the working draft is forwarded to the parent committee for a full review by all committee members.

– The committee stage (30)

This is the principal stage at which comments from national members are taken into consideration with a view to reaching consensus on the technical content of the committee draft. Differences in opinion and (potential) conflicts should be resolved during meetings or – wherever possible – by correspondence. If major problem areas are identified, successive drafts may be elaborated until consensus is reached. At this juncture it is the task of the committee Chair, in consultation with the Secretary and the Project Leader, to decide if consensus has indeed been reached and the text has sufficient support to be circulated as an enquiry draft.

A CD may first be circulated by the TC or SC Secretary for comments from member bodies of that committee. The text is then revised in the light of those comments and circulated again for balloting by committee members (three-month vote). If the text is approved by a two-thirds majority of the participating (P) members, this is sufficient for the draft to progress to the next stage. However, every attempt must be made to resolve negative votes.

The committee stage ends with the registration of the project as a proposed Draft International Standard (DIS). The committee secretariat should submit the finalized version of the draft to ISO/CS within a maximum of four months after approval of the CD text by the committee. See below for details of the development tracks.

– The enquiry stage (40)

The document is made available by ISO Central Secretariat to all member bodies via the ISOSTD server. Nominated persons in each member body can download and distribute the text. This is the first full review (five-month vote) outside its parent committee. The text is not edited or prepared by ISO at this stage, but the ISO Central Secretariat must usually wait for two months for translation into French (or English) unless a translation

was submitted at the same time. All ISO member bodies are now faced with the task of making the DIS available to the widest possible range of national stakeholders including, where applicable, for public comment. All interested parties should submit any comments to their national standards body/national mirror committee, which will in turn study the comments as a basis for the national vote on the DIS. All ISO member bodies are entitled to vote and P-members of the committee responsible for the document are under an obligation to vote. This means they can submit a positive or a negative vote, or they can explicitly abstain. A member submitting a negative vote must state technical reasons for its rejection of the draft.

The results of the enquiry are collated by ISO Central Secretariat and passed on to the committee secretariat for further treatment. An enquiry draft is approved if

- a two-thirds majority of the votes cast by the P-members of the technical committee or subcommittee are in favour, and
- no more than one-quarter of the total number of votes cast are negative.

Abstentions are excluded when the votes are counted. If the overall result of the ballot is "not approved", or if the committee judges that the changes needed are sufficiently significant to require further review, a second enquiry vote of two months can be carried out. If the DIS receives 100 % approval, it may proceed directly to publication once any comments received have been addressed.

In the case of approval with less than 100 %, the enquiry stage ends with the registration of a Final Draft International Standard (FDIS). The committee secretariat is obliged to submit the finalized version of the draft to ISO Central Secretariat within a maximum of four months after approval of the DIS text by the committee. A report on the DIS vote, which includes all comments received and how they have been addressed, must be included.

– The approval stage (50)

The ISO Central Secretariat must usually wait for two months for translation into French (or English) unless a translation was submitted at the same time. At this stage the document is evaluated by ISO Central Secretariat and any drawings revised to comply with the *ISO/IEC Directives*, Part 2.

The document is then edited by ISO staff to ensure that the text is clear and in accordance with the *ISO/IEC Directives*, Part 2. These editorial rules are explained in an imaginary DIS text, which shows the text on one page and the editing rules on the facing page **(www.iso.org/rice-model)**.

Some problems may be highlighted by the ISO editors, who will then contact the Project Leader and Committee Secretary to clarify any possible errors. The electronic files are then checked by typesetters who ensure that they are correctly styled in accordance with the STD Template **(www.iso.org/templates)**.

The FDIS text is then made available to all ISO member bodies via the ISOSTD server for a two-month vote. Nominated persons in each member body can download and distribute the text. At this stage no further technical comments are expected from member bodies voting approval, as ample opportunity for stakeholder discussion has been provided during the enquiry stage and all views should have been taken into due account before the launch of the final draft document. However, a member body voting negatively is obliged to state the technical reasons justifying this vote.

– The publication stage (60)

At this stage the ISO Central Secretariat corrects any editorial errors indicated by the committee secretariat and makes the international standard available to all member bodies via the server. Nominated persons in each member body can download the required number of copies.

The approval requirements for the various deliverables are given below.

Summary of approval requirements

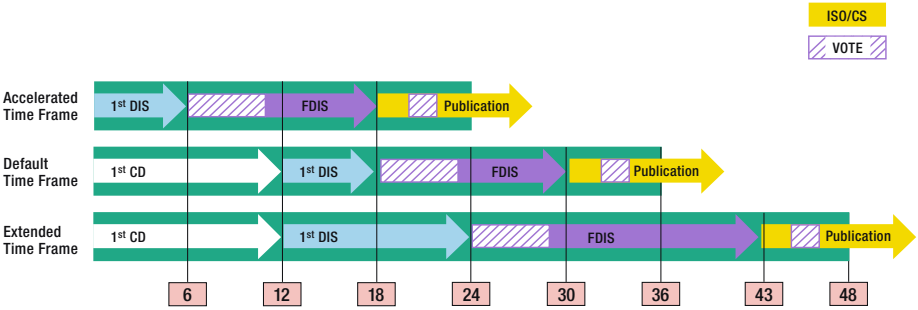
Stages	International Standard	Technical Specification (when proposed as a new project)	Publicly Available Specification	Technical Report
Proposal stage *Adoption of proposal for new deliverable*	– simple majority of P-members of the committee – 5 P-members participating – 5 experts named			Not applicable
Adoption of proposal for amendment or revision or transformation of deliverable	– 5 P-members participating – simple majority of P-members of the committee agree to the proposal			Not applicable
Preparatory stage *Acceptance of WD for circulation as CD*	Not defined – determined by the committee Secretary in conjunction with the committee			
Committee stage *Acceptance of CD for submission as DIS*	– consensus, or – support from 2/3 of the P-members voting	– support from 2/3 of the P-members of the committee voting	simple majority of P-members of the committee	
Enquiry stage *Acceptance for submission as FDIS*	– 2/3 of P-members positive; – no more than 1/4 votes negative	Not applicable		
Approval stage *Agreement to publish*	– 2/3 of P-members positive; – no more than 1/4 votes negative	Not applicable		

International harmonized stage codes

STAGE	SUB-STAGE						
	00	20	60	90 Decision			
	Registration	Start of main action	Completion of main action	92 Repeat an earlier phase	93 Repeat current phase	98 Abandon	99 Proceed
00 Preliminary stage	00.00 Proposal for new project received	00.20 Proposal for new project under review	00.60 Close of review			00.98 Proposal for new project abandoned	00.99 Approval to ballot proposal for new project
10 Proposal stage	10.00 Proposal for new project registered	10.20 New project ballot initiated	10.60 Close of voting	10.92 Proposal returned to submitter for further definition		10.98 New project rejected	10.99 New project approved
20 Preparatory stage	20.00 New project registered in TC/SC work programme	20.20 Working draft (WD) study initiated	20.60 Close of comment period			20.98 Project deleted	20.99 WD approved for registration as CD
30 Committee stage	30.00 Committee draft (CD) registered	30.20 CD study/ballot initiated	30.60 Close of voting/ comment period	30.92 CD referred back to Working Group		30.98 Project deleted	30.99 CD approved for registration as DIS
40 Enquiry stage	40.00 DIS registered	40.20 DIS ballot initiated: 5 months	40.60 Close of voting	40.92 Full report circulated: DIS referred back to TC or SC	40.93 Full report circulated: decision for new DIS ballot	40.98 Project deleted	40.99 Full report circulated: DIS approved for registration as FDIS
50 Approval stage	50.00 FDIS registered for formal approval	50.20 FDIS ballot initiated: 2 months; proof sent to secretariat	50.60 Close of voting; proof returned by secretariat	50.92 FDIS referred back to TC or SC		50.98 Project deleted	50.99 FDIS approved for publication
60 Publication stage	60.00 International Standard under publication		60.60 International Standard published				
90 Review stage		90.20 International Standard under periodical review	90.60 Close of review	90.92 International Standard to be revised	90.93 International Standard confirmed		90.99 Withdrawal of International Standard proposed by TC or SC
95 Withdrawal stage		95.20 Withdrawal ballot initiated	95.60 Close of voting	95.92 Decision not to withdraw International Standard			95.99 Withdrawal of International Standard

Development tracks

Time limits have been introduced to reduce the risk of investing resources in projects that have insufficient hope of success. It is recognized that some projects need more time than others, so three tracks are specified: accelerated, default and extended. If Draft International Standards or Final Draft International Standards are not submitted within six months of their limit dates, they will be automatically cancelled. In order to give every project a fair chance of survival, ISO/CS issues a "Risk of Cancellation" warning 12 months before any cancellation would take effect. The three tracks are illustrated below, with the times given in months.



Patent policy

Standards and other ISO deliverables are allowed to contain provisions which are covered by patents. To ensure that the use and application of such standards will be on a fair and equitable basis, ISO must receive from the owners of such rights statements that they are willing to grant licenses to applicants worldwide on reasonable and non-discriminatory terms. A statement to this effect, the contact person and name and address of the company holding the patent must be included in the Introduction to the standard. An example of this is given in the Model Manuscript of a Draft International Standard (www.iso.org/rice-model).

Copyright policy

When sources used in the drafting of a particular standard are protected by copyright, it is essential that the copyright owners give their consent for the use or reproduction of such material. This applies even at the early stages, such as the preparation of a New Work Item proposal or a Working Draft.

All ISO drafts and publications are commercial documents and are protected by copyright. However, free distribution of such documents is allowed within a working group or committee, but only for the purposes of further standardization, such as the revision of an existing standard.

4. Know what you need, get what you want

At home

Effective participation in international standardization begins at home. Well-developed national standardization systems are the best starting point for optimum benefits from international standardization. A national standardization infrastructure is a complex system in which different forces are at play and the interests of several major stakeholder groups need to be balanced. The increasing similarity of standards and technical regulations often causes standards-related issues to be of immediate concern to regulatory authorities and, vice versa, the effectiveness of standards heavily depends on the existence of an adequate legal framework. For these reasons, cooperation between the actors and coordination and transparency of activities are preconditions for the effective operation of a national standardization system.

Raising awareness of standardization issues among decision makers is an important task, as is the activity of convincing them of the benefits of active participation in technical work. In order for a national standards body to be effective, it should have high visibility as a specialized and competent service organization. Finally, the efficiency of national technical committees is a crucial factor in convincing stakeholders of the value of participation in standardization – and a precondition for effective participation at the international level.

Determining priorities

In standardization, much depends on adequate management, on **how** things are done and **what** should be done. In order for a national member of ISO to get what it wants from international standardization, it has to know exactly what it needs in terms of standardization in general and international standards in particular.

To define priorities for standardization, it is useful to distinguish between the economic and social effects of standards. In an economic context, the importance of any sector can be assessed by consulting industrial and trade statistics and considering, for instance, the sector's contribution to the Gross Domestic Product (GDP) and the role of the sector in export trade. Then, an assessment of the economic priority of individual subjects which may be proposed by representatives of a sector will be relatively easy.

Social importance is assessed based on the extent and urgency of the problems relating to health, safety, the environment and employment, which the proposed standard may help to solve.

In both the economic and social fields, the priority of sectors and subjects may be quantified by means of ranking systems. For economic importance, these ranks could range from "1 (very important)" to "4 (of much less importance)". Safety issues usually require urgent

solutions and attract media attention. Health and environmental problems can be short, medium or long term. Based on the extent, urgency and public interest, ranks for social importance could range from "1 (very serious and urgent problem, public outcry)" to "4 (problem localized, no media reaction)".

Economic research, monitoring of trends in public opinion and regulatory measures by the competent authorities, combined with the application of relatively simple ranking systems, will provide the national standards body with a useful overall picture of priorities for standardization. However, the assessment exercise should also include direct surveys of the actual need for standards as perceived by stakeholders in their respective sectors.

First, stakeholders already cooperating closely with the national standards body should be surveyed: members of the council, of technical committees and subcommittees, of industry and professional associations and chambers, government agencies, consumer associations and regional entities. Next, companies in selected sectors and important organizations which might be interested in active participation should also be encouraged to state their needs and expectations.

Communicating with standardization stakeholders

Standardization stakeholders are those parties that would benefit from voluntary, consensus-based standards, and for whom the existence and content of standards are important.

Standards should be prepared by the stakeholders. Draft standards are written by experts, final documents are negotiated in technical committees by representatives of the interested parties. The production process is managed and facilitated by staff of the recognized standards bodies. However, process ownership (contributions to contents) and output (published standards) should be with the users of the standards, i.e. those who demand standards in order to benefit from their application.

It is natural for both the standards body and the stakeholders to actively seek effective ways of communication and cooperation. This may not happen, however, for the following reasons.

1. Many parties are still not aware of the benefits of standards and of participation in standardization. The strategic potential of standards is insufficiently recognized even by managers of large businesses. Strong economic players may be reluctant to input their solutions and experience into the formal standardization process – for instance, due to a lack of confidence in the effectiveness of the system. Smaller players may have

doubts about the economic value of standards and are worried about the investment necessary.

2. In advanced industrialized countries, the discipline of standardization and the national standards institutes were typically established by the economic stakeholders themselves. In many countries, the original "bottom-up" initiative has produced stable national standards bodies of high visibility, that can rely on a sound mix of government and private sector support, and which operate in a climate that is generally conducive to voluntary standardization.

3. In developing countries and countries in transition, the typical approach taken was "top-down", with government taking the lead. As a result, the first common perception among potentially interested parties was that standardization was a state or governmental task. This perception was reinforced by the fact that the majority of standards prepared by these early governmental standards bodies were of mandatory application and could hardly be distinguished from other regulations.
Although many positive developments have taken place since the early days of standardization in developing countries, the perception of standardization as a state activity lingers on and extensive communication with stakeholders is an absolute necessity.

4. Some old misperceptions about standards and standardization have proven to be very persistent, especially among managers of small- and medium-sized companies, for example:

   - "Standards are only relevant to large, established businesses";
   - "Standards inhibit innovation. They will not permit me to introduce new ideas or to do things differently".

The elimination of these myths requires an effective communication strategy, good arguments and attractive outreach programmes.

Involving regulators in standardization

The World Trade Organization, through its Agreement on Technical Barriers to Trade (TBT Agreement), puts substantial pressure on regulators in all WTO member states to use, wherever appropriate, international standards as a basis for national technical regulations. The TBT Agreement does not provide any specific guidance on how standards can be used as a basis for technical regulations. However, in practice there are several methods for doing this.
More details can be found in the informative ISO/IEC brochure, *Using and referencing ISO and IEC standards for technical regulations.*

There are many advantages for regulators in making use of standards in legislation. Instead of being obliged to find solutions for difficult technical questions themselves, regulators can rely on the technical expertise of the standards developers and so save public money. Moreover, due to open and transparent procedures for setting standards and the subsequent broad acceptance of those standards, the regulator can expect a higher degree of acceptance of that legislation.

Those involved in standardization should use every opportunity to contribute to adequate legislation by educating regulators on standards issues and by involving them in the standardization process. With regard to international standardization, this also means that in cases where regulators might be interested in using a standard for legislative purposes, the national standards body should consult them before commenting or voting on a draft. Similarly, the regulators should be consulted by the national delegation to ISO before the delegates participate in a technical committee meeting. In selected cases, it may be more effective for regulators to participate in ISO technical committee meetings themselves.

Opportunities to influence ISO's work

Participate in technical committees, subcommittees and working groups

- Propose new projects, offer Project Leaders
- Provide a Chair
- Provide a secretariat
- Provide Working Group Convenors

Work with your NSB to become fully involved in ISO

- Twinning
- Policy Development Committees (CASCO, COPOLCO, DEVCO)

– Opportunity 1: Become a full member of ISO

ISO offers three types of membership: member bodies, correspondent members, and subscriber members.
Only member bodies, i.e. full members of ISO, are entitled to participate and exercise full voting rights on any technical committee as P-members.

The categories of correspondent and subscriber members have been established as a means for countries with very small economies, which do not (yet) have a fully developed national standards activity but wish to be informed about international standardization.
The best opportunity to influence ISO's technical work is offered by **direct**

participation in technical committees, subcommittees and working groups.

As a member of a committee, delegates can input the views of the national stakeholders they represent and can propose new projects and nominate project leaders. There are three types of membership possible for each committee:

1. Participating (P) member

- open to all member bodies
- duty to play an active role in the work
- obligation to vote on all matters submitted for voting, and on DIS and FDIS.

2. Observer (O) member

- open to all member bodies and correspondent members
- will be informed of the work of the committee
- no obligation to vote.

3. Liaison member

- open to non-members of ISO
- open to international organizations or large regional organizations, on acceptance by the committee.

Details of all these are given in the *ISO/IEC Directives*, Part 1.

Individuals may contribute to the work of a committee in various ways: as experts, especially in working groups, or as heads or members of national delegations.

No single country will be able to participate actively in all ISO committees on all subjects. Therefore, it is imperative for every national member to select those projects in which it wishes to participate. These should address products or services in which there is substantial national interest, either for domestic use or for international trade purposes. Further criteria are the availability of local capability to present the country's position in the chosen field and local technical expertise to ensure meaningful and constructive contributions at the working group level. In identifying the head and members of the national delegation, preference should be given to individuals who are close to the intended users of the ISO document being prepared. In order to promote consistency of opinions, it may be beneficial to have a regular representative, for instance as head of delegation.

In order for national contributions to be effective, participation in the chosen groups must be systematic and continuous. To ensure the regular study of technical documents, compare them with local needs and develop a national position – through consensus – local mechanisms should be established. The most important of these is the creation of national mirror committees to the ISO committees.

Once the choice of subjects and the corresponding ISO committees has been made, local mechanisms installed and the national delegation chosen, there are the following methods to achieve maximum effectiveness of participation.

Offer Project Leaders

Project Leaders are required for each new work item. They are nominated by the proposer and appointed by the relevant technical committee or subcommittee. They assist in the preparation, updating and editing of committee drafts and final texts. In effect, project leaders are responsible for the progression of "their" projects. A Project Leader will act as a consultant during the progression of a work item and always plays a key role in the reconciliation of comments on draft standards.

Because of time restraints (see Development tracks, page 19), it is essential that the Project Leader has appropriate resources for carrying out the development work.

Provide a Chair

The Chair of an ISO committee is responsible for the overall management of that committee and has the task of steering the committee towards a consensus-based agreement which will be internationally accepted. Chairs are nominated by the secretariat of the relevant committee and appointed by the Technical Management Board (for TCs) or the technical committee (for SCs).

Provide a secretariat

The offer to provide a secretariat contributes to a member's international recognition in the sector concerned. Running a secretariat means that hands-on experience in standardization will be gained which can be put to use in building up or improving national infrastructures.

However, providing a secretariat and being the Secretary to an ISO committee is a demanding commitment that requires adequate skills and resources. Before committing to the task, a member body should ensure that qualified staff and relevant material resources are available.

Provide a Working Group Convenor

WG Convenors call and chair meetings of a working group. They are responsible to the committees that nominate them formally at the time of the creation of the working group. In contrast to the Chair, a Convenor does not have any fixed term of office but is released on dissolution of the WG.

For all technical concerns during the preparatory stage of a document, the Convenor is the communication partner. He or she can be reached via the P-members of the TC or SC, via organizations participating in the committee or in the working group, or directly via individual experts of the WG.

– Opportunity 2 : Twinning

The context of "twinning" between developing and developed ISO members has been introduced as a mechanism to facilitate developing countries' active participation in technical committees and subcommittees of their interest, and to create new opportunities for influencing ISO's technical work. This is also to ensure that the needs of developing countries are taken into account in the standards developing process.

Developing countries represent almost 60 % of ISO's members. However, they currently hold only approximately 5 % of all ISO TC and SC secretariats, and their delegates and experts often have difficulties in attending committee and working group meetings.

The concept of twinning was therefore formulated – partnership agreements that offer the chance of learning by working in cooperation with a more experienced partner. The ISO Supplement includes details of the concept of twinning arrangements at the following levels :

- twinned membership of ISO committees
- twinned chairpersons (chair and vice-chair)
- twinned committee secretariats.

In order to benefit fully from twinning arrangements, member bodies from developing countries and countries with economies in transition are recommended to follow a stepwise approach – which is very similar to a gradual increase of level of participation without twinning arrangements. First of all, twinning is a capacity-building tool, which nevertheless already presupposes a certain minimum capacity for active participation in ISO's work on the part of the applicant member body. This minimum capacity and understanding of the technical work typically will be achieved during a period of observer (O) membership in the specific committee of interest.

As a next stage, the member body can consider twinning with a participating (P) member from a developed country in the same committee. The twinned P-member phase, which should not be shorter than 12 months, may be used to refine national mirror committee procedures and operations and establish the required mechanisms for efficient and effective national contributions (comments and votes).

Finally, the committee's technical work may be developed by the application of a twinning arrangement with the secretariat or the nomination of a vice-chair, twinned to the committee's Chair.

Twinning arrangements should be described in an agreement accepted by both parties. The member bodies entering into such a twinning arrangement are free to decide upon the distribution of tasks and responsibilities and the duration of the agreement.

Each arrangement preferably should be reviewed on a yearly basis, but not later than after three years.

Twinning arrangements are a valuable capacity-building tool and hopes are that they will facilitate developing countries' access to ISO's technical work. However:

- Developing country members with an interest in twinning should know exactly what they want and why they want it. They need to state the reasons for their special interest in a standardization subject or field, specify the twinning arrangement they desire, and demonstrate their capacity for active participation.

- Twinning arrangements do not replace training activities. They start where basic training and information activities end. The successful implementation of twinning arrangements in international standardization will require a degree of understanding of the standardization process, experience in committee work and sufficient capacity for meaningful contributions to the technical work in the chosen field. It remains the sole responsibility of the member body applying for twinning to be fully prepared for efficient cooperation with the twinning partner and active participation in the selected ISO committee.

– Opportunity 3 : Join a policy development committee

These committees are open to all member bodies and correspondent members. Currently there are three such committees :

– ISO/CASCO for conformity assessment,

– ISO/COPOLCO for consumer policy, and

– ISO/DEVCO for developing countries.

Just one of these is discussed more fully as an example.

Example

ISO/CASCO develops documents which are published by ISO as International Standards or Guides. The voluntary criteria contained in these represent an international consensus on what constitutes best practice in conformity assessment. CASCO membership is open to all ISO member bodies as participating (P) or observer (O) members, and both developing and industrialized countries are well represented. At present, CASCO membership is 72 participating countries and 32 observer countries.

CASCO has a structure that reflects its various roles of policy development. It writes technical documents, promotes these documents, and monitors market feedback on their use. A continual improvement cycle is in place to ensure that CASCO provides globally relevant

documents that reflect modern conformity assessment practice. These activities ensure that CASCO stays in touch with the market.

Please note:

ISO itself does not carry out conformity assessment activities. It does not, for example, perform ISO 9001:2000 certification/registration. However, its standards and guides on conformity assessment activities harmonize these worldwide and so facilitate international trade. The ultimate aim is to make products and services acceptable in all countries on the basis of a single assessment and approval in one country.

Adopting international standards

ISO's International Standards are voluntary documents. Members of ISO have the right to adopt these standards as their national standards, but they are under no obligation to do so. The national adoption and implementation of international standards is an important contribution to the fulfilment of the international standardization system and process. The benefits of standards materialize only through their practical application and the main added value of international over national standards is derived from their harmonization impact. Many ISO members contribute to the preparation of international standards because they want to adopt them as their national standards as soon as they are available. Contribution to the preparation of an international standard is not a precondition for its national adoption. Any ISO member may adopt new or existing international standards of interest to them.

In a perfect world, consensus-based international standards would fully answer the needs of all interested parties and could be used directly or adopted as national standards all over the world, without changes. In reality, even the most globally relevant and successful ISO standards are sometimes modified by national members to suit local conditions and purposes. In order to reduce negative effects to trade harmonization and trade facilitation as a result of a lack of transparency in modified adoptions of international standards, ISO and IEC

together published Guide 21, dealing with the "technical" aspects of adoption.

ISO/IEC Guide 21:2005,

Regional or national adoption of International Standards and other International Deliverables:

– *Part 1: Adoption of International Standards*

– *Part 2: Adoption of International Deliverables other than International Standards.*

The main purpose of ISO/IEC Guide 21 is to help achieve greater uniformity and coherence in the way adoptions are carried out and deviations indicated. It describes methods for the adoption of international standards (and other deliverables) and defines a system for indicating the degree of correspondence between international standards and their national or regional adoptions.

Three degrees of correspondence exist between international and national standards:

Identical	Modified	Not equivalent
Adoption	Adoption	No adoption

The degree of correspondence will be deemed "identical" if the following conditions are fulfilled:

- the national (or regional) standard is identical in technical content, structure and wording, or
- the national (or regional) standard is identical in technical content and structure, but may contain certain defined minimal editorial changes, or
- the "vice versa principle" is fulfilled, which means that the two standards can be substituted for each other.

An adoption is called "modified" under the following conditions:

- technical deviations are clearly identified and explained,
- the adopted standard reflects the structure of the international standard. Changes to the structure are permitted if an easy comparison remains possible.

Where a regional or national standard based on an international standard differs from the technical content and structure of the international standard, and where these differences have not been clearly identified, the degree of correspondence with the international standard is described as "not equivalent", and is not considered to be an adoption.

Adoptions of international standards can be performed by means of the endorsement method (via an endorsement notice) or by republication, which includes the methods of reprinting, translation and redrafting. In the case of endorsement, the national or regional standards body accepts the international standard as it is and simply declares it to have the status of a national or regional standard.

5. Tools and resources

Electronic services for committee work

Since most of ISO's work is carried out electronically, delegates and experts are expected to be computer literate. For the purpose of acquainting users with ISO's specific tools and resources, a number of guidance documents for each of the applications of ISO's electronic services have been prepared and are accessible under the URL **www.iso.org/e-guides**.

The ISO eServices Guide provides an overview of all the electronic applications in ISO.

The ISO eServices Update additionally provides a summary of all the new developments related to ISO's electronic services (URL: **www.iso.org/ISOeServicesGuide**).

The environment offered by the ISO server enables Secretaries of ISO committees (and their staff) to make documents available to their committee members, to send notifications to them, and to collect comments from their members. Committee and working group members can obtain various levels of permission, from mere access to certain folders to highly interactive rights and permission to modify documents.

The ISO server is also the platform for electronic balloting by ISO member bodies and within committees. Today, all votes and accompanying comments must be submitted in electronic form, using the electronic balloting system that became operational in August 2000. The system must be used for voting on Draft International Standards (DIS) and Final Draft International Standards (FDIS), and may be used for votes within a committee. For committee votes, the secretary can either use predefined ballot templates or design a completely new ballot paper, defining questions and answers specific to each ballot.

All users with access to ISO committees, working groups or the electronic balloting system are registered in the **ISO Global Directory** (URL: **https://directory.iso.org**), a new database developed for the registration of users and their roles in ISO. Being registered and assigned to a role grants the user permission to access documents of committees, the right to vote, and other applications of ISO's electronic services. The **ISO Global Directory** allows for decentralized management of registration and role assignment by the ISO member bodies, and also offers the possibility of registering international or broadly based regional organizations with liaison status in ISO committees. The **ISO Global Directory** is expected to substantially increase the efficiency of user and role management on the part of ISO member bodies.

ISO's core business is to produce and make available International Standards reflecting the needs of stakeholders

worldwide. At the end of 2006, there were 158 ISO national members, an average of eight technical meetings per working day, 3 041 technical bodies, a total of 16 455 International Standards and standards-type documents representing almost 620 768 pages in English and French. These figures underline the magnitude of ISO's international standardization system and operations. Therefore:

- data and information management within ISO requires adequate electronic tools and services in order to achieve the required high standards;
- member bodies participating in ISO's technical work need to assess their performance and capacity with regard to electronic data and information management. Full advantage should be taken of all ISO support measures, including guidance documents, helpdesks and training courses.

STADIST Newsletter

This is updated each week and lists new DIS, FDIS and published standards. All member bodies have access to this newsletter. TC and SC Secretaries are informed by e-mail of new work produced by their committees but can only download their own committee documents.

Information sources and resources

ISO Online (URL: **www.iso.org**) offers regularly updated information on all aspects of ISO's activities. All ISO's eServices, i.e. the information technology services designed and operated to support various groups of stakeholders, are accessible through ISO Online. This also provides relevant information, specialized applications (TC folders and workspaces, eBalloting) and tools (ISO templates) to support the development work of committee members, chairs and secretaries.

Direct URLs to useful sites

To facilitate access to some basic information or tools, certain sites have their own direct URL:

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

The **ISODOC Server** (URL: **www.iso.org/isodoc**) provides access to ISO documents related to the activities of ISO governing bodies (the ISO General Assembly, Council, Technical Management Board), policy development committees (ISO/CASCO, Committee on conformity assessment; ISO/COPOLCO, Committee on consumer policy; ISO/DEVCO, Committee on developing country matters) and advisory groups (ITSIG – Information Technology Strategies Implementation Group ; CPSG – Commercial Policy Steering Group), as well as ISO general

documents, ISO circular letters and other useful information for ISO members. Access to ISODOC is password-protected and is provided only to ISO members and the representatives of international organizations cooperating with the above-mentioned ISO bodies.

Staff of national standards bodies involved in 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 section "For ISO members", following hyperlinks to the systems designed for them.

The **ISOSTD Server** (URL: **www.iso.org/isostd**) provides ISO members with the opportunity to print on demand DIS, FDIS and ISO standards (current and withdrawn). 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. ISOSTD also provides access to the electronic files of any graphics appearing in newly published ISO standards. These files are available in both EPS and TIFF formats (non-revisable formats are ideal for use in national adoptions) and 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 these electronic media is also given on the ISOSTD. Files containing information on ISO standards and their development, on ICS (International Classification for Standards) and technical committees are available to ISO members from ISOSTD upon request.

ISO Online offers the facilities to search, select, purchase and download ISO's publications as well as access to information about all the standardization projects currently under development in ISO.

In addition to the available online sources and services mentioned above, the ISO Helpdesk (**helpdesk@iso.org**) offers support and advice on e-balloting matters and on the use of the ISOTC server. The following specific Helpdesks have been established for selected business areas:

- Authoring templates: **template@iso.org**
- Training: **training@iso.org**
- Vienna Agreement: **va@iso.org**

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